6. After 1780: The Baroque Imaginary into Science Fiction

By 1850, special effects have converted to the industrial economy. But they took the long way around—an eccentric transition, and frequently stalled. As the early socialist Charles Fourier wrote:[1]" [Industrialism] has reached an impasse; it is in a vicious circle like a horse moving round and round without getting anywhere. For example, after 1780, dozens of new media reappear, then slip into a bog for decades; or simply vanish. What a graveyard for junk. And yet, as I type this, I look around my office; it is dominated by media launched between 1780 and 1850.

Here is a partial list: science fiction, cinematic toys, computers, panoramas, railroads, the lost automobile, mechanical people and animals, the shopping mall, photography, the telegraph, the daily newspaper, wood engravings, lithography, serial novels, westerns, soap operas, horror tales, melodramas, detective stories.

Together, they amount to another history of forgetting, of false starts, erasures and perverse genealogies. The era does not even have an established name. It often goes nameless, folded inside histories of technology, revolutions, even Romanticism. Yet much of it seems perversely anti-industrial, particularly its special effects.

Clearly, the mood of the Baroque Enlightenment lingers well into the nineteenth century. There is even a fetishism for Baroque gadgets that helped launch the photograph, the moving picture. Thus, Baroque media are a shadowy counterpoint during "the heroic age of the bourgeoisie." They were updated Rococo machines, quite literally the very last gasp of neo-feudal manufacturing. However, their backwardness/modernity becomes absolutely crucial to the next stage of special effects—and to the birth of science fiction.

In other words—as fantasy at least—the way that the Baroque Enlightenment died off became an alternate reality: stories about magick science that

never quite finished what it promised. Most of these Baroque upgrades failed "gallantly," like a gentleman. We remember its quaintness fondly in tales of silent airships, Rube Goldberg machines, and dotty gentry scientists. I find traces in literally hundreds of science fiction novels and movies, in the romance of "dead media." One of its standard cues is the Baroque scientist, Jules Verne's fish out of water. He is a mad visionary; but also an eccentric naïf—a Babbage, Saint-Simon, Fourier, an eschatological salesman for a new world. His experiments are tainted with failure, like Milton's Satan, because he is a pure soul, and blasphemous; better to reign in hell because it is utopia. He is well-spoken, elegant, a gentleman from the old regime. But he is also prone to fits, especially after he turns into a fly. At night, the game is afoot. Like Sherlock Holmes, with his fierce intellect, he tends to pounce on people. Then he is bogged down with guilt like Victor Frankenstein. After recovering from his annual nervous breakdown, he visits the club again, gets some fresh air, like Babbage in his morning coat. Lucidly, he can rely on a personal fortune, because he would never work for a salary. I spot him everywhere. Beyond cliché, he just looks oddly familiar, like a relative who had his face rebuilt after an accident in the lab. The plastic surgeon from *The Black Cat* must have botched the job.

Since 1990, these Baroque scientists have been fictionalized with a costumer's eye. Now, they pose literally as if in prop house, walking through the Victorian Internet as steampunks.[2] Science fiction has recoded the 1890's as a folkish reminder of what the Internet *could* have been. In these alternative realities, Baroque software engineers refuse to let 1890 be only itself. Instead, they design a coal-smoked London ready to go green. Scientific accuracy is made to look occluded and occult, like Gothic engineering. Their cine-history is Baroque as well as preindustrial, about the restless ego, scientific method gone awry. Their lead characters are aristocratic liberals, magical materialists. As a pale blend of Verne and noir, they live a delicate, almost neurasthenic life. They need a rest cure every month; so Charles Babbage is flown in to consult (by balloon, of course). In this section, I pay homage to imaginary nineteenth-century eccentrics as special effect, to their alternative machinery then (1760–1914) and now.

We begin with one of the precursors to this transition, a passage from Horace Walpole's *The Castle of Otranto* (1764):[3]

> Though the machinery is invention, and the names of the actors imaginary I cannot but believe that the groundwork of the story is founded on truth

> … A catastrophe … resembling that which he describes is believed to have given rise to this work.

Walpole uses the term *machinery* here in its Baroque sense, as theatrical illusion: movable wings, floating ceilings. He is turning theatrical machines, with their occluded tricks, into literary conventions about a medieval castle and the Gothic horrors inside—trap doors, hovering clouds, and shrieking half-brothers up in the attic. The ruin of the neo-feudal state was already turning into fantasy architecture in Piranesi (also 1760, and earlier). But we must not lose sight of the irony here. Walpole is being whimsical, making a joke. His Gothic storytelling is something of a *folie*, like his father's castle, Strawberry Hill. But years later, when his book became famous, his method was copied much more seriously by other writers.

Machine also refers here to "toy" both optical and mechanical. But not a child's toy: these were both automata and primitive steam engines, perspective awry as technology. The "magick" of these toys lay inside their housing, where a new set of practical applications was in motion, a new form of mechanical engineering. The old Baroque seafaring engine had been replaced: no more hoists, pulleys, sails, clouds. Instead, the magick runs like clocks and looms, things that tick and click. Cylinders turned camshafts and wheels—a *repetitive* movement. Gradually, these internalized docks would integrate with advances in chemistry. In time, repetitive motion toys would launch steam power and electricity: But as the old saying goes, these mechanisms were trapped between two worlds, a body that was dying, an interior that was crying to be born.

Remainders of the Baroque

After 1780, the heritage of Baroque special effects essentially divides in half: the architecture splits off from the optics. They literally separate, and proceed in opposite directions. For large civic projects, Baroque architectural tricks were rarely featured any more—very few trompe l'oeil statues, anamorphic walls or vast *quadratura* ceilings. Even the craftsmen who made these fancy illusions suddenly vanished.[4] In their place, the same kind of tricks reappeared, but much cruder. After 1780, Baroque scripted space evolved mostly on the cheap, at fairs, circuses. The old archi-tricks were marginalized, except perhaps at opera houses; but even there, industrial steam power took over.

By contrast, in more intimate settings, many Baroque gizmos flourished, particularly the magic lantern. Baroque devices small enough to place on a table became very fashionable. It was as if the dinosaurs suddenly died off and gizmo field mice climbed out of their holes, steadily took over, then grew into mammoths. Even Watt and Boulton's first steam engines had cylinders only a few feet long, still very much Baroque scientific "toys." The miniature engine clearly grows in scale, leads toward both cinema and the railroad.

The reasons for this abrupt splitting off were unmistakable. After 1792, world wars during the French Revolution crash the market for Ba-roque scripted spaces. The big-ticket palatial orders stop coming in; even courtly theater all but ceases. In popular theater, Torelli and Sabbatini's old systems practically disappear. Sliding wings as allegorical wonder seem clunk, less "real"; accelerated perspective looks "too forced," like a Poussin sky indoors. Instead, detail about climate and costuming had to look more "natural," more painterly; that clearly appealed to bourgeois audiences after 1780.

Designers like Loutherbourg[5] in London pioneered this new staging—clearly identified as anti-Baroque. Instead of perspective awry, Loutherbourg preferred painted sets. At the theater, natural harmony replaced the *machinae*; painting more than hoists; better light instead of stiff clouds pulling drapery; Sculptural effects were out, painted illusion was in. Better lighting added presence, palette, made painting more effective. The flickering candlelight of the Baroque was gone. Audience boxes were standardly pulled away from the stage, a much dearer distinction between audience and proscenium. All these changes in scenography came rather abruptly. They signaled the end of Baroque participatory theater. The role of the audience was shifted away from the performative, away from interactions like masque. Instead, the audience was the paying public. The "mass public" clearly required a different range of illusion.

Loutherbourg also pioneered other links for the history of special effects. With automata so popular, he finessed what amounts to puppets as pre-cinema. In order to highlight deep focus as nature (instead of Baroque artifice), he animated puppets in ambient lighting. Undersized puppet soldiers would march along the horizon. But more important for cinema in 1781, he premiered his Eidophusikon in London,[6] an intimate, mechanical theater—essentially a moving diorama—using gauze transparencies and ambient lighting, a very different kind of shipwreck than the Baroque. He also painted ambient landscapes, particularly of storms at sea (and battles under stormy skies), at the same time that Turner and Friedrich began working, when Romantic

theories of the picturesque and sublime first appear; and in London rooms not far from Barker's vast panoramas, or Robertson's ambient ghost shows, the Phantasmagoria.

Even before 1789, the mercantile bourgeoisie had fled the old alliance, transformed its identity politically and philosophically—which explains why "half" of the Baroque "splits off." By 1783, both Fuseli's *The Nightmare in London*, and David's *Oath of the Horatii* in Paris epitomize this new identity, each shifting rapidly from older aristocratic models. It is standard for art historians to highlight this "epistemic" shift, evident decades before the Revolution. They locate it in Diderot's salons; in science blending natural philosophy with special effects toys. They see it in the Enlightenment after 1789 as well, the era of Condorcet, the Napoleonic French Academy, David's "Etruscan" period, the early bohemianism of his students. As expected, 1789 remains the crucial year. Revolutionary trauma explains most clearly why Baroque scripted spaces drop away so quickly.

And yet, some of the Baroque memory does persist, some nostalgia for seventeenth-century mercantile gentility, for something of the old alliance. After the Napoleonic Wars, during a conservative interregnum, monarchies even try to revive Baroque spectacle, with eccentric results. In 1828, Charles X of France has himself crowned in a silly gala worthy of a weak-minded descendant of Henry IV—Baroque as a drunken mass.[7] A half century later, King Ludwig of Bavaria builds a Baroque pleasure dome so overwrought that parts of Disneyland were modeled on it.[8]

But most of all, after 1820, the "occultism" of the Baroque persists, heavily disguised behind Catholic revivals, a misremembering of both Neoplatonism and old-regime hierarchies. Seventeenth-century spectacle returns as something weirdly whimsical—what I call a Baroque Imaginary. Nineteenth-century writers tended to call it Gothic, but that may not quite hit the mark. After 1780, "Gothic" tales were rarely set in the Middle Ages, but were filled with Baroque automata, theatrical illusion, occult science, mystical dandified Romanticism, some of it highbrow by our standards, some of it sheer pulp. I call it the nineteenth century thinking the eighteenth century was the seventeenth century. We see it in fantasies written by Hoffmann, Kleist, Goethe, even Wordsworth, Coleridge, certainly Poe; early Balzac—and of course, classically, in *Frankenstein*; but also in handbills, small newspaper items, odd optical ephemera, and penny dreadful, shopworn Gothic tales. By 1862, this misremembering of the Baroque had essentially channeled Romanticism toward science fiction (and still does).

The Baroque Imaginary was conservatively radical, in American jargon today something like libertarian, but utopian. It was often opposed to the grime of manufacturing, even the new city itself, while glorifying the old aristocracy; it was highly conflicted, a kind of evolution by devolution. Like Romanticism in Germany, the Baroque imaginary could be fiercely antirevolutionary (at least anti-French), yet sentimental, Rousseauiste, pietistic.

It was particularly divided about the machine itself. In England, Baroque crafted machines took on the mystique of Gothic ruins, an odd transition. Even the magic lantern itself, so often used for seances with the past, like a lighthouse into the afterlife, still resembled a ghostly Baroque peep show, still jesuitical, with gleaming metals in ambient light. How strange to see a seventeenth-century style misremembered so well: the magic lantern had glorified hierarchy, the Neoplatonic. Then, in stages by 1880, this magic machine, with all its Baroque gleam intact, is channeled on behalf of "individualism," "democracy" in scientific lectures, armchair tourism, and panoramas for the new masses.

In the late eighteenth century, Baroque trompe l'oeil leaves the courtly scripted space. Instead, it turns into popular Rococo ornament—no longer a stately labyrinth, with secrets about hierarchies. Now it was patterned more as home decors, white noise for walls and room dividers, for very private pursuits. Thus, trompe l'oeil returns as ornament—without the "three acts in a few seconds." Simply put, it returned as Art Nouveau, as pattern rather than scripted space—into a floating signifier, part of the Baroque imaginary. These "Rococo" and "Gothic" patterns were more psychoanalytically defined. Instead of scripted space, they took you on an interior path. But the imaginary of Baroque science survived more directly, as science fiction—in *voyages extraordinaires* about scientists and deviant eccentrics updated from the late Enlightenment. For decades, a range of scientistic nostalgia can be found in literature, theater, public lectures. It was Baroque science retrofitted to the industrial age, with a new occult spin, lots of debunking and hoaxes, but always with mythic eccentrics, those gentleman scientists. Baroque toys wind up as Victorian knickknacks, for amateur sleuthing. We stop off at Sherlock Holmes's private laboratory, a universe on tabletops in a rented flat—a primitivism about skilled craftsmen, and Baroque science lit by Victorian gaslight, updated, but still like a Baroque gentleman's fantasy.

Steam

Most of all, this Baroque Imaginary was set up before 1840, during the uncertainties about industrial machines in general, after 1780. And yet, as I mentioned earlier, industrial manufacturing seems to draw upon Baroque engineering/mechanics—those "toys." But it uses them in a very uneven way. In fact, between 1760 and 1800, steam power seems to emanate from the late Baroque. Even more surprising, at first, steam engines barely make a cultural impact anyway, certainly not in Paris until 1836, when de Girardin (following the English) installed steam-driven printing presses for daily newspapers, serial novels, feuilleton. So along with the trauma of the French Revolution, what I find is an interlude. From 1780 to about 1840, there was an ironic lag time—both in civic and intimate special effects. The industrial imaginary does not rush in all that quickly.

As a result, when sorting out the documents, it is very easy to be misled. For example, in 1831, a brief news article asks: "Gurney's The Steam Carriage: Can It Be Made Safe?"[9] This could easily be interpreted as industry on the march, but more likely it suggests anti-industrial paranoia: Who wants those gruesome things boiling down the street, terrifying horses and children? Perhaps they should never be "made safe." In one caricature,[10] a horse watches Gurney's steam carriage chug by, and declares:" Well dash my wig, if that isn't the rummest go I ever saw."

Goldsworthy Gurney (1793–1875) began as a surgeon, then worked as a freelance lecturer in chemistry and natural philosophy.[11] Like others of this odd generation, he was a late Enlightenment "gentleman scientist," not quite ready for the new business climate. He would be an old man before mechanical engineering was completely professionalized.[12] However, in his youth, by 1825, he joined in the chase to build a carriage powered by steam and monitored by camshaft.[13] Perhaps ten prototypes had failed already.[14] They were ugly rat tiers, like coal bins from a mine shaft, with massive wheels and great stove pipes, not very gracious. Most had sent their inventors into bankruptcy, or simply blew up. The first to be widely noticed—but with some horror—was from Richard Trevithick in 1801. Soon after its maiden run, while Trevithick relaxed at a pub, his carriage set itself on fire. Undaunted, he threw himself into repairing and improving it. By 1803, he had made the thing safer, even for speeds of up to nine miles per hour, faster than any horse. But by then, all his investors had left.

The "things" lacked traction; their wheels kept slipping. But that was only one drawback. A Swiss inventor, Rivaz, tried a gas engine, for more power; it proved too backbreaking to operate. Samuel Brown tried a hybrid car, both gas and steam. It climbed Shooter's Hill, had traction, but was too expensive to build ever again. To make the things more natural, some inventors added pistons that seemed to gallop just like a horse. Others promised "boilers" that could glide like steamships on the land. Nevertheless, before 1830, every model failed as a business venture. We barely remember names like Brunton, Burstall, Hall, Seaward.[15]

Then in 1829, public interest revived after the success of George Stephenson's Rocket Locomotive. Thus, Gurney decided to go one better. His carriage was stately, with seats high above the chassis, high enough for a dressy coachman and six smiling gentry. Fussy panels along the side camouflaged the chimney in the back. Anything suggesting chimneys was, by definition, ugly. They reminded people of coal smoke off the roofs of London. Chimneys remained a symbol for anti-industrial culture into Victorian times—even in Parisian caricatures by Grandville as late as the 1840s.

But more importantly, Gurney had solved the problem of traction. He designed a steam jet for added compression, in "sectional boilers"[16] that were "much lighter and safer than before."[17] So in July 1829, his carriage started off quite well. It puffed from London to Bath at speeds up to fifteen miles per hour. Gurney even hid spare parts along the route, to overcome several breakdowns. But unfortunately, a year later, one of his "Drags" blew up anyway, near a barracks in Glasgow.[18] However, despite setbacks, Gurney's carriages seemed reliable, even pleased the Duke of Wellington. They were, after all, the first motorized road vehicle to survive a long-distance journey.

By 1831, Gurney found investors. The manufacturer Sir Charles Dance ordered two carriages. Then other orders followed. Finally, with Dance's capital, he started a passenger service. Then the old curse returned. Powerful enemies took offense. The Turnpike Trust, with support from stablers, hostlers and stagecoach companies, passed ordinances against all steam carriages. Severe levies eventually forced heavy machines off the roads. Despite a plea in his defense from the House of Commons,[19] Gurney was taxed out of business by 1833.

Indeed, the future in early steam power did not always belong to the swift. Rival inventors tried passenger services as well. My favorite name was Hancock's Autopsy—as in *automated topsy*, steam engines as special effects. They also suffered. Additional laws reduced top speeds to four miles per hour on

the open road, and only two miles in the city. The anti-industrials eventually won. A prophetic moment—the world's first automobiles—barely survived the 1830s, then disappeared by 1845. Machines on rails outdistanced machines on the road. Motor cars would have to wait another fifty years, for the research by Mr. Diesel. The entire episode had been all but forgotten by 1863. Early histories of the steam engine barely mention the existence of steam carriages, as if they had been a chimera.[20]

Gurney's career simply moved on. In 1863, he was knighted for lighting and ventilating the House of Commons.[21] But it was a dubious honor. By then, he was considered a creaky old nuisance. His knighthood was a golden handshake, to force him to retire. It is fair to say that Gurney never quite overcame the curse of his generation. Gentleman scientists were seen as dabblers, working in too many forms of mechanics at once. Their inventions were often called "toys, " a Baroque term, by the way, left over from the scientific occult, but rather demeaning in 1830. Gurney was still haunted by the Baroque search for a perfect vacuum, by the study of phlogiston, as part of the philosophy of nature.

So, like a mad Jesuit, he built a piano that played glowing bottles filled with burning hydrogen. In 1823, he lectured on hydrogen, invented a oxyhydrogen blowtorch, called a "blowpipe." Then whatever looked curious, he set on fire.[22] A lump of calcium oxide proved the best. It burned fiercely for a long time; it was blinding. Thus, in 1825, Gurney discovered limelight. Soon after, a lieutenant stationed nearby, Thomas Drummond, heard Gurney's lecture about limelight, and stole the idea (patents came later). Thus, "Drummond" light, not Gurney light, became famous. Its glow penetrated sixty to ninety miles. Inevitably, both Drummond and Gurney worked on lighthouses. At the same time, however, Gurney kept experimenting with his blowpipe. He invented "Rude" lamps for the streets of London, then for mine shafts and as heating systems. He even found a way to bounce limelight from room to room, with lenses and prisms.[23]

By 1860, limelight had transformed night to day as a special effect in many theaters, particularly for spotlights and other special effects. It added the "surviving" moon in Gothic melodramas. For large panoramas, it could raise or set the sun across hundreds of imaginary miles. Most of all, limelight vastly expanded effects for the magic lantern; like dissolving views and wipes, for richer color—and above all, to project more sharply on to a much larger screen. As late as 1913, limelight was still widely in use for traveling movie exhibitions, in small towns.[24]

Still, there was nothing inevitable about Goldsworthy Gurney's industrial genius, even though Stephenson himself admitted that Gurney's version of

the camshaft helped make the railway more practicable. Despite the colossal growth of British industries before 1840, Gurney lived through an era marked also by fierce resistance to manufacturing. I am reminded as well of popular Romanticism, of *Frankenstein* most famously; then the Pre-Raphaelites by 1848; and the Gothic Revival by 1860. Also, by the perverse fascination with landscape *en plein air*. And even more telling: the resistance by Luddites from 1811 to 1816.

Of course, the Luddite impulse continued for decades. In 1830, Swing Riots closed down knitting mills during a wave of industrial sabotage in the English countryside. But consider the response by local government: Magistrates in North Waltham "begged … Owners and Occupiers of Land … to discontinue the use of Threshing machines, and to increase the Wages of Labour."[25] Indeed, many farmers agreed. Caught by spiraling inflation, and maddening tithing debts, they voluntarily destroyed their own equipment.

Similarly, in France in 1831, there was "sabot–age" at silk factories in Lyons. The leaders were skilled cutters who were losing their jobs, or most of their incomes, to machines. In support, spinners would rub machine grease into the silk. Then the army came in. Under military assault, the riots at Lyons were brutally repressed. In 1831, Balzac wrote, in what became a rallying cry for anarchist movements as late as 1900: "The spinner [is] transformed by silken threads that weigh him down like cocoons. Fairness goes out the door, so [to resist] the 'spinner begins to oil his fingers."[26] If heavy industry increasingly promised to release the worker into a collective mode of production, then the Baroque imaginary—man at his private work station—promised to preserve the craftsman.

And yet, when the dust settles, many table-top Baroque "toys" adapt well to the new engineering. They provide entertainment that fetishizes manufacturing. They make industrial objects that look magically pre-industrial—softer, more nostalgic. Magic lanterns, and gizmos the size of tea kettles, were utopian special effects, with many of the same contradictions as utopian socialism, utopian scientists (I am reminded of early "anti-capitalist" fantasies about the Internet). These Baroque devices, in transition from 1780 to 1840, "returned" the viewer to a time when machines (and media) seemed immune to capitalist corruptions. But in fact, before 1840, this immunity bore a steep price. The moment was still oddly premature, even for many businessmen (also, consider how many geniuses of early media go broke, like Daguerre). Factory owners were caught in a double bind. Energy costs remained too high for steep profits.[27] At the same time, pay scales for artisans continued to drop, or remained stagnant for decades. Even Gurney was stoned by locals as he drove his "boiler"

in 1829. Were these "steam things" going to put us all out of work, even the mills out of business—or take us somewhere?

As Charles Babbage explained in 1832, there was a split between "the maker" and "the manufacturer." He preached that his early computing machines would save handicraft. He reminded his patrons that they—not rude, steam belching woolen looms—were the future.[28] He compared his Difference Engine proudly to Baroque automata, to mechanical "toys" he had seen at local curiosities museums. Babbage was another late-Enlightenment gentleman engineer, trying to balance automation with Baroque automata. Like Jeremy Bentham's obsessions with panoptical prisons, like Robert Owen's rustic communes and Fourier's unbuildable phalansteries, Babbage felt that he could easily mechanize the soul of a rustic craftsman. At this earlier economic stage, men like Babbage, did not see themselves as mouthpieces for business. It seemed quite feasible to plan for machines that could exist in complete harmony with nature. They could chime and click like Baroque scientific toys, bring harmony outside the grind of monopoly capitalism. They might even help cure labor unrest.

These smaller, crafted machines could be rural, work in harmony with "landscape," outside the reach of industrial alienation. And there seemed to be evidence supporting that intuition—again, odd evidence. Eccentrics made bad investments. Inventors like Gurney indeed extend the Baroque within the Enlightenment—as gentleman scientists, philosophers of chemistry—but they have poor business minds for this new economy. Their transition toward applied science was often very rocky: At first, they seemed better suited for special effects, for amazing things to put on display.

For a long time, the practical was hidden inside the belly of these "things." Newcomen and Watt helped to shift Baroque engineering away from earlier nautical engines (rigging, gears, hoists). Instead, they specialized in a mechanics based on *repetitive motion*: pistons, looms, camshafts, clocks. But these looked rather modest, better for pumps in mines than the world aboveground. For a time, early steam engines and special-effects automata—puppets with machines in their bellies—managed to coexist, at least ideologically. They were part of natural philosophy. Repetitive motion revealed "man the machine," that famous quote from La Mettrie in 1748.

Thus the automaton and the railroad emerge from similar ancestors from the late Baroque (during the late Enlightenment). But at first glance—then and now—they look quaint, not the "sensible" place to start the industrial nineteenth century. They still look too much like mechanical birds that Jesuits

brought to China in 1650. They fit too well inside a Rococo drawing room. "Toys" that play chess, mechanical children that play the flute, ducks with metal stomachs and fluted anuses? Automata seem only a step away from a Fragonard cameo. Or those ornamental clocks. Their brass leaves were hammered thin—too fragile for use. They looked too delicate to keep serious time, more like a peacock by a stream, unfurling like a puppet. But the inner workings of these "toys"—their hidden coils and wheels—spoke for something very ideologically different, to the practical future for James Watt, Ben Franklin, the French encyclopedists, to the Enlightenment that would follow the French Revolution. But before steam could become a homely everyday industrial "thing," these mechanisms incubated as special effects. They were novelties for a new mass public. And in the public imagination, they have remained there.

Again, the Baroque Imaginary appears as a parallel universe, reacting against the maelstrom of industrial capital. It stood in for a collective memory that often ignored but also defended industrial capitalism. Baroque science made technology look innocent, aristocratic. We show off a Baroque automaton in 1820. It looks old-fashioned, hierarchical, anti-democratic, yet very advanced. It is a souvenir for a future that died.

And yet this automaton has joined the "modern" business culture. Eventually, it may be retooled as cinema, the telegraph, the telephone. It presumably speaks for media that are more democratic, or at least more bourgeois. Of course, this begs the question: was middle-class entertainment after 1780 more egalitarian? I leave that for the reader to decide. Baroque special effects mirror this contradiction. They were remnants of feudality from before 1789. That was crucial to their appeal, and their modernity. Occult lab nostalgia, with feudal brass fittings (circa 1750), sold well in 1835, in 1895, and in 2003—as modern.

Thousand-year-old hierarchies are not simply overthrown like apple carts, quite the contrary. In England, despite two revolutions of their own in the seventeenth century, they were still widely embarrassed by the American Revolution. Thus, popular support for French-inspired radical politics lost favor at first, even after the Jacobins fell in 1794. Strong anti-French conservatism grew even fiercer during the Second Coalition, and fiercer still after the "Boney"[29] scare of 1803. Inside that cautionary atmosphere, many special effects were pioneered: phantasmagoria; panorama; automata. The ideology behind these illusions had to fit the caution of the day.

Then, the noose grew tighter. During the era dominated by the Austrian Prince Metternich (1815–1848), even more conservative impulses were institutionalized, with middling results, across Europe. Let us imagine a Victor

Frankenstein patching something out of this conservative Europe (Mary Shelley and her illustrious husband were hardly conservatives). The French Revolution had been a heart attack upon the corpus, a shock. This conservative reaction after 1815 tried to breathe life into the corpse by keeping its pulse low. Dangerous theories, like the end of monarchies, became even riskier in public. At the same time, aristocratic fashions—at least as nostalgia—maintained a high profile: the Beau Brummells, the dandies, young Baudelaire, even the Decadents of the 1890s. In response, businesses that marketed special effects played to the center, or even toward the right. They tried to soft-pedal their politics. Party affiliation, beyond what was popular, might get in the way of these special effects. As always, in the end, special effects were about equipoise, on behalf of a limited monarchy that was open for business. They borrowed often from nostalgia for the Baroque, but ennobled as mass amusement, free of class warfare, where every patron could feel like an aristocrat.

Special effects rarely defend revolutionary politics anyway, at any time, now or ever. They are usually too fetishized to be a political call-to-arms. In the era 1780–1840, they promoted aristocratic liberalism for loyal subjects, and the less said the better. Like cable media today, they voted for stability first, and open markets second. When you sell tickets to shows, you moisten your finger to the wind even more than politicians do. By 1815, that meant: Be cautious; it is an age of restorations, of gentility for the paying audience, on terms best for profit.

But there is also another twist to the Baroque Imaginary. After 1840, exhibitors of Baroque automata slow down. They look orphaned. They seem feeble and worn, leftovers from the last generation of *philosophes*, like Condillac, Bentham; from popularized Kantianism, early evolutionists. These were preindustrial—Baroque stand-ins, still part of the as-yet unexpressed, in hundreds of fantasy goth sites; steampunk sites on the Internet. Like Gurney's steam carriage, many assumed that the freedom of the early Internet would be struck down in its prime. They suggested a regime cut short, that pioneered steam-driven energy (ironically cleaner than gasoline-powered engines). Gurney's "boilers" failed to make the cut after 1840—due to economic downturns, railroad capitalism, urban growth; and finally advances in chemistry. Such dead ends identified with judgment day. In 1840 thousands of Americans prepared for Dooms Day, by waiting on hills. Instead, another age of revolutions and civil war emerged.

Therefore, after 1840, Baroque gizmos look even more orphaned, in a modern age of steel and railroads. This despite the fact that they were actually symp-

toms of modernist vigor. Consider how many "firsts" in Baroque media were launched between 1815 and 1840—these contraptions "that boiled, clicked and gleamed." And yet, the Baroque Imaginary emphasizes loss, and scientists as Jeremias and Cassandras both; a sense of ruin, as Walter Benjamin continually reminded us. It was the dying edge of modernity.

Perhaps entertainment media are always the reactionary posing as modernity. Media from 1815 to 1840 were certainly confused in that way First it was a golden age for telegraphs, electricity, pre-cinema, pre-automobiles, photography; and second, an era famous for its "dead media,"[30] for technical promises that died prematurely. Probably most of all, 1815 to 1840 was a truncated age. I can see why it was cut short by intense class warfare, the revolutions of 1848. This makes for a contradictory path indeed: Baroque special effects go from hand-crafted gizmos to industrial illusion by 1900, then reappear inside electrical media, inside advanced suburbanization, finally inside the Electronic Baroque today.

Baroque Imaginary: A Collective Misremembering of Eras from 1550 to 1780; The Mad Scentist as Baroque (Film Architecture, Literature)

In brief sections to follow, I will take us through special effects from this period, in civic architecture; urban planning; urban circulation; trains; lighting; the panoramas; automata; theatrical machinery; the role of spectators; caricature and illustration; fantasy literature; optical toys; pre-cinema; and the state system in Europe. Special effects during this "interlude" (1780–1840) tend to glorify the scientist as skilled craftsman, in a dual role, as Apollo, and as long-suffering Prometheus. Stories about these tricks suggest a primitivist fascination with gentlemen in parlor laboratories; and particularly with mechanical engineering as anti-capitalist science. This mystique returns after 1850, as biology, in descriptions of gentleman naturalists like Darwin, and gentleman geologists entering Africa or crossing the oceans—who are then mystified in the writings of Verne, Wells, Doyle. Clearly, this false memory has some basis in fact. As always, the best way to lie is with the truth. So we will be making ontogenic leaps from the imaginary to its political background. There is no other way to accurately—and honestly—describe how special effects invent narratives about power.

Anomaly

That will prove a useful term for us. As Thomas S. Kuhn pointed out forty years ago, scientific knowledge regularly hits a barrier of resistance. It grows to a point of *anomaly*,[31] then, like water breaking through a dam, is finally plunged forward. Next having moved ahead, technology stalls at another barrier. It over-professionalizes. Practical applications grow. Anomaly always brings a mixed blessing, great success clouded by inevitable corruption. Presumably, if one knows the risks beforehand, that might lead to healthier results.

I will not deal with the arguments for and against Kuhn's theories. They lie beyond my subject. Imagine instead how anomaly fits into mass culture and the Baroque Imaginary—as the moment when the mystical, the inductive, the atavistic, the lost science, the failed opportunity turn into special-effects fantasies. Special effects are mythic reenactments of anomaly, whether there actually was a barrier or not.

In that spirit, let us assume that during the eras 1770 to 1840, the memory of Baroque mechanics appears in pre-science fiction as anomaly. Surely, if ever there were an era dedicated to scientific anomalies, this was one, laboring under the pressure to "unconceal," as Heidegger might say. Even Kuhn returns to those decades often in his examples, starting with the debates about oxygen after 1770.

Anomaly suggests nostalgia for Baroque scientists, now a vanishing breed. This nostalgia fuels the birth of science fiction, through industrial fables about adventurous but dotty scientists at war with repressive capitalism. They become symbols of magick science as a social imaginary. Free of the modern, they see deeply into the future. Baroque scientists behave like bohemian poets—*l'art pour l'art*. Their pure science remains an anomaly within capitalism. It is too mired in left-over Baroque hierarchies (circa 1820) to make a profit—not yet. (Anomaly, after all, implies a blockage that *will* be resolved.) Of course, this is merely cultural myth, that during this interregnum, the scientist remained an outsider, an avant-gardist.

I won't try to locate the truth behind this collective imaginary. For a book on special effects, I merely point out that the Gothic reading of Baroque science as of 1820 maintains a fierce hold on science fiction; and in turn, on special-effects cinema, from Wiles to orientalist versions of Baroque nightmare, in *The Mummy* or the Indiana Jones series. One can ride the Baroque/Industrial Imaginary in merry-go-rounds at fairs in 1900, particularly in England. There,

Gothic castles get the Baroque theatrical treatment, becoming facades for freak shows and amusement rides.

We also should remember that European fairy tales were Baroque more than medieval. They were retold in the seventeenth and eighteenth centuries, as "faerie," even in Milton and Spenser. Then they lingered as late Baroque puppets in London or Prague or Germany, before the publishing industry and the opera revive them yet again. Even King Arthur's Camelot is filtered through the Baroque, through state building and civil war in seventeenth-century England. Or certainly Camelot is Baroque in Mark Twain's version, like an early steampunk novel. *A Connecticut Yankee in King Arthur's Court* turns Baroque memories of chivalry into New England Protestantism—into anti-Catholic, anti-Crusades, closer to Twain's beloved reading of *Don Quixote*: anti-chivalry reworked for the Gilded Age. Who could remember as far back as the Middle Ages anyway? Not when you tramp through the medieval in its late-Baroque condition throughout Germany, as Mark Twain did, described in *Innocents Abroad*.

But beyond the literary misrememberings, there is also the Gothic Revival, a grander, more expensive world's fair version of the Baroque Imaginary. Here, entire cities were misremembered triumphally. After 1860, the Gothic Revival is the last gasp of the Baroque—as Romantic urban planning: the Piranesian labyrinth as dream architecture, the Second Empire remembering the Bourbon kings. The "Baroquish" version of feudal glamour seemed Napoleonic, a charming filter for Gothic design, or Victorian chivalry in ornate bindings and fancy wood engravings from the Dalziels in London. It was a gaudier, more decadent way to illustrate Mallory's *Mort d'Arthur*, even into the era of Beardsley and later Rackham. Baroque nostalgia gave medieval magic tales a gnostic occultism, or one more Gothic twist as the revenge of a Baroque corpse in *Dracula*.

I set up a master list of the Baroque Imaginary in films, buildings, graphic novels, computer games; but the numbers began to run into the hundreds, on their way to the thousands. In essentially all of them, a highly scripted Baroque walled city is imagined as late medieval, because it was quintessentially "feudal"—as in the *Oz* books, in Tolkien's Celticized Middle Earth, in Wells's time travel, in Japanese anime, in the Conan stories, *Mad Max*, and *Star Wars* films. Similarly today, architects are designing an Industrial Imaginary, to misremember the city of 1940 by way of suburban consumerism. As I will discuss in Part IV, Gothic revivals polish decay, until it turns into special effects. Ultimately, they retrofit the haunted house until it looks as if no one has moved in yet.

Of course, there is also a psychotropic side to the Baroque Imaginary, as Freudian or Lacanian architecture. I have always thought that Freud's topology was a Baroque novel.[32] Cathexis is a leaking roof that suggests invasion from outside, perhaps the most elemental form of special-effects story. In the second volume, I will go much farther into the psychotropic and paranoic layers beneath special effects. But for this book, the expensive pageantry is supposed to keep you riding the surface, like a Disneyland ride through the end of the world. There, we find characters from the Baroque Imaginary, like Gurney. They reappear as adventurers in science fiction. They are uncontaminated by profit, from Captain Nemo to Indiana Jones.

Our culture needs the Baroque Imaginary for this kind of time travel. It condenses all Middle Ages into a dark age a few decades back in the fifteenth century. It searches through the ruins for theatrical spectacle. As I will show, special effects today labor under a triad of imaginaries: the Baroque; the industrial modern; the Electronic Baroque. Indeed, so much of this book operates in triads. I often say to students, give me any three points, and I can make a line.