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Transcending Technology: Looking at Futurology as a New Religious Movement

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ABSTRACT *This article argues that futurology is a new religious movement. Futurologists propose that the changes taking place in technology will radically alter human nature in the near future. The movement has its share of charismatic leaders, authoritative texts, and notions of salvation. I do not attempt to refute the vision of the future put forth by the futurologists themselves, but assume that their view of the future will unfold as they see it. This allows me more easily to gauge futurology's future relationship with religion. Rational choice theory is employed as a tool to discern whether futurology has the potential to be competitive when it enters the market-place of religions. I argue that, if the science behind it is perfected, futurology poses a real challenge to traditional religion.*

Introduction

> 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 . . . to truly understand it inherently changes one's view of life in general and one's own personal life. (Kurzweil, *Singularity* 7)

Ray Kurzweil is not referring to any doomsday scenarios imparted by traditional religions. He is discussing a kind of technological Rapture, known as 'the Singularity', when humanity will be completely transformed by the unprecedented progress anticipated in genetics, robots, information technology, and nano-technology (hereafter referred to as GRIN). With such technological advancement, futurologists believe that the limitations and weaknesses of our bodies and brains will eventually be overcome. Such metaphysical speculation leads a scholar of religion to wonder what role traditional forms of religion might play in the world, if these technologies are indeed perfected.[1]

The purpose of this paper is not to question whether the anticipated advances awaited by futurologists are actually viable or probable. Rather, by assuming that the future will transpire as they envision it, I can more easily gauge futurology's relationship with better established religions. I will use rational choice theory to explore how traditional forms of religion will compete with futurology, when it enters the religious market-place. By outlining futurology's religious elements, I will argue that it does indeed have the potential to be competitive in the market-place of religions. Futurology-as-religion has charismatic leaders,

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authoritative texts, mystique, and a fairly complete vision of salvation. Futurology is, in effect, a new religious movement (NRM).

Futurology as a New Religious Movement

As Lorne Dawson (370) notes, a definitive definition of a new religious movement is as elusive as a consensus on the definition of religion itself. In spite of this caution, Dawson (374) proposes five characteristics that NRMs tend to have: (1) they are more concerned than churches or sects with meeting the needs of their individual members; (2) they lay claim to some esoteric knowledge that has been lost or repressed or newly discovered; (3) they offer their believers some kind of ecstatic or transfiguring experience that is more direct than that provided by traditional modes of religious life; (4) unlike established faiths, they often display no systematic orientation to the broader society and are usually loosely organized; and (5) they are almost always centered on a charismatic leader and face disintegration when the leader dies or is discredited.

Each of these five characteristics can be found in futurology: (1) It promises individuals a disease-free and death-free existence. (2) It lays claim to the advances of GRIN technologies, which will eventually fulfill these promises. (3) It offers transfiguring experiences, for example, the Singularity and cyber-immortality, in which the individual 'soul' lives forever as software. (4) It is loosely organized throughout several governmental and private institutions. (5) Futurology has several charismatic leaders, such as Ray Kurzweil, Bill Joy, Hans Moravec, and Frank Tipler. However, because it is so loosely organized, it is unlikely that futurology will disintegrate with the death of any one of them. I will present evidence for these five characteristics, but in a somewhat different order. I shall first discuss charismatic leadership in futurology. I shall collapse (1), (2), and (3) into a broader category of salvation in futurology and then discuss the loosely organized nature of futurology (4).

Charismatic Leadership and Authoritative Texts

One of the charismatic leaders in futurology is Ray Kurzweil, a man who, some say, is ''predicting the future by inventing it himself'' (Garreau 88). What sets him apart from many other futurologists is his optimism. He lays out a vision of the future that rivals most notions of salvation imparted by the world's religions. He states that anyone who remains healthy for the next 20 years may be presented with the option of immortality or with at least a dramatically extended lifespan. In *The Age of Intelligent Machines*, Kurzweil explores the nature of thought in the future, when artificial intelligence (AI) will be a fact of life. As proof of his ability to forecast future technological advances, many have extolled his prediction of the World Wide Web, the defeat of chess-champion Kasparov by a computer, and the onset of intelligent weapons (Garreau 90).

In 1999, in his *The Age of Spiritual Machines: When Computers Exceed Human Intelligence*, Kurzweil anticipates the imminent advent of greater-than-human intelligence in machines and robots. In Part Three, he explores in great detail the advances that will occur in the next century. For example, Kurzweil states that by 2019 computers will be invisible—embedded in walls, tables, clothing,

and bodies. By 2029, computers will have the raw processing power of one thousand human brains: ''Computers [will] have read all available human and machine-generated literature and multimedia material, [and] significant new knowledge is created by machines with little or no human intervention'' (Garreau 221).

Thus far in his exploration, Kurzweil has not envisioned much that would truly alter human nature. It is in his vision of 2099 that his predictions take on a supernatural quality. Human thinking will merge with machine intelligence and software-based entities will vastly outnumber individuals still working with traditional bodies and minds. ''A software-based intelligence is able to manifest bodies at will: one or more virtual bodies at different levels of virtual reality and nanoengineered physical bodies using instantly reconfigurable nanobot swarms'' (Garreau 234). Individuals will be essentially transcendent; they will not require physical bodies, projecting virtual bodies at will. Kurzweil seems to envision himself as the new Prometheus, with the faith that humanity will eventually achieve immortality without the help of God.

Kurzweil's most recent book, *The Singularity is Near: When Humans Transcend Biology*, published in 2005, serves as the apocalyptic bible for futurology written by one of its most respected prophets. Kurzweil makes several interrelated claims about human possibility: the speed of technological progress is exponential; it is possible for us to discover the technological make up of the human brain and build one in the future; medical and technological advancements will soon make possible an extended lifespan, if not total immortality.

Another important figure in futurology is Bill Joy, 'the godfather of the Information Age'. Joy shocked many in the movement when, in March 2000, he stated in ''Why the Future Doesn't Need Us'', published in *Wired* magazine, that the speed of technology is posing a threat to the human species. He displays the dark underside of the growing optimism surrounding the advancing technology—the counterpoint to Kurzweil's optimism. Although Joy is opposed to the futurological vision, I include him in the discussion of charismatic leadership for two reasons. He approaches the debate not by questioning the viability of Kurzweil's vision, but by looking at the consequences for humanity. The religious nature of futurology becomes clearer when we examine the tone of Joy's article.

He acknowledges that GRIN technologies hold great promise for the human race, but worries about focusing only on one side of the coin (the promise of technology), when the other side (the threat of technology) may mean human extinction. Joy notes the massive threat posed by nuclear, biological, and chemical weapons. However, building nuclear weapons requires raw materials and specialized knowledge; biological and chemical weapons programs also require extensive development. GRIN technologies, on the other hand, are equally destructive, but do not require large facilities or uncommon raw materials; knowledge alone is all that is required. ''Thus we have the possibility not just of weapons of mass destruction but of knowledge-enabled mass destruction (KMD), this destructiveness hugely amplified by the power of self-replication'' (Joy).

What most futurologists find astonishing about Joy's view is that he advocates relinquishing research on potentially dangerous technologies. Futurologists and technologists alike were disappointed that one of their own had turned against them. As Garreau (139) states, ''At the height of the Internet boom, when technologists of Joy's stature were beating movie stars to the covers of magazines,

his conversion went off like a thunderclap on a sunny day.'' He had effectively become the Judas of futurology. In his *Wired* article, Joy is apologetic and defensive, recalling his life-long dedication to computer technology. After a mini-biography, he states: ''From all this, I trust it is clear that I am not a Luddite.[2] I have always, rather, had a strong belief in the value of the scientific search for truth and in the ability of great engineering to bring material progress.'' He goes to great lengths to assure followers that he has not abandoned them, but is simply afraid of moving blindly into the future. Joy agrees with Kurzweil that technology drives history and that it is the all-important element when dealing with the future. Both view humanity's ability to manipulate the GRIN technologies as imminent and inevitable. Where Kurzweil and Joy part ways is with respect to the consequences for humanity. Kurzweil sees enormous positive potential; Joy sees the awakening of Leviathan.[3]

I now turn to Max Weber's notion of charisma to understand how Kurzweil, Joy, and others function as charismatic leaders in futurology. Weber's writings on charisma have long been the object of scholarly interest and debate (see e.g. Turner, ''Obedience'', ''Reconsidered''; Adair-Toteff). Having initiated the study of charisma in the social sciences, Weber's ideas have been the springboard for further exploration. For Weber, charisma was an ''extraordinary quality'' of some kind possessed by an individual, placing him/her in a unique and powerful position during times of distress. As he notes, the legal/traditional power structures are permanent and reliable in mundane affairs (Bendix 299). However, in times of distress, when the needs of the people go beyond the requirements of everyday life, the traditional authorities have often had to yield to a different kind of leadership, one ruled ''on a *charismatic* basis'' (Weber, *Economy* 1111). Thus, in times of psychic, religious or political anguish, individuals who took on positions of authority bore special traits 'of body and mind' that allowed them to obtain a following. Only certain threads of Weber's wider exploration of charisma are relevant for my discussion. As Adair-Toteff (197) states, Weber's concern for politics ensures that ''much of his interest in the charismatic leader centers on the charismatic political leader''. However, his insistence that the charismatic leader is dependent on the recognition of his/her followers is important for futurology.

At the same time, many subsequent 'neo-Weberian' approaches to charisma have noted the limitations of Weber's theory and attempted to shed some light on its blind spots (see Jermier). These writers recognized that Weber's exploration of charisma is simply one strand of his broader sociological framework. As Turner (''Obedience'' 235) states, ''Weber's comments on charisma are scattered throughout his work, and out of this huge mass of material it is difficult to extract a simple 'theory'.'' Jermier (220) outlines four neo-Weberian themes in the study of charisma, which he believes take into account the ''rapidly changing economic, political, social, and cultural landscapes of contemporary societies''. It should be said that Jermier does not outline these themes to indicate the creation of a new framework or typology for studying charisma.

Weber overturned the understanding of charisma as a strictly religious concept and included in his discussion secular forms of charismatic leadership. This paved the way for the first theme in neo-Weberian approaches: the trend towards studying everyday examples of charisma (Jermier 221). This approach goes against Weber's understanding of the charismatic individuals as emerging in times of crisis. Scholars have begun to view business executives, celebrities,

scientists, and others as having the ability to garner charismatic attention. A second theme of the neo-Weberian approach to charisma is an emphasis on relationships (ibid). Weber made it clear that charisma cannot exist in isolation; followers must acknowledge the claims of the charismatic leader.

Many individuals and groups have supported the charismatic leadership of Ray Kurzweil and others. The World Transhumanist Association (WTA), for example, calls Kurzweil a ''futurist visionary'' (World Transhumanist Association, ''Kurzweil'') and has effectively adopted Kurzweil as its own. He is often quoted on its web site, *The Singularity is Near* is a perpetual 'featured book', and one can find Kuzweil sightings fairly regularly. One ''Transhumanism in the News'' bulletin reports ''Two big newspaper mentions of Ray Kurzweil this month'' (World Transhumanist Association, ''WTA News''). These 'mentions' are in fact nothing more than a positive book review and a debate between Kurzweil and Bill Joy. Because of his inventions, Kurzweil has acquired an aura of leadership. He has been dubbed the modern-day Edison and gained popularity with the creation of the Kurzweil Reading Machine, a device which reads aloud any book that is placed on it. As Garreau (89) states, ''It looks like a photocopier that can talk, which is basically what it is.''

Before discussing the third theme of the neo-Weberian approach, I want to introduce the fourth: the institutionalization of charisma. Scholarly discourse about institutionalization is largely outside the parameters of this paper and will thus not be explored (see Jermier 224–5). However, such an exploration would be possible, since organizations like the WTA, the World Future Society, some governmental organizations discussed below may be apt examples of the institutionalization of charisma. The third theme of the neo-Weberian approach is an emphasis on the character of the mission (Jermier 222). Just as a charismatic leader is dependent on his/her followers, charisma is also closely attached to the leader's objectives. As Jermier (ibid) asks, ''do followers agree to carry out the mission because of the extraordinary qualities of the leader or because of the stirring content of the mission?'' This is an important aspect of the neo-Weberian approach, which is significant for studying charismatic leadership in futurology. The vision of the future put forth by futurologists, and awaited by followers, is highly dependent on what the charismatic leaders think possible. As Jermier (ibid) points out, ''the manner in which the leader formulates and articulates the mission cannot be dismissed. Not everyone can capture the imagination of others by presenting an accessible moving picture linking their deeply felt hopes and fears with appealing future states.''

As Jermier (223) and others make clear, if the mission seems too radical, the charismatic leader can aid in making it sound more plausible. Kurzweil's successful career as an inventor of eccentric gadgets, his books, and popular speaking tours do just that. For example, chapter 7 of *The Singularity is Near* (368) has a picture of Kurzweil with a sign around his neck, which reads, ''The Singularity is Near''; this is reminiscent of 'The End is Near' signs held up by individuals proclaiming an apocalyptic message. Kurzweil insists that he is not interested in creating another dogmatic cult. However, he states (*Singularity* 371) that the onset of the Singularity gives us ''insight that causes one to rethink everything, from the nature of health and wealth to the nature of death and self''. By attaching futurology to issues of death and self, he can propose a new vision, a new way of approaching questions of ultimate concern.

In his books, Kurzweil often includes imaginary conversations with individuals he has created. In chapter 7, however, he has a pretend conversation with a real person: Bill Gates. Gates is made to say that, although Kurzweil's vision is grounded in science, it is close to a religion. Kurzweil responds (*Singularity* 374), ''Yes, well, we need a new religion. A principal role of religion has been to rationalize death, since up until just now there was little else constructive we could do about it.'' The imaginary Gates also asks whether there is a God in this new religion. Kurzweil states (*Singularity* 375), ''Not yet, but there will be. Once we saturate the matter and energy in the universe with intelligence, it will 'wake up', be conscious, and sublimely intelligent. That's about as close to God as I can imagine.'' Not only is Kurzweil constructing a religion around the futurological vision, he is formulating its contents and directing its shape.

Another manner in which futurology's mission has become connected to Kurzweil's charismatic authority is the way in which he has come to embody the vision. He has started four major web sites: Singularity.com, KurzweilAI.net, Fantastic-Voyage.net, and RayandTerry.com. The two latter sites are based on Kurzweil's and Terry Grossman's book *Fantastic Voyage: Live Long Enough to Live Forever*. The books and web sites contain ''extensive information about improving your health with today's knowledge so that you can be in good health and spirits when the biotechnology and nanotechnology revolutions are fully mature'' (Kurzweil, *Singularity* 490). Thus, one ought to make oneself physically and mentally ready for the coming of the Singularity. Fantastic-Voyage.net contains many suggestions for those who wish to prepare themselves. There are recommendations for food and vitamin products and a 61-page ''short guide to a long life'' (which can be downloaded) advising individuals on what to eat and how fast to eat it.

According to Garreau (92), Kurzweil takes 250 pills a day in order to stay alive long enough to reap the benefits of the Singularity. He himself thus lives the vision and can garner more trust from devotees. For example, the message boards on KurzweilAI.net include several posts discussing the Singularity and the possibility of eternal life. One thread from May 18, 2007, entitled ''Kurzweil on Dairy Products'', inquires: ''I can't remember seeing anything on dairy in Fantastic Voyage, has Kurzweil published any other papers on including dairy in ones [sic] diet?'' (KurzweilAI.nett, access date: 31 May 2007). Three responses to the inquirer state that Kurzweil advises against dairy intake, as it may accelerate the aging process.

Another example can be found in the LiveJournal blog ''Singularity_Now''. A 17-year-old from Arizona asks the moderator ''for your thoughts on how people from my generation can prepare for the coming singularity and the changes it may bring to the United States and how we live our everyday lives'' (LiveJournal, access date: 31 May 2007). Responses range widely: one person laments that he lacks the funds to prepare adequately for the Singularity; others insist that, instead of worrying about the nature of the phenomenon, ''we all need to think seriously about what we can do to make it *to* the Singularity'' (ibid). There are many other blogs and message boards on the Internet containing similar discussions.

Salvation in Futurology

I define salvation as deliverance, liberation or release from pain, suffering, and death. Before discussing the futurological version of salvation, it is helpful to

examine Weber's exploration of different types of soteriologies. Weber provides a sociological framework through which we can better examine versions of salvation provided by NRMs. He describes a type of soteriology, which he calls ''institutional grace'': salvation is brought about ''by virtue of the grace, which is distributed on a continuous basis by some communal organization that has either divine or prophetic credentials for its establishment'' (*Sociology* 187).

According to Weber (ibid), wherever one can find institutional grace operating, three principles are involved. The first states that salvation depends on one's association with a particular institution which controls the distribution of grace. The second indicates that the priest's charismatic credentials are irrelevant to his ability to distribute divine grace. Finally, the third states that the individual's religious qualifications are irrelevant to his/her ability to receive divine grace; only his/her faith in the institution is important.

Robert Campbell (35–7) makes use of these three principles when he examines the religious nature of science. Similarly, I shall apply Weber's framework to futurology. When Weber's first principle is applied to science, it effectively means that salvation outside science is not possible. This is precisely the view put forward by the notion of 'scientism', which Mikael Stenmark defines (27) as ''the view that science alone is sufficient for dealing with our existential questions or for creating a worldview by which we could live''. The post-human salvation promised by futurology similarly imparts the belief that it will be through GRIN technologies alone that human salvation will be attained. Hans Moravec, for example, believes that ''robot evolution eventually will provide the technology for the reinstantiation of human consciousness into a computerized and robotic medium'' (DeLashmutt 275). Futurologists see this move into robotics as the logical culmination of our evolution. Robotic 'life' is the inevitable ''consummation of humanity's historical courtship with technology'' (ibid).

For Moravec, the human mind is the essence of who we are. The mind is the transferable software to the brain-as-hardware. For Moravec to envision a post-human existence as a continuity of one's sense of self from the old body to the new one, he has to argue that the physical body is not a requirement for human consciousness (DeLashmutt 277). He asserts, as some of the world's religions do, that the body is inferior to the spirit, which lives on (through reincarnation or in the afterlife) after the body dies. The major difference is that the soul or spirit for Moravec is a ''collection of bits and bytes'', which can be downloaded into our new post-human form. Similarly, Frank Tipler believes that the human mind can exist forever, provided that the device that contains it can survive that long (DeLashmutt 278). This is the futurological version of the 'transfiguring experience' that, according to Dawson, many NRMs possess. Stating that the essence of the human mind is reducible to bits and bytes allows both Moravec and Tipler to envision humans as living a very long time (or forever) with the same awareness of self, but in another form. Thus, through faith in future technology, humanity can become immortal.

Weber's second principle focuses on the priesthood and indicates that the priest's personal traits or talents are irrelevant to divine grace. Steve Fuller (35) points out that, although the term 'science' and similar terms exist in most Indo-European languages, words like 'scientist' are relatively recent. The emergence of the scientist leads to the notion that we need third-party specialists when inquiring into certain arenas of knowledge. Fuller draws comparisons between

priests and doctors. Both are specialists in different areas of knowing: soul and body. Both undergo extensive study, training, and initiation before joining the élite. Campbell (36) points out that, just as in the apostolic succession, where the ''right to perform the sacred rituals and thus provide the key to salvation is passed on through the 'laying on of hands'', in the scientific community, scientists are created in graduate school and infused with the divine grace to engage in research. Futurologists now believe that they have gained the right to distribute divine grace, discuss issues of ultimate concern, and grant salvation.

Weber's third principle states that only through the institution can the priesthood dispense salvation, so that everyone can receive it. As Weber notes, ''institutional grace, by its very nature, ultimately and notably tends to make obedience a cardinal virtue and a decisive precondition of salvation'' (*Sociology* 190). It is not necessary for the believing masses to fully understand how, for example, the Holy Spirit heals them; a willingness to submit to the religious authority of the institution is sufficient to reap the benefits (ibid 194). Applied to science, Weber's third principle would mean that a complete understanding of the manner in which the human body functions is not a prerequisite for a doctor to heal. Similarly, futurologists insist that their advancements will benefit all of humanity, whether ordinary people understand the science or not.

The futurological notion of salvation can be found in the event known as the Singularity. Computer scientist and sci-fi author Vernor Vinge propounded the idea of the Singularity in 1993 to describe the onset of an incomprehensible, irreversible moment of social change. The term is borrowed from mathematics and physics, where it refers to a point when everything ceases to make sense. The Singularity has at its foundation the truth of Moore's Law. Based on an observation made by Gordon E. Moore in 1968, the Law states: ''The power of information technology will double every 18 months, for as far as the eye can see'' (Garreau 49). The rapid doubling, which is fundamentally out of our control, leads to the Singularity. Those who believe that the Singularity is inevitable and imminent envision that Moore's Law will drive computers to become more intelligent than humans, accelerate the interconnections of the Internet so that ''it wakes up as one superorganism'', and provide greater-than-human intelligence to some individuals through implants (ibid 73).

Alongside the quest for greater-than-human intelligence is the quest for immortality. Kurzweil is in agreement with Ernest Becker (xvii) that ''the idea of death, the fear of it, haunts the human animal like nothing else; it is a mainspring of human activity—activity designed largely to avoid the fatality of death, to overcome it by denying in some way that it is the final destiny for man''. Kurzweil (*Spiritual Machines* 2) believes that humanity, aided by the technology it has created, can tackle the age-old problems of need and desire and elevate itself to a position where we can ''change the nature of mortality in a postbiological world''. Thus, not only can mortality be surpassed, the breakthrough will benefit the whole of the human species. For example, Michael Zey's article in *The Futurist* entitled ''The Superlongevity Revolution'' discusses issues of career and retirement planning as well as consequences for society and family in a world where we all live a life of superlongevity (16–21). The Singularity will allow us to transcend our limitations and master our fate and mortality. Kurzweil envisions humanity elevating itself to the status of divinity and living eternally in a virtual heaven of its making.

Rational Choice Theory

Having characterized the futurological vision, the question to explore now is whether futurology as a new religion will be competitive in the market-place of religions. Laurence Iannaccone, one of the leading theorists in the rational choice approach to religion, argues (''Markets'' 123) that religious consumers '''shop' for churches much as they shop for cars: weighing costs and benefits, and seeking the highest return on their spiritual investment. Religious 'producers', the erstwhile clergy, struggle to provide a 'commodity' at least as attractive as their competitors.'' It is not surprising that the rational choice approach has engendered criticism for being too materialistic and rationalistic (see Bruce, *Choice*, ''Religion''). Some regard it as useful, but too simplistic, when applied to religion. Along with Iannaccone, I believe that the rational choice approach to religion has the potential to explain much, especially conversion to NRMs. Thus, in arguing that futurology is a new religion, I suggest that a better understanding of its applicability can be gained by relating it to futurology.

In today's society, where freedom of religion and, consequently, pluralism, is one of its most prized values, religions must be competitive in order to survive. The supply, or production, side of a new religion must be constructed in such a way that it is attractive, as it is competing with longer established religions vying for the same finite resource: adherents. As in other market transactions, the freedom to choose exercised by the consumer places pressure on the producers of religion. Product suppliers, whether of e-commerce or eternal life, cannot stay competitive without the support of consumers.

The economics of religion rest on the notion that religion is a commodity. Viewing religion as a commodity is one of the controversial aspects of the rational choice approach to religion. Religions are surely not products like cars or toasters; they are not physically manufactured. They are not comparable either to services such as manicures or hair cuts. Iannaccone (''Risk'' 125) places religion in a third category, 'household commodities', such as dinner or love—goods and services produced by families or individuals for their own use.[4]

Stark and Bainbridge note (*Future* 8) that one of the fundamental qualities which separates religion from, say, dinner, is that it is dependent on supernatural elements. ''Religious organizations are social enterprises whose primary purpose is to create, maintain, and exchange supernaturally-based general compensators'' (Stark and Bainbridge, *Theory* 42). Religions offer benefits that are not available anywhere else (eternal life, for example). On the other hand, by providing something that is outside the parameters of human evaluation, religious commodities are by their very nature risky. ''Their existence and efficacy must be taken on trust. Since people avoid risk just as surely as they seek rewards, religion presents people with a classic approach-avoidance dilemma'' (Iannaccone, ''Markets'' 125). Iannaccone provides the example of used cars. Since we may be unsure of the quality of a used car before buying it, the purchasing process is inherently risky. We can bypass the risk by demanding warranties or asking a mechanic friend to examine the car before we buy it. Used car dealers must attempt to reduce the feeling of risk in their potential buyers, if they are to remain competitive. However, when religion is under consideration, ''no amount of personal experience suffices fully to evaluate a religious seller's claims. Indeed, the sellers themselves often do not know that their claims

are true.'' (ibid) Suppliers of religion attempt to reduce the risk by providing congregational and collective worship (where the risk is distributed among many rather than falls on an individual) and by keeping a professional staff, who receive a small income or are dependent on 'customer contributions' (Iannaccone, ''Risk'' 285). Such staff will be considered to be more trustworthy, since their religious beliefs are not seen to originate in a desire for financial gain.

Iannaccone (''Markets'' 126) states that congregational structures have a marked downside—free-riding—which arises ''wherever individuals find it possible to reap the benefits of other people's efforts without expending a corresponding effort of their own''. Free-riding is one of the fundamental ways in which an individual may reduce risk. Religions attempt to allay this tendency through various 'costly demands' which Iannaccone calls ''sacrifice and stigma'' (see ''Sacrifice''). ''Distinctive dress and grooming that invite ridicule or scorn; dietary and sexual prohibitions that limit opportunities for pleasure; restrictions on the use of modern medicine and technology'' are all methods by which religions tend to weed out free-riders (Iannaccone, ''Risk'' 286). Having to sacrifice and bear public stigma forces members to 'get their hands dirty'. Stigmatized, they are unable to defect easily.

There are several ways in which the 'sacrifice and stigma' principle appears in futurology. In the case of cyber-immortality, for example, it is difficult to see how free-riding could take place (Bainbridge 25–9). The notion of cyber-immortality envisions the possibility that individuals will be able to live forever as 'software'. In such a situation, either one is a complete cyber-immortal or not. There is no way to make the conversion partial. It forces converts to make a once-and-for-all decision, to 'sacrifice' their very being. There will be no going back. Another example which would allow futurology to prevent free-riding is stigmatizing traditional biological society. For example, when discussing germ-line engineering, Gregory Stock argues that parents will want the most up-to-date technological modifications in their infants and soon ''traditional reproduction may begin to seem antiquated, if not downright irresponsible'' (Stock qtd. in Garreau 118).

Techniques to reduce free-riding are usually necessary because of another method which individuals use to reduce risk; Iannaccone calls it ''portfolio diversification''. To reduce the risk associated with religion, consumers tend to broaden their religious commitments. For example, a Christian may go to church on Sunday, attend yoga class on Monday, and take meditation lessons on Tuesday. However, most religions will attempt to reduce involvement in major competitor religions. As Iannaccone notes, jealous possessiveness of believers is usually most clearly seen in NRMs that, unlike the 'trusted brands' of Christianity or Islam, have to be more aggressive to be competitive.

If futurology does become a congregational NRM, the above are some of the ways in which it could reduce free-riding. However, there are examples of private religious commodities ''that can be transferred directly from an individual producer to an individual consumer without recourse to a mediating group'' (Iannaccone, ''Risk'' 290). New Age items, such as self-help books and tapes, are examples of private commodities. Scientific commodities function in the same way: medication against colds, heart transplants, and plastic surgeries are essentially private commodities that do not have collective or

congregational elements. It is difficult to predict whether futurology will function privately or develop a congregational structure.

Rational choice theory can aid our understanding of both producers and consumers of religion. Producers of religion share their motivations with secular producers and market forces restrict religious establishments as they restrict secular institutions. ''The burdens of monopoly and the hazards of government regulation are as real for religion as for any other sector of the economy'' (Iannaccone, ''Markets'' 128). Thus, a pluralistic society is marked by competition, which forces the suppliers of religion to mold their product in a way that fulfills consumers' needs. If the advances envisioned by futurology are realized, they are likely to compete in the religious market-place, supplying believers with many of the benefits that traditional forms of religion provide. However, futurology has two interrelated advantages when it comes to competing in the religious market-place. The institutions engaged in futurological research receive enormous amounts of funding from the government. This is due to science enjoying privileged status. Futurology has a competitive advantage over traditional religions, because followers will see it as grounded on solid science.

Governmental Support and Recognition

Governmental organizations dedicated to furthering futurological research give futurology a competitive advantage in the market-place of religions, since they receive enormous financial support. The competitive advantage rests on the fact that no other religious group receives direct financial support from government. Individuals, such as George Allen and Ron Wyden in the US Senate, have championed the importance of futurology in Congress with the introduction of the Twenty-First Century Nanotechnology Research and Development Act. Senator Wyden ''views his role as a tech-evangelist of sorts'' and believes that ''the federal government should support nanoscience through a program of research grants, and also through the establishment of nanotechnology research centers'' (Berube 83). In 2004, he managed to earmark $103 million for defense-related nanotech research.

The National Science Foundation (NSF), the National Science and Technology Council (NSTC), and other governmental organizations in the US have developed nano-research sub-committees, which are beginning to receive enormous amounts of financial backing. The NSTC does its work on the future through the Nanoscale Science, Engineering, and Technology (NSET) sub-committee, chaired by Mihail Roco. Roco played a key part in launching the National Nanotechnology Initiative (NNI) in 2001 and aggressively pursued funding by tapping into ''nationalistic fervor'' and seemed ''to revel in fear appeals and nationalistic rhetorical flourishes'' (Berube 88). He stated that the United States cannot cease research in GRIN technologies, because it will then be easily surpassed by other nations.

The US government has always promoted scientific research, either through the National Institute of Health (NIH) or the Defense Department. The funding seeks to ensure the safety and well-being of the population. The question of funding becomes complicated when one asks whether futuristic, speculative

science should receive the same high level of funding as the NIH. The NNI received $249 million in 2004 and the total US Government funding for nano-technology rose from around $250 million in 1999 to $850 million in 2004 (Berube 107–8).

Among all these organizations, the one most dedicated to future research is the Defense Advanced Research Projects Agency (DARPA). Although its research is centered on defense, historically, military innovations have often made their way into everyday life. DARPA's track record is impressive: it played a key role in pioneering the Internet, e-mail, GPS (global positioning system), the cell phone, spy and weather satellites, and advanced military technology. DARPA is interested in eliminating from the human body what makes it vulnerable in a war situation, for example, pain, wounds, and bleeding. Futurology, as an NRM, would have a competitive advantage in the market-place of religion, because it already receives significant funding from government.[5]

Science as Sacred

Sacred, for our purposes, is defined as ''persons, places, or things set apart or having some religious significance, and so accorded worship, veneration, or respect'' (Smith 943). As futurology is so closely associated with science, it will enter the market-place of religions adorned with a badge of trust. In keeping with the work of scholars, such as Midgley, Fuller, and Campbell, I have argued that our understanding of futurology can be heightened, if we view it as a particular form of religion. Science is venerated and respected. The scientific method is viewed with the utmost esteem. As Midgley (4) shows, many scientists see themselves as ''standard operatives in an immense, impersonal falsification factory, busied solely in examining an endless succession of detailed hypotheses about the physical world and in proving most of them to be false, by a single, prefabricated 'scientific method'''.

Many scientists believe that science will eventually tell us everything we need to know about life and the universe. This faith allows biologists, such as Richard Dawkins, to claim (qtd. in Midgley 7) that ''we no longer have to resort to superstition when faced with the deep problems. Is there a meaning to life? What are we for? What is man?'' It is unclear whether science can deal with these issues; it certainly has not proved yet that it can. Stephen Hawking states (qtd. ibid) that ''our goal is nothing less than a complete description of the universe we live in''. It seems that the scientific quest has aligned itself with the age-old religious objective of answering the 'why' questions of our existence. This faith in science has allowed scientists to enter into speculation while seemingly engaged in scientific debate. When, for example, physicist Freeman Dyson states (qtd. in Midgley 150) that ''It is conceivable that in another 1010 years, life could evolve away from flesh and blood and become embodied in an interstellar black cloud or in a sentient computer'', it may be met with less skepticism than when a Christian states that Jesus will soon return to cure all the ills of the world. Yet, both statements are equally metaphysical and speculative.

Campbell (34) states that ''A great part of the myth of science is that scientists fail to recognize, or perhaps to acknowledge, that in their efforts to escape from metaphysics they are entrenching themselves as firmly in speculative dogma as

any religion ever has''. We seem to accept the speculative dogma of science while increasingly scoffing at dogma provided by religion. Speculative science, or thought experiments, is indeed necessary, but when these speculations take on the status of fact, we must ask ourselves how much faith (and funding) they should receive. The mystique of science seems to be at an all-time high and it would underpin futurology's popularity. As most people seem much more willing to make a 'leap of faith' when an idea is backed by science, the speculative science of futurology will gain a strong foothold in the market-place of religions.

Conclusion: How Will Religion Cope?

Futurology shares many characteristics with successful new religious movements: charismatic leaders, authoritative texts, an attraction or mystique, and a notion of salvation. I argue that, if the advancements anticipated by futurologists come to fruition, futurology will enter the very market-place where longer established religions are competing for adherents. One question to be asked is this: how successful a future will futurology have? Stark (''Why'' 260) outlined ''ten propositions which attempt to specify the necessary and sufficient conditions for the success of religious movements''. Five of these appear applicable to futurology, while the other five do not.

Proposition (1) states that NRMs, in order to succeed, must retain a sense of continuity with the belief systems of the broader society. This applies to futurology. As argued above, futurology will benefit much from society's faith in science. Proposition (4) states that religious movements must ''have legitimate leaders with adequate authority to be effective'' (ibid 264). As shown above, futurology has legitimate leaders who enjoy charismatic authority. Proposition (6) states that birth rates must be higher than death rates; this could easily apply to futurologists and their followers in the wider society. Proposition (7) states that religious movements must compete with other sects and conventional religions in order to succeed. I have shown how futurology achieves this by, among other things, presenting its own version of salvation. Proposition (8) states that religious movements must be fairly close-knit as well as open to developing broader social networks. Futurologists maintain a close-knit presence in future-oriented societies, blogs, and message boards and followers can easily form ties outside their own circles because of the lack of strictness.

Thus, five out of Stark's ten propositions appear to apply to futurology, while the remaining five have little relevance. These remaining five are: (2) the doctrines should be non-empirical; (5) they should be able to generate a motivated, religious workforce, including many willing to proselytize; (3) they should maintain a medium level of tension with their surrounding environment; (9) they must remain sufficiently strict, and (10) they should socialize the young adequately well to minimize both defection and the appeal of reduced strictness. As Stark's propositions deal with a conventional understanding of NRMs, based primarily on analyses of so-called cults of personality that gained widespread attention in the 1960s, they are only loosely applicable to futurology which shows a synergistic blending of science and religion and seems little concerned with issues of strictness and proselytizing. If futurology is an example of future religious development, perhaps important propositions, such as propositions

(5) and (10), integral parts of Stark's model, may not be the best indicators of the potential success of new religious phenomena.

If futurology is successful, another question arises: how successfully will traditional forms of religion compete? There are several possibilities: (1) traditional religions may become relegated to the arena of ethics and morality, because futurology seems to say very little about human, or post-human, conduct. However, there are some groups, such as the Center for Responsible Nanotechnology, which may shift from being a public awareness provider and risk assessment organization to providing an ethical framework for post-human existence.

(2) Traditional religion may become solely focused on God. Futurology says very little about traditional notions of God. Thus, if futurology is successful in the market-place, traditional religion may change into a form of mysticism concerned with the union with God, because futurology has presumably dealt with everything else. The notion of panentheism can also be used here: the belief that God is all things, but at the same time not merely the sum of all things. A panentheistic or mystical view makes God ever more transcendent, as humans gradually master those things for which they were once dependent on God.

(3) Traditional religion may exist as it is only for certain groups (the poor, for example). Since futurology's benefits may only accrue for the wealthy, most of the developing world may have to settle for traditional notions of God, soul, and salvation. Another demographic group that may hold on to traditional notions of religion are the reactionaries. It is likely that there will be many individuals and groups who recoil from abandoning the ways in which they believe God created them. They will reject artificial intelligence and cyber ways of life. They will clutch traditional religion with both hands, because it represents to them an ideal past.

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NOTES

1. The Oxford English Dictionary defines futurology as ''The forecasting of the future on a systematic basis, esp. by the study of present-day trends in human affairs.''
2. Luddites presented a social movement in England against the Industrial Revolution, often breaking textile machines in protest. Futurologists call the new technophobes 'Neo-Luddites'.
3. Many other individuals—such as Eric Drexler, Hans Moravec, Frank Tipler, Gregory Stock—could be included in this discussion of charismatic leadership in futurology.
4. For an in-depth discussion, see Iannaccone, ''Practice'' 297–314.
5. For a more in-depth look at government initiatives in futurology, see Berube 81–153.

REFERENCES

Adair-Toteff, Christopher. ''Max Weber's Charisma.'' *Journal of Classical Sociology* 5 (2005): 189–204.

Bainbridge, William Sims. ''Cyberimmortality: Science, Religion and the Battle to Save Our Souls.'' *The Futurist* 40.2 (2006): 25–29.
Becker, Ernest. *The Denial of Death*. New York: Free P, 1973.
Bendix, Reinhard. *Max Weber: An Intellectual Portrait*. New York: Doubleday, 1962.
Berube, David M. *Nano-Hype: The Truth Behind the Nanotechnology Buzz*. New York: Prometheus Books, 2006.
Bruce, Steve. ''Religion and Rational Choice: A Critique of Economic Explanations of Religious Behavior.'' *Sociology of Religion* 54 (1993): 193–205.
– – –. *Choice and Religion: A Critique of Rational Choice Theory*. New York: Oxford UP, 1999.
Campbell, Robert A. ''The Truth Will Set You Free: Towards the Religious Study of Science.'' *Journal of Contemporary Religion* 16 (2001): 29–43.
Dawson, Lorne L. ''New Religious Movements.'' Ed. Robert A. Segal *The Blackwell Companion to the Study of Religion*. Malden, MA: Blackwell, 2006: 269–84.
DeLashmutt, Michael W. ''Perspectives on Techno-Science and Human Nature: A Better Life through Information Technology? The Techno-Theological Eschatology of Posthuman Speculative Science.'' *Zygon* 41 (2006): 267–87.
Fuller, Steve. *Science*. Minneapolis: U of Minnesota P, 1997.
Garreau, Joel. *Radical Evolution*. New York: Broadway Books, 2005.
Iannaccone, Laurence. ''Religious Practice: A Human Capital Approach.'' *Journal for the Scientific Study of Religion* 29 (1990): 297–314.
– – –. ''Religious Markets and the Economics of Religion.'' *Social Compass* 39 (1992): 123–31.
– – –. ''Sacrifice and Stigma: Reducing Free-Riding in Cults, Communes, and Other Collectives.'' *The Journal of Political Economy* 100 (1992): 271–91.
– – –. ''Risk, Rationality and Religious Portfolios.'' *Economic Inquiry* 33 (1995): 285–95.
– – –. ''Voodoo Economics? Reviewing the Rational Choice Approach to Religion.'' *Journal for the Scientific Study of Religion* 34 (1995): 76–88.
– – –. ''Rational Choice: Framework for the Scientific Study of Religion.'' Ed. Lawrence A. Young. *Rational Choice Theory and Religion: Summary and Assessment*. New York: Routledge, 1997. 25–44.
– – –. ''Introduction to the Economics of Religion.'' *Journal of Economic Literature* 36 (1998): 1465–96.
Jermier, John M. ''Introduction. Charismatic Leadership: Neo-Weberian Perspectives.'' *Leadership Quarterly* 4 (1993): 217–33.
Joy, Bill. ''Why the Future Doesn't Need Us.'' *Wired* 8.04 (2000). *Wired Magazine*, http://www.wired.com/wired/archive/8.04/joy.html, access date: 31 May 2007.
KurzweilAI.net. ''Mind Exchange.'' <http://www.kurzweilai.net/mindx/frame.html>, access date: 31 May 2007.
– – –. *The Age of Intelligent Machines*. Cambridge, MA: MIT P, 1990.
– – –. *The Age of Spiritual Machines*. New York: Penguin Books, 1999.
– – –. *The Singularity is Near: When Humans Transcend Biology*. New York: Viking, 2005.
Kurzweil, Ray, and Terry Grossman. *Fantastic Voyage: Live Long Enough to Live Forever*. New York: Rodale, 2004.
LiveJournal. ''Singularity_Now: Preparing for the Singularity'' http://community.livejournal.com/singularity_now/75722.html#cutid1, access date: 31 May 2007.
Midgley, Mary. *Science as Salvation: A Modern Myth and its Meaning*. New York: Routledge, 1992.
Moravec, Hans. *Mind Children: The Future of Robot and Human Intelligence*. London: Harvard UP, 1988.
– – –. *Robot: Mere Machine to Transcendent Mind*. New York: Oxford UP, 1999.
Smith, Jonathan Z. et al., eds. *The HarperCollins Dictionary of Religion*. San Francisco: HarperSanFrancisco, 1995.
Stark, Rodney. ''Why Religious Movements Succeed or Fail: A Revised General Model.'' Ed. Lorne Dawson. *Cults and New Religious Movements: A Reader*. Malden, MA: Blackwell, 2003: 259–70.
– – –. ''Economics of Religion.'' Ed. Robert A. Segal *The Blackwell Companion to the Study of Religion*. Malden, MA: Blackwell, 2006: 47–68.
Stark, Rodney, and William Sims Bainbridge. *The Future of Religion*. Berkeley, CA: U of California P, 1985.
– – –. *A Theory of Religion*. New Brunswick, NJ: Rutgers UP, 1987.
Stenmark, Mikael. ''What is Scientism?'' *Religious Studies* 33 (1997): 15–32.
Stock, Gregory. *Redesigning Humans: Choosing Our Genes, Changing Our Future*. New York: Mariner Books, 2002.

Tipler, Frank. *The Physics of Immortality: Modern Cosmology, God, and the Resurrection of the Dead*. London: Doubleday, 1994.

Turner, Stephen. ''Charisma and Obedience: A Risk Cognition Approach.'' *Leadership Quarterly* 4 (1993): 235–56.

– – –. ''Charisma Reconsidered.'' *Journal of Classical Sociology* 3 (2003): 5–26.

Weber, Max. *The Sociology of Religion*. Trans. Ephraim Fischoff. Boston: Beacon P, 1964.

Economy and Society. Vol. 3. Trans. Ephraim Fischoff, Hans Gerth, A. M. Henderson, et al. Ed. Guenther Roth, and Claus Wittich. New York: Bedminster P, 1968.

World Transhumanist Association. ''Kurzweil Speech Translated into Persian.'' May 13, 2007. <http://72.14.205.104/custom?q=cache:8MCr_SsIYRwJ:www.transhumanism.org/index.php/WTA/more/134/+kurzweil&hl=en&ct=clnk&cd=4>, access date: 13 May 2007.

– – –. ''WTA News October 30, 2005.'' <http://72.14.205.104/custom?q=cache:GOuBl6tyBA4J:www.transhumanism.org/index.php/WTA/more/938/+kurzweil&hl=en&ct=clnk&cd=6>, access date: 13 May 2007.

Zey, Michael G. ''The Superlongevity Revolution: How it Will Change Our Lives?'' *The Futurist* 39.6 (2005): 16–21.