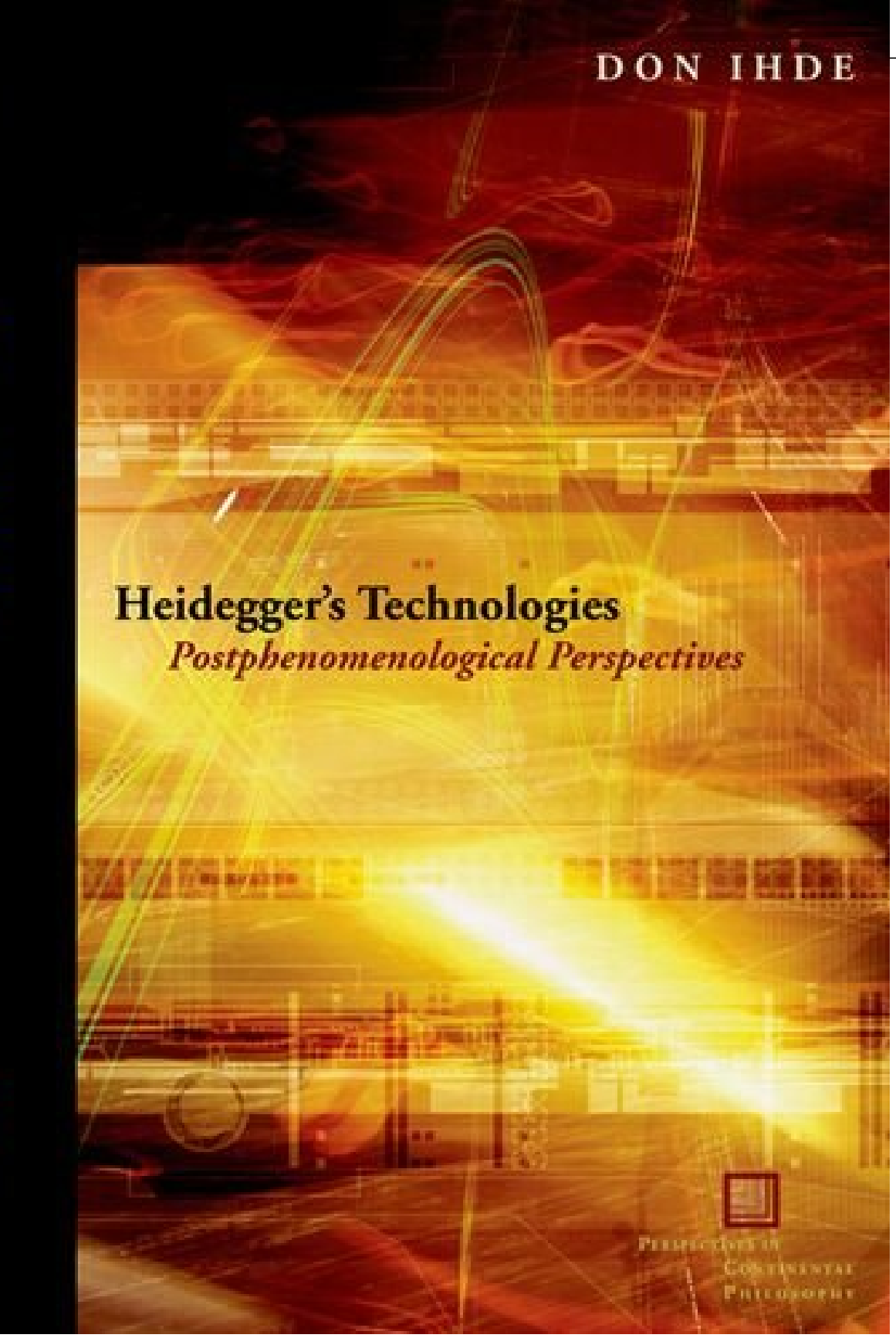
DON IHDE
Heidegger's Technologies
Postphenomenological Perspectives

Heidegger's Technologies

John D. Caputo, ***series editor***

PERSPECTIVES IN
CONTINENTAL
PHILOSOPHY

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First edition

Dedicated to my Technoscience Doctorates:

Paul Thompson, the first
Followed by Evan Selinger
Ken Yip, Robert Rosenberger
Kyle Whyte, and soon, Adam Rosenfeld

Contents

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Heidegger's Technologies

Introduction

Situating Heidegger and the Philosophy of Technology

This book is about, and in response to, Martin Heidegger's *philosophy of technology.* Heidegger is widely hailed as one of the major figures in the foundations of the philosophy of technology. And while it remains the case that in the early decades of the mid-twentieth century, he had a number of peers also interested in technology, particularly among European philosophers, if one judges by articles, books, and other publications today, Heidegger remains virtually the only one of these to continue to draw major comment.

Heidegger's death in 1976 marked his entrance into the company of the "mighty dead," as Robert Brandom calls those philosophers who continue to exert influence in the twenty-first century. That was three and a half decades ago—not that long ago in terms of philosophical time. Brandom's book *Tales of the Mighty Dead* (Harvard, 2002) already counts Heidegger among the mighty, but that comes at the end of a tale that begins with the early moderns Leibniz and Spinoza through the giants Kant and Hegel and then into the twentieth century, wherein Heidegger, along with other notables, is located. My approach is both more limited and more focused. Although I shall locate Heidegger among some of his peers and in this introduction relate him to his intellectual surroundings, I am focused primarily upon the origins and shapings of contemporary philosophy of technology and Heidegger's role therein.

If a period of three and a half decades is not long in philosophical time—Brandom goes back to the seventeenth century, which is still

"modern" in philosophical time—it is very long in terms of today's *technological time*. It is this anomaly that hints at part of the frame into which I will here fit Heidegger. And this is a factor of which any historically sensitive philosopher of technology must be aware. As I shall soon show, philosophies of technology are primarily developments of the twentieth into the twenty-first centuries, however many earlier philosophical anticipations may have occasionally occurred. Prior to contemporary philosophies, technologies played at most background, illustrative, or epiphenomenal roles in philosophy.

Heidegger himself argues that with respect to technology, *modern technology* is historically *later* than modern science. While I disagree with this thesis—and I will point out that Heidegger himself undercuts it by his counterclaim that technology is *ontologically* prior to modern science—Heidegger himself remains thoroughly *modernist* in this distinction. As Paul Forman has argued, modernists have simply assumed that science has priority over technology, an argument I will examine in more detail. For Heidegger, modern technology is, effectively, *industrial* technology—machinic, gigantic, mechanical, systemic, and complex. And there is some historical justification for this if one takes the Industrial Revolution as a model for modern technology. As I shall point out, it may well be that the Industrial Revolution was the alarm that finally awakened philosophers from their contemplative slumbers. But the Industrial Revolution itself also underwent dynamic changes. For example, in its earliest forms power was at first derived from "natural sources," such as ever-larger dams, windmills, and even animals, all of which could and did drive mills, machine shops, conveyances, and the like even into the nineteenth and even vestigially into the twentieth centuries. This gave way early in industrial times to new sources of power, at first primarily *steam* power. Massive steam engines pumped mines, ran multibelt machine shops, and powered engines with steam replacing sail and, on land, railways replacing horse trams. Later, steam engines were modified to become internal combustion engines, which existed alongside steam power.

The next dynamic change was the emergence of *electric* power. This power on introduction seemed mysterious and strange. Literarily it was celebrated in the now-canonical essay "The Dynamo and the Virgin" of Henry Adams (1900). He celebrated its quiet power, quiet enough that a baby could sleep next to the dynamo, yet a power that could run indefinitely many tools and machines. For Adams, it was an almost mystical power, like that of the religion of the Virgin, pervasive but not well understood. It is perhaps hard for us today to re-create this sense of

mysterious power in the midst of now commonplace electronic transformations of the electric. Yet this early sense was also much more pervasive than Adams's experience of forty-foot-high dynamos at the Great Exposition. I found some sense of this mystery recalled recently in a Broadway presentation of *In the Next Room; or, The Vibrator Play*. For also early in the twentieth century, the power of the electric drove the first vibrators, which became medical tools for the treatment of *hysteria,* also one of the maladies which stimulated Freud in his psychosexual theories early in the century. Strangely, today, this is a malady that effectively no longer exists (although vibrators do).

In 2004, I experienced an event that dramatized again the coming of electricity: it was the centennial celebration of the Wantasequet Trout Club in Weston, Vermont, a large lake property very near my own vacation property. Its history was telling. Originally the lake had been the head source for a series of water mills downstream from its runoff, which in turn powered grain mills, sawmills, and other nineteenth-century craft productive enterprises. Electricity had come early to Weston, in 1904, and as such this new power source put the downstream dams out of business—electric motors replaced waterwheels and turbines and now, also out of business, the source lake became a trout club, which remains its role even today. All of these changes characterized the beginnings of rapid technological transformations to be found in the Industrial Revolution and may be seen to be spread over approximately a hundred years, from the mid-nineteenth to the mid-twentieth centuries.

This speed, however, must today seem slow when compared with what has happened beginning from the mid-twentieth century. If we skip to today's frontier technologies, the list usually is led by bio-, nano-, and info-, to which we may add communication and imaging technologies. *All of these are effectively new since the mid-twentieth century.* And before locating these technologies in relation to Heidegger, I want to point out some interesting general features of these, now *technoscience* technologies:

> The scientific "objects"—if I may call them such—with which these technologies deal are all *submicroscopic.* Biotechnology deals with genetic strands, DNA, RNA, proteins, and the like. Nanotechnology deals with objects at the molecular and atomic levels. Information is digitally processed and encoded, fitting into ever more compact chips and transmission processes. The same applies to communication technology, tied into networks that include satellites, wireless, and broadband systems. And, in much scientific imaging, objects as small as individual photons, ion streams, and electron

streams are utilized, particularly to go below even the early-twentieth-century limits of optical light. In short, these submicroscopic objects are the ultrasmall.

Ironically, however, many of the instruments (technologies) through which such observation-manipulation is possible are themselves both often large and always highly complex. My university administers the Brookhaven National Laboratory, whose National Synchrotron Light Source, begun in 1978 and enlarged and updated in 1982, manipulates light across the microwave spectrum, much beyond the limits of visible light. But this machine is dwarfed by the CERN Large Hadron Collider, only now partially operational after its beginning in 1998. It will examine the smallest subatomic objects currently theorized to exist.

Note, too, that these frontier technologies—technoscience technologies—are for the most part technologies that have come into being since the mid-twentieth century. I have often argued that a *second scientific revolution*, with as much difference with the first as the first was to premodern thought, has been and is occurring now.

I make two preliminary conclusions at this point: first, virtually all these frontier technosciences are *post-Heidegger*. I will comment upon this shortly. Second, these technosciences are in many ways qualitatively different from the earlier industrial technologies that, I shall also contend, marked the style of technology most familiar to Heidegger.

So, now, here are some very concrete examples concerning the observations just made and in relation to the technologies with which Heidegger was familiar:

Heidegger was clearly familiar with the beginnings of late modern communications technologies, for example, radio and television. Early public radio, for instance, was early recognized as a medium that could play an important political-propaganda role. It was frequently used by Adolf Hitler, and it was also used intensively by the Nazis in the occupied countries, as one of my former visiting scholars, Lars Nyre, has pointed out in his dissertation, *Fidelity Matters: Sound Media and Realism in the 20th Century* (2003). I am not aware of Heidegger texts that refer in any great extent to radio, but it was well known—and some texts relating to television will be noted later—that in his late life, Heidegger became very attached to television as a medium for broadcasting soccer games.

He was, of course, familiar with the mechanical technology of the typewriter, about which I shall have much to say, but digital word processing did not become widespread until the 1980s.

Nuclear physics did play a role in his later life and the atomic bomb enters several of his lists about the impact of Technology (capitalized to emphasize its "essence" features favored by Heidegger).

The Internet (beginning to be operational, but in very limited ways, by 1973) and the beginnings of nanotechnology (anticipated by Feynman as early as 1959, but not really described until 1974–77) remained basically post-Heidegger.

What was to become worldwide as entertainment technologies (the Walkman in 1979, since modified into the MP3 player and other more miniature music technologies), mobile phones (some early uses, but no practical networks until 1983), and digital photography, all *leapfrog technologies* by which I mean technologies today widely distributed in both developed and nondeveloped regions of the globe, are post-Heidegger.

While the structure of DNA became known in the mid-1950s, biotechnology in the form of practical manipulations of genetic materials did not become practicable until 1975.

In short, so much of the technoscience that dominates the texture of the twenty-first century is primarily a post-Heidegger phenomenon. This is not to say that the now "older" industrial technology has disappeared—it continues in updated and modified forms to operate alongside electronic and digital technologies—but it is to say that overall, today's technologies evidence a quite different flavor from what was prominent during Heidegger's lifetime. With that said, I may now return to placing Heidegger within his milieu and take some account of his role in *early philosophy of technology*.

Philosophers, as I have already noted, came late to the philosophy of technology. As a recognizable subdiscipline, philosophy of technology is primarily a twentieth- and twenty-first-century phenomenon—although there were a couple of notable nineteenth-century beginnings. Of course "philosophies of this and that" are also nineteenth-century philosophical genres that were originated by Hegel, who spoke of the philosophy of religion (*Religionsphilosophie*), philosophy of history (*Geschichtesphilosophie*), philosophy of science (*Wissenschaftesphilosophie*), and so on. And thus it is not surprising to note that it was two neo-Hegelians who could be said to have launched *philosophies of technology.*

One name will be familiar: Karl Marx. For although he never titled works "philosophies of technology," his early analyses of how material

modes of production produce different types of social organization were clearly early forms of technological determinism. By taking account of the different modes of production in different historical eras, Marx saw material modes of production—technologies—as formative of the varieties of economic culture. The other name, contemporary with Marx but less familiar, was Ernst Kapp, who, in this case did title his major work a philosophy of technology; his *Grundlinien einer Philosophie der Technik: Zur Entstehungsgeschichte der Kultur aus neuen Gesichtspunkten* (Fundamentals of a Philosophy of Technology: The Genesis of Culture from a New Perspective) was published in 1877. Here, again, one can see that technology is a primary determinant in the shaping of culture, although Kapp's take was quite different from Marx's. Kapp took technologies to be material transformations of bodily, anthropomorphic functions such that a stove for cooking food could be seen as something like an artificial or "technological" stomach, machines that amplified arm and leg power were extensions of human bodily powers, and so forth.

What is important about these early gestures toward philosophy of technology is a shift in *perspective.* Both Marx and Kapp begin to discern a focal role for *materiality*, particularly the materiality of technologies or produced tools, machines, and their organization in relation to human cultures. And while by today's standards the implied determinisms in both Marx and Kapp are overstatements, such early overemphasis could have been necessary to open the way to the new and distinctive analysis from philosophy of technology. Nor should one ignore the dominant past tendencies of philosophers here—so much of the tradition has focused upon what in a broad sense could be thought of as the "immaterial": ideas, theories, the abstract, ideality, and so on.

Before turning to the twentieth-century beginnings of philosophy of technology, I want to draw attention to a few obvious historical points. I have already noted that the most dramatic historical change, centered primarily on the nineteenth century, was the Industrial Revolution. Here was a technological revolution that involved the new power sources of steam, the internal combustion engine, and electricity, all of which could power new kinds of technologies. Already in the nineteenth century the telegraph and later the telephone, cables, and global connections, were employed. Machines could become larger and did; the "dynamo" and hydroelectric systems multiplied into most corners of human social life.

Today, retrospectively, a quite concrete image for this nineteenth-century change, highlighting its *technologically material* core, was made vivid for me in a 2008 American Museum of Natural History exhibit, "The Horse." This exhibit features displays from the ancient to present role of

horses in human societies and cultures. Stretching back to prehistory, the horse has played central roles in human migrations, wars, transport, and art, and has entered into so many nooks and crannies of earlier times. But what the exhibit points to by way of absence is precisely the lack of, or at most marginality, of horses today. Yes, next door to the exhibit, in Central Park, there are the horses still drawing tourist carriages; and there are the triple crowns of horse racing touted on the sports pages; and riding clubs remain existent—but all are at the margins of our now dominantly technological culture. The nineteenth century, the industrial century, was precisely the watershed era. Even at the very beginning of the twentieth century, New York City still had 150,000 horses within its boundaries. Reminders remain evidencing this bygone era: one can still find some nineteenth-century buildings that have "bumpers" covering the corners of ground-floor areas. These bumpers were originally there to protect the buildings from the frequent damage caused by runaway horse carriages or freight wagons that would scrape against the building corner. But horse-drawn trams, beer wagons, fire engines, and more are all gone, replaced by gasoline or diesel driven vehicles, leaving the police only with a horse guard for crowd control as a reminder of a now-transformed past. Lest one be nostalgic, we need remind ourselves that the twenty pounds or so of horse manure per horse per day, plus urine deposited on the streets, for which the city employed vast crowds of sanitation employees, are also gone. Nor was this simply a health hazard. Piles of manure would burst into flames and had to be put out by horse-drawn fire engines. And traffic deaths due to runaways or other horse-powered vehicles were actually high per mile traveled compared to the later automotive replacement era. In this sense the Industrial Revolution can be seen as both a replacement and new transformation of a form of life through technologies.

I cannot trace here the complex set of reactions to industrialization among intellectuals, although from literary and artistic voices there were both utopic and dystopic responses. Recognizing that the more brilliant sunsets of the nineteenth century were caused by what today we would call pollution, some extolled the "beauty" of industrially enhanced atmospheres, while others condemned what began to be understood as increased health risks arising from atmospheric toxicity. From early sociology came the traditions that decried "disenchantment" and "desacralization" of nature. Max Weber, an early sociologist spanning the turn of the century, was instrumental in establishing this tradition, and as mentioned before, a few philosophers—such as Marx and Kapp—began to relate technologies to the formation of social and cultural shape. But in a sense,

this is too fast a take on industrialization and its critical interpreters, particularly since, as both Thomas Hughes and David Nye, two of the most eminent of historians of technology, have pointed out, it was also the case that the terms "technology," "technics," and the like did not actually come into widespread use until the early decades of the twentieth century, and mostly after World War II.[1] "Machines," "dynamos," and "industrial arts" were terms that preceded "technology." There is a parallel here to the somewhat earlier adaptation of terminology relating to *science*. Most historians locate the rise of early modern science in the seventeenth century, but the term "scientist," for example, was not coined nor did it come into popular use until after 1840! Before that time "scientists" were called *natural philosophers*. Within the Royal Society, in the 1840s, a debate, inaugurated by William Whewell, opened concerning nomenclature leading to "scientists." One of the arguments related to "economists," with those preferring "scientists" holding that this was a good parallel to this social science change.[2] Needless to say, in that period there were not yet any "technologists," although "engineers," those who practiced the industrial arts, and of course "inventors" could be found. The implicit suggestion here is that often complex practices and material developments often *precede* the naming process.

By the beginning of the twentieth century it was clear to most observers that industrialization brought with it a rapid and machinic development of technologies, but variations occurred quite differently in the developing continents. While industrialization was early, particularly in Britain but also in the United States, it was slower to arrive but faster to develop in Germany. As V. R. Berghan, cited by Michael Zimmerman, claims, "Nowhere else in Europe did the transition from an economy based on agriculture to one dominated by industry occur with the same rapidity as in Germany."[3] Zimmerman notes, "From 1880 to 1913, German coal output quadrupled, during the same period, steel production increased tenfold and outstripped British production by 1913."[4] With the twentieth century, industrialization not only accelerates but also, as might be expected, is adopted into *military* contexts, culminating in the early part of the century in World War I. Indeed, the figures just cited point to the German buildup before 1914. Ironically, I will claim, that war, along with the Industrial Revolution, may have been a primary factor in waking philosophers from their slumbers concerning technologies. War, parallel to industrialization, was actually responded to ambiguously with both utopic and dystopic takes thereon. Industrialization through its technologies was seen as inevitable and with often agreed upon effects: it was perceived to be a threat to older European culture, particularly high culture. It was

thought to bring about a leveling of humans, the destruction of bourgeois culture and the coming of "mass man." But it was also thought to be the epitome of the attainment of humans to dominate and control nature. And all of these ideas reached an apogee in World War I.

Clearly, there were different attitudes to the military industrialization taking shape, but one strand of particular importance for what was to become Heidegger's take may seem in retrospect somewhat surprising. These were the movements that *glorified* technologization and saw it as a revolutionary opening to a new era. One early strand of such a response to technology was the appearance of Italian futurism before the war. Filippo Marinetti gathered a group of younger artists, proclaimed a futurist manifesto (1909), and began a movement that eventually affiliated with Italian fascism. The futurists wanted to reject and overthrow the past: "We will fight with all our might the fanatical, senseless and snobbish religion of the past, a religion encouraged by the vicious existence of museums."[5] Instead of the moldy past, the futurists glorified speed, technology, youth, and violence. The car, the airplane, and the industrial city were the forms futuristic technologies would take. Here, too, violence begins to be aestheticized, and a war culture taken as a kind of to-be-enjoyed "horror movie."

In Germany there were similar movements, also associated early with National Socialism, and in Heidegger's case, particularly in the work of his 1914 generation contemporary, Ernst Jünger. Michael Zimmerman has done a highly definitive analysis of this period and the interrelationships of the National Socialist program, Jünger's work, and the impact upon Heidegger in his *Heidegger's Confrontation with Modernity: Technology, Politics, Art*. I could not do a better job of showing the close Jünger-Heidegger relationship; neither will I extensively repeat Zimmerman's analysis. However, it is clear that Jünger, a war hero of the 1914 generation, remained very much in tune with the futurists. With both, there was a glorification of extreme masculinist virtues: manliness, courage, resoluteness, hardness, discipline, and honor (in contrast to the industrial masses, the proletariat).[6] These notions and phrases are echoed by Heidegger repeatedly in his texts and speeches from the early 1930s. And in Jünger's case there was a romanticization of his actual war experiences: "The baptism of fire! There the air was so laden with overwhelming manliness that every draw of breath intoxicated, that one would have to weep without knowing why. Oh, hearts of men who could feel that!"[7] As Zimmerman notes, "For him courage in war was an ecstatic, erotic experience, 'That is a frenzy beyond all frenzies . . . a fury without consideration and limits, comparable only to the violence of nature . . . man is like a raging storm,