MORMON
EXPERIENCE
SCHOLARSHIP
ISSUES & ART

SUNSTONE

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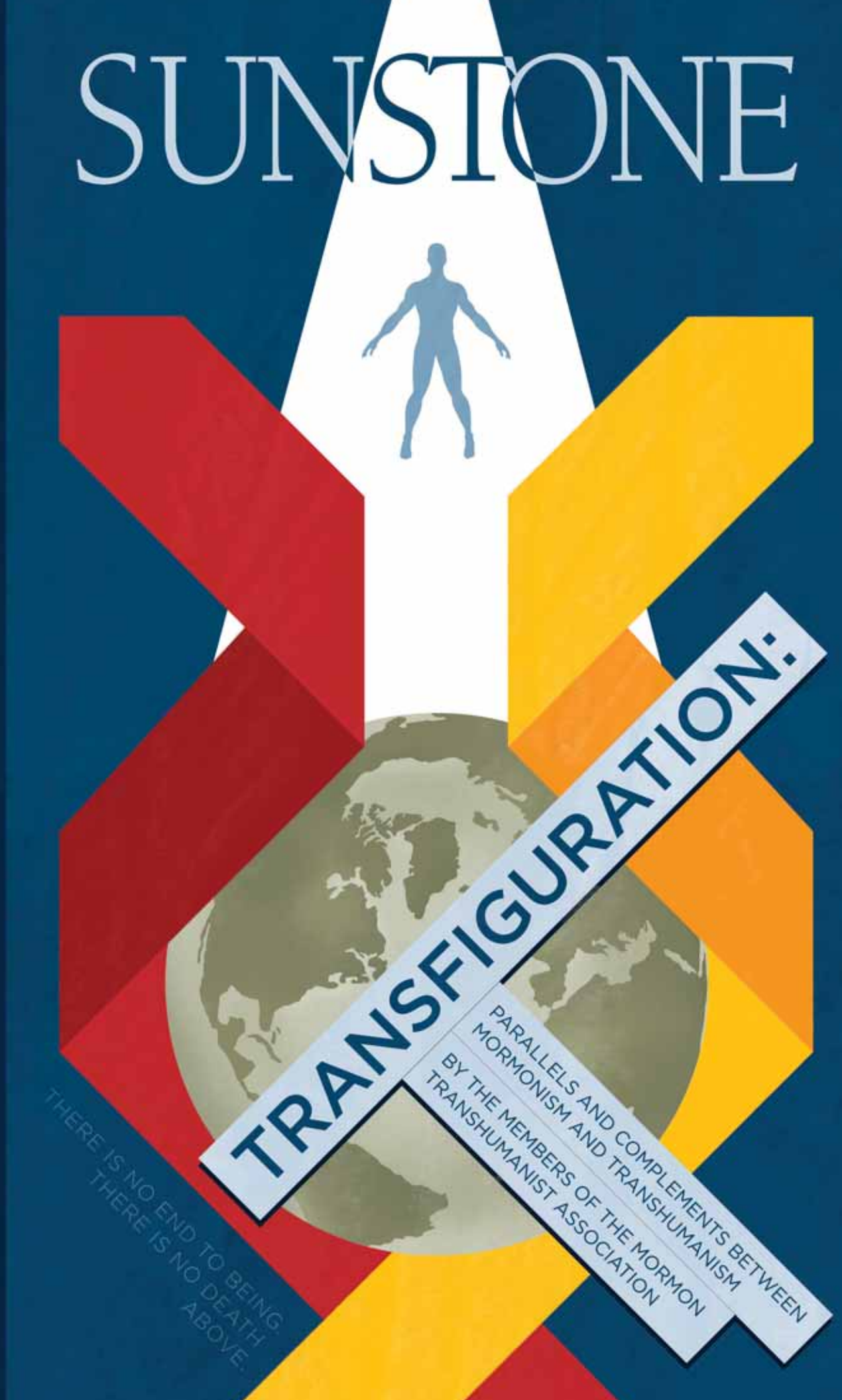
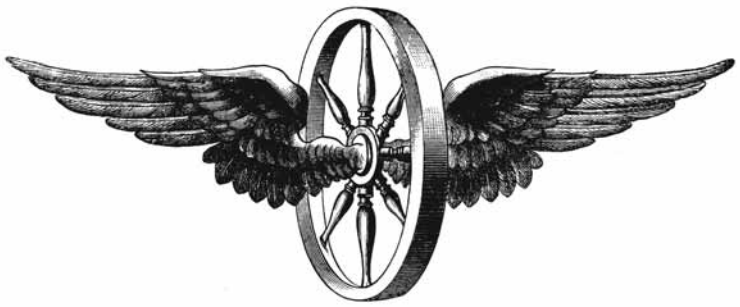


March 2007—$5.95

How can one work toward a future that is understood only vaguely, if at all? What is the effect of faith that is not active? Might active faith in Mormon visions of the future be essential to realizing them?

TRANSFIGURATION

PARALLELS AND COMPLEMENTS BETWEEN MORMONISM AND TRANSHUMANISM



By Members of the Mormon Transhumanist Association

We must assume our existence as broadly as we in any way can; everything, even the unheard-of, must be possible in it. This is at bottom the only courage that is demanded of us: to have courage for the most strange, the most singular and the most inexplicable that we may encounter.

—RAINER MARIA RILKE[1]

MORMON TRADITION TEACHES THAT, THROUGHout time, God has inspired and endowed humanity with knowledge and power in various dispensations, or epochal transitions in the relationship between divinity and humanity. In ours, the "dispensation of the fulness of times," God is restoring all the knowledge and power of past dispensations while continuing to inspire and endow us more rapidly than in the past, to prepare for a greater future.

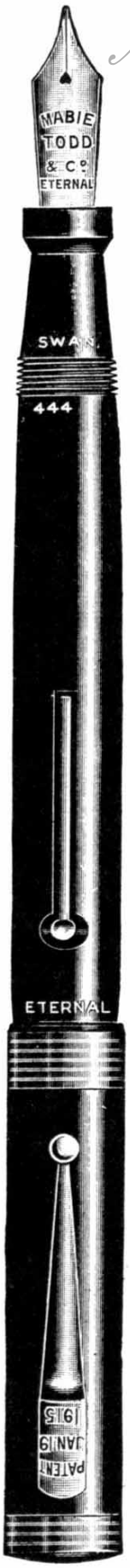
Joseph Smith proclaimed that knowledge restored and gained in our dispensation would be broad, encompassing matters related to history, astronomy, geology, theology, and more:

> God shall give unto you knowledge by his Holy Spirit, yea, by the unspeakable gift of the Holy Ghost, that has not been revealed since the world was until now;
>
> Which our forefathers have awaited with anxious expectation to be revealed in the last times, which their minds were pointed to by the angels, as held in reserve for the fulness of their glory;
>
> A time to come in the which nothing shall be withheld, whether there be one God or many gods, they shall be manifest. All thrones and dominions, principalities and powers, shall be revealed and set forth upon all who have endured valiantly for the gospel of Jesus Christ. And also, if there be bounds set to the heavens or to the seas, or to the dry land, or to the sun, moon, or stars—
>
> All the times of their revolutions, all the appointed days, months, and years, and all the days of their days, months, and years, and all their glories, laws, and set times, shall be revealed in the days of the dispensation of the fulness of times—
>
> According to that which was ordained in the midst of the Council of the Eternal God of all other gods before this world was, that should be reserved unto the finishing and the end thereof, when every man shall enter into his eternal presence and into his immortal rest. (D&C 121:26–32)

Smith taught further that the inspiration and endowments gained in our dispensation would provide a foundation for greater knowledge and power in future dispensations:

> We are the favored people that God has made choice of to bring about the Latter-day glory; it is left for us

You can learn more about the Mormon Transhumanist Association at WWW.TRANSFIGURISM.ORG or by contacting ADMIN@TRANSFIGURISM.ORG.



Mormon theology teaches that though

MORMON THEOLOGY TEACHES THAT THOUGH SOME RIDICULE and few have recognized its signs, the Millennium approaches, and we should prepare ourselves for the day of transfiguration and its attending changes.

to see, participate in and help to roll forward the Latter-day glory, "the dispensation of the fulness of times, when God will gather together all things that are in heaven, and all things that are upon the earth," "even in one". . .

The blessings of the Most High will rest upon our tabernacles, and our name will be handed down to future ages; our children will rise up and call us blessed; and generations yet unborn will dwell with peculiar delight upon the scenes that we have passed through, the privations we have overcome in laying the foundation of a work that brought about the glory and blessing which they will realize; a work that God and angels have contemplated with delight for generations past; that fired the souls of the ancient patriarchs and prophets; a work that is destined to bring about the destruction of the powers of darkness, the renovation of the earth, the glory of God, and the salvation of the human family.[2]

The Bible and latter-day prophets also indicate that God's work will proceed more rapidly at the end of our dispensation:

> For in those days shall be affliction, such as was not from the beginning of the creation which God created unto this time, neither shall be. And except that the Lord had shortened those days, no flesh should be saved: but for the elect's sake, whom he hath chosen, he hath shortened the days. (Mark 13:19–20)

> The work of God is being carried on far beyond that which we can see with our natural eyes. The work of the preparation of the earth, and of its inhabitants, is pressing forward with a rapidity that we who are taking part in it do not realize. . . . He is operating among the nations of the earth. His spirit has gone forth; and it is accomplishing that which He said should be accomplished. And this great work of the last days will be cut short in righteousness.[3]

In addition to these broad teachings regarding our dispensation and the continuing advancement of God's work, Mormon tradition includes diverse specific teachings and prophecies concerning conditions, events, and possibilities for his children during this pivotal time. The scriptures and prophetic commentary are replete with references to a day of transfiguration, humans becoming physically immortal, the resurrection of the dead, renewal of this world, and the discovery and creation of worlds without end. However, the prophecies do not describe in detail the causes of their fulfillment and only hint about the human acts that need to occur before such things come to be.

Given this vagueness, many Mormons find it difficult to exercise faith in ideas and teachings like these except in abstract ways. Hence, some respond to these teachings by concluding that certain ideas are simply beyond our mortal capacity to understand. This response leads in turn to the question: What is the practical value of a belief in something one cannot understand? How can one possibly have faith in an idea if one does not understand it? This criticism is especially challenging to Mormonism, which emphasizes the importance of faith manifest in works. How can one work toward a future that is understood only vaguely, if at all?

We, the contributors to this article, felt much this same way. During conversations across several years, we have observed that, although our faith was active in relation to many tenets of Mormonism, it was mostly passive in relation to the more concrete aspects of future salvation: transfiguration and resurrection to physical immortality, the paradisiacal glory of millennial Earth, the organization of new worlds, and so forth. We found our passivity toward these ideas troubling. What is the effect of faith that is not active? Is it even faith? If not, how can we change so that our faith is active in these ideas that we value? Beyond that, we wondered: Might active faith in these ideas be essential to realizing them?

As we discussed ways to promote active faith in a Mormon view of the future, we observed that, in the broadest sense, science and technology are among the most obvious manifestations of active faith in the future: fighting disease and illness, improving communications, cleaning and beautifying environments, and extending life spans. This realization led us to ask how we could promote the application of science and technology to a Mormon view of the future, to bring these into dialogue with the plan of salvation, and specifically Mormon ideas about the exaltation of humanity to godhood. Questions like this eventually led us to become acquainted with Transhumanism. In hindsight, this discovery seems to have been inevitable. The parallels and complements between Mormon and Transhumanist views of the future are remarkable.

WHAT IS TRANSHUMANISM?

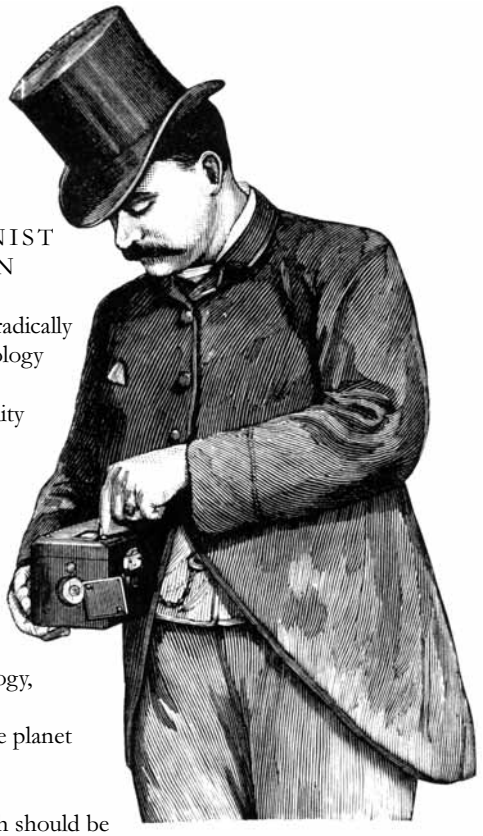
TRANSHUMANISM IS A young and dynamic ideology that is drawing persons of widely varying perspectives into careful consideration of the future, and, in particular, the future evolution of humanity. Their common expectation is that technological advancement will enable humans to transform themselves gradually into persons whose capacities so radically exceed contemporary capacities that the term "human" may no longer adequately describe them. Transhumanists call these future persons "neohumans" or "posthumans" and refer to those in process of becoming them, as "transhumans."

Transhumanists generally trace their origins to humanism. Pre-Socratic Greek philosophers looked beyond traditional gods for scientific explanations of the world. Seventeenth-century astronomer Galileo Galilei deferred to human observation when conflicting with ecclesiastical authority. Eighteenth-century scientist Marquis de Condorcet claimed that medical science could be used to extend human life.

Although contemporary self-identifying Transhumanists are predominantly secular, religious humanism has made substantial contributions to the emergence of Transhumanism in the broadest sense. Early Christians taught of identifying with Christ and becoming gods. Thirteenth-century Scholastic theologians continued the recurring synthesis of Christianity with popular science. Nineteenth-century theologian Nikolai Fyodorov proclaimed that the common task of humanity should be the resuscitative resurrection of our ancestors. Likewise, as we will present more fully, the prophet Joseph Smith and subsequent Mormon leaders could be counted among religious humanists whose ideas have informed the emergence of Transhumanism.

An identifiable Transhumanist movement began in the last few decades of the twentieth century. In the 1960s, futurist Fereidoun M. Esfandiary, who later changed his name to "FM-2030" (in reference to his hope that he would live to celebrate his 100th birthday which would have come in 2030), began identifying as "transhumans" persons who behave in a manner conducive to a posthuman future.[4] In the late 1980s, philosopher Max More formalized a Transhumanist doctrine, advocating the "Principles of Extropy" for continuously improving the human condition.[5] In the late 1990s, a group of influential Transhumanists authored the "Transhumanist Declaration," stating various ethical positions related to the use of and planning for technological advances (see Figure 1).

Of the Transhumanist organizations that have formed, the leading organization is the World Transhumanist Association (WTA), founded in 1998 by philosophers Nick Bostrom and David Pearce.[6] The WTA has worldwide membership that currently exceeds 4000 persons in several geographically divided chapters and special-interest affiliates. Other contemporary organizations with significant influence among Transhumanists include the Extropy Institute,[7] the Foresight Institute,[8] the Immortality Institute,[9] the Institute for Ethics and Emerging



Transhumanist Declaration

TRANSHUMANIST DECLARATION

1. Humanity will be radically changed by technology in the future. We foresee the feasibility of redesigning the human condition, including such parameters as the inevitability of aging, limitations on human and artificial intellects, unchosen psychology, suffering, and our confinement to the planet earth.

2. Systematic research should be put into understanding these coming developments and their long-term consequences.

3. Transhumanists think that by being generally open and embracing of new technology, we have a better chance of turning it to our advantage than if we try to ban or prohibit it.

4. Transhumanists advocate the moral right for those who so wish to use technology to extend their mental and physical (including reproductive) capacities and to improve their control over their own lives. We seek personal growth beyond our current biological limitations.

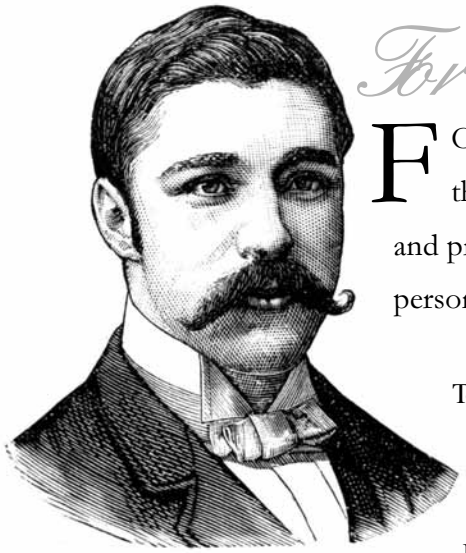
5. In planning for the future, it is mandatory to take into account the prospect of dramatic progress in technological capabilities. It would be tragic if the potential benefits failed to materialize because of technophobia and unnecessary prohibitions. On the other hand, it would also be tragic if intelligent life went extinct because of some disaster or war involving advanced technologies.

6. We need to create forums where people can rationally debate what needs to be done, and a social order where responsible decisions can be implemented.

7. Transhumanism advocates the well-being of all sentience (whether in artificial intellects, humans, posthumans, or non-human animals) and encompasses many principles of modern humanism. Transhumanism does not support any particular party, politician, or political platform.

Available at:
http://transhumanism.org/index.php/WTA/declaration

FIGURE 1



For Mormons willing to engage

FOR MORMONS WILLING TO ENGAGE TRANSHUMANISM, the future events toward which they look are based not only in esoteric teachings and prophecies but also in the predictions of rational and scientifically committed persons looking at the future.

Technologies,[10] and the Singularity Institute for Artificial Intelligence.[11] In 2006, the WTA voted to recognize the Mormon Transhumanist Association as its first religious special-interest affiliate.[12]

A TRANSHUMANIST VIEW OF THE FUTURE

> Transhumanists view human nature as a work-in-progress, a half-baked beginning that we can learn to remold in desirable ways. Current humanity need not be the endpoint of evolution. Transhumanists hope that by responsible use of science, technology, and other rational means, we shall eventually manage to become posthuman, beings with vastly greater capacities than present human beings have.
>
> —NICK BOSTROM[13]

THE FOLLOWING IS a common Transhumanist view of the future, with a focus on accurately portraying the view rather than defending it. Although not all Transhumanists will agree with every aspect of this view, it reflects the ideas of persons who are generally recognized to have significantly influenced Transhumanism. Though we attempt to give an overall sense of major Transhumanist themes, in this brief introduction, we highlight the aspects that we in the Mormon Transhumanist Association believe closely parallel Mormon teaching and prophecy. In a later section, we will explicitly identify the parallels and complements.

The Fourth Epoch

THROUGHOUT history, technology has advanced through epochal paradigms, each building on the technologies of previous paradigms to progress at an accelerating rate. The word "technology" is typically used to describe practical applications of human knowledge. Here the word is used more broadly to mean that which extends abilities, whether it be of humans or otherwise. In this sense, technology includes the laws of physics and chemistry, which Transhumanists understand as foundational technologies characteristic of the first epochal paradigm. The Second Epoch began with the emergence of biological technologies such as DNA. The Third Epoch began with the evolution of brains and intelligence.

Today, we are leveraging past technologies of physics, chemistry, biology, and brains to create a new technology: human technology, or that which we more commonly refer to when we use the word "technology." Human technology has accelerated the rate of technological advance to such an extent that we can now observe the acceleration trend, as illustrated by advances in computing. Consequently, Transhumanists anticipate that we will experience, sooner than commonly expected, increasingly dramatic advances that reflect the current technological paradigm, the Fourth Epoch. As futurist Ray Kurzweil states:

> Combining the endowment of rational and abstract thought with our opposable thumb, our species ushered in the fourth epoch and the next level of indirection: the evolution of human-created technology . . . most advanced mammals have added about one cubic inch of brain matter every hundred thousand years, whereas we are roughly doubling the computational capacity of computers every year.[14]

Gordon Moore, one of the founders of Intel Corporation, observed in the 1960s that the ratio of complexity to cost for computer components doubled approximately every two years. Today this observation is known among computer scientists as "Moore's Law." In its original formulation, Moore's Law reflected the rate of advance of the transistor-based computer architecture of the time. More recently, Kurzweil recognized that Moore's Law also accounts for the rate of advance of previous computer architectures (electromechanical, relay, and vacuum tube computing) and subsequent computer architectures (integrated circuit computing), and that the rate of advance has been increasing. Furthermore, Kurzweil observed that Moore's Law could be generalized to describe accurately the rate of technological advance broadly, well beyond the field of computing. This generalization of Moore's Law is known among futurists as the "Law of Accelerating Returns,"[15] which holds that technology as a whole is advancing, and will continue to advance, at an exponential rate.

An exponential view of technological change contrasts with the intuitive linear view. We commonly expect future advances to occur at a rate similar to that of the past. Such an expectation may approximate actual experience over short periods of exponential advance. However, over long periods, such an expectation results in surprises.

The story of the king and the mathematician illustrates the contrast between an exponential view and the intuitive linear view.[16] As the story goes, a king wanted to reward a mathemati-

cian for service to the kingdom. The mathematician asked only for rice, the number of grains to be determined by placing a single grain on the first square of a chess board and doubling the number of grains on each subsequent square. The king quickly decreed that the mathematician should receive the requested reward. As servants began to place grains on the chess board, it appeared to the king that the mathematician had requested a small reward. After filling the first row, there were a mere 255 grains — not even enough to fill a bowl. However, the king's perspective changed dramatically when, before his servants had placed grains on even half the squares, the board could no longer contain the accumulated grains (16,777,215 grains on the first three rows). Soon, the king realized he would be unable to fulfill his decree (18,446,744,073,709,551,615 grains on the whole board), even if he were to give his entire kingdom to the mathematician. Like the king, most of us have difficulty anticipating the full implications of exponential growth.

The Technological Singularity

BASED on an exponential view, Transhumanists anticipate that increasingly frequent technological advances will culminate in dramatic advances so rapid and astounding that, given current limitations, we cannot predict or direct them. However, the exponential view also suggests we as humans may also adapt, enhancing our minds and bodies, and even our world, to such a degree that we transcend these limitations and maintain an ability to predict and direct technological advances. Transhumanists call this future period, the "Singularity." Kurzweil writes:

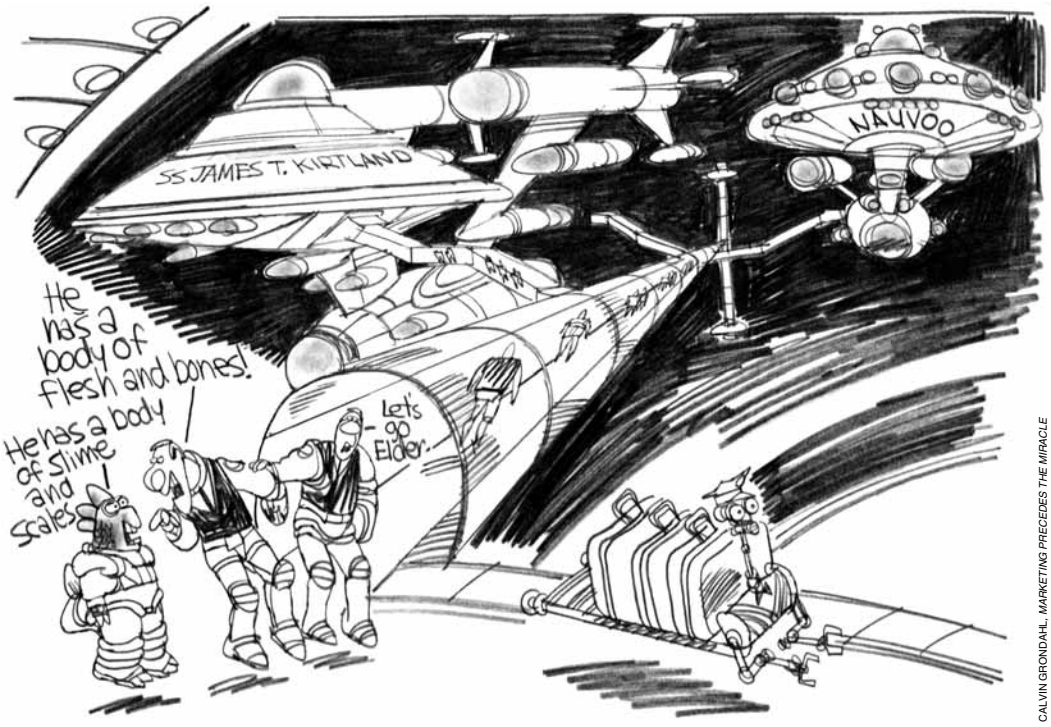
> What, then, is the Singularity? It's a future period during which the pace of technological change will be so rapid, its impact so deep, that human life will be irreversibly transformed. Although neither utopian nor dystopian, this epoch will transform the concepts that we rely on to give meaning to our lives, from our business models to the cycle of human life, including death itself.[17]

Mathematician Vernor Vinge associates the Singularity with the advent of superhuman intelligence: computers capable of recursively producing yet more intelligent computers at yet faster rates. Writing in 1993, Vinge predicted the Singularity will occur between 2005 and 2030.[18] In slight contrast to Vinge, Kurzweil associates the Singularity with a prevalence of superhuman intelligence, and predicts this will occur around 2045, when $1,000 will buy computing power equivalent to that of all human brains and when overall computing power will far surpass that of all human intelligence combined today.[19]

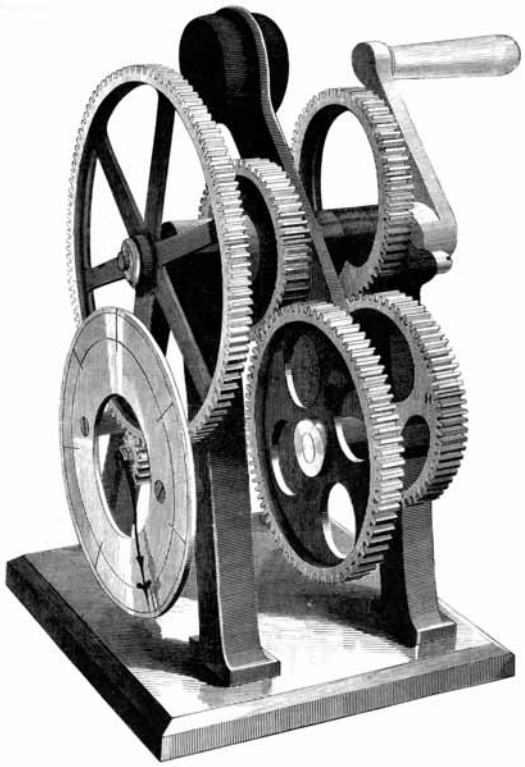
Transhumanists recognize that the advent of the Singularity is associated with serious — even existential — risks that should be earnestly reviewed and mitigated. Indeed, the need to increase awareness of and open a dialogue about these risks has been among the primary motivators for the formation of Transhumanist organizations. In particular, our interest in adding a spiritual dimension to this dialogue was in large part what prompted us to form the Mormon Transhumanist Association, which affirms: "We feel a duty to use science and technology according to wisdom and inspiration, to identify and prepare for risks and responsibilities associated with future advances, and to persuade others to do likewise." (See Figure 2.)

Transhumans

"TRANSHUMANS" is the name Transhumanists give to persons who are evolving from a human to a neohuman state through the application of technology to the human condition. Although the dramatic advances of the Singularity will enable most of this evolution, it has already begun. We are all transhumans to the extent that we have applied human technology to our being — orthodontics and vaccinations, for example. The extent to which the average human applies technology to her being has been increasing at an exponential and accelerating (meta-exponential) rate. However, as in the story of the king and the mathematician, most of us simply have not yet realized how profoundly, and eventually rapidly, technology will change



CALVIN GRONDAHL, *MARKETING PRECEDES THE MIRACLE*



AFFIRMATION OF THE MORMON TRANSHUMANIST ASSOCIATION

1. We seek the spiritual and physical exaltation of individuals and their anatomies, as well as communities and their environments, according to their wills, desires, and laws, to the extent they are not oppressive.

2. We believe that scientific knowledge and technological power are among the means ordained of God to enable such exaltation, including realization of diverse prophetic visions of transfiguration, immortality, resurrection, renewal of this world, and the discovery and creation of worlds without end.

3. We feel a duty to use science and technology according to wisdom and inspiration, to identify and prepare for risks and responsibilities associated with future advances, and to persuade others to do likewise.

FIGURE 2

Affirmation of the Mormon Transhumanist Association

us over time. Looking forward, Kurzweil identifies three areas in which overlapping revolutions are likely to occur as we approach the Singularity: genetics, nanotech, and robotics.[20]

The genetics revolution is likely to occur within the next decade. Exponential growth in computing power has made it possible to sequence DNA strands rapidly and facilitate the decoding of complex protein-folding sequences. A recent monumental achievement, and another example of the surprising nature of exponential growth, is the Human Genome Project. When the project began in 1990, critics pointed out that it would take thousands of years to finish, given the speed at which it began, but fifteen years later, it was completed. The genetics revolution would enable us to treat defects in and make enhancements to our biological state, with treatments in the form of new drugs or gene therapies.

Following closely on the heels of the genetics revolution, the nanotech revolution is likely to begin in the 2020s. Nanotech will extend human abilities through miniaturization, enabling us to manipulate materials at an atomic scale. In his book, *Engines of Creation*, scientist Eric Drexler outlined in some detail a universal molecular assembler that may be realized during this time.[21] Drexler envisions an atomic-scale builder directed by a computer that can create molecular structures, including copies of itself to assist in constructing complex structures in short periods of time. Although still theoretical, the essential physical properties of a molecular assembler, such as being able to manipulate individual atoms, have been demonstrated in the laboratory, and contemporary engineers are working, with increasing success, on implementing various components of the assembler as proofs-of-concept.[22] Such advances in miniaturization may shift genetic defect and enhancement treatments from drug to nanotech solutions.

The third revolution, in robotics, is likely to occur in the 2030s. By this time, non-biological computing power should readily exceed the computing power of non-enhanced human brains. As understanding of and control over biology increases, humans would also learn to integrate biological and information technology. Robotics would take on increasingly sophisticated forms that may be visually and tactilely indistinguishable from biological bodies. Robotic interfaces would make it possible for humans to transfer their experiences and knowledge to one another, or to non-biological substrates to enable indefinite extension of life. The emergence of strong artificial intelligence, in non-biological or enhanced biological form, would lead to the advent of the Singularity.

Even today, in advance of the revolutions outlined above, humans are beginning to enhance their bodies in ways that were previously impossible. For example, LASIK eye surgery is now commonplace and can improve patients' eyesight beyond native abilities. Pacemakers are widely used to extend human lives in ways that biology alone cannot. Prosthetics and cosmetic surgery are other examples of enhancements and reconstructions that, although formerly beyond our capabilities, have become conventional.

Worlds within Worlds

ALTHOUGH, by definition, the Singularity will change our nature and that of our world in currently unpredictable ways, we can speculate regarding possible post-Singularity futures, assisted to some extent by the application of logic to extrapolations from current trends.

For example, a common task to which computers are applied today is that of simulation. Flight and automobile simulators have been available both to the military

and for entertainment for many years. Financial simulators have become important for investors, as medical simulators have improved our ability to train surgeons. Many persons enjoy playing games such as *SimCity* that simulate urban planning. Entire worlds are simulated, for both scientific and entertainment purposes, such as the popular virtual world named "Second Life," in which persons buy and sell real estate, hold meetings, even dance, and generally engage in a virtual life through the proxy of their avatars — virtual representations of themselves.

Over time, the quality of simulations has greatly improved. Users of early flight simulators saw only bumpy black and white outlines of abstract geometric features representing terrain above an equally coarse rendition of a cockpit. Today, full-color, three-dimensional geographies and other aircraft can be wrapped around a user inside a machine that moves to provide for realistic physical sensations.

As the computing power available to us continues to advance exponentially, it seems reasonable to suppose that one of the things we might do is to run increasingly detailed simulations of our world or worlds like it. As the level of detail increases and the user interface improves, it would become ever more difficult to discern any difference between our world and the simulated worlds, to the point that, for all practical purposes, "simulation" or "virtual" would no longer accurately describe those worlds or the apparently conscious persons in them.

In his paper entitled "Are You Living in a Computer Simulation?" philosopher Nick Bostrom identifies and expounds on some interesting logical ramifications associated with the possibility of running simulations detailed enough to include persons like us. To paraphrase, he argues that at least one of the following is true:

(1) our civilization will never achieve the computing power required to run detailed world simulations;
(2) civilizations that achieve such computing power never run a significant number of detailed world simulations; or
(3) we almost certainly live in a detailed world simulation ourselves.

In other words, if ever we manage to run a world simulation that is detailed enough to be indistinguishable from our own, we should assume it is extremely unlikely that ours is the only or the first civilization to do so. It follows that there is a high probability that both (a) we are living in such a world ourselves, and (b) the world running our world is itself run by another, and so forth in possibly infinite regression. This argument is known among futurists as the Simulation Argument.

For some, the first thing that comes to mind when they read of the Simulation Argument is *The Matrix*, a popular film that portrays a world in which humans are imprisoned in a simulation and used as an energy source for the machines running the simulation. However, this dystopian portrayal is not necessary. To the contrary, it seems a more balanced portrayal would better account for the ramifications of worlds within worlds, as described by Bostrom:

IS A SIMULATED WORLD "REAL"?

ARE YOU LIVING IN A WORLD COMPUTED BY NEOhuman gods? Snickering and rolling of eyes may ensue, yet the question is only the latest of an ancient and prestigious kind. Plato taught that the world of experience is but a silhouette of a world of eternal Forms, which in turn is a silhouette of the Good. Descartes required divine benevolence to achieve confidence in experience, and Berkeley positioned God as the immediate cause of experience. These and others remind us of the uncertainty of matters beyond our physical and spiritual experience.

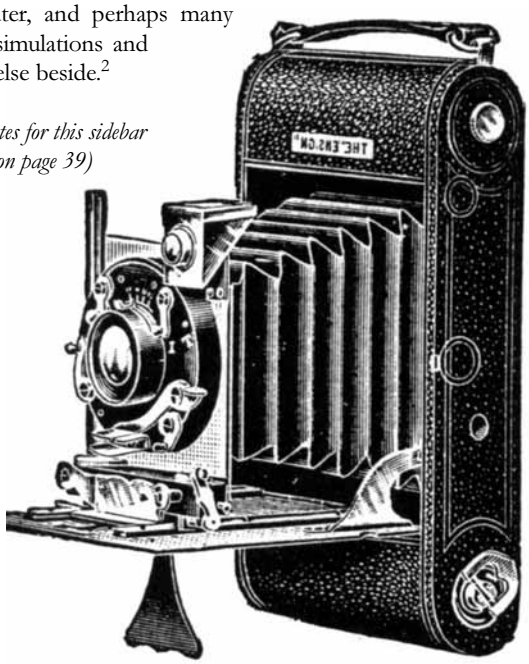
This metaphysical uncertainty also presents itself to us in less sophisticated ways. From the time we are children, we joke that we might now be dreaming or hallucinating—"what have you been smoking?" After watching a psycho-thriller film, we catch ourselves questioning our own mental stability. During a long road trip through the desert, we see the distant mirage and wonder whether we always recognize other illusions in our experience.

Common sense leads most of us, most of the time, to ignore or laugh away metaphysical uncertainty, and proceed with confidence in experience. As William James put it: "The greatest empiricists are only so upon reflection and when left to their instincts they dogmatize like infallible popes."[1] This may not be such a bad thing.

Whether we are dreaming, hallucinating, or psychopathic, and whether we are living in a world computed by neohuman gods, our experience now remains the most real we know. We continue in pain and pleasure, misery and joy. Our memories neither decrease nor increase in poignancy. Our power to help or hinder is unchanged. The smile on the face of the beaming child and the tear in the eye of the reminiscing centenarian remain as meaningful. Nick Bostrom writes:

> No clarity is gained by asserting that the world isn't "really real" if we are in a simulation. The simulated world that we experience would, however, be only a part of reality. Reality would also contain the computer that runs the simulation, the civilization that built the computer, and perhaps many other simulations and much else beside.[2]

(The notes for this sidebar appear on page 39)



If a simulated world is

In addition to wondering about the

IN ADDITION TO WONDERING ABOUT THE MEANS BY WHICH GOD will bring about the resurrection, Mormons can work faithfully toward the promotion of related scientific research. In addition to speculating about scriptural mysteries, Mormons can apply the scriptures to their lives in more pragmatic ways by investing some of their time and resources in the ethical advancement of technology.

> For example, if nobody can be sure that they are at the basement-level, then everybody would have to consider the possibility that their actions will be rewarded or punished, based perhaps on moral criteria, by their simulators. An afterlife would be a real possibility. Because of this fundamental uncertainty, even the basement civilization may have a reason to behave ethically. The fact that it has such a reason for moral behavior would of course add to everybody else's reason for behaving morally, and so on, in truly virtuous circle. One might get a kind of universal ethical imperative, which it would be in everybody's self-interest to obey, as it were "from nowhere."[23]

Neohumans

TRANSHUMANISTS use the terms "neohumans" or "posthumans" to refer to persons who have advanced to the point that, according to present standards, one may no longer consider or recognize them to be human. Although descriptions of this state differ and accommodate a wide variety of perspectives, most Transhumanists see some form of radically enhanced personhood as their ultimate objective.[24]

This should not imply that becoming neohuman is a final destination. Neohumans would continue to advance and progress. The term is used simply to distinguish between humanity's current state and its future possibilities, as well as these can be envisioned at present. It is also inevitable that visions of a neohuman future will evolve as time goes on. As imagined now, possible neohuman traits, all involving technological enhancements to current human capacities, include:

- highly advanced intellectual capabilities, greater than ours in magnitude as ours are greater than those of other animals
- physical bodies that are immune to disease and aging
- the ability to communicate complex thoughts and emotions instantaneously without visual aids or speech
- expanded sensory inputs that enable higher awareness of even distant environs
- superhuman strength and agility
- perfect control of individual desires, moods, or mental states
- increased capacity to experience joy, love, pleasure, and other emotions.

Not all concepts of posthumans are associated with bodies—biological or otherwise. Some Transhumanists desire to abandon bodies entirely and "upload" their identities into some type of network or computer system where they would be free from the perceived demands and constraints of bodily form.

Neohumans, in whatever form they evolve into, may interact, directly or indirectly, with humans as neohuman "gods."[25] Their interactions with humans may include restoring dead humans to life, as speculated by mathematician Frank Tipler, or simulating human worlds.[26] Nick Bostrom writes:

> Although all the elements of such a system can be naturalistic, even physical, it is possible to draw some loose analogies with religious conceptions of the world. In some ways, the posthumans running a simulation are like gods in relation to the people inhabiting the simulation: the posthumans created the world we see; they are of superior intelligence; they are "omnipotent" in the sense that they can interfere in the workings of our world even in ways that violate its physical laws; and they are "omniscient" in the sense that they can monitor everything that happens.[27]

A MORMON VIEW OF THE FUTURE

AS STATED EARLIER, we, the members of the Mormon Transhumanist Association, feel that the many significant changes on the horizon make it important for Latter-day Saints to become actively involved in shaping the future by mining pertinent gospel insights for injection into the wider Transhumanist discussion. While Mormon teachings about the future are vague in many respects, so, too, are the various Transhumanist scenarios. That vagueness makes sense within the context of Mormon teachings that present the unfolding creation as following a particular tra-

jectory, with perhaps a basic framing and thrust, that has been followed "worlds without end," allowing for genuine prophetic insight without predetermining the future. The Mormon understanding is that the power of God is used to work with, not control, creation.

In this section, we provide a brief overview of some significant Mormon notions about future events, especially those that touch on human flourishing and our potential godhood. As with the previous section, our goal is to describe rather than defend these teachings, and we will focus primarily on those for which we sense there are strong Transhumanist parallels. In the final section, we'll explicitly address the parallels and complements, and share more about our own interests and hopes for helping to shape the future through applying Mormon understandings.

The Dispensation of the Fulness of Times

WE opened this article with a brief discussion of the "dispensation of the fulness of times." It is in this dispensation that God is bringing together "a whole and complete and perfect union" in which a "welding together of dispensations, and keys, and powers, and glories should take place," and in which "those things which never have been revealed from the foundation of the world . . . shall be revealed unto babes and sucklings" (D&C 128:18). According to Joseph Smith, this dispensation will see "a work that is destined to bring about the destruction of the powers of darkness, the renovation of the earth, the glory of God, and the salvation of the human family."[28] The dispensation of the fulness of times is also characterized by the speed at which God's work progresses. As George Q. Cannon stated, "The work of the preparation of the earth, and of its inhabitants, is pressing forward with a rapidity that we who are taking part in it do not realize. . . . [T]his great work of the last days will be cut short in righteousness."[29]

Transfiguration, the Millennium, Immortality

MORMON tradition teaches of an imminent "day of transfiguration," expanding across a millennial period of time, when mortals are transfigured and resurrected to immortality (see D&C 63:20–21). The Millennium is an imminent and widely unexpected future period, during which a progressive transfiguration and resurrection to immortality will occur as our knowledge and power continue to increase. The advent of the Millennium is associated with disruptive changes in world conditions, culminating in the return of Christ. Despite its imminence, many will not expect the Millennium to occur when it does, but a few will recognize the signs of its coming.

The Doctrine and Covenants describes conditions during the Millennium, including some aspects of transfiguration, as follows:

> And in that day the enmity of man, and the enmity of beasts, yea, the enmity of all flesh, shall cease from before my face.
>
> And in that day whatsoever any man shall ask, it shall be given unto him.
>
> And in that day Satan shall not have power to tempt any man.
>
> And there shall be no sorrow because there is no death.
>
> In that day an infant shall not die until he is old; and his life shall be as the age of a tree;
>
> And when he dies he shall not sleep, that is to say in the earth, but shall be changed in the twinkling of an eye, and shall be caught up, and his rest shall be glorious.
>
> Yea, verily I say unto you, in that day when the Lord shall come, he shall reveal all things—
>
> Things which have passed, and hidden things which no man knew, things of the earth, by which it was made, and the purpose and the end thereof—
>
> Things most precious, things that are above, and things that are beneath, things that are in the earth, and upon the earth, and in heaven. (D&C 101:26–34)

Joseph Smith frequently expressed the imminence of the Millennium and encouraged us to prepare for it:

> When I contemplate the rapidity with which the great and glorious day of the coming of the Son of Man advances, when He shall come to receive His Saints unto Himself, where they shall dwell in His presence, and be crowned with glory and immortality . . . I cry out in my heart, What manner of persons ought we to be in all holy conversation and godliness![30]

Brigham Young suggested that many of us may not even know when the Millennium has already begun:

> Will the Saints arise from the dead? Yes. Who will know it? But a few. When the resurrection commences, I say but few will know it . . . Will the Saints rise from the dead before the world is converted? Yes. . . . When the Millennium is ushered in, no man or woman will know anything about it, only by the power of God. He will rule and reign, and His glory shall be in Zion, and the wicked will not know it is the hand of our God.[31]

Prophets have envisioned that, during the Millennium, we and other forms of life will be immortal. While immortality might be defined as achieving a perfect physical state, it is an ideal with diverse manifestations. Joseph Smith taught that being raised to an immortal state may involve moving from lesser to greater manifestations of immortality and that such progressions may involve ceremonial ordinances:

> Now the doctrine of translation is a power which belongs to this Priesthood. There are many things which belong to the powers of the Priesthood and the keys thereof, that have been kept hid from before the foundation of the world; they are hid from the wise and prudent to be revealed in the last times.[32]
>
> Michael the archangel (Adam) holds the keys of the resurrection and after a man is raised from the dead,

Whether tomorrow is wonderful

WHETHER TOMORROW IS WONDERFUL OR HORRIBLE may depend on the extent to which persons with good minds and loving hearts become actively involved in shaping the future.

has an immortal body and receives an ordination to hold the keys of the resurrection from under the hands of Michael or those having authority, he then has the power to raise the dead, and not before.[33]

Brigham Young speculated:

> I have friends on the earth, for God would raise them up for me to do my work. That is not all; by and by the Lord will say to the sleeping dust, awake and come forth out of your graves. I am on hand; the Lord wakes me up or sends somebody to do it that possesses the keys of the resurrection. My dust is waked up; my spirit is re-united to it, and it is made a celestial body filled with immortality and eternal life.[34]

Worlds without End

MORMON tradition teaches that the eternities consist of innumerable heavens of types and degrees toward which our world may advance. These heavens are inhabited by a plurality of gods whom we may join as we emulate and become as God. Prophets proclaim that innumerable worlds of diverse types and varying degrees have been and will be created. Further, they envision that these worlds advance through processes such as transfiguration and resurrection, becoming heavens according to the desire and work of their inhabitants and preparing their inhabitants for yet greater heavens. Brigham Young taught:

> You may now be inclined to say, "We wish to hear the mysteries of the kingdoms of the Gods who have existed from eternity, and of all the kingdoms in which they will dwell; we desire to have these things portrayed to our understandings." Allow me to inform you that you are in the midst of it all now, that you are in just as good a kingdom as you will ever attain to, from now to all eternity, unless you make it yourselves by the grace of God, by the will of God, which is a code of laws perfectly calculated to govern and control eternal matter.[35]

The work of creating innumerable worlds and heavens may have neither beginning nor end. This idea is expressed in a Mormon hymn by William Phelps entitled "If You Could Hie to Kolob." (See Figure 3.) Moreover, there may be no end to the advance of heavens, as one heavenly degree prepares its inhabitants for yet another that is greater. Joseph Smith used our world as an example, indicating that, even as it serves as a celestial heaven, its inhabitants would continue to learn of yet greater heavens:

> This earth, in its sanctified and immortal state, will be made like unto crystal and will be a Urim and Thummim to the inhabitants who dwell thereon, whereby all things pertaining to an inferior kingdom, or all kingdoms of a lower order, will be manifest to those who dwell on it; and this earth will be Christ's. Then the white stone mentioned in Revelation 2:17, will become a Urim and Thummim to each individual who receives one, whereby things pertaining to a higher order of kingdoms will be made known; And a white stone is given to each of those who come into the celestial kingdom. . . .(D&C 130:9–11)

Gods

LATTER-DAY prophets have proclaimed that there is a plurality of gods, each of which became so by emulating God, and that becoming gods ourselves is the ultimate destiny of humanity as children of God. These prophets envision that humans will join in the creation of worlds and heavens and the development of other gods, expanding our influence throughout eternity and engaging in yet greater works. Joseph Smith stated:

> Here, then, is eternal life — to know the only wise and true God; and you have got to learn how to be Gods yourselves, and to be kings and priests to God, the same as all Gods have done before you — namely, by going from one small degree to another, and from a small capacity to a great one — from grace to grace, from exaltation to exaltation, until you attain to the resurrection of the dead, and are able to dwell in everlasting burnings and to sit in glory, as do those who sit enthroned in everlasting power.[36]

As Gods, we would join in the creation of worlds and heavens:

> We believe there are many, very many, who have entered into power, glory, might, and dominion, and are gathering around them thrones, and have power to organize elements, and make worlds, and bring into existence intelligent beings in all their variety, who, if they are faithful and obedient to their calling and creation, will in their turn be exalted in [the] eternal kingdoms of the Gods.[37]

These children . . . through their faithfulness to the

gospel, will progress and develop in knowledge, intelligence and power, in future eternities, until they shall be able to go out into space where there is unorganized matter and call together the necessary elements, and through their knowledge of and control over the laws and powers of nature, to organize matter into worlds on which their posterity may dwell, and over which they shall rule as gods.[38]

PARALLELS AND COMPLEMENTS

IN THIS FINAL section, we briefly identify some of the parallels between Transhumanist and Mormon views. We first note parallels—places where we see the sensibilities of the two groups matching very closely. We then present complements—spots within the two frameworks where we see one might benefit from the insights of the other.

TRANSHUMANIST PARALLELS WITH THE MORMON VIEW

THE Transhumanist and Mormon views parallel each other generally as follows:

- The present is a time of rapid progress in knowledge;
- A fundamental change in our nature and that of our world is imminent;
- Both we as humans and our world can and will dramatically transcend our current limitations.

More specific parallels can be seen in the following areas:

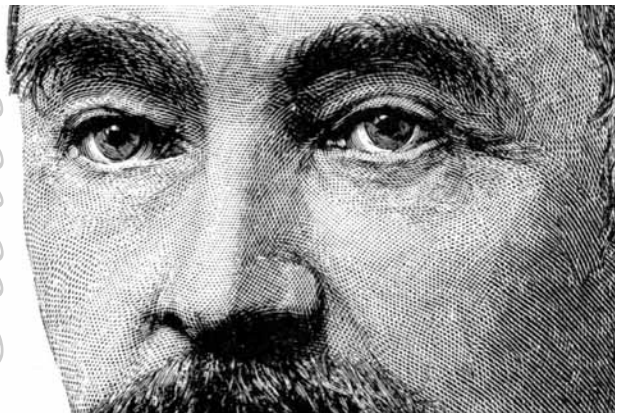
- The LDS notion of the "dispensation of the fulness of times" parallels the Transhumanist view of our having entered the "Fourth Epoch";
- LDS teachings about transfiguration, the Millennium, and immortality parallel Transhumanist notions of the Singularity and transhumans;
- LDS teachings about worlds and heavens without end and the human potential for godhood parallel Transhumanist understandings of simulations and posthumans.

The Dispensation of the Fulness of Times and the Fourth Epoch

MORMON teachings about the dispensation of the fulness of times parallel Transhumanist ideas regarding the Fourth Epoch in at least the following ways:

1. *Present knowledge is the culmination of multiple past periods.* In the dispensation of the fulness of times, we benefit from the restoration of the knowledge and power of previous dispensations. Likewise, in the Fourth Epoch, the technologies of previous epochs enable present human technologies.

2. *Acquisition of knowledge and power is accelerating.* In the Dispensation of the Fulness of Times, God is shortening the days and increasing the rapidity of the work. Similarly, in the Fourth Epoch, technological advances are recursively leveraging previous advances to progress exponentially.



IF YOU COULD HIE TO KOLOB
William W. Phelps

If you could hie to Kolob in the twinkling of an eye,
And then continue onward with that same speed to fly,
Do you think that you could ever, through all eternity,
Find out the generation where Gods began to be?

Or see the grand beginning, where space did not extend?
Or view the last creation, where Gods and matter end?
Me thinks the Spirit whispers, "No man has found 'pure space,'
Nor seen the outside curtains, where nothing has a place."

The works of God continue, and worlds and lives abound;
Improvement and progression have one eternal round.
There is no end to matter; there is no end to space;
There is no end to spirit; there is no end to race.

There is no end to virtue; there is no end to might;
There is no end to wisdom; there is no end to light.
There is no end to union; there is no end to youth;
There is no end to priesthood; there is no end to truth.

There is no end to glory; there is no end to love;
There is no end to being; there is no death above.
There is no end to glory; there is no end to love;
There is no end to being; there is no death above.

FIGURE 3

3. *Future progress depends on knowledge and power acquired today.* In the dispensation of the fulness of times, we are establishing the foundation for yet greater dispensations to come. Analogously, in the Fourth Epoch, we are introducing technologies that will enable future epochs to combine biological and information technologies.

Transfiguration, the Millennium, Immortality, and the Singularity and Transhumans

MORMON teachings about transfiguration, the Millennium, and immortality parallel Transhumanist ideas regarding the Singularity and transhumans in at least the following ways:

1. *A period of dramatic and unexpected change is imminent*. Mormon theology teaches that though some ridicule and few have recognized its signs, the Millennium approaches, and we should prepare ourselves for the day of transfiguration and its attending changes. Likewise, although critics scoff and despite the intuitive linear view of change, Transhumanists believe the Singularity is nearer than we anticipate, and that we should review and mitigate the associated risks.

2. *Minds and bodies may be changed in diverse ways*. Mormon doctrine speaks of how in the twinkling of an eye, we may be transfigured or resurrected to bodies of varying types and degrees of glory. Similarly, Transhumanists recognize that continued advancement in information technologies may enable genetics, nanotechnology, and robotics to enhance our minds and bodies.

3. *Anatomical changes may extend lives indefinitely*. Mormons teach that from one transfiguration to another, exchanging blood for spirit, we may attain immortality. Analogously, as transhumans, we may extend or exchange our biological substrate with a different substrate to ensure the persistence of our identity.

4. *Our work may contribute to these changes*. Mormons teach that transfiguration and resurrection may be ordinances for us to perform for each other. Comparatively, Transhumanists believe our science may provide technology that enables us to enhance ourselves and attain indefinite longevity.

Worlds without End and Worlds within Worlds

MORMON teachings related to worlds and heavens without end and the human potential for Godhood parallel Transhumanist ideas related to simulations and posthumans who act as Gods in at least the following ways:

1. *Our world may be among infinite and diverse worlds*. According to LDS teaching, there may be telestial, terrestrial, and celestial worlds without end, and heavens of yet higher orders, each reflecting the work and desire of its inhabitants. Likewise, there exists a Transhumanist notion that in addition to the worlds of our space and time, there may be an infinite regression of simulations, each with inhabitants adapted to varying physical laws.

2. *We may one day utterly transcend our current knowledge and power*. According to Joseph Smith and other prophets, as the children of God, we may learn to become like God as we emulate and join in the plurality of gods. Similarly, Transhumanists believe we may one day be able to merge with our technology to become neohuman, with minds and bodies enhanced in ways far beyond what is currently imaginable.

3. *Others may have produced us, and we may yet produce others*. Mormon theology understands that God created our world and its inhabitants and that we may one day join in the creation of yet other worlds. Analogously, in Transhumanist speculation, neohumans in another world may very well be simulating our world, and we may eventually simulate yet other worlds.

4. *There may be no end to progress*. The Mormon doctrine of eternal progression declares that God may progress forever, creating worlds without end, exalting others to immortality and eternal life, and expanding throughout eternity. Comparatively, Transhumanists posit that neohumans may advance forever, sending their intelligence through time and space.

Transhumanist Complements to the Mormon View

THE Transhumanist view may complement Mormon faith in three areas:

- It provides a rational basis for certain LDS beliefs;
- It promotes Latter-day Saints' exercising a more active faith in Mormon notions of the future;
- It encourages Latter-day Saints to have more optimistic expectations for the near future.

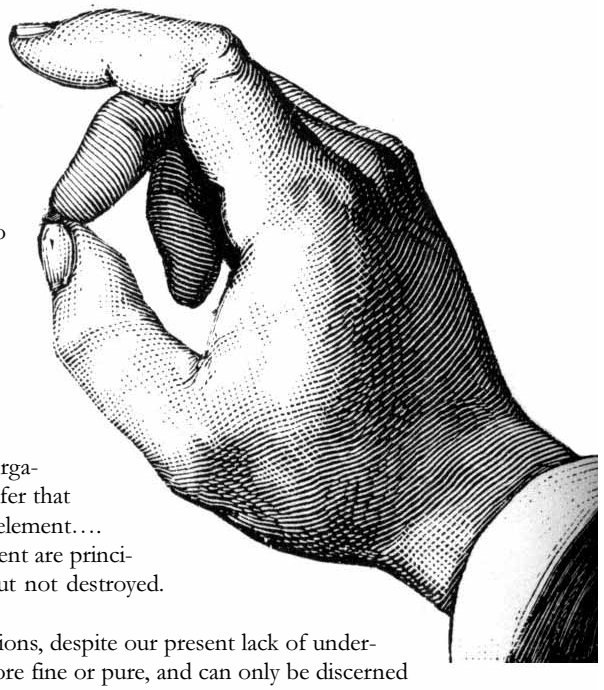
Superstitious versus Reasonable Hope

ONE of the criticisms of religion in today's postmodern world is that religious belief is superstitious. Critics often claim that faith in ideas such as immortality and *theosis* (human potential for godhood) have no basis in reality. Transhumanist ideology has the potential to answer these criticisms by providing believing Mormons with a relatively reasoned and detailed vision of possible future events. For Mormons willing to engage Transhumanism, the future events toward which they look are based not only in esoteric teachings and prophecies but also in the predictions of rational and scientifically committed persons looking at the future. The Transhumanist view complements the Mormon view by providing a basis of belief, not only in mystical teachings, but also in rational predictions.

Idle versus Working Faith

AS discussed in the introduction, Mormonism contains many teachings about the future that are so vague that they are difficult to exercise faith in, except in very abstract ways. Critics rightly ask about the value of believing in something we cannot begin to understand. And given Mormonism's pragmatic view of the world and emphasis on the manifestation of faith through works, this criticism is especially challenging for Latter-day Saints.

Mormons who take Transhumanist notions seriously can appeal to more than unexplainable or incomprehensible mysteries. They may appeal to rationality and science. Their arguments then become more understandable, meaningful, and practically applicable. Transhumanism provides Mormons with something tangible toward which to work. In addition to wondering about the means by which God will bring about the resurrection, Mormons can work faithfully toward the promotion of related scientific research. In addition to speculating about scriptural mysteries, Mormons can apply the scriptures to their lives in more pragmatic ways by investing some of their time and resources in the ethical advancement of technology. In addition to wondering how God will provide a way for us to overcome physical ailments and limitations,



MIRACLES

MORMON THEOLOGY HAS PLACED SPECIAL EMPHASIS ON GOD'S adherence to logic and natural law, and the need to provide a rational explanation for divine operations. Departing from the Calvinist doctrine of God's absolute supremacy as the creator of all matter, Joseph Smith taught instead that God was a discoverer who subsequently worked to shape the world according to his will:

> God himself, finding he was in the midst of spirits and glory, because he was more intelligent, saw proper to institute laws whereby the rest could have a privilege to advance like himself. The relationship we have with God places us in a situation to advance in knowledge. He has power to institute laws to instruct the weaker intelligences, that they may be exalted with himself.[1]

> Now, the word create . . . does not mean to create out of nothing; it means to organize; the same as a man would organize materials and build a ship. Hence, we infer that God had materials to organize the world out of chaos—chaotic matter, which is element…. Element had an existence from the time [God] had. The pure principles of element are principles which can never be destroyed; they may be organized and reorganized, but not destroyed. They had no beginning and can have no end.[2]

Not only is matter eternal, but all spiritual phenomena have materialistic explanations, despite our present lack of understanding. "There is no such thing as immaterial matter. All spirit is matter, but it is more fine or pure, and can only be discerned by purer eyes" (D&C 131:7). Miracles are understood as presently irreproducible events that defy explanation but necessarily adhere to law, and over which we will someday have control:

> Miracles cannot be in contravention of natural law, but are wrought through the operation of laws not universally or commonly recognized. Gravitation is everywhere operative, but the local and special application of other agencies may appear to nullify it—as by muscular effort or mechanical impulse a stone is lifted from the ground, poised aloft, or sent hurtling through space. At every stage of the process, however, gravity is in full play, though its effect is modified by that of other and locally superior energy. The human sense of the miraculous wanes as comprehension of the operative process increases.[3]

> A miracle is an occurrence which, first, cannot be repeated at will by man, or, second, is not understood in its cause and effect relationship. History is filled with such miracles. What is more, the whole story of man's progress is the conversion of "miracles" into controlled and understood events. The airplane and radio would have been miracles, yesterday.[4]

Mormons tend to embrace scientific discovery and advancement, believing that "the glory of God is intelligence" (D&C 93:36) and that "a man is saved no faster than he gets knowledge."[5] This emphasis on emulating God as we strive to understand and control the natural world has strong parallels with the Transhumanist view of continually progressing humans who seek increasing understanding of and control over their anatomy and environment.

(The notes for this sidebar appear on page 39)

Miracles

Mormons can promote the rights of individuals to cure and enhance themselves as the technology becomes available.

A More Optimistic View of the Immediate Future

SOME Latter-day Saints believe that additional war and disaster must occur before the return of Christ and the advent of the Millennium. Critics argue that faith in such interpretations of biblical prophecy could be self-fulfilling and result in needless suffering and death. Influenced by a Transhumanist perspective, Mormons may open themselves to more optimistic views of the near future. Given cause to believe that the prophetic promises of the Millennium could be realized without further war and destruction, Mormons are more likely to seek to bring about such prophecies through constructive efforts and are more likely to choose to view prophecies of destruction as warnings rather than inevitabilities. Hence the Transhumanist view complements the Mormon view by encouraging an optimistic expectation for the near future of humanity.

MORMON COMPLEMENTS TO THE TRANSHUMANIST VIEW

MORMONISM may complement Transhumanism in several important areas:

- Mormon teachings about the human potential for godhood provide resources for adding love and a moral coloring to Transhumanist views of what it means to be neohuman;
- Mormonism, along with other religious traditions, can encourage Transhumanists to adopt a more respectful and accurate view of certain traditional values and the important role they play in human lives;
- Mormon emphases on universal salvation can provide an important reminder in the work and thinking done in Transhumanist circles that technologies and opportunities must be available to all.

Brazen versus Sanctified Desire

SOME religious critics charge that Transhumanists are "playing

God" and that the desire to change the human condition is blasphemous. These critics claim that while technology improves efficiencies, it does not make us holier. Instead, it feeds our desire for power. According to these critics, this desire is evil, and it is immoral to aspire to the kinds of power attributed to neohumans. They ask: to what end do we pursue these improvements over past states of being? Mormonism answers: godhood. The desire to work together toward godhood is the highest and most righteous desire and the fullest manifestation of love. Hence, the Mormon view complements the Transhumanist view by providing a spiritual justification for the desire to better the human condition.

Disdainful versus Respectful Attitude

THERE are detrimental consequences to acting with a negative or dismissive attitude towards established cultures, religions, and values. When the advocates of social or philosophical movements do not respect the traditions of persons they are trying to persuade, those advocates decrease their success.

In common with advocates of other nascent movements, some Transhumanists are negative or dismissive toward tradition. This was demonstrated early in the Transhumanist movement when FM-2030 advocated Transhumanist rejection of religious belief and traditional family values.[39]

More recently, the World Transhumanist Association has acknowledged that it would like to find better ways to communicate with and understand religious persons.[40] To that end, Transhumanists should not ignore the religious lives of others and should take a closer look at core values at the heart of the various world religions. Many of these religious values can benefit Transhumanists as they work on the cutting edges of technological innovation, just as Transhumanists might be able to teach others how to complement their religious lives in fulfilling and practically beneficial ways.

Mormonism, with its Judeo-Christian roots, has much in common with established cultures, despite differences in various beliefs. Mormonism emphasizes the traditional values of charity and unity, avoidance of unnecessary contention, and the building up of all persons, regardless of their beliefs. These and many other gospel teachings belong at the Transhumanist discussion table to impact the way future technological advancement unfolds.

Elitist versus Universal Access

CRITICS of Transhumanism argue that emerging technologies will be disproportionately available to those with greater financial resources.[41] An elite class of neohumans may arise to the exclusion of poorer individuals. Central to Mormon ideology is the assertion that all persons are invited to partake in salvation. Mormonism even goes so far as to advocate faith that all persons will find happiness in immortality and in heavens that vary according to their individual desires. Hence, the Mormon view complements the Transhumanist view by positing a moral imperative to advocate for universal access to whatever understanding of salvation and human flourishing emerges in the future.

CONCLUSION

WE RECOGNIZE THAT the Transhumanist ideas sketched briefly in this article may sound farfetched to persons who do not closely monitor what is occurring in technological and scientific circles. Still, we believe that many recognize that we as a species have reached a critical moment in human history. Through technological advancement in recent centuries, humans now navigate depths of the sea that sunlight does not reach and rocket through the sky at speeds greater than that of sound. For more than a half century now, humans have had the technological power to destroy themselves and a significant portion of the planet. Within just the past quarter century, we've seen the emergence of the personal computer, which now provides more power in a handheld device than what once filled entire rooms. Humans have visited the moon, space tourists are currently orbiting the Earth, and robots are scouting Mars. The human genome has been entirely sequenced. Worldwide data, text, audio, and video communications via the Internet are inexpensive and commonplace. We regularly read in the news of advances toward cures for cancer. This is today!

Whether tomorrow is wonderful or horrible may depend on the extent to which persons with good minds and loving hearts become actively involved in shaping the future. We cannot prove that God will prevent us from misusing the power with which we have been endowed, nor can we prove that God will ensure human immortality despite our efforts or lack thereof. It may be that we can avoid the prophesied horrors of the last days just as Nineveh avoided its prophesied destruction (Jonah 3). It may be that the transfiguration and resurrection to immortality will happen no faster than we do the work, as with the preaching of the gospel to all persons. More generally, it may be that charitable and working faith, leveraging all the inspiration and endowments we have received, is essential to the realization of prophetic visions of the future. With such risks and opportunities at hand, what shall we do? Where do wisdom and inspiration guide us? As Captain Moroni asked in the Book of Mormon: "Do ye suppose that the Lord will still deliver us, while we sit upon our thrones and do not make use of the means which the Lord has provided for us?" (Alma 60:21).

In response to these questions, we repeat the words of Brigham Young:

> You are in just as good a kingdom as you will ever attain to, from now to all eternity, unless you make it yourselves by the grace of God, by the will of God, which is a code of laws perfectly calculated to govern and control eternal matter.[42]

The Mormon Transhumanist Association was formed on 3 March 2006 and became the first religious special-interest affiliate of the World Transhumanist Association on 6 July 2006. We invite you to explore our website at WWW.TRANSFIGURISM.ORG or contact us at ADMIN@TRANSFIGURISM.ORG.

NOTES

1. Rainer Maria Rilke, *Letters to a Young Poet,* http://www.mythosandlogos.com/Rilke.html (accessed 2 February 2007) .
2. Joseph Smith, *Teachings of the Prophet Joseph Smith*, ed. Joseph Fielding Smith (Salt Lake City: Deseret News Press, 1938), 231–32.
3. George Q. Cannon, *Journal of Discourses,* 26 vols. (London and Liverpool: Latter-day Saints Book Depot, 1855–86), 24:56.
4. Of his name change, Esfandiary wrote: "2030 reflects my conviction that the years around 2030 will be a magical time. In 2030 we will be ageless and everyone will have an excellent chance to live forever. 2030 is a dream and a goal." See http://en.wikipedia.org/wiki/FM-2030 (accessed 15 January 2007).
5. These principles can be viewed at http://www.extropy.org/principles.htm (accessed 2 February 2007).
6. See http://transhumanism.org (accessed 2 February 2007).
7. See http://www.extropy.org (accessed 2 February 2007).
8. See http://www.foresight.org (accessed 2 February 2007).
9. See http://www.imminst.org (accessed 2 February 2007).
10. See http://www.ieet.org (accessed 2 February 2007).
11. See http://www.singinst.org (accessed 2 February 2007).
12. See http://transfigurism.org (accessed 2 February 2007).
13. Nick Bostrom, "Transhumanist Values," at http://www.nickbostrom.com/ethics/values.html (accessed 15 January 2007).
14. Ray Kurzweil, *Singularity is Near: When Humans Transcend Biology* (New York: Viking, 2005), 16.
15. See "Accelerating Change" at http://en.wikipedia.org/wiki/Accelerating_change (accessed 15 January 2007).
16. The many variations of this story may have originated in Hindu mythology. For more information, see "Ambalappuzha Sri Krishna Temple" at http://en.wikipedia.org/wiki/Ambalappuzha_Sri_Krishna_Temple (accessed 2 February 2007).
17. Kurzweil, *Singularity is Near*, 7.
18. See "Vernor Vinge on the Singularity" at http://mindstalk.net/vinge/vinge-sing.html (accessed 15 January 2007).
19. See "Law of Accelerating Returns" at http://www.kurzweilai.net/articles/art0134.html (accessed 15 January 2007). For a good overview, see Technological Singularity" at http://en.wikipedia.org/wiki/Technological_singularity (accessed 15 January 2007).
20. See "Law of Accelerating Returns," at http://www.kurzweilai.net/articles/art0134.html (accessed 2 Februray 2007).
21. Eric Drexler, *Engines of Creation: The Coming Era of Nanotechnology* (New York: Bantam/Doubleday, 1986).
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23. See Nick Bostrom, "Are You Living in a Computer Simulation?" at http://www.simulation-argument.com/simulation.html (accessed 15 January 2007).
24. See "What Is a Posthuman?" at http://www.transhumanism.org/index.php/WTA/faq21/56/ (accessed 2 Februray 2007).
25. See "Posthuman God" at http://en.wikipedia.org/wiki/Posthuman_God (accessed 2 Februray 2007).
26. Frank Tipler, *Physics of Immortality* (New York: Doubleday, 1994).
27. Bostrom, "Are You Living in a Computer Simulation?"
28. Smith, *Teachings*, 232.
29. Cannon, *Journal of Discourses*, 24:56.
30. Smith, *Teachings*, 29.
31. Brigham Young, *Brigham Young Addresses,* 6 vols, comp. Elden J. Watson, (n.p., 1979–1984), 2:127.
32. Smith, *Teachings*, 170.
33. Wilford Woodruff, *Journal of Discourses,* 6:120.
34. Young, *Brigham Young Addresses,* 2:100.
35. Young, *Journal of Discourses,* 3:336.
36. Smith, *Teachings,* 346–47.
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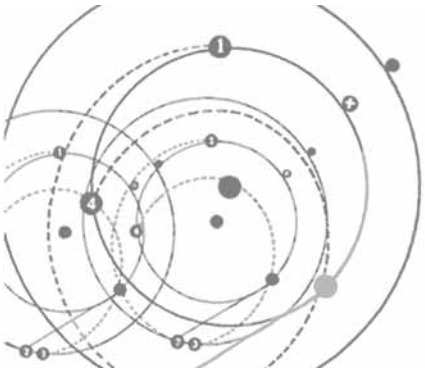
38. Lorenzo Snow, *Improvement Era*, June 1919, 658–59.
39. See "Transhuman" at http://en.wikipedia.org/wiki/Transhuman (accessed 15 January 2007).
40. See http://www.transhumanism.org/index.php/WTA/communities/religious/ (accessed 15 January 2007).
41. See http://en.wikipedia.org/wiki/Transhumanism#Gattaca_argument_.28biotech_divide.29 (accessed 15 January 2007).
42. Young, *Journal of Discourses,* 3:336.

NOTES FOR "IS A SIMULATED WORLD 'REAL?'" SIDEBAR

1. William James, *The Will to Believe and Other Essays in Popular Philosophy* (New York: Dover Publications, 1956), 13–14.
2. See the "Frequently Asked Questions" section of Nick Bostrom, "Are You Living in a Computer Simulation?" at http://www.simulation-argument.com/faq.html (accessed 15 January 2007).

NOTES FOR "MIRACLES" SIDEBAR

1. Joseph Smith, *Teachings of the Prophet Joseph Smith*, ed. Joseph Fielding Smith (Salt Lake City: Deseret News Press, 1938), 354.
2. B. H. Roberts, ed., *History of The Church of Jesus Christ of Latter-day Saints,* 6 vols. (Salt Lake City: Deseret News, 1902–1912), 6:308–09.
3. James E. Talmage, *Jesus the Christ: A Study of the Messiah and His Mission According to Holy Scriptures Both Ancient and Modern* (Salt Lake City: Deseret Book, 1983), 143.
4. John A. Widtsoe, *Evidences and Reconciliations* (Salt Lake City: Improvement Era, 1960), 129.
5. Smith, *Teachings*, 217.



ESCHATOLOGY

They said Jesus said he'd come back,
which means that, till then, now is never,
will never be, can never be
enough: the merest between,
time sliced sliver-thin,
an empty car speeding
from vague nostalgia toward final fire.
Or the secular version: incessant Progress
hurrying past the contorted faces
outside the window, talking the Kingdom
of genetic engineering and artificial intelligence
over muffled wails.

Or maybe Jesus spoke like the sun
like river, thunder and leaf
saying now now forever now.

— JAY UDALL