I have it right, it is a desire rather than a state of being, a fantasy of escape from the figurality of everything, a dream of finding the Urizenic “solid without fluctuation.”

So far I have labored the topic of labor’s abstractions, but I should not fail to point out the virtuosity of some of Wang’s readings of Romantic texts. There is a fine chapter on the complex simplicity of Kant’s account of genius, and a compelling reading of Shelley’s “West Wind” ode next to Keats’s “To Autumn,” in which lightness and heaviness figure the debate about commodities in both poets. Besides the chapter on Byron already mentioned, Wang also bestows a timely attention to Dacre’s Zofloya in relation to Jane Eyre and the Gothic engagement with commodification and with the prospects for sobriety. And, despite all we have had on “Lamia,” Wang’s chapter sustains an arresting and (to me) new reading of the poem that allies it with the aesthetics of the early cinema by way of the “sensation” machines of Keats’s time and their construction of a play between still and moving images. Keats, one might say, cannily hails Hollywood and the figure, of course, is all. With this leap into low culture, Wang joins Keen in his reading (for instance of the ballooning craze) of how sensation was made sensational. Garofalo and Wang are also fellow spirits in their perspicuous attentions to Byron, Keats, and two of the Brontës. It may not add up to the definitive exhibit of a Zeitgeist, but the engagement with commodification has produced some visible overlap between these three authors, all of whom illuminate some part of the history and theory whereby the attempt to reduce Romanticism to a machine for the production of protected versions of authenticity has run into various sorts of trouble, not just in recent times but right from the start.

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Machines and Us: A History of Unease


Reading these fascinating new works on the history of machines in human life, I could not help thinking of the words of Victor Hugo in “The Slope of Reverie”:
Friends, never delve into the dreams you cherish; When ever slumbering oceans rise before you, Swim at the surface, or play on the shore – Because thought is a dark thing! An insensible Slope links the visible world with the unseen; Its curve goes deep, and when you travel downwards It stretches out, extending endlessly; Often you meet with some fatal enigma, And return from the unknown journey pale! (36)

Why should Hugo’s cosmological confusion come to mind while reading scholarly books on the history of technology and brain science? Because lingering behind the clear exposition and bright syntheses presented here lies a cautionary tale. In the nineteenth and early twentieth centuries as described by these scholars we see societies that were running head-first into the brave new world that we now inhabit, where mechanical gadgets that were meant to be useful have ended up clouding people’s judgment and stifling fellow feeling.

The publication of these books heralds an important and salutary development in the intellectual life of our time, and that is the emergence of a finer appreciation for the legacy of positivism and its corollaries: clear communication, precision, and factual evidence. It is high time for a return from the obfuscating rhetoric that once held the Humanities in thrall, and a re-prioritization of meaning-making as our primary work. After all, the line between the materials that we study and the work that we do as writers and teachers – that is, as homo faber in the intellectual sphere – is slight. We too make things: we make meaning and prompt others to see how it is made. Yet, and this is a testament to their great intelligence and courage, the books reviewed do not smooth over the dis sensions that drove some famous feuds of the nineteenth century (between Charles Darwin and his one-time partner Alfred Wallace, for instance), nor do they shy away from other battles between scholars today. I came away from the reading fortified by an exciting sense of ideas-in-the-making, and inspired to learn more. What more can a writer hope for? And what higher praise can a reviewer grant?

Turning first to Minds, Bodies, Machines, there is an exemplary article on the history of brain science by Laura Salisbury. Salisbury focuses on how aphasia – memory and language loss – was diagnosed, treated, and elicited artistic responses from 1861 to 1934. Distinguished by a limpid, readable writing style that is characteristic of both books (and such a relief to the reader), the article leads us through the highlights of nineteenth-century discoveries by doctor-researchers such as Pierre Paul Broca and Marie-François Xavier Bichat, who sought and apparently succeeded in localizing brain functions by performing autopsies on victims of aphasia after they died. Broca’s study of a patient called Leborgne (or “Tan”) suggested the promise of a materialist approach to brain science (181). In the autopsy of Leborgne’s brain, Broca found a lesion caused by a cyst, and deduced that the area of the cortex affected was “the faculty of articulated language” which allowed the man to utter only one syllable for the last 21 years of life (“tan,” hence his nickname). Clinical description and pathological anatomy became the hallmark of nineteenth-century approaches to aphasia. But studying the brains of dead people has limited value to clinicians. Although Leborgne’s disability was interesting to scientists, the knowledge achieved post mortem did nothing to enable him to live a full and happy life.

The advent of X-ray techniques in 1895 was expected to take brain science into hitherto unexplored realities, but the X-ray machine (like its latter-day successors PET
and MRI imaging) has its limits; the fuzzy images projected by soft brain tissue onto X-rays were ultimately useless to explain how and why brain activity happens. And so, frustrated by the limits of positivism’s emphasis on observation and mechanical manipulation in the 1890s, psychoanalyst Sigmund Freud developed alternative methods to help the living by prompting people to talk and interpret their cerebral problems as a kind of waking dream. From there, the science of psychoanalysis developed, and although its impact still cannot be measured or located on a machine, some people who have undergone psychoanalysis have emerged transformed and have gone on to live successfully without further intervention. (Others, however, become so engrossed with their own self-images that an unhealthy sort of narcissism develops and may go on indefinitely unless the analyst brings it to closure.) Freud’s fascination with dreams, the subconscious, and altered states inspired a new sort of romanticism in the 1890s–1920s, when writers and artists teamed up against Science to lament the spiritual decline of modernity and to refuse the reduction of the mind to a machine. Salisbury evokes enough examples from writers of the First World War era to pique the reader’s curiosity into the love-hate relationship between man and machine that marked their generation, whose cry, “Give us back our dreams!” is still haunting (199). While the last word on brain functions remains out, efforts to plumb its depths have given rise to any number of artistic creations that continue to hold the power to move audiences today.

Also remarkable is Steven Connor’s exploration of the “influencing machines” described by mentally ill patients, the brilliant socio-historical analysis by Iain McCalman of the reasons why a prominent scientist and partner of Darwin might have departed from positivism to become a spiritualist, James Mussell’s work on the influenza virus of 1890, and Paul Crosthwaite’s conjunction of automata and Artificial Intelligence.

Connor surveys of some of the “influencing machines” imagined by mental patients in nineteenth-century Britain to reveal how mechanical metaphors can penetrate the psyche. Most notable is the “air-loom” that was not only described but also drawn by James Tilly Matthews, who claimed that a gang of sinister plotters were controlling his mind with this device and its power to emit magnetic waves into his body. Matthews was an unusually articulate man and his description of the machine’s operations (captured by his doctor in an 1810 book) is quite fascinating. Although Connor’s focus is on the history of mental illness, readers might find it interesting to note that aspects of Matthews’s neurosis made their way into French fiction of the period, notably in Joris-Karl Huysmans’s _A Rebours_ ([Against the Grain] 1884). The _musical glasses_ by which Matthews imagined his assassins to be projecting streams of attraction and repulsion into his body (through the ears and the pores, one assumes) recall the devices imagined by Huysmans’s neurotic hero, Des Esseintes. He famously tried to create an _orgue à bouche_ (tasting organ) which would generate cocktails in response to music played on its keys. Although Des Esseintes imagines himself choosing whether or not to imbibe in the musical cocktails (unlike Matthews who believed himself victimized by the _musical glasses_), the idea of intoxicating effluvia being generated by a mechanical device is similar.

McCalman reopens a case that has long been considered closed and explains why a seemingly mad choice was actually quite sane. Alfred Russel Wallace, co-discoverer of the theory of natural selection, had lost the respect of colleagues and the scientific establishment by embracing “crankish social ideas” such as spiritualism, phrenology, and radical socialism in the 1870s, and has gone down in history as an eccentric, “too credulous for his own good” (126). McCalman drills down into the minutiae of Wallace’s
1869–1870 conversion to spiritualism to explain the context that made it possible. A key insight is his attitude toward privilege: unlike his colleagues in the Darwin group, Wallace was not born into the middle class; rather, he was a plebeian and largely self-taught (128–29). When he returned to Britain with the Darwin team, after living 22 years with the indigenous peoples of tropical jungles, his sudden celebrity did not save him from professional failure, nor did it blind him to the changes that had affected the landscape of Victorian Britain during his absence. Uneasy about the reactionary uses to which positivism was being put, he began to doubt “whether the contemporary capitalist world encouraged the survival of those who were ethically fittest” (134). Spiritualism, McCalman concludes, relieved Wallace of the guilt of promulgating social Darwinism. By delving into his subject’s psychological make-up in this finely-hewn way, the historian reveals the secret behind his apparent madness and provides a good reminder of the importance of considering multiple influences that lie behind people’s choices. Scholars must not only consider people’s generation or intellectual cohort, but also their family and religious training, their readings, and the economic forces behind attitudes toward privilege, wealth, and concern for social well-being.

Mussell’s essay on the influenza virus of 1889–1890 – which he cleverly uses to segue into a discussion of the anxiety wrought by computer viruses today – brings up a concern that hovers over both books, and that is the porosity of the body and its vulnerability to the environment. Although our machines are more and more sophisticated, the human body remains a fragile creation, easily subject to distress. To realize the gravity of this, one need only consider the connection between high-tension wires and neuralgia sufferers, or allergens transmitted through mass-produced furniture and clothing, which are thought to be pushing up levels of psoriasis and dermatitis, or, perhaps most spectacularly, the airborne irritants that have since the 1970s led to a drastic rise in asthma and other illnesses of the lungs. Unlike these ailments, however, the influenza epidemic of 1890 seemed to have no origins in the environment. As Mussell writes, it seemed to travel “like information, like letters on trains or electrical signals over wires . . . affecting different parts [of the body] simultaneously and preventing their symptoms from appearing as indexical marks that could delineate the hidden microbe” (174). Mussell ends on an intriguing note, describing the “indeterminable materiality” of the influenza virus, that is, its ability to “mutate from a thing to a message and pass virulently through culture” (176). The metaphor will strike a jarring chord among readers, because we cannot predict whether future manifestations will improve or destroy us.

Paul Crosthwaite’s chapter on automata and Artificial Intelligence (AI) builds on that notion and provides an apt mental bridge between this collection and the work of John Tresch. After surveying some late-eighteenth-century automata that were designed to look like writers, Crosthwaite points out the continuity with present-day work in robotics and AI in ways that should give us pause. Inventors today are trying to create computers that could reproduce the “intentionality” that makes us human, and more precisely, makes our writings appeal to fellow humans. Tiptoeing around the fraught issue of designing these machines in the first place, Crosthwaite seems to reassure readers by reminding us that whatever merit they may achieve, the literature-generating computers such as BRUTUS “have no apprehension of what these texts mean, or even that they could yield such a thing as meaning” (94). And after a bracing incursion into the field of High Theory, he concludes with the seemingly obvious and yet long-overdue reminder to literary critics that meaning “is the
uncircumventable object of reading, and meaning... can be guaranteed only by the
agency of an intentional being” (97). Yet he concludes on a chilling note by envisioning
how robots of the future — who will develop the sentience necessary for a literary
culture of their own — will chronicle their literature production, and how “human
beings and their aesthetic interests” will be as marginal in that genre as the history
of our own technologies of writing have been in “human literary history” (101).
(One can only wonder if they will struggle as much as we humans do in our arduous
efforts at meaning-making.)

As readers will by now have surmised, Minds, Bodies, Machines, 1770–1930
retraces multiple instances in the past, and some in the present, when positivist
methods and new machines generated anxiety and hostility in the populace and elicited
fearful resistance to a perceived threat. What is remarkable about John Tresch’s volume
is his insistence on the good that machines can do, the admirable impulse behind nine-
teenth-century positivism, and the utopian politics to which they’ve both been linked
and which have long since been forgotten.

In some regards, Tresch’s Romantic Machine feels like an omnibus history: clearly
enthralled with his subject, the author cites massive amounts of evidence and sustains a
highly detailed mode of argumentation through the ten chapters that make up this large
tome. The reading was on occasion rather exhausting (one wonders if Tresch left any-
thing out?!). Yet ultimately the lucid exposition and smart organization may win you
over (as it did me) to Tresch’s reasoning, which runs something like this: Romanticism
has often been characterized as a reactionary movement that rose up at the same time
and in opposition to positivism. In response to the latter’s prioritization of technology
and instrumental reason, Romanticism’s products are sometimes caricatured as expres-
sing an irrational nostalgia for a pre-modern nature or some kind of otherworldly
emotionalism. Yet the Romanticism that developed in France in the 1830s and
1840s was energized by the advent of new technologies; indeed many of the same
people who created and promoted Romanticism in the arts were fascinated by the tech-
nology that was celebrated by positivists. Why? Two reasons: first, “debates about the
impact of technology were at the center of cultural and political life,” and second, the
two schools of thought were not opposed but rather complementary (3).

Tresch provides portraits of a number of major figures, as well as detailed descrip-
tions of the “romantic machines” and utopian theories they invented, to defend this
unorthodox coupling. Although the introduction and first two chapters lay out the
lives and works of distinguished scientists such as André-Marie Ampère (mathemati-
cian and chemist; pioneer in electromagnetism) and Alexander von Humboldt
(whose book, Cosmos, laid out an innovative mode of scientific practice), the book
really started to grab my attention around chapter 4, where the author’s nimble
weaving of political, scientific, literary, and cultural influences started to show a recog-
nizable pattern with measurable real-life impact. The crux of the matter is the way labor,
and the intensification it underwent thanks to new instruments and machines, was con-
ceptualized as a democratic (or républicain) force for social well-being. Instead of
pitting man against machine, or man against man, the French engineer-scientists associ-
ated with the new schools in Paris (the Conservatoire National des Arts et Métiers and
the Association Polytechnique) drew on the egalitarian spirit of the French Revolution
to restructure human relations at work and in their local milieus. Drawing on the labor
theory of value, which posits that matter becomes valuable according to the effort that is
mixed with it, thinkers such as François Arago and Auguste Comte derived what Tresch
calls an “epistemological ‘surplus-value’” that transformed general theories and rules of
thumb into explicit, mathematical formulas for socio-political improvement (102). As he explains, “All of them advanced the notion that the interests of scientists, managers, and entrepreneurs were ultimately the same as those of workers, thanks to the classes’ shared participation in the general project of ‘industry’” (103). These optimists imagined that their innovations in the material sphere could be compatible with a harmonious nature and social compact as well. Tresch synthesizes the convergence thus: “The idea, familiar from romantic poetics and aesthetics, of the power of the imagination to make and remake the world was merged here with a profound experience and reflection on technology: machines were the assistants in the process of making the invisible world, constructing objects of knowledge, and framing the image of the world” (104).

Tresch fleshes out what might be an opaque concept by describing the life and work of Arago who quite literally seems to have “walked the talk.” He valued the contribution of observers and instruments in his own experiments and in the leadership roles he held in major Parisian institutions. He actively defended workers’ rights in the political realm when he was elected and continuously re-elected as a left-wing deputy of the Pyrénées Orientales department from 1830 to 1848. Arago exemplified the virtues of both the positivist labor theory of knowledge and the romantic style that audiences liked. As secretary of the Académie des Sciences and director of the Observatory, he championed a collaborative mode of experimentation that stressed field work and foregrounded the technical, labor-intensive, and transformative aspects of scientific research. When speaking before the Chamber of Deputies, he liberally peppered his lectures with professions of strong feeling and used brilliant oratory to promote the case of workers and scientists. His efforts bore fruit in the development of the daguerreotype and other major inventions of the day. An exemplar of Tresch’s central argument, Arago’s case proves that romanticism was not necessarily subjectivist, asocial, or fantastical. Described as the “Jupiter of the Observatory,” Arago “applied these conventions of unconventionality to projects marked by patriotism, mathematics, and machines” (107).

Tresch’s exploration of opera in chapter 5 might provide an interesting counterpart to Steven Connor’s chapter above, in that it stresses the strange “soundscape” made possible by new musical instruments commissioned by composers Hector Berlioz (for his *Symphonie fantastique*, 1830) and Giacomo Meyerbeer (for *Robert le diable*, 1831), and the shocks that they dealt audiences. As Tresch notes, “not only did they assemble unprecedented technologies of sound and vision, hallucination and ecstasy, but they made charismatic technologies themselves characters in the drama” (152). A connection to the work of Paul Crosthwaite might be found in chapter 6 on automata. Where Crosthwaite employs the history of automata as a cautionary tale on the author function in literary history, Tresch’s approach is less fraught with metaphysical dread; he interprets them as mere “allegories for the infusion of the spirit in the material world” (173).

Tresch’s approach – which is largely descriptive – may be considered a hindrance for some material in this book. This is especially visible in the third section where he aims to challenge commonplaces on Auguste Comte and the school of thought associated with him, positivism. Stressing the importance of understanding the myriad contexts of a person’s life and works (similar to Iain McCalman, above), Tresch notes: “That the founder of positivism was in many respects an exemplary mechanical romantic forces us to pause before taking for granted the oft-remarked soullessness and reductionism of positivism and before identifying ‘modernity’ by a split between the positive sciences and the subjective arts, between murderous machines and soulful
humans” (186). By entering into long and largely neutral-sounding descriptions of the outlandish schemes of Comte, the Saint-Simonians and Pierre Leroux in this section, Tresch somewhat weakens his support for the positivist epistemology he claims to rehabilitate. The large-scale experiments in social engineering attempted by the utopian socialists strike the modern-day reader as so peculiar – almost totalitarian in nature – that it is hard to recall the valid aspects of Comte’s methodology. But this is a minor criticism in such a major book, especially since Tresch’s focus throughout is not so much the humans behind the scenes as the machines that were running the show, or more precisely, the “vital contributions of romantic machines to the coalescence of a new image of knowledge as the product of active and embodied engagement with the world” (286).

Any book worth its salt has to have a reason for being, a legitimate appeal to contemporary audiences. Given the current craze for electronic gadgetry and the anxieties about side effects that are emerging in heavy users – an impaired ability to concentrate, for instance, or to achieve unmediated emotional connections with other people – both books can arguably pass the test of relevance. Almost anyone would agree that machines and man coexist in a delicate equilibrium. Indeed Tresch’s description of the scientist-activists studied in The Romantic Machine sounds very much like how one would imagine the wise legislator of the present. The men (and a few women) studied in this book were not “hopeless romantics” nor were they “soulless mechanists” advocating cold reason and detached calculation as the means to direct nature and society. Rather they argued for “continued inventiveness in the administration of machines, a rethinking of their use and ownership, and careful foresight about consequences for society” (289).

A bit more philosophical in its approach, the volume edited by Coleman and Fraser voices a similar refrain but with more emphasis on the actual brains and bodies of its subjects. Despite the uneasy nature of our relations with the mechanical creations we have wrought, both books project optimism for the future: Tresch in the realm of politics or administration, and Coleman/Fraser in the realm of medicine. After a fascinating foray into the work of Oliver Sacks and the surprising career of Aimee Mullins (top model and double amputee who owns no fewer than 12 pairs of legs), Coleman and Fraser foresee a time when physical disabilities will be a thing of the past. Perhaps one day we will see “an era of smart prostheses at the neural-digital interface – technologies which will merge with our bodies and our minds to change our concept of human ability forever” (16). Perhaps we are wrong to fear losing the special significance of our “intentionality” and the “embodied,” material nature of human life. Even if computers do one day achieve sentience and develop a culture that is superior to ours, all will not be lost. Some of the figures here will doubtless be remembered . . . in a robot-written history of “machinedness.”

Notes
1. “Amis, ne creusez pas vos chères rêveries / . . . quand s’offre à vos yeux un océan qui dort, / Nagez à la surface ou jouez sur le bord. / Car la pensée est sombre ! Une pente insensible / Va du monde réel à la sphère invisible; / La spirale est profonde, et quand on y descend, / Sans cesse se prolonge et va s’élargissant, / Et pour avoir touché quelque énigme fatale, / De ce voyage obscur souvent on revient pâle.” (Hugo, “La Pente de la rêverie” 770)


The dust jacket to The Sarah Siddons Audio Files: The Lost Voice is as provocative as the title. Sir Joshua Reynolds’s portrait, Sara Siddons as the Tragic Muse (1784), is represented wearing earbuds with the wire looped over the beckoning finger of her raised right hand, presumably connected to some unseen state-of-the-art audio device. What might she be listening to? Perhaps Siddons has joined the audiophiles listening to the audio files of her own lost voice. The jacket image has been reversed. In Reynolds’s painting she is positioned as the central figure in a triptych, seated in contemplation of the rising tragic action which she is calling forth with her raised left hand – the figure of raging fury bearing a beaker of poison – and the falling tragic action of the aftermath indicated by her drooping right hand – perfectly parallel to the bloody knife carried by the figure of remorse. The Sarah Siddons of Reynolds’s painting conjures tragedy in a silent *tableau vivant* of frozen gesture. The Sarah Siddons of Judith Pascoe’s meticulous study is made audible once more.

Visitors to Mirehouse near Keswick in the English Lake District can listen to a recording of Alfred Tennyson’s sepulchral recitation of “The Charge of Light Brigade.” Vocal recordings of the poets and performers of the Victorian era have preserved many of those voices. As Pascoe reminds her readers, the Romantic era was the last historical period prior to the advent of electronic recording and amplification. If Siddons had had the advantage of recording and listening to her own voice, she would have developed a voice very different from the one heard in her roles at Drury Lane. Just as the London population was doubling from one generation to the next during this period, so too was the seating capacity of Covent Garden when rebuilt in 1792 and 1809, and Drury Lane rebuilt in 1794 and 1812. At the peak of her career Siddons was performing to a full audience of over 3,600 patrons. With no other means of amplification than the physical power of vocal projection, Siddons could deliver a stage whisper or even a tremulous sob to the upper reaches of the gallery. Occasionally, as contemporary reviews report, Siddons forgot to rein in that powerful voice when she played to smaller theatres like Newcastle managed by her brother Stephen Kemble.