



Vision and Leadership

The View from Science Fiction

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Abstract

This article utilizes two works of science fiction to examine the moral implications of pursuing great visions, Mary Shelley's *Frankenstein* and Arthur C. Clarke's *2001: A Space Odyssey*. Fiction writers often deal creatively with the darker side of human behavior, a perspective that social science researchers do not always explore. Both books offer insights into the way visions arise and the ethics of pursuing visions whose full consequences are not known.

The ability to imagine is the largest part of what you call intelligence. You think the ability to imagine is merely a useful step on the way to solving a problem or making something happen. But imagining it is what makes it happen.

—Michael Crichton, *Sphere*

In one of his many science fiction novels, Michael Crichton describes a group of scientists who investigate what appears to be an alien spaceship sitting at the bottom of the Pacific Ocean. Inside the spaceship is a sphere. The scientists approach the object, apprehensive about the dangers that may follow. Monsters appear. The terrible beings are not creatures from outer space, however. They are creations from the scientists' minds. The sphere is a machine designed to read the minds of the people who approach it and transform their imaginings into reality. In this book, Michael Crichton presents imagination as more than a step in the larger process of "making something happen" (1987, 68). Simply by visualizing their fears, given the mechanics of the novel, the scientists make monsters appear.

Defined as the act of anticipating circumstances that may come to be, vision is an important element in organizational leadership. It may be the principal force behind it. In Crichton's novel, change occurs as soon as the characters begin to imagine it. In large organizations, vision involves more. The mental act of creating a vision—what some call imagination—is only the first step in the process. The second step, as writers like John Kotter have observed, requires "some implicit or explicit commentary on why people should strive to create that future" (1996, 68). Effective leaders

do more than articulate visions. They install their visions in the overall institutional culture, or what Peter Vaill calls “the organization’s human meaning and value” (1998, 64). To do this, leaders often link their visions to the values people prize and provide specific incentives for others to move beyond personal self-interest and commit themselves to the dream (Javidan and Waldman 2003). In this sense, every vision is created twice—once in the mind of its sponsor and again in the minds of the people who carry it out.

The currently fashionable theory of transformational leadership, which influences much of the New Public Management, encourages public servants to articulate visions that can transform their organizations (Osborne and Gaebler 1992; Light 1997). Keeley (1995) and others (Gronn 1995) observe that this process lends itself to ethical abuse, for the process of articulating and implementing visions creates opportunities for promulgators to manipulate followers and abuse authority. In his seminal work on the ethics of transformation leadership, Bass (1997) lists the means by which the behavior of transformational or entrepreneurial leaders becomes unethical. He includes situations in which leaders avoid the checks and balances of countervailing interests, discourage organizational learning among followers, encourage followers to set aside valid self-interests, and practice what he calls “amoral puffery” or “impression management.” To be ethical, Bass insists, transformational leaders promoting visions need to develop a climate of trust, authenticity, sensitivity, and fairness as seen from many points of view.

This article takes Bass’s analysis one step further. Using works of fiction, it suggests that transformational leaders pursuing visions create the opportunity for ethical transgressions if, as is usually the case, the full range of consequences arising from their visions is not known. In such situations, promulgators of visions lead others toward a future that no one fully understands.

By the nature of their trade, science fiction writers deal with future realms and circumstances. Having created alternative futures, science fiction writers explore the reasons why people might be motivated to go there and the results they might expect. Like all creators of works of imagination, science fiction writers have a natural affinity for exploring the psychological makeup of their characters and the forces that inspire them (Kroll 1965; Waldo 1968).

The writings of Mary Shelley and Arthur C. Clarke provide a nice counterpoint to the generally rosy treatment of the pursuit of visions in the literature on management. Readers of science fiction gain an appreciation for the messiness that inevitably accompanies vision, imagination, and change. Many science fiction writers, including Clarke, have a positive view of technological change. They would like to believe that new technologies, on the whole, improve the human condition. Others, like Shelley, are skeptical. In common, however, they share the view that visionary change inspiring the pursuit of new technologies occurs in such an episodic manner as to lead people to places they did not intend to go. The main characters of such writers often lack a clear understanding of how to achieve their visions, the costs involved, and the possible outcome. This is a quite natural view in the context of fiction writing, which depends upon plot twists and surprises to hold the reader’s attention.

Works of fiction also offer insights into the origin of visions. In motivating people to contemplate new futures, visionaries often appeal to values taken from the past. In a counterintuitive manner, they construct their futures upon a foundation of memo-

ries. The tendency to motivate followers by appealing to nostalgic beliefs appears in both fiction and real life.

By attaching the future to poorly filtered memories of past events, visionaries increase the probability that such efforts will lead to unforeseen places. The future is rarely what people expect it to be, even less so when imagined through the image of a romantically reconstructed past. The main character in Shelley's story seeks to accomplish the ancient vision of resurrection, a seemingly noble vision. He does so, however, without the most basic knowledge of what such an achievement would entail. The results, as the story evolves, are disastrous. In their treatment of change, both novelists reinforce the notion that the process of vision-making raises important ethical concerns. The two works lift the implications beyond conventional concerns about power and manipulation to the ethical obligations that leaders incur when they promote visions for which the full range of consequences cannot be known.

Young Frankenstein

Eighteen-year-old Mary Shelley began the first draft of *Frankenstein* during an unusually soggy vacation in Switzerland in the summer of 1816. Three principal visions propel the novel.

The first is Shelley's remarkable anticipation of the science that provides the setting for the story. The novel anticipates organ transplants and a good deal of the science of electricity. The creature, whom Shelley never names, is produced by transplanting various organs—liver, kidneys, lungs, heart—pretty much the whole body. The organs are restored to life through a form of electrical shock, anticipating to a large degree the manner in which modern physicians resuscitate heart patients using automatic external defibrillators.

Second, there is Victor Frankenstein's motivation for assembling the creature. This is young Frankenstein's vision. As a college student setting out to assemble a living being, Frankenstein is motivated less by an interest in the technology of transplantation than by his desire to understand the circumstances that give rise to life in living beings. He seeks to understand the difference between dead and living tissue.

Finally, there is Shelley's broader vision—her commentary on the consequences of this new creation. Most of the book is devoted to Shelley's visualization of the manner in which society would treat an object so contrived and the effect this would have on its behavior. As any reader of the novel knows, Frankenstein's creature is not a monster at the moment of awakening; it is only through rejection and interaction with society that the creature becomes monstrous.

The story is told from the point of its conclusion. Victor Frankenstein is rescued from the sea near the Arctic Circle by the crew of a ship on a voyage of exploration. He tells them his story—how he was inspired by his studies to create a living being by bringing to life human parts from dead people. Apparently Frankenstein is better trained in internal medicine than plastic surgery, for the being he creates has an outward appearance of "appalling hideousness," with color and texture "like that of a mummy" (Shelley 1992, 211). Disgusted by what he has done, Frankenstein runs away, making no provision for the care of the life he has created. The monster, initially a benevolent creature, quietly associates himself with a pastoral Swiss family that is poor but loving. He secretly gathers wood for them and helps to ease their

burden. He finds books and educates himself, which leads to his discovery of Frankenstein's notebook and the revelation of his strange creation.

Seeking companionship, the monster introduces himself to the father of the Swiss family. The father, who is blind, accepts the monster, but when the other family members return home, they beat the monster and drive him into the woods. Still exhibiting no hostility, the creature saves a child from drowning. Nonetheless, the local villagers attempt to kill him. Seeking revenge against his creator, the monster finds and kills Frankenstein's younger brother.

Frankenstein confronts the monster, who agrees to leave Europe if his creator will construct a mate for him. Frankenstein retreats to the Orkney Islands off the coast of Scotland, but cannot bring himself to assemble another being. The monster, enraged at his duplicity, sneaks into Frankenstein's bedroom on his wedding night and strangles young Frankenstein's bride.

Events quickly worsen. Pursuing his own revenge, Frankenstein chases the monster across Russia toward the Arctic Circle. There Frankenstein is rescued by the ship's crew, and in sorrow dies. The monster intercepts the ship, confesses his sins to the captain, and jumps from the cabin window onto an ice raft, disappearing "in darkness and distance" across the waves (*ibid.*, 215). It is not a happy ending.

Shelley's Vision

How did an eighteen-year-old living at the beginning of the nineteenth century possess the insight to create a vision of human regeneration? The answer is both simple and complex. The simple answer, and perhaps the more insightful, is that she did not. The novel that Shelley began in Switzerland in the summer of 1816 opens with the monster created, but gives little description of the two years of difficult work devoted to Frankenstein's "sole purpose of infusing life into an inanimate body" (*ibid.*, 56). Only later did Shelley elaborate on the creation of the monster in what became the book's first four chapters.

Early science fiction writers often avoided technical details in order to get on with their stories. In one of the most famous science fiction series, the Mars novels of Edgar Rice Burroughs, the author wholly ignores the technical problem of transporting his protagonist to that distant orb. The hero, John Carter, simply falls into a trance outside the mouth of an Arizona cave and the next moment finds himself on Mars. Science fiction writers who attempt to explain technical details often produce hilarious results. Savinien de Cyrano de Bergerac in the seventeenth century wrote a novel describing an attempted voyage to the Moon in which his main character is lifted there by the morning dew. Cyrano noted that early morning dew appeared to rise into the atmosphere when exposed to the rays of the rising sun, leading him to design a device that depended upon vials of moisture exposed to solar rays. Jules Verne spent an entire novel describing the preparation of a huge cannon out of which he shot a projectile to the Moon; to cushion his travelers from the shock of the blast, Verne installed a waterbed. Experts later calculated that the sudden acceleration sufficient to propel a space capsule to the Moon with a single blast would reduce the passengers to thin smears on the cabin floor.

The casual approach of authors like Shelley and Burroughs actually mirrors the implementation of real visions in practical affairs. When John F. Kennedy challenged Americans to race to the Moon, neither he nor his advisers actually knew

how to get there. No one who participated in the decision had a workable plan for transporting humans to the Moon and back. Wernher von Braun, the best-known proponent of human space flight at that time, had published extensively on the subject. Yet his plan, presented in a 1952 issue of *Collier's* magazine, was wholly impractical, requiring twice-a-day launches of large rockets devoted to the construction of three enormous spaceships in low Earth orbit. Nonetheless, Von Braun optimistically advised Vice President Lyndon Johnson that “we have an excellent chance of beating the Soviets to the first landing of a crew on the moon” (1961, 430). After Kennedy explained his vision to a joint session of Congress, a little-known NASA engineer, John C. Houbolt, convinced his superiors of the necessity of adopting lunar-orbit rendezvous as the only feasible method for completing the voyage.

Kennedy, like Mary Shelley, was much less concerned about the technical feasibility of his vision than with its cultural significance. For centuries, humans had dreamed of voyages to the Moon. Throughout the twentieth century, space flight had gripped the imagination of people around the world, propelled by publications such as Buck Rogers comic strips and the novels of Burroughs. Kennedy understood that no project would be “more impressive” in demonstrating the technical capabilities of the United States than “achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to earth” (Kennedy 1961, 404). He undertook to achieve the vision not because he knew how, but because of its symbolic importance.

The Scientific Mind

In a similar manner, Shelley understood the symbolic importance of the story she was telling, and that is why she gave more attention to the cultural significance of the monster's creation than to the technical feasibility of bringing body parts back to life. That is the complex answer to the question posed earlier about the origin of Shelley's vision. Her vision deals primarily with the conflict between ancient superstitions and the scientific revolution that was replacing them. The superstition in this case was the raising of the dead; the scientific revolution provided the means to achieve it. Shelley did not need to know exactly how to raise the dead in order to comment on the cultural significance of such an accomplishment.

For centuries, humans had been telling resurrection stories, including the one recounted in the four gospels of the New Testament. To be sure, *Frankenstein* is a resurrection story: Frankenstein brings a dead body back to life—actually parts from a number of dead bodies. Resurrection stories were very popular at the time. So were gothic novels, which typically dealt with supernatural events taking place in gloomy castles. The ghost story was an especially popular type of gothic novel. The reader of *Frankenstein*, then, receives a ghost story in the form of a gothic novel that tells a resurrection tale.

Frankenstein is more than a gothic novel, of course, which accounts for its enduring significance. Shelley's story connects the supernatural themes of the gothic novel with commentary on the scientific revolution spurring the industrialization of Europe and America. Her commentary on the dangers associated with scientific philosophy were so convincing that many consider her book to be the first work of modern *science* fiction. Shelley wrote it when the people with whom she was spending the summer challenged each other to pen “a ghost story” (Shelley 1992, 7). Shelley's consideration of the scientific personality of Victor Frankenstein proved

so terrifying that Lord Byron, who originally suggested that the group write scary tales, is said to have run shrieking from the room when Shelley read hers aloud. In the novel, the monster is far less threatening than the science that creates it.

Shelley was familiar with emerging trends in chemistry and electricity, the two branches of inquiry upon which the monster's creation is based. More important, she was intimately familiar with the type of person who would arrogantly use chemistry and electricity to create a monstrosity, for she was married to him. The character of Victor Frankenstein is modeled after her husband, Percy Bysshe Shelley. Mary met him when she was fifteen; inconveniently, he was married to another woman. Percy and Mary eloped to the European Continent without the advantage of a divorce.

Percy Shelley was intense, radical, and hotheaded. At Oxford, he had done chemical experiments and read books on magic and witchcraft. He was fascinated by electricity. The mad-scientist scene in which Frankenstein's excessive use of electricity causes his hair to stand on end actually duplicates an experiment that Percy completed at school. The scene is a Hollywood film creation and regrettably does not appear in the novel. In the book, Frankenstein utilizes the "spark of being" on a night noteworthy only for its dreary rain and not for any electrical storm (*ibid.*, 56).

The vision that Mary Shelley ascribes to the protagonist of her novel—and indirectly to her husband—is motivated by the desire for power and dominance. Frankenstein embodies, in the words of one critic, "the aspiration of modern masculine scientists to be technically creative divinities" (*ibid.*, xxiv). Frankenstein's vision is the motivation of scientists who create atom bombs, of engineers who fly humans to the moon, of capitalists who construct large corporations, and of cardiologists transplanting hearts. These figures are predominantly men, generally brilliant, and often controlling in their relationships.

Frankenstein says, "Whence, I often asked myself, did the principle of life proceed?" (*ibid.*, 50). He decides to learn how inanimate substance can be made alive by studying the dead. His research extends well beyond dissection and the emerging science of anatomy. Frankenstein additionally sets out to "observe the natural decay and corruption of the human body," venturing into graveyards, vaults, and charnelhouses.

I saw how the fine form of man was degraded and wasted; I beheld the corruption of death. . . . I paused, examining and analyzing all the minutiae of causation, as exemplified in the change from life to death, and death to life, until from the midst of this darkness a sudden light broke in upon me—a light so brilliant and wondrous, yet so simple, that while I became dizzy with the immensity of the prospect which it illustrated, I was surprised, that among so many men of genius who had directed their enquiries toward the same science, that I alone should be reserved to discover so astonishing a secret. (*ibid.*, 50–51)

Frankenstein's desire to pursue this line of inquiry follows a motivational speech given by one of his university professors. Ruminating on the history of science, his chemistry professor praises the power it places in the hands of its masters. "They have acquired new and almost unlimited powers; they can command the thunders of heaven, mimic the earthquake, and even mock the invisible world" (*ibid.*, 47). Frankenstein is so excited by the professor's words that he cannot sleep that night. "Treading in the steps already marked," he promises himself, "I will pioneer a new way,

explore unknown powers, and unfold to the world the deepest mysteries of creation” (ibid., 47).

Frankenstein’s Ignorance

Shelley did not share Frankenstein’s enthusiasm for power. The story’s tragic ending is her way of commenting upon the consequences of mixing vision and power. Looking back on the misfortunes he has endured, Frankenstein warns others to avoid his secret lest they create their own “destruction and infallible misery.” Learn from his example, he says, “how dangerous is the acquirement of knowledge and how much happier that man is who believes his native town to be the world than he who aspires to become greater than his nature will allow” (ibid., 52). This is Mary Shelley speaking, of course, through the regret expressed by Frankenstein. Shelley recognized that scientists were no longer content to probe the mysteries of nature, but instead sought to use knowledge as an instrument of power to control others. Frankenstein’s ignorance lies not in his science, but in his inability to visualize the consequences of his quest for control.

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This theme is implied in the novel’s subtitle: *The Modern Prometheus*. Using his powers of foresight, the god Prometheus of Greek mythology steals fire and delivers it to Earth in an effort to assist humankind. In the Roman version, Prometheus uses fire from heaven to create human beings. As punishment for his insubordination, Zeus chains Prometheus to a mountain where crows chew on his liver and—as further chastisement—constructs Pandora’s box, from which the evils and pain that afflict humankind emerge. Humanists and intellectuals in Shelley’s time commonly sided with Prometheus, praising the impulse that had helped humans ascend above the poor circumstances that nature had bestowed upon them. Mary’s husband Percy, in 1820, penned the lyrical drama *Prometheus Unbound*, a sympathetic accounting of the benevolent god’s liberation from bondage.

Mary took the opposite point of view. In her story, she makes a number of important points about the nature of the visions that inspire great social and technological changes. The successful visionary, when beginning work, often lacks a clear picture of the specific techniques necessary to make the vision happen, and even less understanding of the ultimate consequences. While this is not an impediment to the practical achievement of the vision, it does mean that the vision often produces changes unanticipated by its motivator. In creating life, Frankenstein is responsible for many deaths.

Frankenstein’s fate can be viewed as both a triumph and a failure of vision. Shelley lived in a world still emerging from the medieval era in which many people were skeptical about the ability of humans to remake their condition through science and technology. Frankenstein creates life out of dead body parts not solely because he discovers an important principle of biochemistry, but because he possesses a worldview that motivates him to undertake the act. He possesses a vision of the world in which scientists and other intellectuals use godlike powers to improve the human condition. That is Frankenstein’s triumphant vision.

His failure is also one of vision. Frankenstein wholly fails to anticipate the needs

of the creature he creates. He is so preoccupied with testing the principle of life that he makes no provision for the care and education of the monster. Drawing upon Rousseau's notion of the "noble savage," Mary Shelley invents a monster with an intuitive sense of compassion and morality. As a new creation, it needs companionship and love, but what it encounters is savagery. Shelley's vision of an ethical world is one in which scientists more carefully consider the social consequences of their visions before undertaking them.

Clarke's Vision

Shelley's story, especially as subsequently portrayed in film, feels medieval. Arthur Clarke's screenplay, which resulted in the novel and the Stanley Kubrick movie *2001: A Space Odyssey*, has a futuristic appeal. The two works differ not only in the eras they depict, but also in the degree of optimism with which they approach technological change. Yet they embody common themes, especially in their mode of interpreting their respective visions. The two authors construct their visions in much the same way. They draw extensively on contemporary events to imagine an ill-defined future. For her descriptions of science, Mary Shelley consulted the work of Humphry Davy, a famous chemist who visited her father during her younger years. Shelley read two of Davy's books on chemistry while completing *Frankenstein*. In addition to helping Shelley imagine the science that frames the novel, Davy's messianic demeanor provided the model for the professorial lecture that motivates young Frankenstein to seek the spark of life.

Contemporary events similarly inspired the science that frames Kubrick and Clarke's *2001: A Space Odyssey* (Clarke 1968; Kubrick 1968). Their ambitious vision of twenty-first-century space travel relied heavily upon long-range planning then under way at the U.S. National Aeronautics and Space Administration (NASA). Anticipating a successful lunar landing, NASA officials visualized many activities to follow. Planning was under way for a permanent lunar base, a large Earth-orbiting space station, a winged space shuttle, a large space telescope, robotic voyages to the outer planets, and an expedition to Mars (Space Task Group 1969). The Kubrick-Clarke story presents these plans on film. Kubrick released the film in 1968, one year before humans first landed on the Moon. Clarke prepared a novel based on the screenplay that clarified the more inscrutable cinematic scenes.

The story features a large rotating space station, a reusable space shuttle, a gigantic lunar base, and a human expedition to the outer planets. As with the creation of Frankenstein's monster, these instrumentalities are motivated by the quest for power. The story opens on the African plains, well before the dawn of humanity. Drawing again on the Prometheus legend, godlike beings intervene to help apelike creatures achieve human form. The influence of these godlike beings is indicated by the monolith—a large black tablet—they place among a prehuman tribe. The monolith imparts a vision inspiring the tribe to create war weapons from animal bones and thereby vanquish a competing tribe. Instantly, the viewer is transported forward to the age of space exploration. *Homo sapiens*, armed with its tool-making capabilities, has developed fantastic machines: the first machine the viewer sees, even before the space station appears, is an orbiting bomb.

As a consequence of the international conflicts that spawned the space race, humans from various nations compete to control outer space. In particular, officials

from the United States rush to understand the significance of a second monolith, discovered beneath the lunar surface. When approached, the object sends a powerful signal to a location in the outer solar system.

The United States possesses the technology to travel there and mounts a deep-space expedition, its ultimate purpose hidden even from the astronauts assigned to conduct the voyage. The officials who plan the expedition want to reach the signal's destination before rival nations do. The only system on the spaceship fully aware of the mission's purpose is the HAL 9000 computer. Confused by instructions that require it to protect the mission while lying to the crew, the computer develops a cognitive disorder. It makes an error and, rather than admit its mistake, seizes control of the ship and kills all but one of the astronauts.

Scientific Optimism

On the surface, this may seem to be another story about technology out of control. But whereas Mary Shelley approaches her subject with caution, Clarke proposes nerve. The third monolith, orbiting an outer planet, is a star gate: a transportation device that delivers the remaining astronaut to a room in a distant location prepared for his coming. Once again, the interveners are never seen. Their influence, however, is felt dramatically. They transform the remaining astronaut, Dave Bowman, into a starchild with godlike powers and return him to the solar system. Appearing in an orbit above the Earth, the starchild uses his powers to destroy all the weapons in space.

Clarke uses science fiction to transmit a vision of rebirth and hope. This is a recurring theme in the popular culture of space travel, repeated in films like *ET: The Extraterrestrial* (1982), *Cocoon* (1985), *Contact* (1997), and the classic *Day the Earth Stood Still* (1951). In the latter, a flying saucer lands in Washington, D.C., where its captain orders the assembled leaders of the world to control the nuclear arms race or face annihilation by a race of robotic police. The extraterrestrial forces humans to adopt behavior appropriate to their level of technological knowledge. In his story, Clarke presents space travel and alien contact as a means for humans to accelerate their own development. In *2001*, the aliens have achieved an ethereal form that removes them from the material universe. Much like Prometheus, they provide gateways to this form of existence to any civilization that attains space travel.

Every human culture possesses a vision of a higher spiritual order that transcends the material world. In many cases, this includes a resurrection myth. Traditionally, resurrection is attained through faith in the gods or by good works. Clarke suggests another avenue: his higher order is attained through space travel and technology.

Clarke's optimistic view of space travel is counterbalanced by Kubrick's darker interpretation. In the movie, which Clarke helped write but Kubrick produced, the astronaut's return to Earth is dreamlike, not unambiguously real. The starchild destroys no nuclear weapons in the movie; only in Clarke's novel does this occur. In Kubrick's movie, moreover, the human space travelers are bland and uninspiring. The behavior of the HAL 9000 artificial intelligence computer is more vivid than that of the automatonlike astronauts. Kubrick's film presents a vision of technology more Frankenstein-like, a theme he had already explored in *Dr. Strangelove* (1963) and *A Clockwork Orange* (1971). Kubrick's darker view of technology recalls the behavior of extraterrestrials inclined "to serve humankind," but only in a gastronomical sense, as in *Alien* (1979) and *Independence Day* (1996).

Both Kubrick in his movie and Clarke in his novel treat the HAL 9000 computer as a villain. Provided with more intelligence than seems necessary, the computer destroys most of the crew. The people who program the HAL 9000 computer are the

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twenty-first-century equivalent of young Frankenstein—they do not possess even an elementary understanding of the consequences of their acts. To Clarke, the episode represents a warning to those who favor robotic missions over human spaceflight. To Kubrick, it represents the unforeseen dangers of technological progress.

Visions from the Past

The most captivating visions in *2001*, especially in the movie, are the result of cinematic special effects. Viewers are treated to magnificent images of space shuttles, space stations, lunar rovers, and interplanetary spacecraft. Clarke and Kubrick clearly believed that these technologies would appear soon—hence the title of the book and film. The film also postulates the existence of extraterrestrial beings that intervene in human evolution.

Such visions are grossly appealing, not so much because they were expected to come true by the title date of the film, but because they represent so many dreams about past events. This is an important characteristic of visions contemplating great change. They often sit more in earlier times than in the future.

Space travel and its representation in popular culture exemplifies this proposition particularly well. In the United States, space travel draws much of its influence from association with the European settlement of North America. Members of the National Commission on Space unabashedly chose this theme for the title for their 1986 report on the future of space flight: *Pioneering the Space Frontier*. Early proposals for extraterrestrial activities were often characterized as the “conquest of space,” another allusion to the popular vision of Europeans occupying new territory (National Commission on Space 1986; Bonestall and Ley 1949). When Gene Roddenberry prepared the writer’s guide for his *Star Trek* television series, launched in 1966, he told the writers who were developing scripts to write Hollywood Westerns and set them in outer space. Like the Old West, outer space provided “a vast colorful backdrop against which any kind of story could be told” (Roddenberry 1967). The fact that Hollywood had transformed western settlement from an actual experience into a nostalgic memory only added to its appeal.

Space exploration, as presented to the public at large, evokes a substantial number of memories drawn from previous achievements. Winged space shuttles represent an extension of aviation accomplishments into the airless realm. To the same extent that winged jetliners revolutionized air travel, visionaries expect winged rocket ships to expand human access to outer space. Large space stations are the twenty-first-century equivalent of frontier forts. They provide human footholds in hostile territory and jumping-off platforms for voyages beyond. Returning from terrestrial voyages of discovery, explorers like Charles Darwin and Meriwether Lewis relayed fascinating tales about the incredible creatures they had encountered: Galapagos turtles, grizzly bears, human tribes so exotic that they might as well have been visitors from

another world. Such stories prepared people in the modern era to anticipate similar encounters on extraterrestrial missions, in spite of the apparent rarity of suitable sites for the evolution of complex life. Thus anticipation of the extraterrestrial was born.

In practice, of course, past events rarely anticipate future ones. Space exploration resembles the settlement of the American West about as much as Hollywood Westerns capture the true history of that period, which is to say hardly at all. People who base their visions on memories of past events often encounter surprising developments as they attempt to make their visions real. They may initiate change, but the events that materialize are unlikely to resemble a past that never was. Unanticipated consequences are the only certain consequence of basing one's visions on past events filtered through a nostalgic haze.

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Nonetheless, memories of the past motivate people to pursue fresh visions. Familiar memories are easier to explain than strange futures. The former resonate with the values that ordinary people embrace. What memories lack in accuracy, they gain in common use. In support of efforts to motivate change, visions from the past are more persuasive than dreamy revelations of an unfamiliar future.

Excessive reliance upon familiar memories accounts in part for the occasional policy failure. Clarke's large, rotating, hotellike space station, for example, did not come to pass. The space station that NASA engineers sought to develop by 2001 resembled an agglomeration of cans and trusses rather than a large, gracefully turning wheel. The difficulty of explaining the new configuration caused one of its designers to complain that "the public at large, and quite possibly most of the people within NASA," visualized the space station as "a very large rotating vehicle with 100 people on it" (McCurdy 1990, 146). So long as the space station was a concept in the minds of its supporters, people were free to imagine it in any way they wanted. The loss of popular support for the actual facility was due in part to the fact that its design differed so substantially from its popular conception.

Clarke's futuristic vision of space activities in the twenty-first century sought to recapture the glories of terrestrial exploration, a past in which his own country of Great Britain had recently played so prominent a role. The character of Frankenstein sought to use chemistry to achieve the ancient dream of immortality. The central characters in both works of fiction eventually found themselves in places they did not intend to go. Clarke was generally pleased with the reception accorded astronaut Bowman's odyssey; Shelley clearly disparaged the outcome afforded young Frankenstein. In no sense, however, did the central character in either work of fiction anticipate the situation into which the author's motivating vision sent him.

Vision and Leadership

The modern literature on organizational transformation tends to treat vision as a morally uplifting force. Vision is seen as a necessary process that assists institutional members adjust to changing realities. It helps to create a sense of common purpose. Early writers on management as diametrically opposed as Luther Gulick (1937) and Chester Barnard (1938) shared the view that vision, or "coordination by

ideas,” could glue elements of an organization together in ways that formal authority could not. Modern writers like Peter Vaill (1998) call the process of creating visions and motivating people to accept them “the essential characteristic of leadership,” while James MacGregor Burns (1978) assigns great moral value to the people who carry it out. According to Vaill, vision is far more than an expression of “why an organization exists and what products and services it intends to deliver.” Vision embodies the movement toward future possibilities. It is, he says, “a motivational statement” (Vaill 1998, 64). In addition, self-help literature sees vision as an inspirational force for individuals. Stephen Covey (1989), for example, lists the creation of a personal vision as one of the “seven habits of highly effective people.” The overall view that emerges reinforces a fundamental assumption underlying the modern world: the belief that progress as a whole is generally good, and that visions help people to get there.

Science fiction writers question this perspective in a number of ways. Some use their visions of future events to warn readers about the dangers of change undertaken without adequate study and consideration. Mary Shelley’s *Frankenstein* falls into this category, as does the broad collection of films and novels describing what may be characterized as negative utopias. Works such as George Orwell’s *1984* and Ray Bradbury’s *Fahrenheit 451* fall into this category.

Shelley and Clarke are sensitive to the manner in which vision can be used as a means of domination. As a counterpoint to the presentation of vision as a benevolent force employed by dreamers attempting to create a better world, Shelley and Clarke associate vision with the quest for power. It is used by suspicious groups or characters (or in Clarke’s case a machine) seeking to exercise control over their surroundings.

Possessing what Dwight Waldo once called “a sour and ill-tempered view” of institutional affairs, writers of fiction embrace the virtues of vision-making with less enthusiasm than the authors of books on management (1968, 2). Novelists and screenwriters deal with the darker and messier side of vision-making. They are more attentive to the manner in which innovators may be motivated by the desire for power. They are conscious of vision’s ambiguous quality, particularly when people formulate visions without a clear understanding of the means to achieve them. They emphasize the unintended consequences produced by the pursuit of lofty goals, thereby questioning the moral consequences of efforts to pursue progress in unfamiliar ways. Novelists suggest, in their writings, that inattentive leaders with great visions can do unethical things.

Works of science fiction provide a fresh and often useful perspective on the ethics of vision-making and transformational leadership. They place among the requirements of ethical leadership a sensitivity to the consequences of one’s vision-making. Works of fiction do not describe actual events, but the lessons they contain can be as authentic as those produced in the real world. Imagination, after all, is what makes reality happen.

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