

The (Bio)technological Sublime: From Nature to Technology and Back

BY JOS DE MUL

Many things are awesome, but none more awesome than man. — Sophocles

Every once in a while, we experience something extraordinary. Such “awesome” experiences might happen in research, when we unexpectedly discover something really amazing, or when we come across a magnificent landscape, hear a piece of music that really moves us, or when we fall deeply in love. Traditionally, these kinds of extraordinary experiences are called “sublime.” In the following, I will present some reflections on one particular kind of sublimity: the technological sublime.

Although the word “sublime” first appears in English in the fourteenth century, the notion goes back a long way. It is described in the Greek essay *Περὶ ὕψους*, written in the first century and—probably incorrectly—ascribed to Longinus. It was, however, not before the seventeenth and eighteenth centuries that the notion of the sublime started its victory march through European cultural history. In the period between the Baroque and Romanticism, the sublime became one of the key concepts in aesthetics, ethics, and even ontology.

Three characteristics of the modern sublime come to the fore. First, the word predominantly refers to natural phenomena with a divine ring, such as mountain landscapes, stormy seas, and starry night skies. The German philosopher Immanuel Kant distinguishes between mathematical and dynamic sublimity. The first is evoked by the immeasurable and colossal, pertaining to the idea of infinitude, surpassing all human imagination and understanding. The dynamic sublimity, on the other hand, confronts us with superior forces of nature, such as volcanic eruptions, earthquakes, or tsunamis. The latter experience of the sublime strikes us with our vulnerability.

Second, the modern sublime is strongly contrasted to beauty. Beautiful things give us a pleasant feeling. They feed our hope that we are living in a harmonious and purposeful world. The sublime, on the other hand, is connected with experiences that upset our hopes for harmony, due to their unbounded, excessive, or chaotic character.

Third, although the experience of the immeasurable and potentially destructive forces of nature evokes unpleasant feelings, contemplating them from a safe distance (for example, by watching a painting of a stormy sea in a museum) is pleasurable as well. Sublime experience is highly ambivalent. The sublime evokes both awe and fear; attraction and repulsion melt into one ambiguous experience. Therefore, the sublime has been defined as “a pleasure mingled with horrors” (John Dennis), “delightful terror” (Edmund Burke), and an experience which induces “negative lust” (Kant).

Friedrich Schiller conceptualizes the sublime beyond the safe cocoon of aesthetic experience. He distinguishes between a reflexive experience of the sublime (be it mathematical or dynamic) and a practical encounter with the sublime. In his view, we can only experience the sublime when we actually collapse in a glorious battle against the superior powers of nature or military violence: *Groß kann man sich im Glück, erhaben nur im Unglück zeigen* (One may be great in times of good fortune, but one only can be sublime in times of misfortune).

With this transformation, Schiller—impressed by the Jacobin terror following the French Revolution and the connected rediscovery of Greek tragedy, with its emphasis on the *deimon* (awesome) character of man—paved the way to the modern experience of the technological sublime.

Through the nineteenth and twentieth centuries, the main site for the ambiguous experience of sublimity gradually shifts from nature to technology. This transformation is closely connected with two major developments in Western society: the secularization and disenchantment of nature, and the spectacular growth of the natural sciences and technology. Nature increasingly becomes the object of technical control.

As David Nye has documented in great detail in his book *American Technological Sublime* (MIT Press, 1994), during the twentieth century, the American experience of the

natural sublime was gradually complemented and even surpassed by the technological sublime: the sublimity of the factory, the skyscraper, the metropolis, automobility, aviation, and space travel.

But of all the twentieth-century technologies the computer—the universal machine—is perhaps the most sublime technology. In a world in which the computer has become the dominant technology, everything—atoms, genes, texts, organizations—becomes a relational database, a collection of (re)combinatory elements. Keeping Kant’s distinction between the mathematical and the dynamical sublime in mind, we might also distinguish between mathematical and dynamic sublimity in computer technologies.

The mathematical sublime in the age of the computer manifests itself in combinatorial explosions and multiverses. For a literary expression of the mathematical sublime, we may think of Jorge Luis Borges’s “The Library of Babel,” which contains all possible different books made out of the twenty-five symbols of the Spanish alphabet, a hyper-astronomical number compared to which the number of atoms in our universe is negligible.

We encounter the dynamic sublime not only in nuclear power but also in the practical applications of biological databases being used in the life sciences and various biotechnologies. Considering the hyper-astronomical number of possible recombinations of the

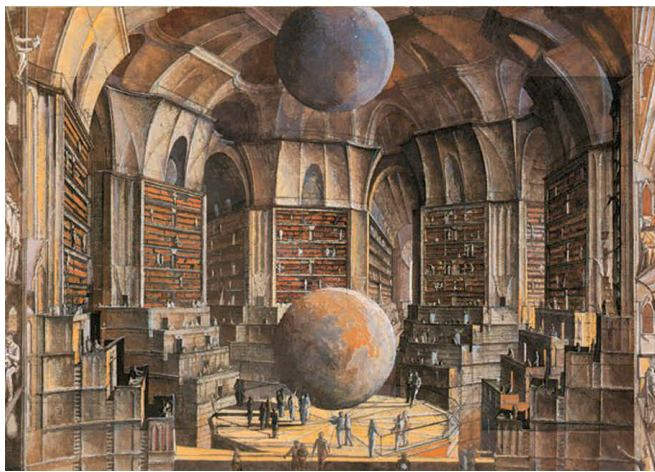
three billion nucleotides that not only can be simulated *in silico* but are increasingly realized *in vitro* and *in vivo*, we get a first glimpse of the dynamic sublime in the age of biotechnology. Of course, there are many—physical, chemical, biological, and historical—constraints on the number that actually can be realized, but even then the number and possible impact is sublime.

What is both fascinating and uncanny in all this is that, in this process, we witness a fascinating trading of places of nature and technology. While nature is increasingly controlled and governed by man and turned into a cultural category, our technological environment becomes so complex and uncontrollable that we start to relate to it as a force on its own. With the aid of techniques such as genetic modification and attempts to synthesize life from scratch—the holy grail of synthetic biology—we are creating a “next nature” that possesses and increasingly develops its own intentionality and agenda.

Here the pendulum is swinging back: whereas the sublime transformed from a natural to a technological category in the twentieth century, in the twenty-first century, we are witnessing the technological sublime becoming a natural phenomenon again. And like the holy in premodern times, the biotechnological sublime is Janus-faced: it reflects both our hope for secular salvation (production of fuel and food, cure of diseases, transhumanist dreams of immortality) and our fear of its uncontrollable, destructive power. Should we exercise constraint with regard to the biotechnological sublime or rather affirm it in blind hope, as we have done since Prometheus? Or should we rather say that *Homo sapiens*, the species that is artificial by nature, for that reason, has been denied the choice *not* to be technological.

Not so much a conclusion, but rather as a thought for consideration, I will close with the following words of Ronald Dworkin: “Playing God is indeed playing with fire. But that is what we mortals have done since Prometheus, the patron saint of dangerous discovery. We play with fire and take the consequences, because the alternative is cowardice in the face of the unknown.” ■

Jos de Mul, a Visitor in the Program in Interdisciplinary Studies and Professor of Philosophical Anthropology at Erasmus University Rotterdam, presented a version of this essay as an After Hours Conversation at the Institute on October 4, 2012. An extended version will be published as “The (Bio)technological Sublime” in Diogenes 233–34 (Spring 2013). On this and related topics, see also Jos de Mul, Destiny Domesticated: The Rebirth of Tragedy Out of the Spirit of Technology (State University of New York Press, Autumn 2013).



La Salle des planètes from Érik Desmazières’s series of illustrations for Jorge Luis Borges’s story “The Library of Babel,” 1997–2001

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out from distant shores and pioneers who pushed westward against an unforgiving wilderness: Yes, we can. It was the call of workers who organized, women who reached for the ballot, a president who chose the moon as our new frontier, and a king who took us to the mountaintop and pointed the way to the promised land: Yes, we can, to justice and equality. Yes, we can, to opportunity and prosperity. Yes, we can heal this nation. Yes, we can repair this world. Yes, we can.

Here, Obama makes political change sound effort-filled but achievable, even natural. In addition, the poetic historical sweep, which takes into account an arguably ideologically incoherent set of change agents, is overlaid with the sheen of coherent nobility. America, he communicates, is a nation built by audacious underdogs who could not be put off by the powerful and the petty. In this way, Obama was able to invert the usual relationships between official power and insurgent challenge. He argues that difference and resistance are the unifying themes of the American experience and recharacterizes losing as a necessary, transitory test before an eventual exultation that is not only possible but nearly inevitable.

The frequent criticism of Barack Obama as “merely rhetorical” rather than substantive, as if discursive power is somehow not “real,” is a neat encapsulation of the reason why it is so important to take rhetoric seriously in the study of politics, particularly for those of us interested in how political underdogs can make credible challenges to status quo arrangements of power and privilege. Barack Obama’s campaign was an innovative version of institutional electoral politics and not a social movement, but the way that the candidate used rhetoric to claim a credible space at the political table is nevertheless instructive. Social movements, like candidates, benefit from a combination of organizational strength and rhetorical savvy. A popular discourse on movement goals and issues, even when there is political backlash, can make all the difference in whether a political challenger has a chance against those who begin the contest with more resources and power. Public discussion tends to enlarge the scope of conflict, and as E. E. Schattschneider observed, the publicity of the competition is what gives the underdog a fighting chance. In this way, rhetoric can be used as a resource that helps to level the playing field in political contests. ■

* Lymari Morales, “Americans More Tuned in Than Ever to Political News,” Gallup (September 22, 2008).