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In the eighteenth and nineteenth centuries, as new technologies and social formations displaced the haptic in favor of the visual as a source of knowledge about an increasingly complicated set of lived realities, popular culture offered a surfeit of spectacular forms that compensated for the lack of touch with what might be termed a hyperbole of the visible. An apparently direct address to the spectator depended on techniques of perspectival composition, trompe l’oeil, a hiding or deemphasis of the frame, an often overwhelming scale, and a mimesis of the natural. Historians tend to agree that underlying the fascination with these displays were anxieties regarding urban growth, technological development, and social change. The spectacle was a simulacrum of reality, but spectators were not duped by these illusions—by paying admission the customer indicated at least some understanding of the rules of the game. Some pleasure, however, clearly derived from responding to these entertainments as if they were real. Visual spectacle provided a reassurance in the form of a panoptic power (minus the inscribed and very real power relations described by Foucault)—the human subject was, after all, capable of perceiving and comprehending these new conditions through the projection of an almost omnipotent gaze out into the represented world.

The cosmic displays of science fiction cinema, produced by technologically advanced optical effects, surely derive from a similar drive for scopic mastery. The overwhelming perceptual power granted by these panoramic dis-
plays addressed the perceived loss of cognitive power experienced by the subject in an increasingly technologized world. In acknowledging anxiety while ultimately producing a sense of cognitive mastery, these entertainments frequently evoked the rhetorical figures of the sublime. The nature of popular, commercial entertainment suggests that this was actually a tamed sublime rather than truly awe-inspiring, transcendent visions; nevertheless, the sublime became an important mode for these mareoramas, landscape paintings, stereoscopic views, and science fiction films.

The stock scripts and relatively wooden performances of science fiction cinema shouldn’t distract one from the articulations of meaning located in the mise-en-scène as well as the state of the art technological spectacle on display. While there are relatively few director-auteurs in SF film, cinematic style (as well as authorial consistency) can be located in the fields of art and effects direction. The special effects work of Douglas Trumbull is particularly distinctive and sustained in its evocation of the sublime, and this essay will concentrate on sequences from his films. Trumbull supervised the Stargate sequence of 2001 and produced the luminous alien spacecraft of Close Encounters of the Third Kind (see color figs. 1, 2). He worked in conjunction with “visual futurist” Syd Mead on Star Trek: The Motion Picture and Blade Runner (see color fig. 3). Beyond his work as an effects designer, Trumbull directed two features, Silent Running and Brainstorm—both interesting in themselves—while developing his 65mm, 60 fps Showscan exhibition system. Finally turning away from Hollywood and a system that was, as he put it, “multiplexing itself to death,” Trumbull turned to “special venue” productions, developing multimedia technologies for theme parks or World’s Fair exhibitions. The popularity of simulation rides in a surprising range of settings has provided new opportunities for Trumbull to experiment with the kind of experiential cinema that has been his forte since the 1960s. The attention to spectacle and the conditions of exhibition reconnects Trumbull’s work to the early history of the cinema as well as to the history of precinematic phantasmagoria.

In Trumbull’s effects sequences, the sublime is elicited around a massive technological object (or environment): the Stargate (2001), the mothership (CE3K), V’ger (Star Trek), and the city (Blade Runner). It is technology that inspires the sensations characteristic of sublimity; therefore, it is technology that alludes to the limits of human definition and comprehension. The special effect unfolds before the human gaze and becomes susceptible to an encompassing control that inheres in the very act of seeing. Trumbull’s sequences, however, are different from other effects work in their ambivalence:

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they are neither unabashedly celebratory (*Star Wars*) nor darkly condemning (*Alien*). As with the panoramas and other displays of the last two hundred years, then, Trumbull’s effects are rooted in an ambivalent relation to new technologies, and like those other forms, they depend on new technologies for their very effect(s).

**Concerning Visuality**

The ability to cognize is very often dependent on the concurrent ability to envision and thereby conceive, and this can be equally true for both quantitative information and abstract conception. Therefore, debates over the place and meaning of observation and visual representation within culture take on a crucial importance. This is generally, although not unanimously, regarded to be a period of information proliferation, by which it’s understood that less information comes to the subject via direct sensory, bodily experience and more, far more, arrives in mediated, representational forms. If, as some theorists of culture would have it, mediation is immediately tantamount to manipulation, then the proliferation of mediated experiential modes will indeed produce a vapid, inertial society of spectacles and simulations. But, on the other hand, if visuality comprises a more complex and open phenomenon, then the range of observer positions will be less circumscribed and possibly less debased. The relationship between visual experience and cognition, then, always an active topic for philosophical debate, becomes increasingly crucial as a means of understanding the place(s) available to the subject in this heavily technologized and electronically mediated culture.

Jonathan Crary’s extended essay, *Techniques of the Observer*, has already proven its value in the fields of art history, cinema studies, and cultural studies. Crary’s analysis of paradigmatic shifts in the construction of “observation” is set against the context of electronic culture—his opening question (“How is the body, including the observing body, becoming a component of new machines, economies, apparatuses, whether social, libidinal or technological?”) straddles historical and contemporary moments. The model Crary constructs is grounded in the process of modernization, under the conditions of which the observer “is made adequate to a constellation of new events, forces, and institutions that together are loosely and perhaps tautologically definable as ‘modernity.’” Classical models of vision collapse, along with “their stable space of representations. Instead, observation is increasingly a question of equivalent sensations and stimuli that have no reference to a spatial location.” The idea that increasing industrialization and rising urban
concentration should challenge older paradigms of spatiovisual experience is not new—for example, Henri Lefebvre wrote:

The fact is that around 1910 a certain space was shattered. It was the space of common sense, of knowledge, of social practice, of political power, a space thitherto enshrined in everyday discourse, just as in abstract thought, as the environment of and channel for communications; the space, too, of classical perspective and geometry, developed from the Renaissance onwards on the basis of the Greek tradition (Euclid, logic) and bodied forth in Western art and philosophy, as in the form of the city and town. Such were the shocks and onslaughs suffered by this space that today it retains but a feeble pedagogical reality, and then only with great difficulty, within a conservative educational system.⁶

Their periodization may be at odds, but I think Crary and Lefebvre are concerned with the same epistemological rupture. Lefebvre even shares with Crary the sense that this is not simply a shift within the field of “representation” but the disappearance of a particular lived, bodied conception of spatiality. Crary’s emphasis is less on changing spatial conceptions than on the implications of a culture founded on a new relationship between visuality and experience, a relationship that now “depends on the denial of the body, its pulsings and phantasms, as the ground of vision.”⁷

Representation begins to have less to do with the world “out there” than with the physiological conditions of vision, conditions that can now be simulated. Thus, the experience of a three-dimensional image is no longer any guarantor of “reality” but is more on the order of a physiological sleight of hand. Crary brilliantly argues that a range of aesthetic techniques generally lumped under the heading of realism “are in fact bound up in non-veridical theories of vision that effectively annihilate a real world.”⁸ The absence of spatial verifiability uproots signs from an ostensibly stable field of meaning, whereupon meanings and values can be exchanged more freely.

The separation of the visual and the haptic thus resulted in an overemphasis on the former. The “empirical isolation of vision” permitted its “quantification and homogenization” while at the same time, the objects of visual contemplation were “sundered from any relation to the spectator’s position within a cognitively unified field.”⁹ A veritable explosion of visually based toys, displays, and environments appeared, as if to compensate for the diminished role played by the remaining senses. These objects and environments, however, were irredicibly situated within the increasingly central-
ized and disciplinary conditions of industrial capitalism. Where some might see the construction of a “transcendent subject” no longer limited to a single set of spatiotemporal coordinates, Crary, following Foucault, sees a model grounded in systems of surveillance and control, in which the observer becomes, almost literally, “a component.”

Crary emphasizes the kineticism that emerged in the nineteenth century. Visual experience was “given an unprecedented mobility” that was “abstracted from any founding site or referent.” Crary tracks this mobility into the field of representation, noting that “the traveling artist’s kinesthesia demanded and elicited a new and complexly fluid state of mind. Locomotion was consonant with the experience of mobile and mutable aspects or shifting effects.” This analysis is consonant with some others, which also link the emergent kinesis of the Machine Age to a set of epistemological reconfigurations and adaptations on the part of the mobile observer. The nineteenth century saw the expansion of travel and the rise of tourism for the middle classes. Vision was put in motion around the rise of railway travel, with its new emphasis on what Wolfgang Schivelbusch has dubbed “panoramic perception.” The replacement of the slow, horsedrawn coach by the speeding train shifted the rider’s attention from foreground to the middle and backgrounds. The windowed and enclosed train put the world behind glass and effectively filtered out auditory, olfactory, and haptic sensations of the world beyond the window, forcing a reliance on sight as the sole source of information.

Crary’s sociology differs significantly from that of Schivelbusch, however. While for Crary “panoramic perception” would demonstrate the severing of visuality from the body, Schivelbusch describes a reconfiguration of the body in relation to the shifting nature of spatial apprehension. Despite their common suspicion of industrial capitalist culture, Schivelbusch remains committed to a phenomenological perspective that is less concerned with judging than with mapping alterations in lived experience. Whatever it is that Schivelbusch is describing, it is not a removal of the bodily experience from the field of industrial development—the velocity that produces a panoramic view is also the velocity that cripples and pulverizes bodies, whether in crashing railway carriages or across the fields of wartime carnage. Panoramic perception (even in its simulacral, cinematic variation) remains a most definitely embodied phenomenon.

It is the absence of a phenomenology that weakens Crary’s generally excellent work, and that absence tends to schematize some of his most provocat...
tive arguments. The body, as an experiential field, simply disappears from his consideration, repressed as surely as he claims it was in the historical past.

It is worth noting that while vision may be detached from the body of the observer it is constantly reattached to an at least partially illusory body. There is a being at the center of the panorama, enjoying the view. The body isn’t at the center of Paris; it’s at the center of an exhibition, a display—still, it’s at the center of something. As at Disneyland, where real and simulated motion are intricately combined, the actual position of the observer’s body becomes a means of support for an illusionistic position.

Why is the body constantly being recalled into being by amusement park rides or panoramic addresses? Undoubtedly, Crary could argue that the loss of the body is the precondition for creating that equivalence of signs and values that obtain when vision is decorporealized, “liberated” from direct physical verification, and so the support that I’m describing would serve as an ersatz reembodiment to further ground the ideological operations of industrial capitalism. Indeed, every moment of potential liberation that Crary describes is immediately recontained by the disciplinary society: “But almost simultaneous with this final dissolution of a transcendent foundation for vision emerges a plurality of means to recode the activity of the eye, to regiment it, to heighten its productivity and to prevent its distraction. Thus the imperatives of classical modernization, while demolishing the field of classical vision, generated techniques for imposing visual attentiveness, rationalizing sensation, and managing perception.”

I think that I’m allowed to be unsatisfied with this. It isn’t wrong; it’s brilliant—but it’s not the whole story. Indeed, Crary provides some clues of a world beyond his monolithic historical read. He acknowledges the existence of oppositional modes but argues that “it only becomes legible against the more hegemonic set of discourses and practices in which vision took shape.” That’s a start, but I would still resist the reading of this “set of discourses” as all determining. Crary is altogether too eager to reduce a vast array of cultural phenomena to a single hegemonic model of hegemonic practice.

So Crary winds up aligned with the very tradition he critiques. When he discusses “techniques for imposing visual attentiveness, rationalizing sensation, and managing perception,” he isn’t simply describing a historical position; he’s inadvertently presenting us with an astute analysis of the academy in a nutshell—the academy that can’t abide discourses of the body (only discourses about it), the academy that can’t accommodate a plurality of inter-
pretive positions (only the faux plurality of identity politics). Can we liberate the study of visuality from the academy’s own predilection for rationalized sensation and managed perception?

Barbara Stafford offers a very different set of terms with which to understand visual culture. While her theoretical models are less elaborated than those of Crary, she describes a pervasive shift from a culture grounded in visuality and physical experience to one dominated by textuality and instrumental reason.

Stafford’s histories reveal the diversity of visual culture in the eighteenth century. If research into the physiology of perception “objectified” the viewer, this objectification was often a prelude to further revelations concerning, or discoveries of, natural law. Such “rational re-creations” as automata, kaleidoscopes, miniatures, illustrated texts for children, and even the phantasmagoria of magic lantern presentations served as forms of “phenomenalized instruction,” according to Stafford, erasing “the dualism between mind and body, art and craft, science and technology.” ¹⁵ Stafford emphasizes the construction of “an informed and performative gaze” operating within a field of “sensationalized knowledge.”¹⁶ As for the illusionism attendant upon most of these phenomena, Stafford notes that these were “licit effects” (a lovely phrase); their principles were to be revealed and explained to the audience or observer.¹⁷ Yes, the world and the observer were inscribed within a field of knowledge and therefore within the disciplinary apparatus that Foucault correctly describes, but this is not the sole aspect of visuality that needs to be acknowledged (and I have no doubt that Crary would concur).

So the constant address to the body that marks the panorama and, later, the amusement park attraction, is not simply a writing of the body into an expanding field of signification; it is also a means of inscribing new, potentially traumatic phenomena and perspectives onto the familiar experiential field of the body. They are holdovers from a time when, Stafford writes, “spatial and kinesthetic intelligence were not yet radically divorced from rational-linguistic competence and logical-mathematical aptitude.”¹⁸ Empirical positivism may have suffered at the hands of the perceptual skepticism exercised by eighteenth-century British philosophy, but enough faith in “direct” and “unmediated” experience survived to be flattered at the fairground.

If I’m arguing for the validity of an “embodied knowledge,” I do so not from a belief in the existence of some empirically verifiable truth, but from my conviction that knowledge grounded in the conditions of physical experience permits a necessary accommodation—perhaps we should call it an
adaptation—to a new set of lived conditions. Crary is correct to emphasize the separation of observation from spatial referent, but if he wants to follow the macroscopic, strategic model upon which Foucault’s historiography depends then I’ll counter with de Certeau’s emphasis on the range of interventionist tactics available to the subject within these broader structures, tactics that are the very stuff of individual adaptation to the strategies of centralized power structures. While the incorporation of the body into a range of primarily visual entertainments constitutes for Crary a colonization of that body, I think it represents a compensation for the declining centrality of sensory experience, a valid (i.e., useful) means of recentering one’s experience of a decentered world. If this was, in some ways, complicit with dominant ideological agendas, it is also, irreducibly, a necessary means of being in the world.

Corporeal Mappings

Now the sense of displacement or disorientation produced by the environment of the industrial city gave rise to new entertainments that produced a cognitive and corporeal mapping of the subject into a previously overwhelming and intolerable space. Panoramic perception became a fundament of the Machine Age, a function of new architectures of steel and glass; it defined the arcades and department stores of consumerist abundance as well as a set of spectacular forms that reinforced the new dominance of an epistemology of vision. Telescopes, microscopes, maps of continents, geologic periods, and human anatomy further extended the reach of human perception, as Stafford notes: “The extension of vision permitted a new form of travel. Opaque depths were opened up, becoming transparent without the infliction of violence. The veil of the invisible was gently and noninvasively lifted. The eye could easily voyage through and beyond the densities of a plane, or silently journey beneath the stratified level.”

Travel provided the metaphor for a broad evocation of a spatiotemporal continuity wedded to a utopian dedication to “progress”; Susan Buck-Morss writes that “Railroads were the referent, and progress the sign, as spatial movement became so wedded to the concept of historical movement that these could no longer be distinguished.” Journeys to new heights, new perspectives, and new worlds became the substance of such recreations as the packaged tour, the panorama, the scenic garden, and the world’s fair. In popular literature, Jules Verne took his readers aloft in a hot air balloon to go Around the World in Eighty Days and fired them from a cannon to bring them...
From the Earth to the Moon. As Buck-Morss notes, new modes of conveyance became linked to new fields of knowledge and new possibilities for human advancement.

Here, then, is the start of at least one thread of what we have come to refer to as the Information Age, as an abundance of physical data was fitted to the epistemological desires and requirements of the public consciousness. Spectacular displays depended on a new mode of spectatorial address—essentially, you are there (even though you’re not)—linked to new technologies of visual representation. Of course, these presentations can, in their turn, be traced to the geometric specificities of perspectival composition, which situated the observer in an illusory relation to the scene observed: now the spectator was granted vivid revelations of the insides of the human body, astronomical phenomena, and newsworthy events. Panoramas of exotic ports evoked an immersion in faraway places.

The panorama struck a responsive chord in the nineteenth century. It satisfied, or at least helped to satisfy, an increasing appetite for visual information. A revolution in travel had made the world seem smaller. The growth of a literate middle class and the burgeoning newspaper industry meant that many more people were aware of a greater number of happenings over a larger area of the globe. It is not surprising that people should desire visual images of a world of which they were becoming increasingly aware through the printed word. The panorama supplied a substitute for travel and a supplement to the newspaper.21

Bodily experience and cognitive understanding were thus both supplemented—and largely replaced—by a reliance on vision within a simulacrum of the real.

Most popular were panoramas of one’s own city, which became perceptible in a manner previously impossible. If the visual was now largely removed from the confirmation of haptic experience (a fundament of the Information Age), then, first, the visual would become a hyperbolically self-sufficient source of knowledge and information for the general public as well as the scientist and, second, a significant set of entertainments would recall the body into a pleasurable ersatz existence. The panorama and its successor, the diorama, would eventually incorporate simulated motion, lighting, and sound effects, platforms to rock or even move the audience, photography, and even, in the case of Hale’s Tours, cinema. Such attractions have made an important return: Trumbull developed the “Ridefilm Theater,” a simulator-theater sys-
tem that featured a fifteen-passenger motion base encompassed by a 180-degree spherically curved screen. High-resolution images, projected with synchronized movement, produce a striking sense of kinesthetic immersion in a complex technological space.

Special Effects

A too easy historicism has tended to divide cinematic representations into naturalist and antinaturalist categories. Within this schema, special effects hark back to the imagistic manipulations of Méliès, but it should be clear that even the supposedly naturalistic Lumière brothers were purveyors of spectacle and novelty. Cinema is, of course, a special effect, and that is how it was regarded by its initial audiences. The illusion of motion, with its consequent sensations of temporal flow and spatial volume, provided enough innovation for spectators already familiar with a range of spectacular visual novelties. If cinema’s unique blend of spatiotemporal solidity and metamorphic fluidity was largely assigned to the representation of narrative, the effect(s) of the medium nevertheless remained central to the spectatorial experience.

Writings on early cinema by both Tom Gunning and Miriam Hansen describe a “cinema of attractions,” an “unabashed eclecticism” that was figured in a direct address to the viewer. According to Gunning, “this is an exhibitionistic cinema,” while Hansen, following Jean Mitry, writes that “The frontality and uniformity of viewpoint is clearly the mark of a presentational—as opposed to representational—conception of space and address.” 22 The presentational mode ultimately yielded to a more univocal narrational system that stabilized space and introduced “the segregation of the fictional space-time on the screen from the actual one of the theater or, rather, the subordination of the latter under the spell of the former.” 23 Nevertheless, Gunning argues that the fascination of the attraction “does not disappear with the dominance of narrative, but rather goes underground, both into certain avant-garde practices and as a component of narrative films, more evident in some genres (e.g. the musical) than in others.” 24 The genre of science fiction often exhibits its spectatorial excess in the form of the special effect, which is especially effective at bringing the narrative to a spectacular halt. Science fiction participates in the presentational mode through the prevalence of optical effects that in fact re-integrate the virtual space of the spectacle with the physical space of the theater.

Special effects redirect the spectator to the visual (and auditory and even kinesthetic) conditions of the cinema and thus bring the principles of percep-
tion to the foreground of consciousness. This idea is at the center of Annette Michelson’s superb analysis of *2001: A Space Odyssey*. The expansion of the visible field to cineramic proportions, the removal of perceptual clues to verticality and other conditions of physical orientation, and the sustained evocation of bodily weightlessness, the imposition of the rhythms of respiration and circulation on the soundtrack all contributed to the profound redefinition of haptic experience undergone by the voyagers in the audience. If *2001* is more radical in its affect than other works of narrative cinema, visual effects remain central to science fiction for closely related reasons. “If we think of what it is that science fiction ‘does,’” writes Brooks Landon, “surely we must acknowledge that its frequently mentioned ‘sense of wonder’ derives from ‘a new way of seeing.’”

The special effects of contemporary cinema are thus only a more recent manifestation of optical, spectacular technologies that created immersive, overwhelming, and apparently immediate sensory experiences such as “Renaissance” and elevated perspectives, panoramas, landscape paintings, kaleidoscopes, dioramas, and cinema—a cinema, to borrow from Gunning and Eisenstein, of attractions.

The Sublime in Science Fiction

The presentational mode described by Gunning or Hansen exceeds the logics of narrative and exaggerates the poetics of spectacle and thus bears a relation to certain conceptions, in poetry and painting, of the sublime—especially the sublime as figured in American art of the nineteenth century. The classical conception of the sublime, as described by Longinus in relation to spoken rhetoric, emphasizes its power to enthrall and elevate the mind of man; in a famous passage, Longinus celebrated its unambiguous glory through his own little special effects sequence, writing that “our soul is uplifted by the true sublime; it takes a proud flight, and is filled with joy and vaunting, as though it had itself produced what it has heard.”

Joseph Addison and Edmund Burke were largely responsible for transforming the sublime from Kantian doctrine to aesthetic strategy. The field of the sublime was comprised of the majestic, the awe inspiring, and the literally overpowering: it spoke the languages of excess and hyperbole to suggest realms beyond human articulation and comprehension. The sublime was constituted through the combined sensations of astonishment, terror, and awe that occur through the revelation of a power greater, by far, than the human. Those commingled sensations result from the rhetorical construc-
tion of grandeur (either grandly large or small) and the infinite. The object of sublime rhetoric is often not entirely available to vision or description: uniformity (the similarity of all parts) and succession (a sense that the object extends on and on) characterize this “obscurity.” The sublime initiates a crisis in the subject by disrupting the customary cognized relationship between subject and external reality. It threatens human thought, habitual signifying systems and, finally, human prowess: “the mind is hurried out of itself, by a crowd of great and confused images; which affect because they are crowded and confused.”29 The final effect is not a negative experience of anxious confusion, however, because it is almost immediately accompanied by a process of appropriation of, and identification with, the infinite powers on display. The phenomenal world is transcended as the mind moves to encompass what cannot be contained. And so the sublime is grounded in a pervastive ambivalence—the tension between diminution and exaltation is evident in the oxymoron of Burke’s “delightful horror” and in Kant’s description of “a quickly alternating attraction toward, and repulsion from, the same object.”30

As telescopes provided tantalizing glimpses of worlds beyond our own, astronomy provided a new and exalted ground for the rhetoric of the sublime. In 1712, Joseph Addison wrote of the infinitude of the heavens in language typical of the mode.

When we survey the whole earth at once, and the several planets that lie within its neighbourhood we are filled with a pleasing astonishment, to see so many worlds, hanging one above another, and sliding round their axles in such an amazing pomp and solemnity. If, after this, we contemplate those wild fields of ether, that reach in height as far as from Saturn to the fixed stars, and run abroad almost to an infinitude, our imagination finds its capacity filled with so immense a prospect, and puts itself upon the stretch to comprehend it. But if we rise yet higher, and consider the fixed stars as so many vast oceans of flame, that are each of them attended with a different set of planets, and still discover new firmaments and new lights that are sunk further into those unfathomable depths of ether, so as not to be seen by the strongest of our telescopes, we are lost in such a labyrinth of suns and worlds, and confounded with the immensity and magnificence of nature.31

Here, in a sense, the cosmic trajectories of 2001 are prefigured not only in the evocation of astronomical scale but in the description of successive levels of macrocosmic order that ultimately yield to a chaos that signals the very limits of our ability to comprehend the vastness of the universe. The universe...
is without end, it confounds us, but the rhetoric of the sublime paradoxically permits an understanding of these sensory and conceptual limits. The rhetorical threat posed by the sublime is finally, then, not really that much of a threat.

The precise function of science fiction, in many ways, is to *create* the boundless and infinite stuff of sublime experience and thus to produce a sense of transcendence beyond human finitudes (true to the form of the sublime, most works produce transcendence of, and acknowledgment of, human limits). Indeed, the objects of science fiction are characterized by a spatio-temporal grandeur revealed by the titles alone: *A Space Odyssey, Last and First Men, When Worlds Collide, The Star Maker* (and consider the titles of early science fiction magazines: *Astounding, Amazing, Thrilling Wonder Stories, Weird Tales*). The conclusion of Richard Matheson’s *The Shrinking Man* (1956) links the micro- and macrocosmic in an infinite continuum of religious transcendence. Science-fictional objects are sublimely obscure: the city of Trantor in Isaac Asimov’s *Foundation* series, covers an entire planet—one of the boundless cities of SF—and there is the spaceship that begins *Star Wars* (1977): too large for the screen—or our consciousness—to hold. Science fiction is immediately and deeply bound to the tropologies of the sublime. Burke’s “artificial infinite” is echoed in *2001*’s “Jupiter and beyond the Infinite”: rhetorical allusions to the unrepresentable forms of infinity.32

As in the parable of Prometheus, however, humanity’s o’erreaching is frequently followed by the punishment of the gods. Arthur C. Clarke’s “The Nine Billion Names of God” (1952) posits a religious order that has enlisted the aid of a computer to determine all the names of the story’s title. The lamas believe that this task of enumeration is humanity’s purpose and that upon its completion our history, too, will end. The rationalist technicians, hurrying to escape the wrath of the order once the computer has executed its run, are finally confronted with the limits of being: “‘Look,’ whispered Chuck, and George lifted his eyes to heaven. (There is always a last time for everything.) Overhead, without any fuss, the stars were going out.”33

Clearly, SF participates in the “delightful horrors” of sublime experience. Humans are often dwarfed by the presence of a greater power, and the only appropriate response seems to be the awe and shaking terror of the astronaut in the penultimate sequences of *2001*.

Landscape Painting and Special Effects

The figures of sublime rhetoric were developed and understood primarily with reference to poetic language and were first related to the register of the

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visual arts only with suspicion. With the unintentional influence of Burke in the nineteenth century, however, painting became a new site for the instantiation of the sublime. While the concrete and exteriorized representations common to painting had long been regarded as deficient when compared to poetry’s grand abstractions, Burke’s categorization of sublime effects (“ obscurity, privation, vastness, succession, uniformity, magnificence, loudness, suddenness and so on”) proved easily applicable to the painter’s depiction of the natural order. Andrew Wilton has studied Turner’s painting within the context of eighteenth-century notions of the sublime and argues that painting’s concreteness, once regarded as its very limitation, now became its great strength: “The vast, the remote, the obscure, qualities that give rein to the imagination, can be enumerated in respect to landscape more easily and precisely than in connection with religious, mental or abstract ideas.”

The representation of natural phenomena—mountains, sky, flora—became the means of meditating on the magnificence of their Creator (and the magnificent powers of reason that could ruminate upon that magnificence).

The landscape sublime is rooted in an activity of contemplation, in the attempt to grasp what fundamentally cannot be grasped. The breadth of nature proves ideal in stimulating the dynamic cognitive processes that exalt the mind that engages with it. The artworks most closely associated with the sublime are therefore often detailed and scrupulous revelations of nature’s grandeur—but less from an impulse toward mimesis than from the encouragement of specific spectatorial behaviors. For landscape painting to inspire dynamic contemplation, however, it is not enough to duplicate external form. Many artists, Turner and Church among them, provide a kind of viewing instruction in the depiction of a frequently tiny figure fixed in contemplation of the very wonders that the painter has chosen to embellish.

Spectacular and monumental elements, all encompassed by a dynamic spectatorial gaze, are easily found among the plethora of special effects sequences in the history of the cinema. If the poetics of the sublime anticipated the thematics of science fiction, then the visual sublime elaborated through painting just as surely prefigures the visible excesses of SF film, and they are particularly pronounced in the filmwork of Douglas Trumbull.

An examination of Trumbull’s work reveals a surprisingly coherent aesthetics. A Trumbull sequence is less the description of an object than the construction of an environment. He has expressed a dissatisfaction with the flatness of most special effects sequences, which require rapid cutaways to distract the audience: “I like the idea of creating some crazy illusion that looks so great that you can really hang on it like a big master shot of an
epic landscape.”38 (“Epic landscape” suggests the affinity between Trumbull’s effects and the majestic paintings of Turner, Church, Bierstadt, and so on.) The work privileges a sense of environmental grandeur: the wide-screen effect becomes an enveloping thing, such as the roiling cloudscapes that presage the appearance of the mothership in CE3K, the gorgeous and monstrous Los Angeles of Blade Runner, or the amorphous, infinite interiority of V’ger in Star Trek. The Stargate sequence in 2001 features scarcely any objects; it emphasizes instead a continuum of spatiotemporal transmutations.

Wilton isolates some relevant techniques in Turner’s style. Citing the moments of turbulence in Turner’s painting, his language evokes a powerful spectatorial kinesis: “Views through arcades, avenues of trees, tunnels of rock, even vortices of dust or storm, create an arrow-like retreat through the picture-space that is often at odds with the calmer perspective of the principal view. These distortions . . . impose a dramatic mode of vision upon the viewer, who is compelled to enact with the eye leaps and plunges, ascents, penetrations and progressions that plot for him the three-dimensional presence of the perceived landscape.”39 Such turbulent moments are usually grounded within the calmer description of a larger landscape, just as Trumbull’s kinetic effects are rooted in the narrative progression of a feature film. In American landscape painting, the work of Martin Johnson Heade also puts the spectator in motion, this time in an act of spatial penetration of the picture plane: “The lines of the juncture between the higher ground on the perimeter of the marsh and the edge of the marsh itself also expand to exaggerate and reinforce the visual experience of rushing into deep space. In no other American landscapes does spatial recession play such an important role or is it developed with such careful geometric precision” (Powell, 83). Trumbull’s effects are also grounded in a phenomenologically powerful spatial probing.40

Trumbull emphasizes the spectatorial relation to the effect/environment. To some degree, all special effects are so inscribed: the effect is designed to be seen, and frequently the narrative will pause to permit the audience to appreciate (or groove on) the technologies on display (what, in a somewhat different context, Laura Mulvey once referred to as “erotic contemplation”). However, Trumbull’s sequences are different. Where John Dykstra’s work in Star Wars or Firefox (1982) is all hyperkinesis and participatory action, Trumbull’s work is especially contemplative. If he desires to create effects “good enough to look at for a long period of time,” then his sequences have encouraged precisely this kind of activity.

Further, and regardless of the director involved, these scenes frequently
include an explicit and pronounced spectatorial position within the diegesis: witness the cutaways to an astronaut’s frozen features, Spielberg’s typically slack-jawed observers, the crew of the starship Enterprise, or the disembodied eye that holds the infernal city reflected in its gaze. Much of this is typical of cinematic science fiction, a genre that is almost defined by its incorporation of new technologies of vision. But, again, Dykstra’s work on Star Wars is not so inscribed: the passage of the first, impossibly enormous spaceship is witnessed by the audience, but there is no spectator within the diegesis (the same holds for the climactic explosion of the Death Star). The presence of the diegetic spectator stages an extended encounter with the sublime, rehearsing (and hyperbolizing) the filmic spectator’s own response.

In Star Trek: The Motion Picture, to take the most obvious example, the spectatorial function is taken by the crew of the U.S.S. Enterprise, which has been brought out of mothballs to confront an immensely powerful technorganic entity that is heading (as usual) for Earth. The visual centerpiece of the film (aside from the hilariously fetishized Enterprise itself) was the mysterious V’ger entity; essentially an old Voyager spacecraft with some loose screws. The V’ger model, as designed by Syd Mead (who would also work with Trumbull on Blade Runner) was sixty-eight feet in length and peppered with lamps, fiber optics, neon tubing, and laser lights, all augmented with additional animation effects and Dykstra’s computerized camera. V’ger is perhaps exemplary of the sublime object in its boundlessness (although one should note a blurred distinction here between sublimity and monotony). Trumbull’s unit developed a computerized multiplane system (Compsy) that provided complex movements through the ethereal, multi-layered space within V’ger as well as some beautiful streaked footage of the Enterprise flying through a “wormhole” in space. Although the film is poorly paced and plays like a high school version of 2001, the effects work is not without interest. The extended penetration of V’ger places the human within and against the alien landscape. In these shots of a touchingly diminutive Enterprise, the human is nearly lost, barely visible against V’ger’s dark monumentalism. There is, perhaps, a similarity here to the tiny figures that occupy the lower foreground of Church’s South American paintings—“insertions of culture into nature,” Barbara Novak calls them. Of course, V’ger is not natural but is possessed of the brutal force that one associates with nature: this is a distinction to which I shall return.

Through the prevalence of such temporally distended special effects sequences, science fiction clearly participates in a presentational mode of cine-
matic discourse. Audiences may use a diegetic human figure as a provisional guide through the immensities of alien space, but this character does not serve to defuse or anchor the spectator’s own phenomenological experience. The passage into the kinetic lights and amorphous shapes of the Stargate sequence in 2001, to take another example, is explicitly directed right at the viewer. Close-ups of David Poole, the astronaut, do not reintegrate us into a fictional (re-presentational) space; neither do they situate Dave as a psychologized subject meant to focus audience identification. Cutaways to human observers in Trumbull’s sequences reestablish scale and reemphasize the “otherness” of the sublime environment, but they do not mediate the experience through the psychology of characters who are, uniformly, stunned into a profound passivity. In their increasing magnification they suggest something of the “extraordinary intensity” of the close-up as celebrated by Jean Epstein. Fictive and theatrical spaces are collapsed, as diegetic and cinematic spectators are, in a metaphorical sense, united. (Michelson argues that 2001 is predicated on just such a confusion between astronaut and spectator. In other SF films, these tropes are often present but in less overt form.) The presence of diegetic spectators, then, here actually enhances the presentational aspect of the cinema while also evoking the sublime.

America (and beyond the infinite)

In the nineteenth century, America revealed its obsession with the relationship between nature and human power and human destiny in prose, paint, and politics. A rhetoric of progress mingled with the sense of a people chosen by God and history, privileged to engage with, and tame, a New World that still seemed to bear the fresh touch of its Creator. The vast reaches of the American West seemed to test the will of the nation’s new citizens, and the emerging technologies of industrial capitalism were extraordinarily suited to the colonization and economic exploitation of these territories. Alan Trachtenberg has written that “the American railroad seemed to create new spaces, new regions of comprehension and economic value, and finally to incorporate a prehistoric geological terrain into historical time” (this powerful spatiotemporal collapse echoes Buck-Morss’s contention that spatial movement analogized historical progress).

In an oft-quoted section of “Nature” (1836), Emerson—who also could be somewhat delirious about train travel—narrates a state of mind characteristic of the transcendental sublime: “Standing on the bare ground,—my head bathed by the blithe air and uplifted into infinite space—all mean egotism...
vanishes. I become a transparent eyeball; I am nothing; I see all; the currents of the Universal Being circulate through me; I am part or parcel of God. . . . In the wilderness, I find something more dear and connate than in streets or villages. In the tranquil landscape, and especially in the distant line of the horizon, man beholds somewhat as beautiful as his own nature.” Emerson’s debt to Kant is evident in his version of the sublime as exaltation and in his description of the ego’s dissolution, which is ultimately recuperated in the beauty of human nature.48 His “transparent eyeball” anticipates the infradiegetic but impossibly positioned spectators that populate Trumbull’s effects sequences, and it provides a strikingly direct gloss on Trumbull’s evident transcendentalist bias.

The landscape took on a centrality in American painting, which became “immersed in nature.”49 In the union of sublime aesthetics and transcendental philosophy, one critic has written that “the sublime experience was transformed into a new mode of landscape expression; the traditional sublime setting was augmented by the transcendental sublime sensibility, a sensibility that found its roots in man’s internal perception of time and space.”50 This sensibility found its clearest expression in the genre of luminist painting. Barbara Novak has defined luminism in relation to transcendentalist philosophy as an aesthetic that emphasized impersonal expression, horizontality, minute tonal gradations, intimate size, immobility, and silence (see color fig. 5). The luminist work is marked by a “calculated control”: an order is imposed on visible reality.51 Stroke is deemphasized because stroke implies the artist, paint as a medium rather than a transparent representation, and an ongoing temporality. And of course the luminist work is defined by its representation of light: a cool, hard, palpable light (not diffuse) spread across a glassy surface. “The linear edges of reality are pulled taut,” Novak writes, “strained almost to the point of breaking.”52

Luminism was not the only means of evoking the sublimity of the American landscape. The monumental paintings of such nineteenth-century figures as Copley, Cole, Church, Bierstadt, and others constructed a visual rhetoric of the sublime far removed from the solitude and silence of the luminists, although there were numerous shared concerns.53 “The landscape painter must astonish his audience by the immediacy of his effects,” Wilton writes.54 While much of this immediacy was achieved through the hyperbolized detail of the rendering, the scale of the works also meant to overwhelm the sensibility of the spectator. These representations of exotic landscapes in the American West or South America were too large and too detailed to be
“taken in” with a single glance; the spectator’s gaze had to be put in motion to assimilate the work. Furthermore, this especially exhibitionistic mode of representation was often exhibited like a fairground attraction. In its construction of a dynamic, kinetic gaze, as well as its mode of exhibition, the monumental landscape painting takes its place alongside such contemporaneous “phantasmagoria of progress” (Buck-Morss) as the diorama and magic lantern show.

The paintings of Frederick Church are particularly appropriate to consider alongside Trumbull’s effects. The astonishing, bold color experiments (special effects) that Church unleashed in depicting his twilight skies and volcanic eruptions were the result of new technologies in cadmium-based pigment production (see color figs. 6, 7). These effects were put in the service of atmospheric and cosmological phenomena: not just the sky but the sun and moon, a meteor, and the aurora borealis. One critic has pointed to the promise of revelation that underlies the dramatic scenography and monumental scale of Church’s later paintings.55 Another writes of “Twilight in the Wilderness” (1860) that “The painting defies simple categorization as a ‘luminist’ work of art, but there can be no doubt that the subject of the picture is, literally, American light, symbolic of the new world Apocalypse. It is a compelling work of art which combines two aspects of the sublime, the traditional interest in nature as object and the transcendental concern for nature as experience, through color, space, and silence.”56

The dual contexts of luminism and “great pictures” provide a further context for the Stargate sequence. The passage through the Stargate is a voyage “beyond the infinite,” a movement beyond anthropocentric experience and understanding. Using slitscan technologies, Trumbull created a set of images that were little more than organized patterns of light—the very stuff of cinema. Light, with its implications of revelation and blinding power, is also the very stuff of the sublime.

Light is . . . the alchemistic medium by which the landscape artist turns matter into spirit. . . . In American art especially, light has often been used in conjunction with water to assist spiritual transformation, either dissolving form, as in some of Church’s large South American pieces, or rendering it crystalline, as in the works of Lane. In the former, light is more closely attached to what we generally call atmosphere, and has a diffusive, vaporous quality. In the latter, light itself partakes of the hard shiny substance of glass. In all instances, the spirituality of light signals
the newly Christianized sublime. In the large paintings by Church and Bierstadt light moves, consumes, agitates and drowns. Its ecstasy approaches transcendence, but its activity is an impediment to consummating a complete unity with Godhead.\textsuperscript{57}

In 2001, light’s transformative power illustrates, embodies, and enacts precisely the supercession of the human (and the human’s rebirth as a superhuman, a Star Child).

The Sturm und Drang of the Stargate sequence is clearly different from the luminism of Fitz Hugh Lane, but I would argue that the sequence participates in both of these tropologies of light, moving from the diffusion and mutability of the first section to the color-tinted, crystalline silence of the landscapes at the end. Light “moves, consumes, agitates and drowns,” but there is nevertheless a stillness that subtends the sequence’s last minutes. Here the landscape becomes more concrete but commensurately more barren, and sky and sea blend as the horizon disappears. The penetrating camera movements persist but are now overwhelmed by the quietude of these enormous and empty worlds.\textsuperscript{58}

John Wilmerding has written about Church in terms that seem just as applicable to the Stargate sequence: “while Church’s handling of composition and paint only peripherally borders on luminism,” he nevertheless notes “the sense of vast stillness verging on an imminent crescendo of light and sound.”\textsuperscript{59} The “imminent crescendo” directs us to the function of sound here and in other sequences. While most are accompanied by tumultuously loud sound effects or scoring, language is, in every instance, absent. Again there is a conflation of two tropes found in the American landscape sublime: the evocation of Apocalypse (“sublimity overwhelms with a deafening roar”) and the quietude of luminism (“the spectator is brought into a wordless dialogue with nature”).\textsuperscript{60}

Technological Encounters

Mark Seltzer has astutely proposed that “Nothing typifies the American sense of identity more than the love of nature (nature’s nation) except perhaps the love of technology (made in America).”\textsuperscript{61} To the American paradigm that opposed nature’s might and human will, American painters, poets, essayists, and novelists added the newly unleashed forces of technology to produce what Leo Marx has labeled “the rhetoric of the technological sublime.”\textsuperscript{62} The anxiety surrounding the new prominence of technology has received much
attention since the Industrial Revolution, and its representation has hardly been limited to science fiction.

In nineteenth-century America, technological anxiety was transformed by a sense of destiny. “Above all, the rhetoric conveys that sense of unlimited possibility which seizes the American imagination at this remarkable juncture.” This rhetoric of unlimited possibility does not, however, mask some residual anxieties, as a surfeit of landscapes featuring decimated woodlands and smoke-obscured vistas demonstrates: “The new significance of nature and the development of landscape painting coincided paradoxically with the relentless destruction of the wilderness in the early nineteenth century.” As Rosalind Williams notes in her study of subterranean environments in the nineteenth century, “Technological blight promotes technological fantasy.” The presence of the sublime in science fiction, a deeply American genre, implies that our fantasies of superiority emerge from our ambivalence regarding technological power rather than nature’s might (as Kant originally had it). The might of technology, supposedly our own creation, is mastered through a powerful display that acknowledges anxiety but recontains it within the field of spectatorial power.

What Buck-Morss refers to as the “phantasmagoria of progress” (panoramas, world’s fairs, and the like) are visual displays that concretized metaphors of progress to provide some means of contending with the complexity of what Walter Benjamin called a “new nature.” By this, she contends that Benjamin meant not just industrial technology but the entire world of matter (including human beings) as it has been transformed by that technology. There have been, then, two epochs of nature. The first evolved slowly over millions of years; the second, our own, began with the industrial revolution, and changes its face daily. This new nature, its powers still unknown, can appear ominous and terrifying to the first generations confronting it, given “the very primitive form of the ideas of these generations” who have yet to learn to master, not this nature itself, but humanity’s relationship to it.

The sublime is thus figured in these spectacles as an idealist response to significant and continuing alterations in lived experience. Hence the sustained reappearance of the sublime in popular, technologically based entertainments. Then and now, the language of consumption and the display of spectacle grounds the spectator/visitor and hides the awful truth that an en-
vironment that we made has moved beyond our ability to control and cognize it: hence the experience of technology as both alien and enveloping in Trumbull’s effects sequences. The simultaneous fascination with and fear of technology’s beauty, majesty, and power reveal a necessary ambivalence, and through this ambivalence the sublime becomes a crucial tool of cognitive mapping.

Technology has come to comprise an environment, a second nature “with its own attendant pleasures and hazards.” Nature is displaced by technology in *2001, CE3K,* and *Silent Running,* and this displacement is complete in *Star Trek* and *Blade Runner.* Buck-Morss notes that the new space of the Crystal Palace, a space permitted by new technologies of glass and steel architecture, “blended together old nature and new nature—palms as well as pumps and pistons.” Technology permits a containment of nature in the Crystal Palace and the crystalline domes of *Silent Running* (the garden in the machine perhaps). But the appearance of nature has become little more than nostalgia for a pastoral ideal. If the rhetoric of the technological sublime in nineteenth-century letters was characterized by the appearance of “the machine in the garden,” then, at the end of the twentieth century, we would have to note that the machine is the garden.

The significance of this shift was discussed by Thomas Weiskel, who noted that the sublime “must now be abridged, reduced, and parodied as the grotesque, somehow hedged with irony to assure us we are not imaginative ado-
lescents.” He adds that, the infinite spaces of nature or the cosmos “are no longer astonishing; still less do they terrify.”

In the absence of nature’s grandeur, then, perhaps technology constitutes a new ground for human definition and for our obsession with infinite power and possibility.

Theorists of postmodernism emphasized the moment’s technocultural underpinnings and the rise of invisible networks and decentered fields of power that were seen to characterize electronic and nuclear technologies. The aesthetics of John Pfahl’s series of photographs (from the early 1980s) of power plants in their “natural” settings are troublingly, shockingly ambivalent: nuclear (and other) technology becomes truly awe-ful, somehow simultaneously coexisting with nature, dominated by nature, and dominating over all. The startling rise of mediating electronic technologies has precipitated a crisis of visibility and control. If cultural power now seems to have passed beyond the scales of human activity and perception, then culture has responded by producing a set of visualizations—or allegorizations—of the new “spaces” of technological activity. Most SF remains unflaggingly conservative in its language and iconography, but it still remains the genre most committed to narrating the ambiguities that mark the technological contours of contemporary culture.

The ambivalent relationship between technology and human definition is evident in the mothership sequence in Close Encounters of the Third Kind. First, one must note the sky in the film’s night scenes—abundant stars allude to the infinite reaches of space: as we know, “theorists of the sublime attached much importance to the associational significance of the sky, and usually placed the night sky full of stars at the head of their list of its sublimities.”

For landscape painters, clouds also afford the opportunity to depict “the storm cloud, with its obvious propensities for sublimity,” and CE3K provides strikingly exaggerated clouds, substantial yet strangely liquid and far more animated than the dumbfounded characters themselves (see color fig. 1).

The star-filled skies presage the appearance of the mothership. The ship’s design was inspired, according to Spielberg, by the sight of an oil refinery—the sublime is thus constituted around an anxious technological object (compare this to Pfahl’s contemporaneous reactor shots). We might additionally note how nature, in the form of Devil’s Tower, dwarfs the humans who nestle against it until the mothership, in its turn, dwarfs nature (see color fig. 1). The complex relationship between nature and technology is also manifested in the first appearance of the mothership, which emerges from behind the mountain, that is, from the earth, instead of the improbably starry sky. The
scale of the ship further indicates the subjugation of nature by the power of
technology—Spielberg wanted it to be “so big it would blot out the stars.”
Finally, while the ship is defined by brilliant and beautiful light, it is also
distinguished by the black shadows that swallow the observers: for all its beauty,
the mothership is something of a dark, visually negative force. Burke noted
the same dialectic between light and its absence in Milton’s descriptions of
God: “Dark with excessive light thy skirts appear.” The subsequent communica-
tion between human and alien happens via music and color, continuing
the avoidance of linguistic rationalism and so remaining firmly within the
experience of the sublime. In Trumbull’s films, as a rule the effects sequences
unfold, if not in a reflective silence, then at least in the absence of language.
(“The eye is not the only organ of sensation by which a sublime passion may
be produced,” Burke wrote. “Sounds have a great power in these as in most
other passions. I do not mean words.”) The tension that obtains between
visibility and obscurity, the explosions of vivid chromatics and sound, the
evacuation of language and narrative—all this speaks to the powers of the
human sensorium even as it also seems to diminish and displace the human.

Artificial Infinities

Artificial infinities abound in SF: generation ships, outer space, cyberspace,
boundless cities, cosmic time, galactic empires, 2001’s mysterious monolith,
the endless underground cities of the Krel in Forbidden Planet. Rosalind Wil-
liams has written about the craze for artificial environments that punctuated
the fancies of the nineteenth century and notes that these industrial fantasies
have continued unabated into the present era “in the form of retreats into
personal or collective environments of consumption—the artificial paradises
of the shopping mall or of the media room, for example. This is a journey
further inward, a retreat from technology into technology.”

Trumbull’s accomplishment is the articulation of the tension between anx-
iety and identification as we strain to assimilate the imagined infinities of
technological power. Such tension is exemplified in the opening sequences
of Silent Running, as a lush, natural forest is slowly revealed to exist within the
hypertecnologized spaces of a vast spacecraft—nature is now enclosed and
redefined by the experience of the technological, as “man’s traces” become
increasingly more evident until they finally overwhelm. The ending is even
more complex: the drones are left to care forever for the forests as they drift
through deep space. The spaceship explodes in a, well, sublime pyrotechnical
display (a new sun). The drones tend to the forest in a series of interior shots.
Then the drifting domed biosphere is seen in its entirety, slowly receding in the visual field. Culture (the ship) is superseded by nature (the pure light of the explosion); then the natural (forest) is contained by the technological (dome), which in its turn is contained by the cosmological (space).

The archetype of the artificial environment is, of course, the industrial city, revisited and hyperbolized in Blade Runner. The oil refinery motif of CE3K has become more pronounced, as the entire city is now explicitly figured as an anxious technological object. There is no more nature, only its simulacra in the form of synthetic animals and humans, and no escape from the encompassing technological landscape. Williams argues that “in the late twentieth century, our technologies less and less resemble tools—discrete objects that can be considered separately from their surroundings—and more and more resemble systems that are intertwined with global systems, sometimes on a global scale.” In Blade Runner, as the hovercar glides above and through the city, we indeed “take a proud flight” and attain a position of conceptual mastery over the complex and superbly synchronized urban scene. The film provides two fields of vision: there is the physical reality beyond the windshield and a graphic display of what must be an electronic traffic corridor along which the car glides. Each view explains the other as urban space and information space map each other to produce an intertwined global system.

The phantasmagoria of progress involves a sustained immersion within an artificial, technological environment that suggests technology’s own ability to incorporate what it has generally excluded. If the disappearance of nature is seen as a consequence of a burgeoning technosphere, then utopian technologies will incorporate Arcadia (Crystal Palace, Futurama, Silent Running). If technology is seen as a dehumanizing force that leads to an impoverishment of spirit, then utopian technologies will permit a new emergence of spirituality and cosmic connectedness (V’ger, virtual reality). It might even be argued that cinema is the very paradigm of an artificial, technological environment that has incorporated utopian fantasies of nature, kinetic power, spiritual truth, and human connection.

Conclusion

Trumbull’s effects are not the sole staging ground for sublime experience in electronic technoculture—it is evident that the rhetoric of the sublime has made a somewhat massive return. Baudrillard’s kinetic cyberblitz, the technomysticism of Mondo 2000, the transcendent possibilities envisioned in Gibson’s cyberspace trilogy, a new attention to its rhetoric within philoso-
phy and the academy, and millennial fantasies of various stripes all point to the renewed relevance of the sublime.

The reasons for its return are not difficult to fathom. The sublime came to prominence in response to the increasing secular rationalization of modern life and was later co-opted as a mode of accommodation to the power of industrial technology. The late twentieth century presented a historically analogous time of technological development and expansion, and so it was hardly surprising that this rhetoric should recur to ground an understanding of an ostensibly new phenomenon. Just as Gibson’s cyberspace recast the new “terrain” of digital information processing in the familiar terms of a sprawling yet concentrated American urbanism, the sublime becomes a means of looking backward in order to recognize what’s up ahead.

But there’s something else going on. The sublime not only points back toward a historical past; it also holds out the promise for self-fulfillment and technological transcendence in an imaginable near future. Under the terms of the sublime, technology is divorced from its sociological, rationalist underpinnings to become a technology without technocracy, a technology beyond the scope of human control. There is thus an inevitability to the fact of technological progress, and thus accommodation becomes the one valid response. The sublime presents an accommodation that is both surrender and transcendence, a loss of self that only leads—back? forward?—to a renewed and newly strengthened experience of self.

Thomas Weiskel’s revisionist approach to the Romantic sublime understands this characteristic ambivalence as a repressed content, namely, the playing through of an oedipal scenario. On some level, then, the return of the sublime represents a throwback to fantasies of masculinist dominance, and to this interpretation Trumbull’s endless penetrations into vast unknown regions would seem to lend themselves. “I think we may infer,” Weiskel writes, “that the ‘imminent danger’ [Burke] to which we are exposed and from which we are then released in the sublime moment is an unconscious fantasy of parricide.”79 There are elements of this scenario in each of Trumbull’s sequences as the human—character and cinematic spectator—is first overwhelmed before being granted some measure of cognitive control. The destabilizing function is then subverted and recontained by the narratives of some of these films: Spielberg’s parricidal anxiety becomes especially evident when Close Encounter’s omnipotent aliens emerge from the “mothership” resembling the doe-eyed third world waifs of a Margaret Keane painting. Human superiority is (re)assured in relation to these diminutive and neutered figures. Star Trek’s
new captain literally mates with the female manifestation of V'ger in a transcendent, transspecies union that nevertheless somehow remains comfortably heterosexual.

The sublime’s rhetoric of confrontation and mastery smacks of phallocentrism. While the landscape sublime’s predilection for the “virgin landscapes” of South America and the North American West aligns it all too neatly with the colonialist usurpation that called itself manifest destiny. Its mystical overtones no longer jibe with a secularist culture that remains deeply suspicious of spiritual value. Despite these condemnations, however, any number of theorists and artists have attempted to “rescue” the sublime, finding in its confrontational power an ethos of exploration and self-discovery that meshes with my sense of Trumbull’s effects work.

Patricia Yaeger has specifically challenged the masculinist modalities of sublime rhetoric. Despite its status as “old-fashioned, outmoded [and] concerned with self-centered imperialism,” she contends that because “it is a literary genre or moment concerned with empowerment, transport, and the self’s strong sense of authority, the sublime is a genre the woman writer needs.” The sublime preserves a sense of the other, or “alienness,” even in the face of cognitive assimilation, and it can encompass the intimate as well as the grandiose. The other need not be “obliterated or repressed” but can be preserved in a newly dialectical self-other relation. Citing Weiskel and Neil Hertz, Yaeger argues that one can locate a desire to merge with the other in the sublime moment, and thus the oedipal struggle for control may be a feint that masks more primordial (and less gendered) desires. “Subject and object have entered into an intersubjective dialectic of grandeur in which the poet refuses to annex what is alien, but revels, for a brief poetic moment, in a pre-oedipal longing for otherness and ecstasy.”

What she terms the “feminine sublime” thus addresses the crucial problem of how to produce “a model of the self that permits both a saving maintenance of ego-boundaries and an exploration of the pleasures of intersubjectivity.”

In Agon, Harold Bloom connects sublimity to the questioning traditions of gnostic thought. Like the sublime, “Gnosis is more than or other than rational,” Bloom writes. “And yet this need not be considered either a mystical or a visionary experience, since in Gnosis the knowledge is neither of eternity nor of this world seen with more spiritual intensity. The knowledge is of oneself.” The confrontation leads back to a confrontation with a self that is neither fixed nor given, but comes into being through the act of interrogation. Bloom refers to gnosia as “performative knowledge,” a knowledge that
can only emerge via experience. Further, the experience of “the Sublime moment proper” opens a “gap of negation or disjunctive generation of meaning.” The sublime thus depends on a disruption followed by a performative adaptation that yields a dynamic knowledge of a dialectically constituted self. Yaeger and Bloom might be approaching the sublime from very different directions, but for both the trope offers something more than phallocentric reassurance.

Bloom has devoted some attention to the sublimity of science fiction and fantasy: “What promises to be the least anxious of literary modes becomes much the most anxious, and this anxiety specifically relates to anterior powers.” Again, ambivalence—the eddies between the polarities of bondage and freedom—structure the experience of the text. The sublime enacts an ambivalent relation to authority, while the technological sublime enacts a conflict between a humanity ever more tenuously linked to nature while ever more imbricated with the “anterior powers” of technocultural structures. If a positive value can be assigned to the return of the sublime in SF cinema, then it lies in a rhetoric of scopic destabilization that yields a new subject position with regard to the source of technological anxiety. Unlike Star Trek, 2001 does not “explain” its ultimate trip and so denies its viewers the firm ground provided by cognitive comprehensibility. I would argue that in 2001 Kubrick and Trumbull have emphasized and foregrounded the phenomenological instability that has always been more or less present in science fiction cinema. If SF too often seems anchored (or mired) in rationalist cant, then the “performative knowledge” provided by inventive special effects moves the spectator beyond the rational to a space beyond the infinite. Despite the recontainments and reassurances that are the function of these films’ narratives, scopic instability and cognitive accommodation remain fundamental to, and implicit in, our experience of the works.

Barbara Novak describes another moment when advanced technology was employed to (re)present advanced technology: “The most exciting visual encounters with the railroad were those that took place through the mediation of yet another machine—the camera. The photographer, having already accommodated one machine within his artistic perspective, had much less difficulty than painters in accommodating still another.” As with the privileged views provided by panoramas, elevated views, photographs, and the cinematograph, special effects encourage engagement with a reality that seems to defy engagement. Through the “magic” of special effects, a contemporary rhetoric of technological sublimity is produced by technological
means. Cinematic affect is rooted in cinematic technology, but effects emphasize those underpinnings; if cinema is rooted in illusions of light, for example, then optical effects endow light with an overwhelming physicality. Science fiction cinema uses state of the art effects to “accommodate still another” realm of machinery. The effects put machinery in motion, offering technology up to dynamic contemplation (and in the ridefilm theaters machinery in motion puts the spectator in motion as perception is now supplemented by bodily experience).

However, one must acknowledge (at least briefly) the recurrent fantasies of sexuality and power at work within many of these texts. The mythology of the frontier is clearly evoked in narrative, image, and technique, as a penetration of sublimely mysterious and fluid interior spaces becomes the precondition for masculinist mastery (one might refer to this as regeneration through cyberspace). But this overdetermined phallocentric thrust should not blind us to the overwhelming need to map ourselves into the anxious spaces of first industrial and now electronic culture. Cognition, one hopes, does not necessarily imply domination, and, while the science fiction narrative often speaks to militaristic male fantasies, the spectator’s immersion in a technologized environment presented by the wide-screen special effects sequence retains phenomenological validity and importance. To invoke a transcendentalist, Thoreau’s admiration of the Native American was grounded in their relation to nature: “Perception, rather than domination or calculation, is his forte.”

Relations among perception, cognition, knowledge, and power are neither simple nor, I suspect, absolute, and the phenomenological status of these phantasmagorias of progress merits an attention that moves beyond simply classifying such spectacles as masculinist, colonialist, or consumerist.

But we should remember Tom Gunning’s argument that “effects are tamed attractions.” The reflexivity of special effects (a technology of technology, a cinema of cinema) indeed encourages some sense of identification and mastery. The effect is possessed of its own hypnotic grandeur: it is designed to inspire awe, but always within a reassuring sense of play (here I’ll simply note the number of fanboy magazines devoted to effects extravaganzas). Rapture replaces terror in most of these artificial infinities. There is, ultimately, a denial of human limitations—a denial of death, really—that connects to science fiction’s overall denial of sexuality, mortality, and fleshly bodies (what Vivian Sobchack has described as “the virginity of astronauts”).

Special effects, in the cinema and in their extension to virtual reality systems, are but the latest in a series of popular cultural entertainments that em-

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phasize what Stan Brakhage has referred to as the “adventure of perception.” Despite their emphasis on perceptual mastery and the magisterial gaze, these recreations significantly balanced sensory pleasure and cognitive play. The effects sequences of the science fiction cinema are significant for what they say, as well as for what they do not say, about our complicated relationship to complex technologies at this precarious historical moment. This ambivalence permeates the culture of visuality. As Miriam Hansen wrote with regard to the development of cinema’s moving camera, “The mobilization of the gaze promises nothing less than the mobilization of the self, the transformation of seemingly fixed positions of social identity. This mobilization, however, is promise and delusion in one.”


Grant Morrison and Richard Case, “Crawling from the Wreckage,” *Doom Patrol* #19 (DC Comics, February 1989). The first few issues of this extraordinary title have been collected in Grant Morrison and Richard Case, *Doom Patrol: Crawling from the Wreckage* (New York: DC Comics, 1992).

Ibid., 99.

The Brotherhood of Dada is featured in *Doom Patrol* #26 (September 1989) through #28 (January 1990). Flex Mentallo and Danny the Street are both introduced in #35 (August 1990), and the initial battle against The Men from N.O.W.H.E.R.E. occurs in #35–36 (August–September 1990). All issues published by DC Comics.

McEnery, 98. For detailed, annotated plot summaries, see Doom Patrol Online, <http://www.rpi.edu/~bulloj/Doom_Patrol/index.html>.

Later Alan Moore (of *Watchmen* fame) and a number of artists produced a more sustained return of those halcyon days of Marvel in their 1963 series, published by Image. The pastiche is so lovingly accurate that some readers, including myself, felt an overwhelming sense that this was how comics were meant to be. The initial 1963 series ended with the members of the Tomorrow Syndicate suddenly finding themselves in the far more brutal and textured universe of Image Comics. The homages to the comics of Lee and Kirby have continued, most evidently in *The World’s Greatest Comic Magazine* (Erik Larsen and various artists, Marvel Comics, 2000–2001).

My terms are derived from the excellent introductory chapter of Barbara Stafford’s *Body Criticism: Imaging the Unseen in Enlightenment Art and Medicine* (Cambridge: MIT Press, 1991), 5.

Jack Kirby, the creator of the Silver Surfer and so many other heroes, passed away in early February 1994, as I was revising this essay for its initial publication. It is to his memory and his accomplishments that this chapter is dedicated.

4  The Artificial Infinite: On Special Effects and the Sublime


An attempt to situate authorship around the visual designers of the film is progressive, in that it displaces the director as the sole “author” of a cinematic text, but it retains a reliance on the continuity of a single creator as a locus of textual meaning. While this latter position has been roundly criticized in recent years as outmoded in its assumption of a coherent subjectivity, it has produced an undeniably important body of textual interpretation. Authorship remains, I think, a valuable critical concept, although it is a tool to be wielded with some caution.

Such ontological questions are further emphasized when the technologies are alien in origin.

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4  Ibid., 9.

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Ibid., 24.
Crary, 136.
Ibid., 14.
Ibid., 19.
Ibid., 103.
Ibid., 44.
All of this is elaborated in Wolfgang Schivelbusch, *The Railway Journey: The Industrialization of Time and Space in the Nineteenth Century* (Berkeley: University of California Press, 1986).
Crary, 24.
Ibid., 7.
Ibid., xxii, 51.
Ibid., 32.
Ibid., 3.
Hansen, 83.
Gunning, 57.
This is not really the place to review the entire, complex history of the sublime. A very useful review is provided by Raimonda Modiano in *Coleridge and the Concept of Nature* (Tallahassee: Florida State University Press, 1985), 101–14.
Ibid., 120.
*Brainstorm* (1983), directed by Trumbull, plays to the religious thematics of Burke’s sublime.

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Anticipating the advent of virtual reality technologies, the film is predicated on a device that records perceptions and feelings for playback. At the film’s climax, a character jacks into the recorded death experience of another, and the effects are replete with references to after-death experiences and multitudes of Blakean angels. *Brainstorm* explicitly stages a confrontation with the terror of death that at once exalts and diminishes and offers a (somewhat romantic) portrait of greater cosmic connectedness.


Wilton, 30.

Ibid.

The detailed gaze of the cinematic apparatus can participate in a similar process of disclosure. In his extended evocation of a close-up, for example, Epstein recasts the physiognomic in the terms of the geologic—the human face becomes a sublime landscape, susceptible to endless contemplation. “Now,” he writes, “the tragedy is anatomical.” Jean Epstein, “Magnification and Other Writings” *October* 3 (1976): 9. Intimate yet distant; monumental yet minute; hypervisible yet still somehow obscure—these are the terms of the sublime and of a cinema constituted as a special effect.

Wilton argues that this was a careful strategy of Turner’s and finds that a significant progression in his series of marine paintings (1801–10) “is one of gradually increasing involvement of the spectator in the scenes depicted” (46).

This remark was made in an interview with Don Shay presented on the Criterion laser disc of *CE3K*.

Wilton, 79, my emphasis.

To concentrate solely on the phallic implications of this movement of penetration seems to me unfairly and uninterestingly reductive (except, I’ll admit, in the case of *Star Trek*). Annette Michelson, for example, has linked this cinematic trope to the epistemological project of works by Kubrick, Michael Snow, and Claude Lanzmann, among others.

Further, spectatorship is especially pronounced in the films of Steven Spielberg, whose characters spend much of their time staring upward (or downward in the case of *Jaws*).


The film features, among other things, hyperreal effects work; a mysterious cosmic object; an extended—six-minute—docking sequence; spacewalking astronauts; and an exaggerated, willfully sublime, transcendent climax that yields an image of rebirth (the *Enterprise* emerges from a luminous, all-consuming glow above the blue arc of Earth). *Star Trek*, however, manages to miss every irony of Kubrick’s film, and this is exemplified by the docking sequence, which must be the most extended scene of phallic worship in contemporary, nonpornographic cinema (as Vivian Sobchack has also noted).


For some viewers, the *Star Trek* action figures may be an exception.

Note the extended sequences during which amplified breathing dominates the soundtrack, an auditory effect that often has a regulatory effect on the spectator’s own respiration.

Ralph Waldo Emerson, “Nature,” Selected Essays, Lectures, and Poems, Edited by Robert D. Richardson Jr. (NY: Bantam Books, 1990), 18–19. The connection forged between the Western landscape and American transcendentalism might help explain an odd portion of the Stargate sequence, as the cinephilic spectator suddenly recognizes the spires and pinnacles of Monument Valley. While I assumed that this was simply an obvious and rather pointless homage to John Ford, perhaps there is another explanation. Referring to the surfeit of representations of the American West in the nineteenth century, Novak has written: “For the vast expansive prairies, the immense extensions of space, the awesome mountains, the forbidding and majestic scale that characterized the varied landscape of the West could only then, as now, be called ‘sublime’” (149). It is at least possible that Clarke and Kubrick’s tale of a lone pioneer traveling through the “forbidding and majestic landscapes” that lie “beyond the infinite” might make some reference to these aesthetic forebears.


Novak, 23.

Ibid., 27.

These canvasses were indeed large-scale works (Church’s “The Heart of the Andes” [1859] measured about 66 × 120 inches), and Novak has noted that a consideration of these works must involve “a consideration of art as spectacle.” She further notes that “this art had a clear twentieth-century heir in the film, which rehearsed many of the nineteenth century’s concerns” (19).

Wilton, 39, my emphasis.


Powell, 90.

Novak, 41–42.

It is also true that luminism produces a sense of distance from the carefully aestheticized landscape that differs from the immersion I am describing; nevertheless, the similarity abides in their suspended temporalities.

Novak, 37, 29. One final aspect of the transcendentalist sublime needs consideration—the rigorous assertion of self. Bryan Wolf has produced a highly modernist reading of the sublime in Romantic Re-vision: Culture and Consciousness in Nineteenth-Century American Painting and Literature (Chicago: University of Chicago Press, 1982): “The sublime painting tells but a single tale. It repeats on each canvas the history of its struggle with older systems of meaning, which it perceives as exclusionary and prohibitive.” These paintings are “records of their own composition”; their strategies involve “filling the silence of nonnarrative vistas with the clamor of self-discovery” (178). The figures of woodcutters that pepper Thomas Cole’s canvases are, for Wolf, metaphors for the romantic painter, reshaping the contours of the natural for his own, human, ends (182). Trumbull’s work is similarly self-referential. The special effect is inherently reflexive, especially when the narrative pauses to permit its display, but in the two films Trumbull has directed the position of the filmmaker-artist is directly alluded to. In Silent Running, the forests of a polluted Earth have been moved to giant spacecraft, and...
an astronaut (played with neurotic zeal by Bruce Dern) is positioned as the caretaker (or director) of nature. His assistants are three robot drones, each with a built-in video camera. It’s easy to consider the drones as sensitive, anthropomorphized cameras, carefully responsive to their director’s needs and responsibilities. *Brainstorm*’s sensory-recording apparatus is co-opted by the military (surprise!), which wants to use it for the usual evil purposes. A fantasy of the ultimate effects technology—and its heroic inventors—turns into a nightmare of bottom-line psychic exploitation.

63 Ibid., 206.
64 Novak, 4.
66 Buck-Morss, 70, my emphasis.
67 Williams, 140.
68 Buck-Morss, 83–85.
69 This trajectory is completed in the cyberspace of William Gibson’s novel *Neuromancer*.
71 “His current projects, like *Smoke*, carry the implications of these hazards farther, as even in the midst of a gorgeous abstraction of smoke and sky the viewer remembers that chemical pollution from industrial plants poses an unremitting, ongoing health threat that cannot and should not be ignored. Pfahl does not ask the viewer to indulge in mere passive contemplation, even though it must be admitted that the unbridled beauty of his landscapes is a temptation. Pfahl asks that we think” (Estelle Jussim, “Passionate Observer: The Art of John Pfahl,” in *A Distanced Land: The Photographs of John Pfahl*, edited by Cheryl Brutvan [Albuquerque: University of New Mexico Press, 1990], 25).
72 Wilton, 101.
73 Novak, 97.
74 Burke, 149–50.
75 Williams, 185.
76 Novak, 157.
77 Williams, 1.
79 Weiskel, 92.
81 Ibid., 205.
83 Ibid., 238.
5 The Ultimate Trip: Special Effects and Kaleidoscopic Perception


2 Ibid., 130.


4 Ibid.

5 Stafford, 73.

6 Ibid., xxvii.


9 Ibid., 15.

10 Ibid., 17.


13 Ibid., 113–14.

14 This tendency continues, more or less unabated, into the late-twentieth-century rhetorics surrounding computer technologies, virtual reality, and raves.

15 Walter Benjamin saw them as a quasi-religious site of commodity fetishism: “They opened up a phantasmasia into which people entered to be distracted” (“Paris: Capital of the Nineteenth Century,” in *Reflections: Essays, Aphorisms, Autobiographical Writings*, translated by Edmund Jephcott, edited by Peter Diemetz (New York: Shocken, 1986), 152.)