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The Transhuman Heresy

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Abstract

Data from a pilot questionnaire begin the difficult process of using social science methods to assess religious opposition to human enhancement. Historical and theoretical considerations suggest that the power of traditional religions is directly threatened by Transhumanism, so the sacred monopolies can be predicted to try to suppress it. The questionnaire data provide initial support for this hypothesis, because highly religious respondents show less favorable reactions to a variety of modes of technological transcendence.

The Transhuman Heresy

Buoyed by technological optimism and the hope that well-meaning people can agree to disagree about the choices that each individual must make, Transhumanists believe that we have reached the point in history at which fundamental changes in our very natures have become both possible and desirable. When humans can improve their own minds and bodies technologically, then they will gain the intelligence and longevity to devise even more methods for self-improvement. In a positive feedback loop that vastly accelerates evolution, humans could become like gods, and in so doing may put conventional religion out of business. Thus it is in the vital interests of Christianity and the other great world faiths to prevent human technological transformation.

A Theoretical Framework

At the outset, it should be recognized that several different theoretical perspectives exist that can frame the questions we ask in empirical research. One of the more fully developed sociological perspectives is sometimes called *rational choice theory* or *exchange* theory (Stark and Bainbridge, 1980, 1985, 1987; Bainbridge, 2002a, 2003c). All animals seek rewards and avoid costs – pleasure and pain – but they differ in the sophistication of the metal apparatus with which they do this. All mammals experience emotions like love and fear, and the higher primates seem to have a sense of self-identity as well. But only humans possess the complex minds necessary to frame detailed plans, and the words with which to articulate ideas. In pursuit of rewards and avoidance of

costs, human seek *explanations* with which to understand the contingencies and *algorithms* that will guide behavior toward goals. Most recently, the logical rigor of this theory has been explored through artificial intelligence computer simulations that modeled the emergence of religious beliefs among human beings who interacted with each other in pursuit of valued rewards (Bainbridge, in press).

In the absence of algorithms (plans, recipes, strategies) for attaining desired rewards such as extended life or increased social power, people will seek exchange partners who may be able to provide the rewards. But until this point in human history, people could not provide eternal life and some other valued rewards to each other. Over time, people will exchange ideas and information about where such rewards can be obtained, and rumor builds upon fantasy to suggest there exists a supernatural realm where supernatural exchange partners dwell, who might be willing to help humans deal with their most desperate needs. At the same time, some humans exploit this situation to attain status in their society as religious specialists, priests whose role it is to mediate with the supernatural beings.

Progressively, over generations in prehistoric time, magic and religion arose in human culture as pseudosolutions to the problem of providing help when people were obligated but unable to offer real solutions. Gradually, local nature-religions arose, cultural fabrics woven of innumerable promises decorated with symbols of presumably powerful plants, animals, and forces of the environment. The rise of agricultural civilization and invention of writing allowed many of the primitive legends to be preserved and codified, a valuable legacy for an emerging professional priesthood. Then religious reformers began to appear – like Osiris, Moses, Buddha, Jesus, and Mohammad – and soon after their deaths were transformed into Messiahs or Messengers of God, whose mythologies served the propaganda needs of progressively larger and better-organized sacred bureaucracies.

A fully developed, modern religious bureaucracy suppresses magical movements, because they threaten the monopoly on supernaturalism enjoyed by the established sacred authority, and it will resist real solutions to human problems of powerlessness and mortality for the same reason. The church is the last remaining absolute monarchy – God, after all, is its Lord – and its loyal defenders will oppose any attempt to establish a republic. Transhumanism, especially in its democratic variants (Hughes, 2004), seeks to empower each individual to become whatever he or she wishes. It has emerged at a point in the history of science and technology when this grand goal may soon become possible, as suggested by a series of major reports concerning converging technologies for improving human performance (Roco and Bainbridge, 2003; Roco and Montemagno, 2004; Bainbridge and Roco, 2005). True human freedom would violate the divine right of kings, or the rites of divine kings, so one might predict that all but the most secularized forms of religion will brand it sacrilegious.

A broad theoretical perspective such as this can be refined or tested only by an extensive research program, and any one study offers only limited confirmation, disconfirmation, or elaboration. This article reports results from one small part of such a program.

Religious Opposition to Human Transformation

An initial reconnaissance of the relationship between religion and technological transcendence was carried out with a pilot questionnaire study of attitudes toward

radical technological possibilities that was distributed initially at the 2003 Transvision conference, then through classes at religious colleges and a secular university. The 435 respondents were by no means a random sample of the population, but included a number of Transhumanists, others who might be sympathetic to the idea of human enhancement, and religious people who were recruited because they presumably have very different beliefs and attitudes from those of Transhumanists. The primary point was to administer the pilot questionnaire to people with strong views who were thus likely to highlight any deficiencies in the items so that they could be improved for a future study that sought a broader and more representative sample. However, until such time as we have more reliable data, the results of this pilot study offer tentative but clear insights.

The questionnaire began with seven brief stories about people who are exploring some of the new technological possibilities for transcendence, asking respondents to read each one and judge whether the plans of the person in the story are good or bad. There were actually eight versions of each story, varying three dichotomous variables, and at random a given respondent received just one. Here, the questionnaire was prototyping material following a standard method for incorporating experiments in questionnaires, called the *vignette method* (Alexander and Becker, 1978; Sniderman and Grob, 1996). For example, here are two versions of a story about cryonic suspension:

> Story I, Version 1: Michael is a senior scientist in a medical research laboratory who has an incurable disease. He has become interested in a process called cryonic suspension. This involves carefully freezing a person's body, perhaps for as long as several decades, then thawing and reviving the person to continue his life. Michael has decided to enter cryonic suspension himself, so that his disease can be cured by the medical science of the future.
>
> Story I, Version 2: Mary is a high school health teacher who is perfectly healthy. She has become interested in a process called cryonic suspension. This involves carefully freezing a person's body, perhaps for as long as several decades, then thawing and reviving the person to continue her life. Mary has decided to enter cryonic suspension herself, so that she can see what the future will be like.

For each of the seven stories, half of the respondents read a story about a man, and half read a story about a woman. There were two reason why gender was varied in this way. First, if we asked just about one gender, then we would not know if the results generalized to the other. Second, research supports the common stereotype that males are more likely to take physical risks than females (Flynn *et al.*, 1994), so by varying gender at random we can explore whether this applies to futuristic risks like cryonic suspension. The stories also varied in whether the person was an expert in the field, and thus able to make an informed decision – here whether the person was a senior medical research scientist or a high school health teacher. And a third variable differed across stories, but often gave the person a special motivation for taking the risk, such as having a currently incurable disease.

In fact, the different experimental manipulations appeared to have very little impact on respondents' judgments of the stories. About 21 percent of people who read the story about Michael think cryonic suspension would be a good idea, compared with 18 for those who read about Mary. This is a small difference, and could easily be due to chance. Indeed, averaging across all seven stories to get more stable statistics, respondents thought the ideas were good for a male protagonist 31 percent of the time, and 33 percent if the protagonist were female. The difference between expert

protagonists and non-experts is coincidentally about the same, 31 versus 33. Although many published vignette studies have reported significant differences, it is not uncommon for the experimental manipulation to prove far weaker than other variables, such as the personal characteristics of respondents (e.g. McKinlay *et al*., 2002).

This is important for the present analysis, because it suggests that the ideology of the respondent could overpower any specific details of the concrete situation described in a story, in determining responses. If the gender and expertise of the protagonist in the story do not matter to respondents, then we may wonder whether the respondents are willing to grant protagonists the right to decide their own fate. After briefly explaining the content of the other stories, we will see whether respondents' religious views are a more powerful determinant of reactions.

The second story turned out not to be controversial enough, because so many respondents thought the person had a good plan that differences in opinion cannot be correlated with other variables. It concerned using advanced multi-media computer technology to record all of one's experiences, which could be a step toward cybernetic immortality but was described blandly enough that it did not provoke negative reactions. The third story stimulated more disagreement, because it took that idea to an extreme conclusion:

> Story III, Version 1: Albert is a very successful brain surgeon. He reads a lot about both computers and the human brain, and he believes it is possible to transfer a person's mind from the brain to a computer. Recently he has become involved in a research project to accomplish this, by having his own mind scanned in, using a process that will destroy his brain.

The fourth story drew moderate reactions, and describes a method of personality capture (Bainbridge, 2003a) somewhat between stories two and three in terms of how radical the technological idea is:

> Story IV, Version 1: Elizabeth is the head of a computer science laboratory. She has become interested in the concept of uploading a human personality to a computer, using a variety of psychological tests and opinion surveys. She has assembled a huge computerized collection of questionnaires and has already answered forty thousand questions. She hopes that progress in information technology and artificial intelligence will allow her ideas to influence people even after her death.

The fifth story concerned human reproductive cloning. An article published previously in *The Journal of Evolution and Technology* (Bainbridge, 2003b) and based on a different dataset found that religious respondents were especially hostile to the idea of reproductive cloning. Story number six was about use of nanotechnology robots (*nanites*) to clean and repair the circulatory system, and it has been analyzed in an article published in *The Journal of Nanoparticle Research* (Bainbridge, 2004). The final story builds on the earlier items and explores an idea presented in a book published by NASA (Bainbridge, 2002b):

> Story VII, Version 1: Carl is an electrician working for an airline who has always dreamed of traveling through space to another star. He has joined a group that believes it is possible to record an individual's personality and genetic code, send them to a distant planet, and reconstitute the person there to begin a new,

extraterrestrial life. He is very excited about the most recent advances in the space program, and has volunteered to have himself recorded for launch on a future interstellar mission.

Religious Beliefs and Attitudes toward Technological Transcendence

The seven stories do not directly attack religion, but they have two qualities that might offend religious sensitivities. First, they suggest that it may be possible to improve human nature to a significant degree, thus implicitly faulting God's handiwork in creating humans. Second, they hint that it may be possible to achieve technological immortality, thus stealing one of God's supposed prerogatives.

One of the miscellaneous items in the survey gives us a measure of the intensity of the respondent's religious faith. It asked the person to select one of the following choices: "I don't believe in God." "I don't know whether there is a God and I don't believe there is any way to find out." "I don't believe in a personal God, but I do believe in a Higher Power of some kind." "I find myself believing in God some of the times, but not at others." "While I have doubts, I feel that I do believe in God." "I know God really exists and I have no doubts about it." This is a widely used religious belief item that has proven itself in many prior studies. Given that we intentionally oversampled religious conservatives (in the relatively religious United States), fully 56.2 percent selected the final option, and in Table 1 we compare them with the 43.8 percent who selected any of the other options.

Table 1: Percent Saying the Idea is Good by Belief in God

	Saying the Thing is Good	
	No Doubt God Exists	Doubt about God's Existence
Cryonic suspension	13%	28%
Recording all one's experiences	77%	81%
Having one's mind scanned in	10%	28%
Uploading a human personality	22%	34%
Cloning oneself	5%	19%
Nanites inserted into blood stream	46%	57%
Send personality to distant planet	11%	27%
Average of 7 stories	26%	39%

Among people who selected one of the five choices indicating some doubt in the existence of God, 28 percent felt that cryonic suspension was a good idea, compared with only 13 percent among those having complete faith in God. Discounting the second story, which was too bland to elicit strong opinions, we see a solid tendency for religiously faithful people to reject the other transcendent technologies as well. On average, only 26 percent of highly religious respondents think the plan in a story is good, compared with 39 percent of those with a range of religious views. In a larger study, with sufficient numbers of respondents to compare across all different beliefs in God, we would expect to find an even great range of reactions to the stories.

Table 2 shows results comparable to those in Table 1 for a second religion item that measures a very different attitudinal dimension. "Organized religion" was one of a set of four "institutions in this country," the other three being medicine, the scientific community, and major companies. The instructions asked: "As far as the people running these

institutions are concerned, would you say you have a great deal of confidence, only some confidence, or hardly any confidence at all in them?" About 25 percent of the respondents expressed a great deal of confidence in organized religion, whereas 36 percent had some confidence and 37 percent had hardly any. For the scientific community, the comparable percentages were 30, 52, and 14. The table shows that approval of technological transcendence is negatively associated with confidence in religion, and positively associated with confidence in science.

Table 2: Percent Saying the Idea is Good by Confidence in Religion and Science

	Organized Religion			Scientific Community		
	A great deal	Only some	Hardly any	A great deal	Only some	Hardly any
Cryonic suspension	14%	16%	25%	33%	15%	9%
Recording all one's experiences	81%	80%	78%	85%	76%	72%
Having one's mind scanned in	9%	18%	25%	27%	14%	16%
Uploading a human personality	21%	29%	33%	39%	24%	19%
Cloning oneself	4%	11%	18%	16%	10%	9%
Nanites inserted into blood stream	44%	51%	57%	63%	49%	40%
Send personality to distant planet	10%	16%	27%	30%	52%	12%
Average of 7 stories	26%	32%	38%	42%	34%	25%

Comments from Religious Respondents

After each of the seven stories, the respondent was encouraged to write comments, and many availed themselves of this opportunity. The religious objections to reproductive cloning were reported in an earlier article that was based on a different dataset (Bainbridge, 2003), so here we will only briefly examine criticisms of other technologies that reveal how pious people think about such issues.

Some religious respondents felt that the technology violates God's plan for us. That would be bad not only because it defies the Lord – as they see it – but also because they believe all human life gains its meaning from God's plan. "Cryonic freezing is something I disagree with. God put us on this earth at a certain time for a certain reason." On the same topic, others wrote, "We as humans do not have the right to play God in such a manner;" "I don't believe in altering God's plan;" "You are messing with God's work and his plan for you." "This is wrong, to continue life like this is against everything I believe in. When God gives you a time to die it is your time. This is acting too God like in my opinion." The same objection was leveled against interstellar colonization: "Other planets are not made for humans to live on. If God wanted us to live on those planets he would have put us there."

On brain scanning, one worried, "I don't see that happening, and if it does that will be very scaring. Will we be doing God's work?" Another complained, "It is wrong to play God with mind, body, or spirit." About computerized personality capture through question-answering, one said, "From a religious point of view, I see this as 'playing God.' I feel that

God ultimately decides how long one is here and I'm relatively certain that the development of such technology (God willing) would head to the demise of all humanity." Another asserted, "It is corrupt to think someone wants their human personality to be alive after they die. You should just leave all that stuff alone and let God do his work."

Several of the stories suggest not merely enhancement but technological immortality, and religious respondents think the problem of human death has already been solved, but by God, not by human inventiveness. On recording all one's experiences, one religious respondent wrote, "For educational purposes about his life it is ok, but to achieve immortality? That is only done by accepting Jesus." In response to two of the personality capture items, another commented, "Only God gives eternal life through His son Jesus... There is no way to become immortal in this world, unless you believe in a loving God who sent His son to die for you." A third respondent offered a more complete analysis: "While recording and documenting one's personal life experiences is something I find realistic and even interesting, I don't see the connection between that and achieving a kind of immortality. While we analyze and often relive our memories, the things we go through are merely experiences through which our characters and faith in God are enhanced. If we were meant to be immortal on earth, God would've created us so."

A religious conception implies a very different way of thinking about human personality, that may render technological solutions implausible to the religious person. One said, "Immortality is a matter of the spirit, not the physical. The mind is more than a collection of electrical impulses and neurotransmitters or neurons. It's linked to the spirit, which isn't transferable to a database." Another thought cryonic suspension would fail: "If one believes that a human being is made up of both soul and body, then no matter what is done to the body, if a man's soul departs, then he is dead. There's nothing wrong with wanting to have a long life, but when a man's time is up, it's up and no amount of scientific advancement can prevent the soul from leaving the body." "A person's being is not just his brain, but his soul. Unfortunately, the soul needs the brain to exist on Earth." "I think the human soul and mind is something that could never be contained in any computer, no matter how sophisticated or advanced." "You may be able to transfer one's personality to a computer, but not their soul, and that is what counts."

Some respondents explained that a soul or spirit is what gives us many fundamental human characteristics. "Her ideas may remain in the computer, but her soul is in her body. Even if she lives on mentally, she will be dead and it won't be here, just her thoughts (no feelings or emotions)." "The mind is not solely a collection of ones and zeros processing data and spewing out results. That is one function, but there is also the spirit of a man that sustains him. Without a man's spirit the mind would be a mere 'super computer' without life, free-will and choice."

Belief in the soul poses a difficulty as well for interstellar travel in the form of an information pattern: "Duplicate her? So there's a copy on another planet? Don't think so. Nor would it really be her. Again the missing ingredient is the spirit that God gives to a person and they develop, some more, some less. That's not copyable. If this means 'de-constitute' Carol to reconstitute her, again it doesn't work. It's like suicide. If physically possible, her mind would be there, and the mind is an integral part of the soul of a person!" "A person's soul cannot be reconstituted, so this plan of reconstituting a person – even if they have their personality and genetic code – is flawed. 'The body without the spirit is dead.'"

Finally, to some respondents pursuing these technologies for personal gain would not serve appropriate spiritual goals. "It's man's attempt to achieve the spiritual or eternal life on his own without having to go through the proper channels. – Probably so he can say 'I did it myself without God' – which basically is pride, and pride in my opinion is the opposite of true, sacrificial love." "Why waste your life working towards a false sense of eternity, when there is so much to cherish, learn and love in the life we are given?"

Additional Measures

The pilot questionnaire also included 20 agree-disagree statement items about science and technology, including four that express views Transhumanists might hold: "Humanity is on the verge of evolving into a higher form of life." "Technological convergence – combining nanotechnology, biotechnology, information technology and cognitive science – will greatly improve human abilities." "Cryonics (freezing a person's body until medical science is able to cure its diseases) will enable people to survive otherwise fatal accidents and illnesses." "Research on human cloning should be encouraged, because it will greatly benefit science and medicine." Table 3 reports data on these four statements in favor of technological transcendence, plus one statement opposed: "There should be a law against cloning human beings." Five responses were offered: Strongly agree, Agree, Neutral, Disagree, and Strongly disagree. Table 3, combines the two positive responses, Agree, and Strongly agree.

Table 3: Religion and Agreement with Statements about Technological Transcendence

	Agree with Statement		Confidence in Organized Religion		
	No Doubt God Exists	Doubt about God's Existence	A great deal	Only some	Hardly any
In favor of technological transcendence:					
Humanity is on the verge of evolving into a higher form of life.	19%	23%	16%	20%	26%
Technological convergence – combining nanotechnology, biotechnology, information technology and cognitive science – will greatly improve human abilities.	40%	59%	40%	51%	53%
Cryonics (freezing a person's body until medical science is able to cure its diseases) will enable people to survive otherwise fatal accidents and illnesses.	17%	31%	17%	21%	31%
Research on human cloning should be encouraged, because it will greatly benefit science and medicine.	10%	38%	10%	20%	33%
Opposed to technological transcendence:					
There should be a law against cloning human beings.	81%	38%	84%	63%	46%

Highly religious people are most rejecting of cloning, but there is also a difference in the direction predicted on the other items. This is further evidence that supernatural transcendence competes with technological transcendence.

Conclusion

This pilot study indicates that especially religious people may indeed be substantially more likely than other people to reject various forms of technological transcendence. The results suggest that a more extensive study could be worthwhile, employing a larger number of respondents. Ideally, one would want to use a random sample of the population. However, given the great cost of large random samples, one might consider a widely-distributed Web-based questionnaire including a number of calibration items that could be used to weight results to approximate a random sample.

Before such a study is done, it will be important to identify measures of a number of other concepts that should be included in the questionnaire, to achieve maximum scientific payoff. Other religion measures should cover the major dimensions of belief, practice, and affiliation. Similarly, other measures of attitudes toward technological transcendence and transhumanism should be included.

Finally, such a study should explore other factors that might shape attitudes, independently of religion, such as educational level, general orientation toward science and technology, and personality. One would predict that religion is not the only factor determining attitudes toward technological transcendence, although it probably is a powerful one.

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