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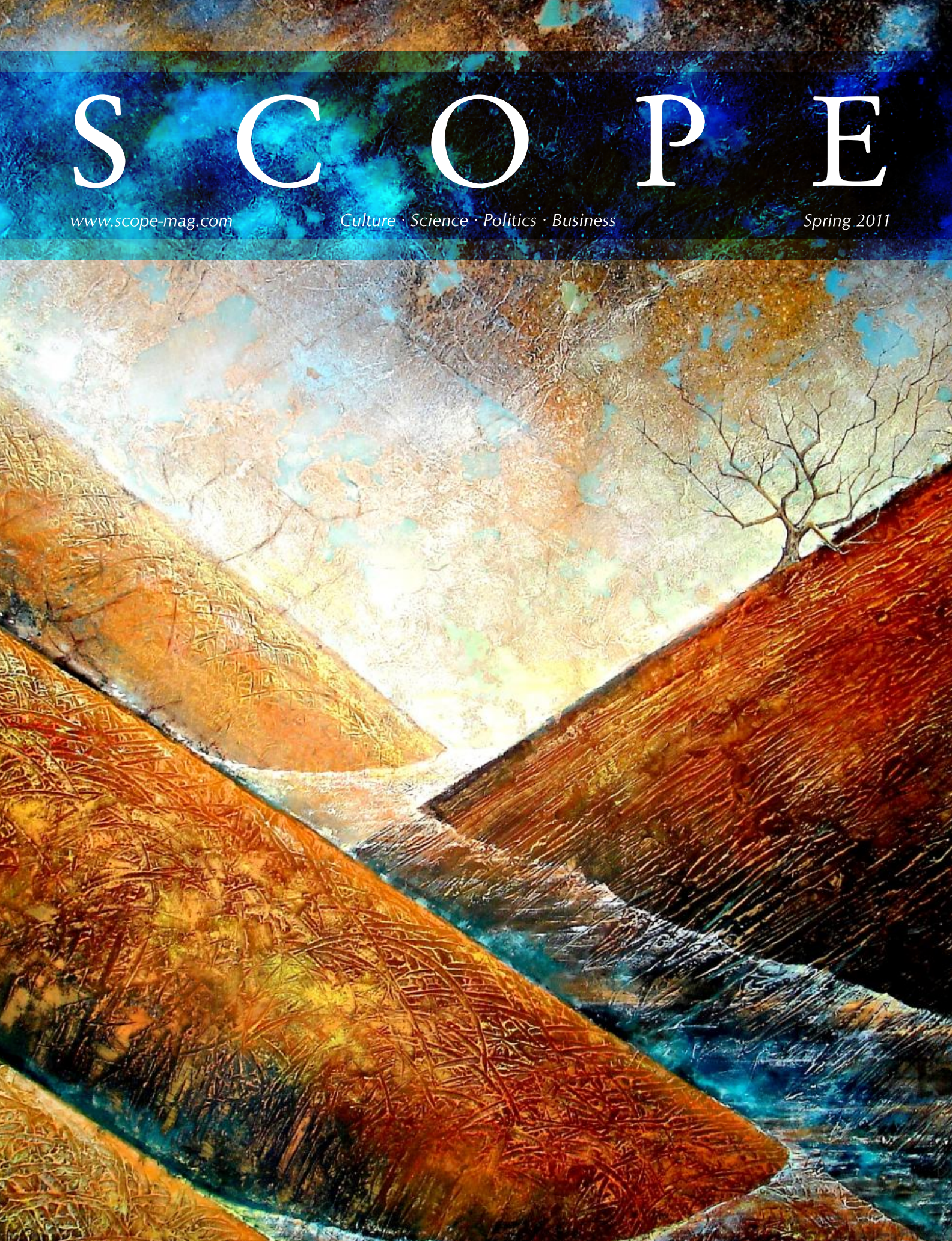

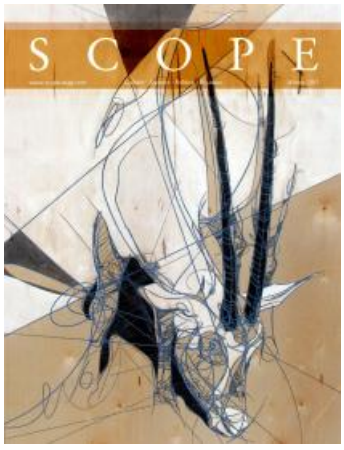

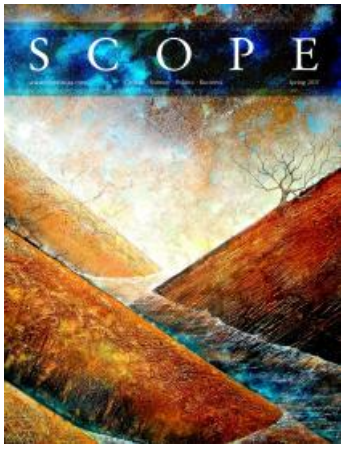

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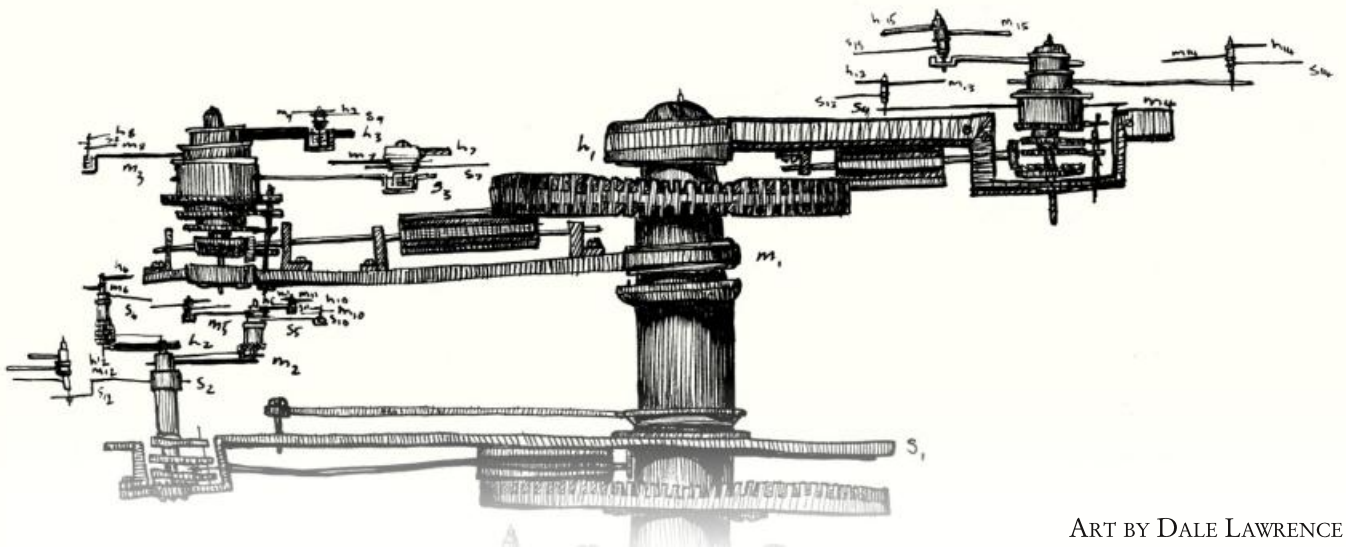


Art by Dale Lawrence

It was an age of borderless thinking,
of democratic access to scientific, technical,
and financial knowledge.

It was an age of obsessives, of dilettantes,
of hucksters and eccentrics.

It was our past. It may well be our future.

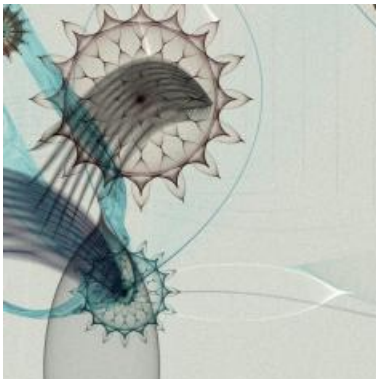
Convention of cranks

by Rob MacDougall, *page 12*

S C O P E

Art by Beth Rhodes

Art by Priscila Floriano, Gustave Studio Créatif, and Marcos Torres



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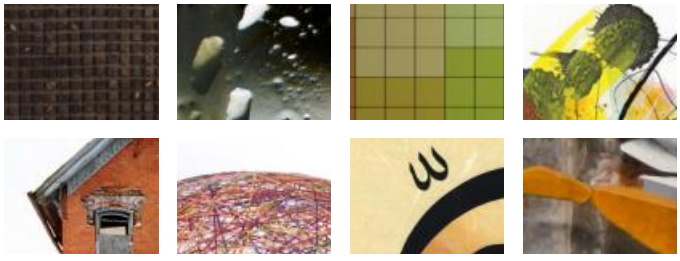

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Beth Rhodes, "To Be Alone With You", 2011

On mere suspicion

Are the Security Council's efforts to combat the financing of terrorism violating fundamental rights?

BY CHRISTOPHER MICHAELSEN

ART BY BETH RHODES

In the early 1990s, Somalia was a country rapidly descending into chaos. Political upheaval, combined with the effects of civil war and a severe drought, had led to the collapse of the Somali government and banking system, and to a general breakdown in the social structure. Amidst this turmoil, a charity organisation, the Al Barakaat Foundation, stepped in to provide aid to the Somali people. It set up a system that enabled Somali immigrants in the United States, Europe, and elsewhere to send a significant part of their earnings back to their families. Over the next few years Al Barakaat grew to become Somalia's largest business group, with subsidiaries involved in banking, telecommunications, and construction. Close to eighty percent of Somalis depended on its services.

Then came 9/11, and with it frantic efforts by the U.S. and other governments to combat the financing of terrorism. Al Barakaat quickly found itself under suspicion of supporting Al-Qaeda. In early November 2001, President George W. Bush declared that the foundation was "a group of money-wiring and communication companies owned by a friend and supporter of Osama bin Laden." He announced that the Treasury Department would force Al Barakaat to close. This, stated Bush, would send "a clear message to global financial institutions: You

are with us, or you're with the terrorists. And if you're with the terrorists, you will face the consequences." U.S. officials now acknowledge that the evidence of Al Barakaat backing terrorism was rather flimsy.

Nevertheless, one of the immediate results of the U.S. allegations was that Al Barakaat was included on the United Nations 1267 sanctions list maintained by a sub-committee of the Security Council. Initially established by the Security Council as a response to the bombings of the U.S. embassies in Kenya and Tanzania in 1998, the 1267 sanctions regime required all states to freeze the assets of any individual or entity associated with Al-Qaeda, Osama bin Laden and/or the Taliban as designated by the 1267 Committee.

The listing of Al Barakaat had severe consequences. It effectively deprived Somalia of its most significant employer and financial institution, and cut Somalis off from the remittance payments on which they relied. In fact, the freezing of Al Barakaat's assets worldwide resulted in the collapse of economic activities in Somalia as thousands employed by the foundation had to stop working, while those receiving money from relatives and friends abroad struggled to make ends meet. As Somalia's ambassador to the United Nations, Ahmed Abdi Hashi, put it in 2003, "depositors cannot access their funds. Businessmen cannot do business. Many are going bankrupt."

Yet Al Barakaat was neither informed about the exact reasons for its inclusion in the UN's list, nor was it given any opportunity to prevent the listing by demonstrating that its inclusion was unjustified. What is more, even after its assets had been frozen, the foundation's ability to challenge the listing in a court of law was severely limited. This was mainly due to the fact that UN Security Council resolutions enjoy primacy over other rules of international law, making it difficult to submit them to any form of judicial review.

The case of Al Barakaat was not an isolated incident. While the foundation was eventually removed from the list in 2009, as of 28 April this year 487 persons and entities remain listed. Indeed, the Security Council continues to consider the 1267 sanctions regime as a cornerstone of the UN's counter-terrorism efforts. This was recognized by the Council, most recently, in resolution 1904. Emphasizing that sanctions were "an important tool under the Charter of the United Nations in the maintenance and restoration of international peace and

Beth Rhodes, "Deathbed", 2011

Beth Rhodes, "We Will Become Silhouettes", 2011

Beth Rhodes, "Flint", 2011

Dr. Christopher Michaelsen is a Senior Research Fellow at the Faculty of Law of the University of New South Wales (UNSW) in Sydney, Australia. He teaches and specialises in public international law, human rights, and international security. Prior to joining UNSW, he served as a Human Rights Officer (Anti-Terrorism) at the Office for Democratic Institutions and Human Rights of the Organization for Security and Co-operation in Europe in Warsaw, Poland. http://www.law.unsw.edu.au/staff/MichaelsenC/

About the artist

Beth Rhodes is a painter and designer from Biloxi, Mississippi. Her work incorporates expressive marks and loose brushstrokes, reminders of human presence in a digital world. In her most recent series of paintings, she focuses on the loneliness felt from an increasingly individualistic society. You can view her entire portfolio here:
http://cargocollective.com/bethrhodes

Dale Lawrence, "2.1.1 Invention to Pass Time (I)", 2010

Convention of cranks

Why the nineteenth century's golden age of pseudoscience may be a precursor of our own

BY ROB MACDOUGALL

ART BY DALE LAWRENCE

Pravda, Russian for "truth", was the official newspaper of the Soviet Communist Party from the start of the Bolshevik Revolution to the final days of the Soviet Union. After the collapse of Soviet communism, *Pravda* fell on predictably hard times. The newspaper was sold to foreign owners, who reinvented it in the 1990s as a rather shameless supermarket tabloid. The pages that once delivered the ponderous dictates of the Kremlin were given over to breathless reports on extra-terrestrial invaders, ghostly apparitions, and the curative properties of goat testicles. This may be a fitting fate for a newspaper whose truth was never much more than titular. But *Pravda*'s transformation (liberation? decline?) strikes me as a kind of metaphor for our whole information environment, as we pass from the top-down mass media of the twentieth century to the interactive digital media of the twenty-first.

The shorthand story of our own revolution is by now familiar. In the twentieth century, we built powerful tools by which a

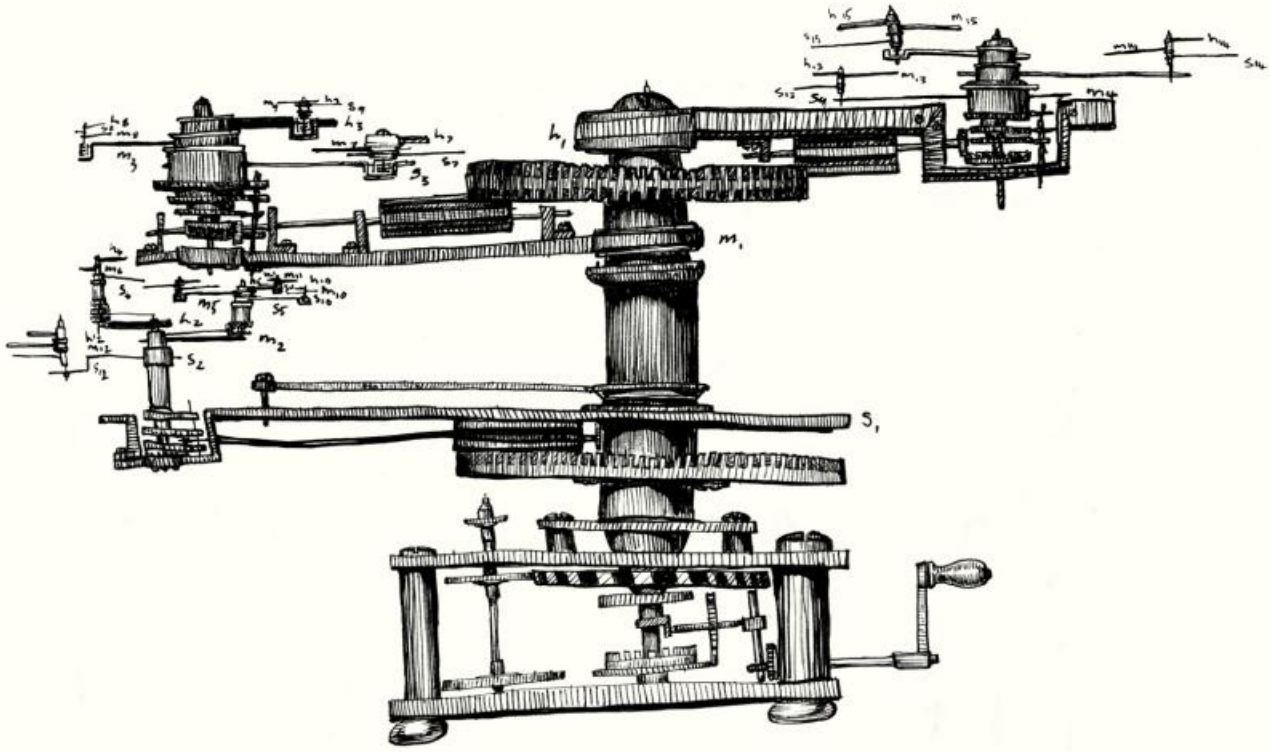


Figure 2.1.1

INVENTION TO PASS TIME (I)

1.Design & Development.—2. Manufacturing. —3. Accelerated Time. —4. Effects of Viewing and its Analogy to Accelerative Culture

Concept drawing of the front view of the present invention showing the main drive shaft; the primary, secondary and tertiary hands and illustrating the basic cog and gear system, which is driven by the handle.

few people could broadcast their version of truth to a mass audience. In the West, at least, such power was supposed to come with responsibility. Around our presses and bully pulpits we built codes of professional conduct and hierarchies of expertise. But now the world has turned. Networked digital and social media are toppling the old business models and the intellectual authority of twentieth-century institutions. Today, we are told, everybody can broadcast to everybody, or at least speak to themselves. We have moved from the cathedral to the bazaar, from the one voice of our own Central Committees to the post-Soviet cacophony of Twitter and YouTube, Wikipedia and web 2.0. To some, this is the happy dawn of a more democratic marketplace of ideas. To others, it is a descent into crankdom, quackery, and untruth.

It is hard to judge a revolution still in progress, and harder still to say much about today's social and technological changes that has not already been said. Whatever else new media does, each innovation in communications turns us, if only briefly, into historians of technology. Until the novelty of this or that tool fades, we are all Marshall McLuhan, conscious of and curious about the media we use. Blog posts about blogging, tweets about Twitter, books about the obsolescence of books: every new form of communication produces a similar moment, if only a moment, of critical self-reflection.

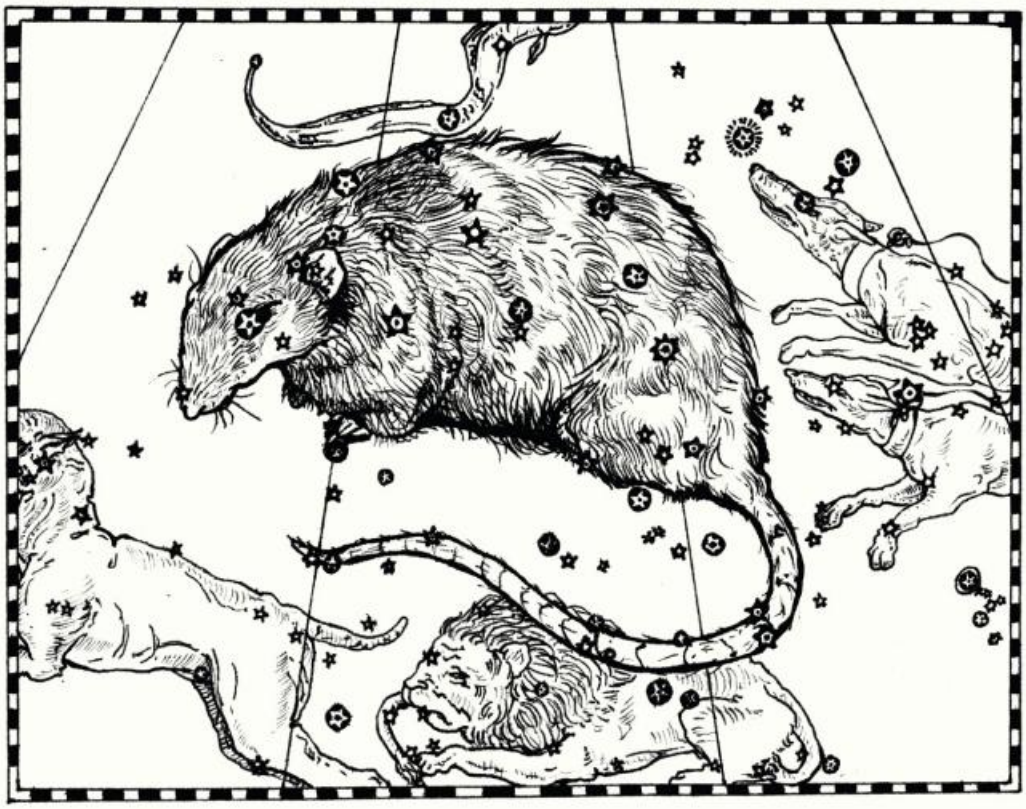
But I really am a historian of technology. Does that expertise equip me to offer anything new to this debate? One thing my training has taught me is to be very wary of making predictions about the future. Another thing is that, when in doubt, a historian can always say: This has all happened before. Which, in fact, it has.

The golden age of crankdom

There have always been people who believe in odd things, and those who fixate on impossible inventions or miracle cures. The market for comforting falsehoods remains bullish in good times and bad. But the cranks and pseudoscientists of the nineteenth century were remarkable in terms of the wide exposure they achieved, the large audiences they reached, and the banquet of strangeness they laid out before their era's marketplace of ideas. Quack doctors hawked patent medicines to cure all ills, backyard inventors toiled over perpetual motion machines, and political prophets brought forth strange commandments to lead their faithful to some promised land.

Historians of science have identified a particular "discourse of eccentricity" that flourished in nineteenth-century Britain. Britons borrowed a word from geometry and astronomy—as in the orbit of a comet, an eccentric circle is one that is not concentric with another circle—to describe individuals who would not fit into the social or intellectual categories of the day. Victoria Carroll's 2008 book *Science and Eccentricity* describes the era's fad for eccentric biographies, its close association of science and strangeness, and a corresponding fascination with boundary-crossing "freaks" or hybrids of the natural world. Early Victorian eccentrics were an eclectic bunch: cross dressers and nudists, hermits and misers, vegetarians and gluttons. Yet as the century wore on, the label more often became affixed to amateur scholars whose theories transgressed emerging boundaries between literary genres or scientific fields. This nineteenth-century discourse of eccentricity helped to define and entrench a new intellectual order, hardening lines between the disciplines, between professionals and amateurs, and between legitimate and illegitimate ideas.

In nineteenth-century America, the closest equivalent label was not astronomical but mechanical: the crank. The etymology of the word "crank" in this sense is not clear—it was probably a conflation of crank's original root, meaning crooked, and the word "cranky," meaning irritable—but the term took hold in the nineteenth-century United



Dale Lawrence, "3.2.1 Ursa Nova", 2010

Figure 3.2.1
URSA NOVA

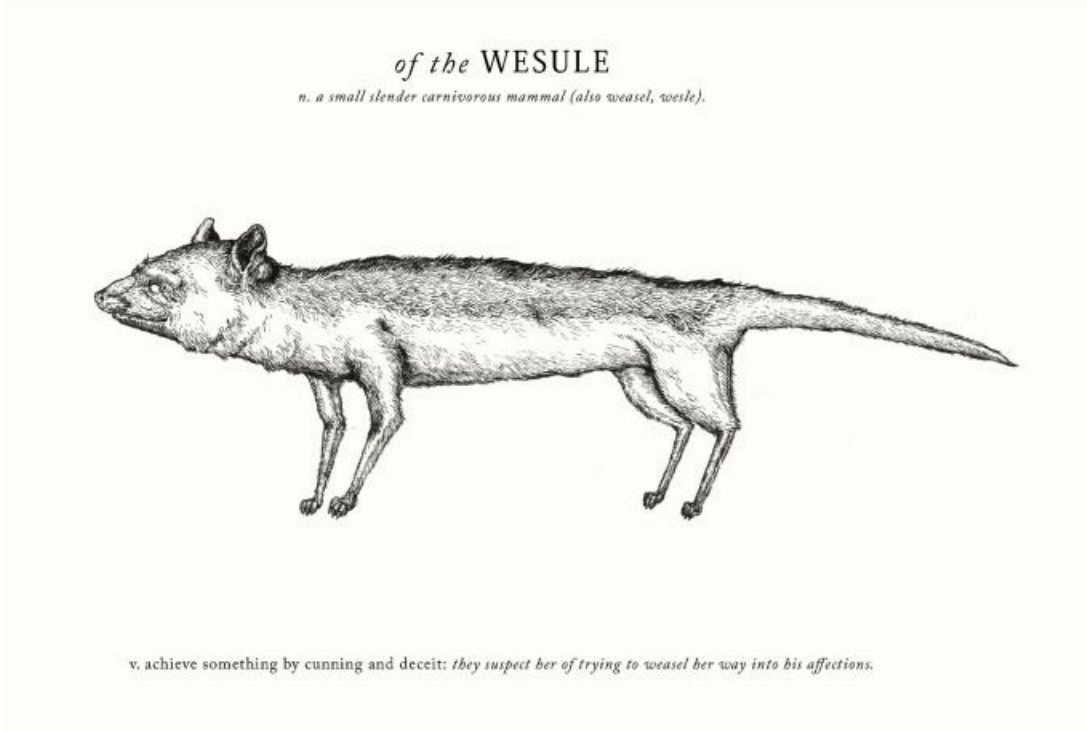
States as a way to describe anyone in the grip of an implausible idea. American ideas about crankdom worked in much the same way as Carroll's discourse of eccentricity, but with a more political edge. American cranks routinely conflated mechanical, social, and financial ideas. The dotty, pontificating crank became a recognized symbol of the age, and allegations of crankdom and quackery flew back and forth in the boisterous political combat of the era.

A convention of cranks

The overlap between crankdom, invention, and political reform was on clear display at the so-called "Convention of Cranks," a meeting of the American Bimetallic League at the Chicago World's Fair of 1893. Six hundred delegates attended this convention in order to promote the remonetization of silver. The money debate between advocates of gold, silver, and paper money was central to American politics in the 1890s in a way that is hard to fathom today. Wall Street and Washington orthodoxy favored a gold standard, and would-be reformers like the Bimetallic League faced harsh derision from the establishment. Speaking of the pro-silver convention in 1893, the Chicago Herald said, "The air seems to breed cranks, and the demon of destruction is abroad in the land." But the mayor of Chicago, Carter Henry Harrison, welcomed the Bimetallists. He opened the convention with a speech saying, "It is said you are lunatics… I say I am rather glad to welcome such lunatics as you." Members of the Bimetallic League warmly applauded Harrison's remarks, and spent the rest of the conference addressing each other as "fellow lunatic" and "brother crank".

1893 was a year of economic panic.

Dale Lawrence
"Of the Wesule"
2011



League members shared a belief that an injection of silver currency into the American economy would relieve suffering farmers and restore prosperity to the West. But silver was far from the only topic discussed. While the wealthy and powerful saw the gold standard as a basic tenet of economic prosperity and even moral probity, something drew eccentrics and oddballs to the silver cause, and drew silverites to ever more radical ideas. At a moment when America seemed to teeter on the brink of financial ruin, the convention of cranks offered an explosion of nostrums, inventions, theories, and cures. Flat earthers and spiritualists rubbed shoulders with rain makers and prognosticators of all kinds.

One of the stars of the convention was Minnesota Congressman Ignatius Donnelly. Donelly is remembered today as a Populist leader; he wrote the ringing preamble to the Populists' Omaha Platform in 1892. He also wrote several books about the lost civilization of Atlantis, the end of the world, and the secret messages encoded in Shakespeare's plays by their "true" author, Francis Bacon. At Chicago in 1893, Donnelly debated Carl Browne, a California showman who dressed like Buffalo Bill—and in private, like Annie Oakley—who combined his own political activities with trying to invent a flying machine and hawking a patent medicine called "Carl's California Cure". It was also at the Convention of Cranks that Browne met Jacob Coxey, a "Greenback" advocate so committed to monetary reform that he named his youngest son "Legal Tender". Coxey had invented his own patent medicine—the evocatively named "Cox-E-Lax"—and had his own technological prescriptions for the nation's economic ills. Together, Browne and Coxey would go on to organize Coxey's Army, a famous protest march to Washington by hundreds of unemployed workers, hoboes, and tramps.

Crankdom was at once a mechanical activity and a political one, and the two were often intertwined. Cranks slipped easily between the political, technological, and scientific realms, often trying to bring the tools of one to bear on the problems of another. Each had their own individual hobby horse, but on the whole the Convention was an optimistic gathering. The cabinet of cures on offer for America's economic ills testified to a deep belief, or desire to believe, that politics, economics, science, and society remained understandable and perfectible by ordinary folk.

Ben Franklin's ghost

John Murray Spear was a Universalist minister in nineteenth-century New England. Spear was a reformer: an opponent of the death penalty, an advocate of women's suffrage, a staunch abolitionist, and an operator in the underground railroad. In 1844, Spear was attacked by an anti-abolitionist mob and beaten within an inch of his life. He received severe head injuries and spent several days slipping in and out of a coma. Some time after this experience, Spear was, he believed, contacted by the friendly ghost of Benjamin Franklin.

This was not as unusual as it might sound. In the middle to late nineteenth century, millions dabbled in spiritualism, visiting séances, decoding table rappings, pushing Ouija-style planchettes, and watching mediums emit ectoplasmic goo. And no spirit from the other side—no messiah, no rich dead uncle, no lost child—communicated with American spiritualists more frequently than the unquiet shade of Benjamin Franklin. From beyond the grave, Franklin transmitted messages to and from dead loved ones, spoke out on the issues of the day, and lectured on scientific topics like magnetism and balloons. The industrious Franklin had apparently kept busy in the afterlife, for he often provided his living correspondents with descriptions of new inventions: self-adjusting window blinds, an improved flush toilet, and the like. Andrew Jackson Davis, a leading spiritualist known as the Poughkeepsie Seer, offered an ingenious explanation as to why Franklin appeared so frequently in spiritualist séances, and why spirits in general had only recently become so talkative. It was Franklin's spirit, Davis said, that had posthumously invented the "Celestial Telegraph" by which the dead could send messages back to the living world.

Reverend Spear spent the next twenty years doing Franklin's bidding and constructing inventions of Franklin's design. Before being contacted by Franklin, Spear had shown no particular interest or aptitude for invention or technology. Indeed, a friend called him "quite destitute of inventive genius, scientific knowledge … or even ordinary mechanical abilities." But this, the friend went on, made Spear "all the better adapted" to being Franklin's instrument, since he was "neither disposed nor able to interpose any undesired suggestions of his own." Despite this lack of mechanical ability, every task that Spear undertook for the spirit world combined the technological and the political. His improved sewing machine was meant to liberate women from drudgery. His network of telepathic mediums was meant to break the grip of the hated telegraph monopoly. His perpetual motion machine, the New Motor, was a mechanical representation of America itself. It was not meant "merely" to run forever, or to produce more energy than it used. The aim of the machine, he said, was the "radical agitation" of an "inert society", converting poverty into abundance and prejudice into love.

John Murray Spear was undoubtedly a crank. He was also a tireless advocate for the poor and oppressed. And he was emblematic of a type. If Spear was one of a kind, his story would illuminate little more than his own psychology. But he was not. Scratch an eccentric nineteenth century inventor and you find a reformer. Scratch a nineteenth century reformer and you generally find an attic full of mechanical inventions or schemes.

Again and again, reformers and inventors in this era reached for machine metaphors, describing democracy or the economy as a marvelous but malfunctioning machine. Nineteenth-century Americans admired their Constitution as a "machine that would go of itself." Crank inventors literalized this metaphor, conflating the dream of a

John Murray Spear was undoubtedly a crank. He was also a tireless advocate for the poor and oppressed

Knowledge should not be locked in libraries and learned colleges, Ben Franklin argued: "the great book of Nature is open to all"

perpetual motion machine with political or spiritual renewal. The machinery of government, they said, was run down or stuck. But if the nation was a malfunctioning machine then it stood to reason it could be fixed like a machine. There had to be some small adjustment—a priming of the pump, or an application of axle grease—that would resolve all contradictions between morality and progress, or poverty and prosperity.

Metaphors are used for poetic effect, of course, and this makes them slippery sources for historical analysis. Yet to the crank, metaphor was more than poetry. It was an argument in itself. "As above, so below" was the ancient credo of Hermetic magic, and cranks and other marginalized thinkers carried that philosophy into the nineteenth and twentieth centuries. Over-literalized metaphors and analogies were engines driving crank and pseudoscientific thought.

The information explosion of the nineteenth century

The Burgess Shale, in the Rocky Mountains of British Columbia, is one of the world's most celebrated fossil deposits. The soft-bodied creatures fossilized there were products of the Cambrian explosion, a great flowering of life that began some 570 million years ago. They are bizarre to human eyes: spiny worms and finned crustaceans, limbless predators with serrated gullets, five-eyed *opabinias* with vacuum-like snouts. In his 1989 book *Wonderful Life*, Stephen Jay Gould made the Burgess fossils famous as evidence for the strangeness and contingency of life. He argued that the Cambrian explosion contained far more diversity and variety of life forms than exist today.

The nineteenth century was a kind of Cambrian explosion for intellectual life. The mental soil of the era was crammed with an extraordinary diversity of notions and enthusiasms, many now extinct. Their remains can be found nearly everywhere, deposited in the great libraries and institutions of North America and Europe and in dedicated collections like the Massachusetts Institute of Technology's Archives of Useless Research.

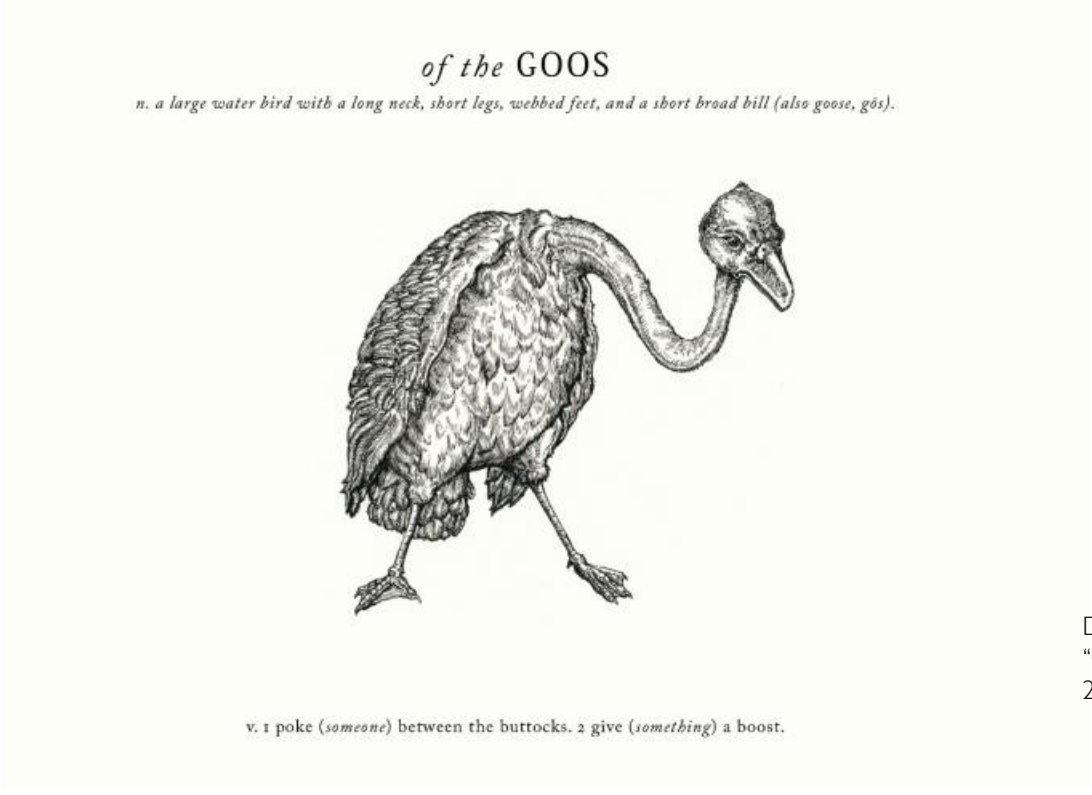
We need not embrace or endorse the extinct ideas of the nineteenth century to learn from them. Gould saw the diversity of the Burgess Shale as powerful evidence against all self-congratulatory visions of evolution as an upward path towards ourselves. It is easy, but not illuminating, to dismiss the cranks of the past. What if we approached them instead as paleontologists approach the Burgess Shale? We might well ask, what was it about the nineteenth century that allowed such intellectual diversity to flourish? And what changes in that intellectual environment led to the mass extinction of so many theories, pseudosciences, and memes?

The eighteenth century—Ben Franklin's day—had been marked in both Britain and America by the scarcity and control of information. As the historian Richard Brown put it, "the most obvious feature of the American information environment at the beginning of the eighteenth century was the relative scarcity of information, its limited topical range, and the crucial importance of social stature … in determining who possessed access." Franklin himself did agitate for more open flow of information. Knowledge should not be locked in libraries and learned colleges, Franklin argued: "the great book of Nature is open to all." He promoted the circulation of newspapers, the postal service as a mass medium, and the democratization of science as a crucial civic good. In 1774, Franklin was fired as postmaster of all British colonies in America

after leaking government documents to the colonial press. (He became the first postmaster general of the United States the following year.) But then as now, the loudest advocates for the free circulation of information were often the most connected, and not always self-conscious about the privilege on which their access to information rested. As a printer, a postmaster, and an active participant in the trans-Atlantic republic of letters, Franklin was wired in to networks of fairly up-to-date information including scientific and technical knowledge, political and economic theory, gossip and current events. This set him apart from all but a few of his contemporaries. Information and learning were luxuries, available to only an elite few, and the authority to speak on most topics was tightly controlled by law and custom.

All this changed in the information explosion of the nineteenth century. Cheap print and a profusion of presses cranked out a flood of books, pamphlets, newspapers, and broadsides. Technology played a role in this expansion, but just as important were political choices and cultural shifts. Rising literacy created a mass audience—or audiences—for the printed word, and a profusion of genres and styles both catered to and created new communities of politics and taste. Expanding and increasingly affordable postal services put all these documents in motion. Britain introduced a uniform penny post in 1840; the United States democratized its postal rates in 1847. In both countries, postal service represented a grand civic endeavor, a major investment in information infrastructure at a time when governments were relatively small and disinclined to intervene in economic life. By 1831, the United States Postal Service was bigger than the army and represented over three-quarters of the entire federal civilian work force. The French traveler Alexis de Tocqueville reported from the hinterland of the Appalachians in that year: "There is an astonishing circulation of letters and newspapers among these savage woods."

The first half of the century witnessed a similar explosion in public speech. Previously, secular oratory had been rare and confined to a narrow range of speakers and topics. By the 1820s and 1830s, public speaking had entered its own golden age. Reformers, educators,



Dale Lawrence
"Of the Goos"
2011

scientists, and salesmen combined information and entertainment to reach audiences big and small. Competition for eardrums, the attention economy of the nineteenth century, bred diversity rather than uniformity, with an audience for every opinion and a platform for every cause. The era's menagerie of warring political tribes—Greenbackers, Copperheads, Goldbugs, Anti-Masons, Anti-Monopolists, Yellow Dogs, and more—was one expression of this fragmentation. A bull market in millennial movements and religious splinter sects was another. By the middle of the century, Richard Brown concluded, "America had gone from a society where public information had been scarce, and chiefly under the control of the learned and wealthy few, to a society in which it was abundant and under no control other than the interests and appetites of a vast, popular public of consumers."

Caricatures of the political activist as crank inventor were increasingly used to discredit political reform

The undisciplined age of science

As access to information exploded, science came along for the ride. For much of the nineteenth century, there was little effort to define the boundaries of legitimate and illegitimate science. For centuries before, the typical scholar of nature had not been a specialist but a generalist, dabbling in a variety of academic disciplines. Indeed, the term "scientist" only came into general use after the 1840s.

Americans in particular embraced the ideal of a democratic science, knowable and accessible to all. Franklin became the patron saint of this tradition in the century after his death—an exemplar of Yankee know-how and practicality, the archetypal "scientific American". The magazine of that name began publishing in 1845, promoting a Franklinian faith that the common man could, and should, be a participant in the worlds of science and technology. Scientific showmen like Benjamin Silliman and Edward Hitchcock reached huge audiences with lyceum lectures. Industrialists funded mechanics' institutes, public libraries, and technical schools to educate skilled workers (and to keep them out of pubs). The spread and popularity of such institutions encouraged hopes that widespread scientific enlightenment could be achieved. "The characteristic of our age," declared William Ellery Channing, "is not the improvement of science, rapid as this is, so much as its extension to all men."

The middle nineteenth century has been called the "democratic age" in Anglo-American science. One can easily overstate the egalitarianism of science in this era, just as one can overstate the egalitarianism of nineteenth-century democracy itself. But it is certainly true that amateurs and dabblers outnumbered professionals or specialists in the intellectual life of the period. The nineteenth century enjoyed, if not a democratic, certainly an undisciplined marketplace of ideas—undisciplined both in the sense that it lacked much order or restraint, but also in the sense that it lacked formal academic disciplines. The lines between science, politics, invention, reform, and entertainment remained blurry. And the lines dividing subfields within those fields had hardly yet been drawn. Autonomous faculties, specialized journals, and professional guilds were largely late nineteenth-century inventions. The hyper-narrow specialization of twentieth-century academe lay decades in the future.

The darker side of this intellectual diversity was a real hostility to expertise. In 1844, Oliver Wendell Holmes Senior—no populist he—warned the graduating class of doctors at Harvard Medical School that the rabble would balk at their professional authority. "The ultra-radical version of the

axiom that all men are born free and equal … has invaded the regions of science," Holmes declared. "The dogmas of the learned have lost their authority, but the dogmas of the ignorant rise… to take their place."

The result of all this was a fairly lawless marketplace of ideas where theories and practices flourished not because they were true but because they could find a buyer. Titles like "Doctor" and "Professor" were appropriated by anybody who wanted them. Barbers called themselves "professors," as did banjo teachers, tailors, phrenologists, and acrobats. Nineteenth-century Americans experienced medicine, one historian has written, "as a smorgasbord of possible panaceas, some from licensed doctors in their offices and some from quacks selling from carts on street corners." It would be hard to design an intellectual environment more hospitable to quackery and crankdom, to eccentric scholars and odd ideas.

Yet the climate changed as the nineteenth century wore on. As the leading edge of scientific knowledge advanced, most sciences became less descriptive and more abstract. The work being done in fields like physics, chemistry, and astronomy increasingly required trained specialists with expensive equipment. And virtually all of the disciplines developed elaborate theoretical structures and precise technical terms. Institutional changes mirrored and reinforced these trends. Professional societies became more formal and exclusive. Colleges and universities established graduate schools and specialized research institutions. Scientists and inventors became increasingly dependent on corporate or government funding. By the twentieth century, most inventions or advances could not be made by solitary dabblers but were the work of teams of professional researchers at elite universities or corporate labs. The growth and bureaucratization of government pushed political amateurs away from the levers and gears of democracy in much the same way.

This was a period of aggressive boundary work, as professionals of all sorts campaigned to consolidate their authority and purge their guilds of amateurs. Professionalization involved the identification and removal of dabblers and dilettantes. Terms like "crank" and "quack" were deployed as accusations and epithets as the older, participatory vision of democratic or undisciplined science declined. By the twentieth century, a would-be Franklin who dabbled simultaneously in electrical, political, and moral experiments would surely be dismissed as a kook or a crank.

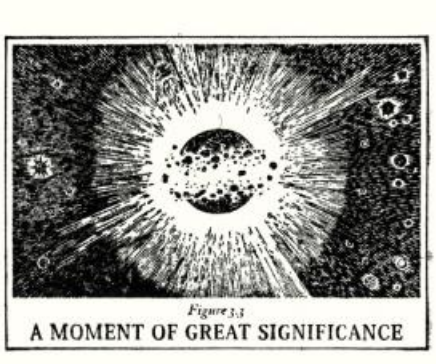


Figure 3.3
A MOMENT OF GREAT SIGNIFICANCE

The politics of crankdom

Like scientific outsiders, radical reformers could be labeled "cranks" and "lunatics", and caricatures of the political activist as crank inventor or patent medicine quack were increasingly used to discredit political reform. The consistency of the label is remarkable. "Crank" was not a label that everybody used against their political opponents; it seemed to get used again and again in the same specific ways.

When the newspaper editor Horace Greeley ran for president against Ulysses Grant in 1872, he was compared to "the crank of a hand-organ, continually grinding out the same old tunes." The political cartoonist Thomas Nast, famous for his satirical images of Boss Tweed and Tammany Hall corruption, was equally cutting in depictions of Greeley as a crack-brained, pontificating crank. What was Horace Greeley's crime? He was a spiritualist, an

abolitionist, and a vegetarian. He was chubby, with wooly hair and little round glasses—a tempting target for Nast's pen. He did dabble in science and invention; he wrote a book about scientific farming that Nast worked into almost every cartoon of Greeley he drew. But Greeley also challenged the financial orthodoxies of the day. When the philosopher John Fiske was a librarian at Harvard in the 1870s, he undertook to cull Harvard's library of what he called "insane" or "eccentric literature". In an essay Fiske wrote about "Cranks and their Crotchets", what did he single out for particular ridicule? Not spiritualism, not phrenology, not perpetual motion, but free silver and financial reform.

Remember Mayor Harrison, who welcomed the convention of pro-silver cranks and lunatics to Chicago? Three months after the convention, Harrison was assassinated, shot by a disturbed young man named Patrick Prendergast. Prendergast was, it turned out, something of a crank. He was an obsessive advocate of Henry George's single tax, who wrote long rambling letters to just about everybody in Chicago's public life. His trial, in which he was represented by Clarence Darrow, turned on the question of whether Prendergast was a true "lunatic"—that is, medically and legally insane—or simply a dangerous political "crank". Because of his political leanings, the prosecution was able to convince the jury of the latter. Prendergast hung, in part, for his crankdom.

We should not be surprised that the crank story ended up intertwined with the money question. The money debate was for post-Civil War America a burning, hugely divisive issue. It fired passions and invited ordinary Americans to argue over the nature of their country and its new corporate economy. *Coin's Financial School*, a pro-silver treatise that John Fiske ridiculed as alchemy, sold one million copies in the 1890s. How many books about fiscal policy are read by one million ordinary Americans today? Yet the money debate is now remembered, if at all, as something abstract and arcane. This is a measure of how thoroughly financial conservatives discredited their populist foes. Defenders of the gold standard associated monetary reform convincingly and damningly with all manner of crack-brained inventions and mechanical schemes. Would-be reformers pushed back, but by the turn of the century they were ever more marginal. The twentieth century would be the age of the expert—an era of highly specialized knowledge, of clearly defined guilds and hierarchies of professional authority and expertise.

Crank 2.0

But as we've seen, the world has turned. The doomsayers and the cheerleaders for our Web 2.0 world all seem to agree that the old hierarchies of knowledge and expertise have been toppled or outflanked. Maybe the twentieth century will prove to be the aberration, with its professional guilds, its elevation of experts, and all its powerful tools for letting a few insiders speak to and for everybody else. If we are entering a new era of undisciplined knowledge and innovation, it is worth looking back at the last such age. History remembers few eras as innovative as the late nineteenth century, at least in technological terms. But one would also have a hard time naming a period that embraced more flavors of pernicious nonsense. Is that the trade-off on the table? Are we entering a new golden age of pseudoscientists, quacks, and cranks?

The parallels are persuasive. As in the nineteenth century, our own information explosion was triggered by technological changes, but cultural and political factors give it form. The Internet is both printing press and postal service on a scale that Franklin's ghost would never have believed. We use it to connect across continents and oceans, even as we subdivide, like our nineteenth-century forebears, into tribes of affinity, opinion, and taste. Web culture is a kind of consilience

engine, mashing up data and weaving connections between disciplinary silos. Today's blogs bear a remarkable resemblance to the newspapers of the antebellum era: a motley banquet of individual, often partisan voices, with much content clipped and "curated" from other sources. Contemporary distrust of experts and disillusionment with traditional institutions inspires hopes for new models of online participation, while simultaneously fueling the new crankdom. Frightening economic, political, and environmental challenges ensure high demand for simple cures and easy answers.

One might wish to draw a line between scientific and political cranks. Cold fusion is a crank idea because it doesn't work; it is harder to be as definitive about fringe ideas in politics or economics. Yet in the history of crankdom, such distinctions are rarely respected. John Murray Spear's quest for perpetual motion was never really about the laws of thermodynamics. And who can claim that the battle between creation and evolution is not as much about politics as science? Confronted with tenacious pseudosciences like creationism, or the pseudohistorical beliefs of the 9/11 "Truth" movement and the Birthers, we could just cluck our tongues at the foolishness of the inexpert masses. But maybe it would it be more fruitful to ask, like a paleontologist at the Burgess Shale, what intellectual niche does this community inhabit? What emotional or intellectual functions does this belief fulfill?

There is much to be said for guilds and hierarchies of authority and expertise. But they have their costs. The scientific experts of the early twentieth century overturned all manner of superstitions. They also drastically narrowed the acceptable range of inquiry and belief. Progressive-era political experts made government more efficient but less accountable, pushing ordinary citizens away from the machinery of politics and contributing to what Lawrence Goodwyn called a "mass folkway of political resignation." At a time when political apathy and scientific illiteracy are widespread, there might be something to learn from a moment when so many were so fiercely engaged, and so certain there must be a solution to all the world's woes. We may expect our new century to be profoundly innovative—but we must also anticipate our share of eccentrics, quacks, and cranks.

Rob MacDougall is associate director of the Centre for American Studies at the University of Western Ontario in London, Canada. He is a historian of business, technology, and culture, especially information networks in nineteenth-century America. He blogs about history, games, and play at http://www.robmacdougall.org and http://www.playthepast.org. His book, *The People's Telephone: The Rise and Fall of the Independent Telephone Movement*, will be published this winter by the University of Pennsylvania Press. *Tecumseh Lies Here*, an augmented reality game he is designing about the War of 1812, will be loosed upon the world in the summer of 2012.

About the artist

Dale Lawrence is a twenty-three year old artist from Cape Town, South Africa. In 2009, Dale graduated with a degree in graphic design from the AAA School of Advertising, followed in 2010 by a post-graduate diploma in Fine Art (New Media) at the University of Cape Town's Michaelis School of Fine Art. Dale was awarded membership to the International Society of Typographic Designers in 2009. He currently lives and works as an artist in his home city. His other works can be viewed here (http://www.behance.net/DaleLawrence/frame) and on his blog *Ostensibly, Yes* (http://ostensiblyyes.blogspot.com/).

Priscila Floriano, "Fairy tales project - Little Red Riding Hood", 2011

The singularity

What made The White Stripes unique is what will make the band's influence last

BY LUKE GRUNDY

ART BY PRISCILA FLORIANO, GUSTAVE STUDIO CRÉATIF, AND MARCOS TORRES

Son House was a pioneering blues musician in the twentieth century who, along with now well-regarded talents like Robert Johnson, Charley Patton, and Willie Brown, helped to mould the inimitable Delta blues genre which would capture the imagination of young musicians for the next eighty years and beyond. Their lives were not easy as young black men in the hostile South, but their music was nevertheless wonderful, telling tales of unimaginable hardships and praying for the fulfillment of their dreams.

One boy who found solace in the music of Son House was a young Detroit native named John Gillis. He would sit listening to old blues vinyls, and recorded covers on a reel-to-reel tape in his attic. Gillis was considering becoming a priest, but having just gotten a new amplifier (which he wasn't sure he could take with him to the seminary), he decided against it. Some twelve years later,

this same boy, now named Jack White, was on stage in Detroit playing a show with his wife Meg, a local bartender.

The sign on the door read "The White Stripes".

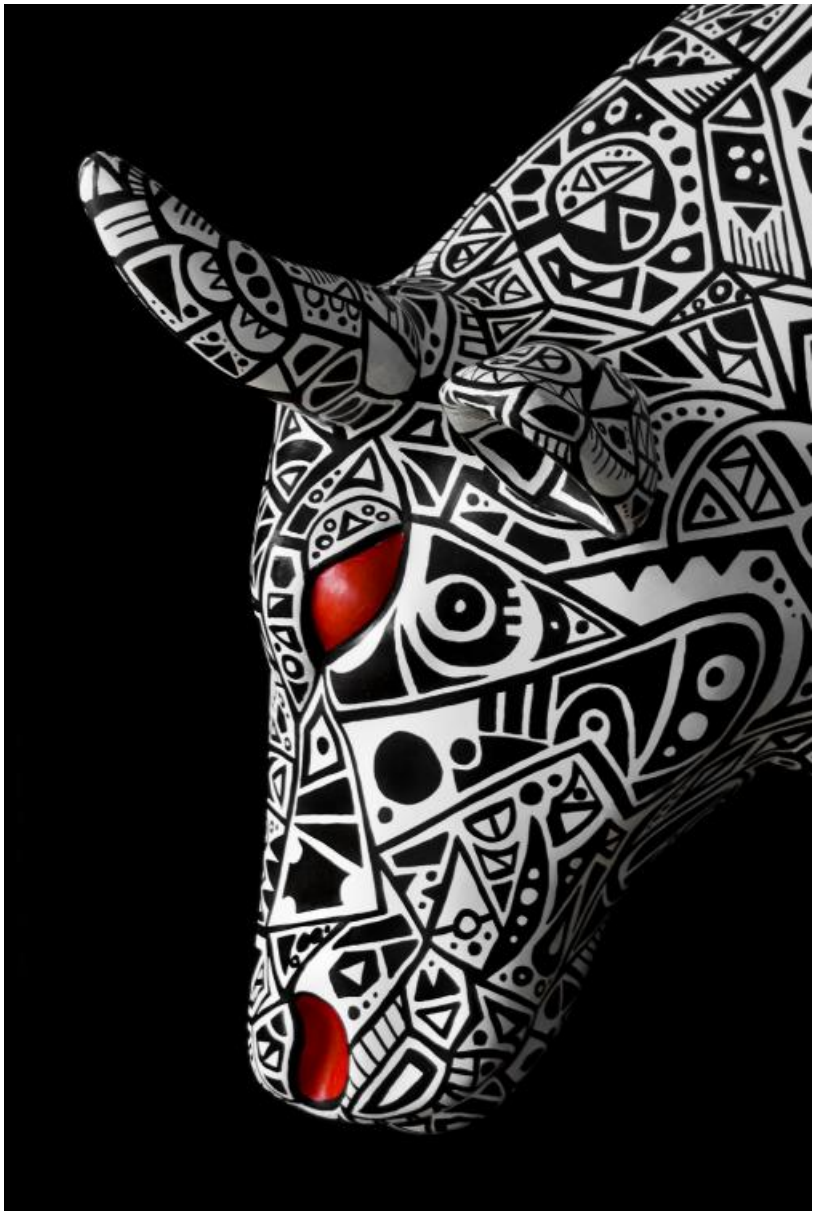
Fourteen years and six albums later, on February 2nd 2011, The White Stripes announced they would no longer be making music together. This was not due to arguments or "creative differences", the band wrote on its website, but "to preserve what is beautiful and special about the band and have it stay that way... The White Stripes belong to you now."

The announcement was greeted with genuine sorrow by critics and fans worldwide. Yet the joy that The White Stripes fostered in their listenership cannot be ignored; the split, whilst upsetting for those who love the band, also enables us to think about the impact they've had since that first gig in 1997. Just as

David Roger, Caroline Leduc, Karine Bernier
(Gustave Studio Créatif), "La Nuit", 2009

Gustave Studio Créatif, "La Nuit", 2009

Marcos Torres, "Mecanicow" (2010); photo by Alexandre Raupp



the six

The albums extant

| The White Stripes, 1999 |

| De Stijl, 2000 |

| White Blood Cells, 2001 |

| Elephant, 2003 |

| Get Behind Me Satan, 2005 |

| Icky Thump, 2007 |

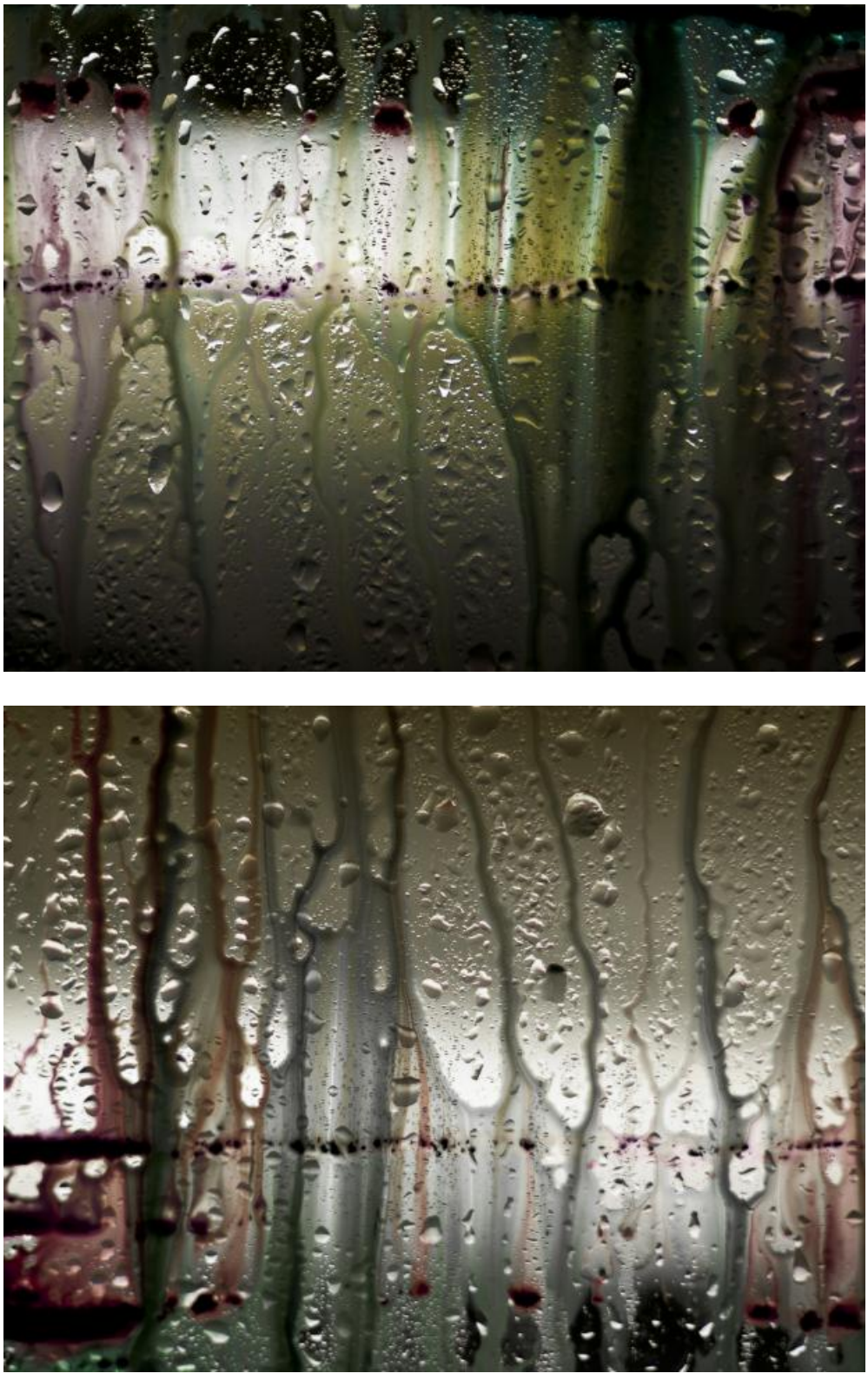
Luke Grundy is a writer living in London, UK, who spends most of his time indulging his twin loves of music and film. As well as contributing to *SCOPE*, he writes for *The Independent* and maintains his music and film blog, Odessa & Tucson: http://odessatucson.wordpress.com

The artists

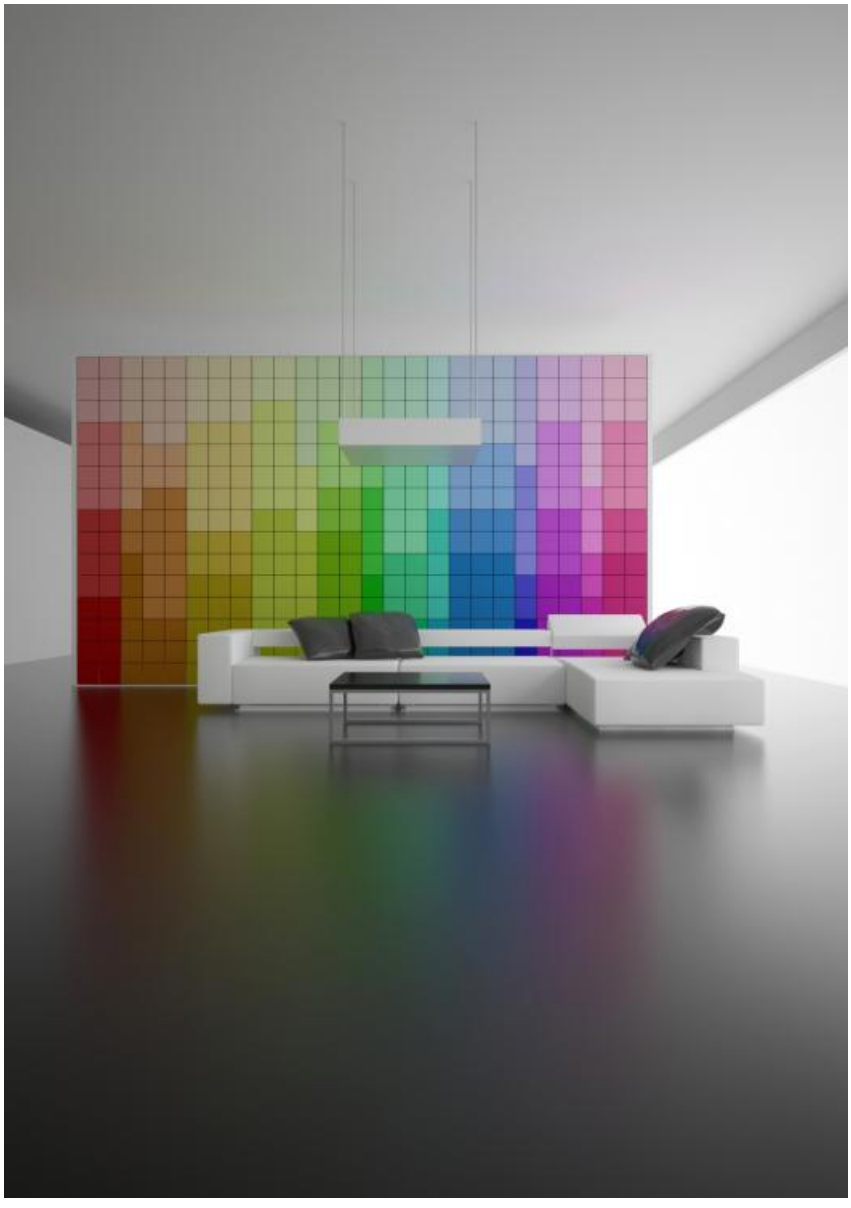
Priscila Floriano: http://priscilafloriano.com
David Roger, Caroline Leduc, Karine Bernier (Gustave Studio Créatif): http://www.gustavestudio.ca/
Marcos Torres: http://marcostorres.info/

Spectacle

| **Levi van Veluw: Origin of the Beginning (2011)** |
http://www.levivanveluw.nl/



| **Caroline Leduc, Gustave Studio Créatif: Ambiguïté (2010)** |
http://www.gustavestudio.ca/



| **Amirkhan Abdurakhmanov: "CHANGE IT" prism-based wall concept** |
http://www.behance.net/Amirko

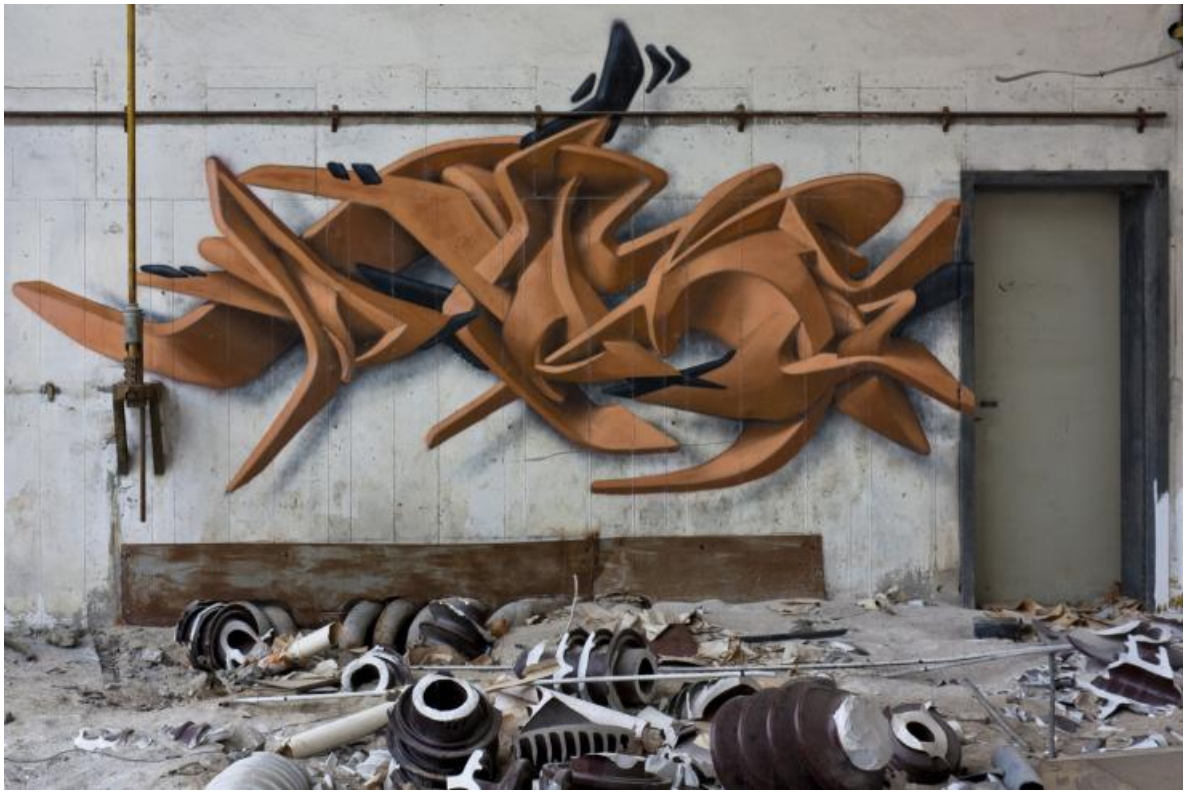
| **Michael Cina: Apex (2009)** |
http://www.cinaart.com/




| **Kevin Bauman, from 100 Abandoned Houses (ongoing project)** |
http://www.100abandonedhouses.com

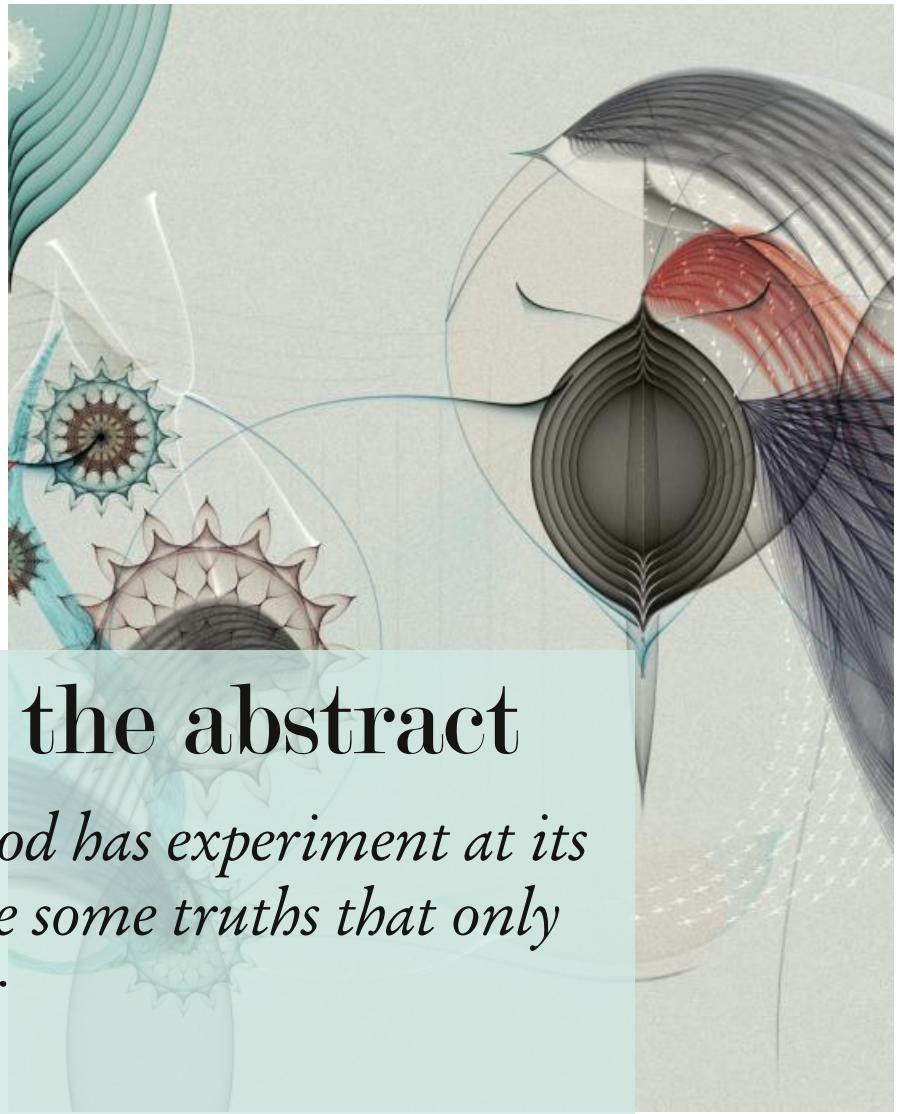
| **Matthew Bradshaw and Sergio Silva, Silva/Bradshaw: "Play" Munny (2010)** |
http://www.silvabradshaw.com

| **Wissam Shawkat: Love Flower (2011)** |
http://www.wissamshawkat.com



| **Peeta: Two works, Venice industrial port area (2011 top, 2009 bottom)** |
Photos by Lenny Morandin
http://www.peeta.net

Cristian Boian, "Attempts" series, 2011



The way of the abstract

The scientific method has experiment at its heart—but there are some truths that only theory can uncover

BY GIOVANNI VIGNALE

ART BY CRISTIAN BOIAN

Physics, most of us would agree, is the basic science of nature. Its purpose is to discover the laws of the natural world. Do such laws exist? Well, the success of physics at identifying some of them proves, in retrospect, that they do exist. Or, at least, it proves that there are Laws of Physics, which we can safely assume to be Laws of Nature.

Granted, it may be difficult to discern this lofty purpose when all one hears in an introductory course is about flying projectiles and swinging pendulums, strings under tension and beams in equilibrium. But at the beginning of the enterprise there were some truly fundamental questions such as: the nature of matter, the character of the forces that bind it together, the origin of order, the fate of the universe. For centuries humankind had been puzzling over these

Adapted from *The Beautiful Invisible: Creativity, Imagination, and Theoretical Physics*, by Giovanni Vignale (Oxford University Press, 2011)

questions, coming up with metaphysical and fantastic answers. And it stumbled, and it stumbled, until one day—and here I quote the great Austrian writer and ironist, Robert Musil:

> . . . it did what every sensible child does after trying to walk too soon; it sat down on the ground, contacting the earth with a most dependable if not very noble part of its anatomy, in short, that part on which one sits. The amazing thing is that the earth showed itself uncommonly receptive, and ever since that moment of contact has allowed men to entice inventions, conveniences, and discoveries out of it in quantities bordering on the miraculous.

This was the beginning of physics and, actually, of all science: an orgy of matter-of-factness after centuries of theology. Careful and systematic observation of reality, coupled with quantitative analysis of data and an egregious indifference to theories that could not be tested by experiment became the hallmark of every serious investigation into the nature of things.

But even as they were busy observing and experimenting, the pioneers of physics did not fail to notice a peculiar feature of their discipline. Namely, they realized that the laws of nature were best expressed in an abstract mathematical language—a language of triangles and circles and limits—which, at first sight, stood almost at odds with the touted matter-of-factness of experimental science. As time went by, it became clear that mathematics was much more than a computational tool: it had a life of its own. Things could be *discovered* by mathematics. John Adams and, independently, Urbain Le Verrier, using Newton's theory of gravity, computed the orbit of Uranus and found that it deviated from the observed one. Rather than giving up, they did another calculation showing that the orbit of Uranus could be explained if there were another planet pulling on Uranus according to Newton's law of gravity. Such a planet had never been seen, but Adams and Le Verrier told the astronomers where to look for it. And, lo and behold, the planet—Neptune—was there, waiting to be discovered. That was in 1846.

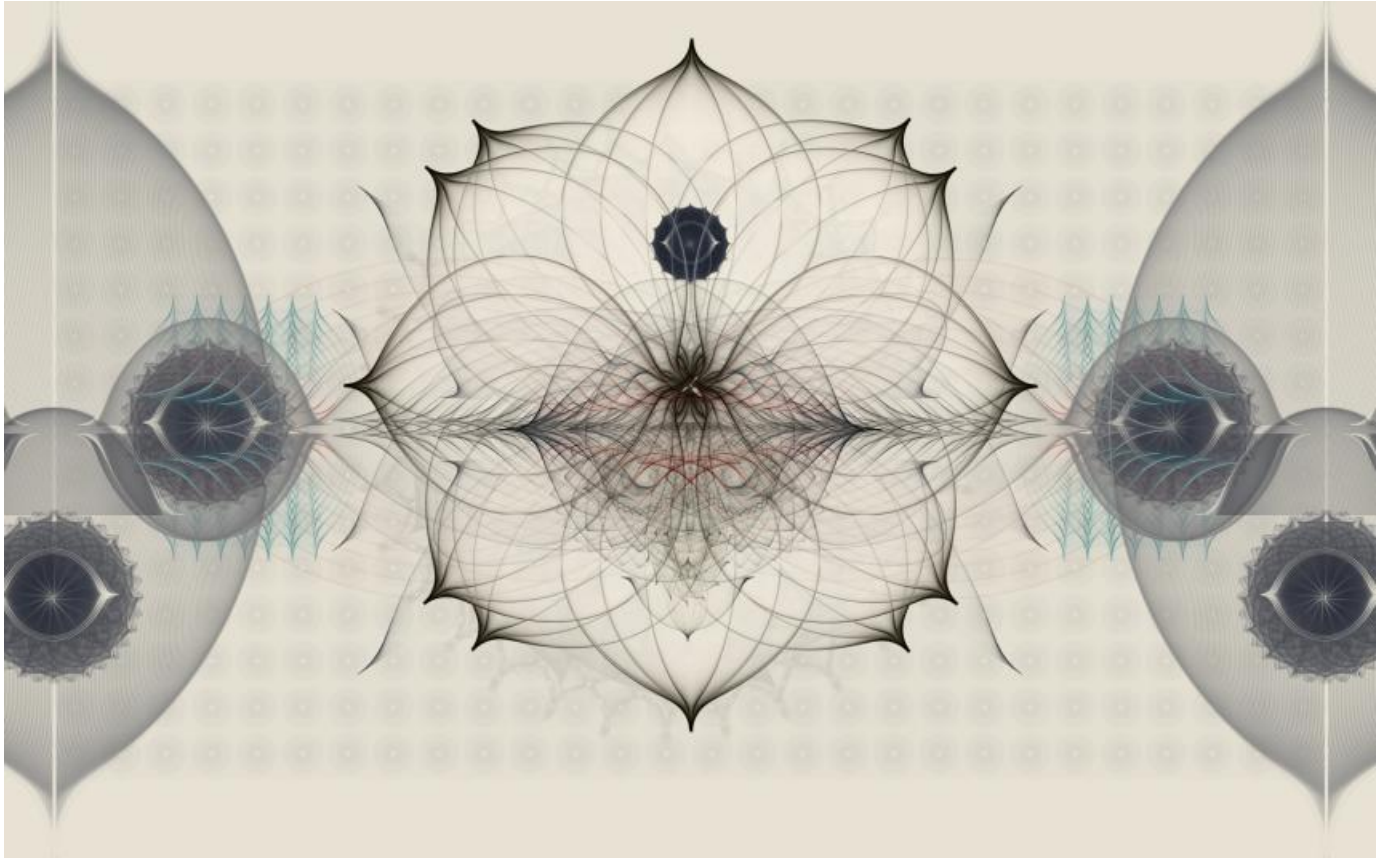
Even this great achievement pales in comparison with things that happened later. In the 1860s, James Clerk Maxwell trusted mathematics —and not just the results of a calculation, but the abstract structure of a set of equations—to predict the existence of electromagnetic waves. And electromagnetic waves (of which visible light is an example) were controllably produced in the lab shortly afterwards.

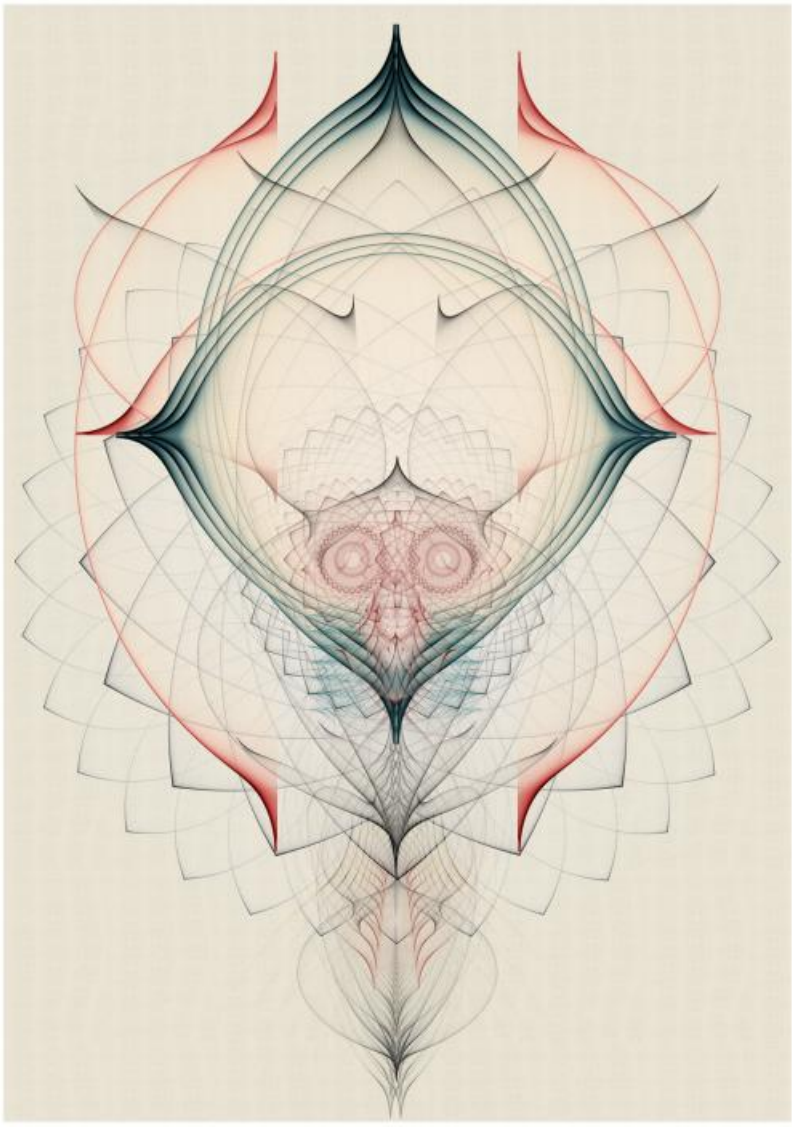
In the 1870s Ludwig Boltzmann undertook the task of finding out, by mathematical analysis, how a hypothetical world made of *atoms* would behave. Nobody had seen an atom, and very few believed seriously in what, at the time, must have looked like a very artificial concept. With the help of a revolutionary mathematical approach in which probability was the main actor, Boltzmann was able to show that his artificial world behaved pretty much like the real world. At least, the behaviour of gases was the same!

These examples illustrate three different ways of practising the strange kind of science known today as *theoretical physics*. In the first, one applies a general theory, summarized in a set of mathematical equations, to the solution of a concrete problem. In the second, one plays with the mathematics to find new equations that are more satisfactory from an intellectual, aesthetical, or practical point of view. Finally in the third way—the Boltzmann way—one

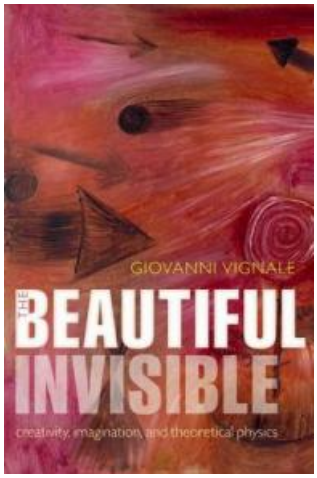
Mathematics was more than a tool: it had a life of its own. Things could be discovered by mathematics

Cristian Boian, "Attempts" series, 2011





Cristian Boian, "Attempts" series, 2011



Giovanni Vignale is Professor of Physics at the University of Missouri-Columbia. His main field of study is theoretical condensed matter physics—the science of highly organized matter. *The Beautiful Invisible* is his second book. http://web.missouri.edu/~vignaleg/index.htm

About the artist

Cristian Boian is an experimental digital artist from Romania who seeks to understand and develop connections between traditional and digital art. He also works as a carpenter and hopes to combine the knowledge acquired in this domain with visual art and technology. http://www.behance.net/boiancristian/frame


Brian Rolfe, "Before the Storm", 2010

Our invented universe

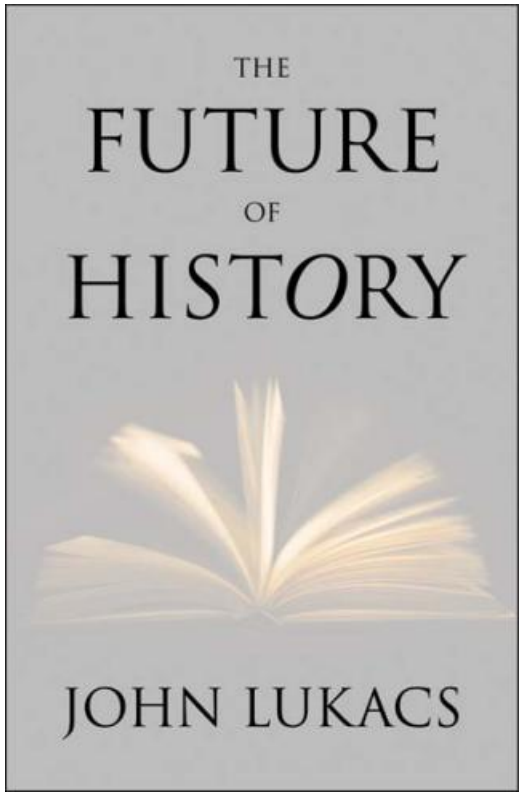
A review of John Lukacs' The Future of History

BY JOHN H. ARNOLD

ART BY BRIAN ROLFE

With a fair degree of regularity, historians late in their profession will declare that "history is in crisis". The laments which follow usually argue that historical practice has lost its compass bearing, having been foolishly distracted by some new interdisciplinary or conceptual fad; that fewer and fewer students are taking history courses at school or college; and (most often) that historians and the reading public have lost all meaningful contact. In the period since I started studying history (circa 1990), at least three such "crises" have been announced. This lament, if nothing else in history, does seem to repeat itself: in 1903 George Macaulay Trevelyan decried the fact that whilst "two generations back, history was part of our national literature" it was now "proclaimed a 'science' for specialists".

John Lukacs, author of some thirty books on modern history and, as he tells us in the "Apologia" with which he ends his book, 87 years old, now raises something of the same refrain. He is very much unhappy with the "fads" which distract academic historians



The Future of History
John Lukacs
Yale University Press
April 2011
200 pages

Brian Rolfe, "Acacia", 2010

John H. Arnold is author of *History: A Very Short Introduction* (Oxford University Press, 2000) among other works on medieval history and modern historiography. He teaches at Birkbeck, University of London (http://www.bbk.ac.uk/history/our-staff/full-time-academic-staff/professor-john-arnold); some of his thoughts on doing history can be found in this interview: http://www.mypodcast.com/fsaudio/radiofreenation_20090908_2034-493285.mp3

About the artist

Brian Rolfe started his career as a forensic artist in the South African Police Service. He ran his own commercial art studio for many years, and since 2003 has been exhibiting his original paintings both at home and internationally.
https://www.facebook.com/profile.php?id=527872723&sk=photos

From *Ancient History up to the Reign of Caesar*
Illuminated by the First Master of Bible Historiale of Jean de Berry

Paris, about 1390 - 1400
Tempera colors, colored washes, gold leaf, and ink on parchment

The J. Paul Getty Museum
http://www.getty.edu/art/exhibitions/imagining_past_france/

A page depicting a battle from the Trojan War, from *Ancient History until the Reign of Caesar (Histoire ancienne jusqu'à César)*, an unfinished illuminated history produced in Paris in the late fourteenth century. Beginning with the creation of the world, the book emphasized to lay readers the moral lessons of important historical events. While it is uncertain to what degree the French actually believed that they were the descendents of the Trojans, this piece echoes a common trope found throughout medieval French culture which evokes the Trojan War as part of a mythic tradition (including historical figures like Charlemagne) after which French leaders hoped to model themselves. Illuminations like these thus served a political purpose, connecting their medieval readers with stories of the ancient past; note the scene's inclusion of medieval architecture, weaponry, and ships, and the use of French rather than Latin in the surrounding text. The past, of course, continues to be used to support political ends, as demonstrated by French president Nicolas Sarkozy's justification of his country's intervention in Libya as a duty to "assume its role, its role before history."

– Abby Plener

Welcome to the end of the second issue.

(We're glad you're making this a habit.)

Our Summer issue is just around the corner, but there's still time for us to throw all of our work out and start again based on your feedback.

editor@scope-mag.com

Go on. You know you want to.

"Whatever else new media does, each innovation in communications turns us, if only briefly, into historians of technology, conscious of and curious about the media we use. Blog posts about blogging, tweets about Twitter, books about the obsolescence of books: every new form of communication produces a similar moment, if only a moment, of critical self-reflection."*

* *Page 14, inside*