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Catholic Students' Fatalism in Anticipation of Transhuman Technologies

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Abstract: Findings are presented from a qualitative study in which participants from a Catholic university in New England, USA read a description of transhuman technologies (e.g., genetic engineering) and wrote lengthy responses indicating what they saw as the likely impact of these technologies on identity, society, and religion. In the subsequent content analysis, the responses were also examined for what Patrick Feng calls the "myth of technological determinism" — a sense that technological change is beyond human control. Most of the young men and women in the sample described negative impacts, identified a threat to religion and to their religious beliefs, and expressed concerns for the integrity of human nature. Many of the students wrote of their expectations regarding the future development or restriction of these technologies, with twice as many evoking technological determinism as compared to professing human agency. This passivity and sense of alienation can be understood as a variant of fatalism that Ulrich Beck describes in his account of "risk society". Social scientists prefer to see the public constructively engaged with technologies. Ironically, a religious critique of advanced technologies may invite fatalism. The author suggests that a secular critique, informed by science and technology studies, is more conducive to the public debate.

Keywords: Fatalism, Determinism, Religion, Risk Society, Technology, Transhuman

SHOULD WE AUGMENT our senses, morphology, immune system, and cognition with robotics, neural implants, nanotechnology, or genetic engineering? Proponents and opponents strenuously debate whether a future with such *transhuman* technologies will be bleak or bright, but on this point they agree: within a short period of time we will reach a point of no return.

Advocates of enhancement, or *transhumanists*, give the impression that the momentum is not only in their favor but that the course of the future has already been set. They place transhuman technologies at the forefront of the inevitable march of science and progress. Critics from conservative religious traditions warn of the debasement of mankind and interference with God's plan for humans. Their tone is more alarmist and they use the alleged turning point to mobilize opposition.

Of course in addition to the stark contrast of utopia and dystopia there are other possible scenarios, of starts and stops and mixed consequences. Also, to what extent transhuman technologies move forward, if it all, undoubtedly will be influenced by factors other than how successful the visions are to seduce or to frighten. Nevertheless, if the current debate over stem cell research is any indication, perception is important.

In previous work I investigated the narratives of the most vocal religious activists and identified rhetorical strategies, value sets, and more comprehensive ideologies (Lilley, 2005). I turn now to pose questions regarding the base: Do religious men and women share the activists' concerns about transhuman technologies? Are they as confident that these technologies can be relinquished or banned through collective social action? An exploratory study was conducted on one such population to provide some insights. Catholic students from a private university participated in the study by reading a description of transhuman technologies. They were asked to provide their opinions of the technologies and their expectations regarding future development or restriction.

Results from the qualitative data analysis suggest that many students experience cognitive dissonance in that they readily adhere to the religious critique of transhuman technologies while anticipating what they see as an inevitable, irreversible expansion of these technologies. Given the work in Science and Technology Studies (STS) on technological determinism and Urlich Beck's theory of "risk society," this fatalism comes as no surprise. Even so, those of us in the field of STS prefer that individuals recognize the social construction of technologies and the role of human agency. What can be done, however, when the response to cutting-edge technologies is a sense of helplessness and anticipated future shock?

Background

There are a few transhumanist organizations hosting web sites, holding conferences, and in other ways promulgating transhumanist views with the most

notable organization, the World Transhumanist Association (WTA), claiming over 4000 members worldwide. Transhumanists share a common vision regarding humankind and technology. This is succinctly stated on the homepage of WTA:

> The World Transhumanist Association is an international nonprofit membership organization which advocates the ethical use of technology to expand human capacities. We support the development of and access to new technologies that enable everyone to enjoy *better minds, better bodies and better lives*. In other words, we want people to be *better than well.* (original emphases)(http://www.transhumanism.org/index.php/WTA/index/)

The first point in the "The Transhumanist Declaration" holds that

> 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. (http://transhumanism.org/index.php/WTA/declaration/)

Far from fearing change to the human condition, they are excited by the prospects. The development of cyborgs (humans enhanced with computer technologies), the downloading of human mind into robotic body, the manipulation of genes to forestall or reverse aging, are but a few of the imagined applications which transhumanists eagerly anticipate. Many transhumanists assert that these developments are inevitable. For example, Ray Kurzweil describes enhancement of intelligence as being determined by evolution:

> [W]e are a product of evolution, indeed its cutting edge. But extending our intelligence by reverse engineering it, modeling it, simulating it, reinstantiating it on more capable substrates, and modifying and extending it is the next step in evolution. It was the fate of bacteria to evolve into a technology-creating species. And it's our destiny now to evolve into the vast intelligence of the Singularity. (2005:298)

It is the technophilia of the transhumanists that religious activists not only call into question, but highlight in an attempt to rouse their audience. In an article published in *Christianity Today* entitled, "The techno-sapiens are coming," Christopher Hook begins by warning, "When God fashioned man and woman, he called his creation very good.

Transhumanists say that, by manipulating our bodies with microscopic tools, we can do better. Are we ready for the great debate?" (2004:36) Leon Kass claims that "[i]n leading laboratories, academic and industrial, new creators are confidently amassing their powers and quietly honing their skills, while on the street their evangelists are zealously prophesying a posthuman future. For anyone who cares about preserving our humanity, the time has come to pay attention." (2002:4)

The religious critique is primarily drawn from within the respective faith traditions. The account of human destiny presented in the great monotheistic religions-- that the imperfection of corporeal existence is a prelude to the possibility of transcendence after death-- is sharply contrasted with the transhumanist evolutionary perspective. More specifically, the creation account in Genesis is used to assert that humankind has been made in God's image and for the purpose of forming a special relationship with God, and that to radically alter the body or mind would undermine this. (Herzfeld, 2002) Catholic writers add transhuman alterations to a list of natural law violations that also include abortion, contraception, and euthanasia. (Toth-Fejel, 2004).

As religious activists have ventured beyond their respective faith communities and into the public debate, they have also offered utilitarian or consequentialist assessments. For every alleged benefit that the transhumanists depict, they have described one or more risks. In some cases they follow the lead of Bill Joy (2000) and warn of the dangers of GNR technologies (genetics, nanotechnology, and robotics), especially the risk of unleashing self-replicating entities such as genetically-engineered pathogens. Along the lines of Aldous Huxley's *Brave New World* (1969 [1932]), it is asserted that transhumanist technologies will be used by elites to deepen and sustain social inequality. (Davis, 2004) In terms of the person, some writers take an Aristotelian approach and argue that even if transhuman technologies provide benefits to the individual by prolonging life or minimizing suffering, it will come at the expense of virtue and character. (Coleman, 2003)

For an audience receptive to religious rhetorical argumentation, the case against transhuman technologies may be sufficiently compelling. However, I hypothesize that the much harder task is convincing this audience that restriction of these technologies is possible. In his seminal work, *Risk Society* (1992), Urlich Beck points out that modernization represents in the minds of its recipients a tradeoff between comfort and risks. For example, to have air conditioning, suburban enclaves, and economic growth we consume more energy and in the process run the risk of global warming and nuclear power plant catastrophes. Mass transportation and international travel

increase the risk of terrorist attacks and viral epidemics. Mass production of food entails the passage of pesticides, growth hormones, and antibiotics into our diet. Civilization has come to be associated with self-endangerment.

Acquiescence to technological risk is reinforced by what Patrick Feng (1998) calls the "myth of technological determinism" -- a sense that technological change is beyond human control and is inevitable. For example, computerization and the Internet are often characterized as proceeding at an exponential growth rate, and formulations to describe this, such as Moore's Law, only increase the sense of autonomous development. Religious activists publicize risks in order to spur action, however this strategy will fail if the base has been conditioned to accept risk and if they acquiesce to technological determinism. Ironically, it is possible that a conservative religious distrust of science and a tendency to maintain barricades while waging numerous battles (e.g., Creationism versus Darwinism) may predispose members to perceive science and technology in terms of alienation—powers that are foreign and out of their control. Every setback (and there have been a few lately) may fuel fatalism.

The purpose of this qualitative study of Catholic college students is to test this general hypothesis that there exists a deep concern regarding transhuman technologies that it is muted by fatalism. More specifically, three descriptive hypotheses are offered:

1. The majority of respondents disapprove of transhuman technologies.
2. The majority of respondents perceive transhuman technologies as a threat to religion.
3. The majority of respondents express fatalism.

Method

The exploratory study took place from October, 2005 through February, 2006 at a Catholic university in New England (USA). From a purposive sample of 92 students, 76 participated by reading a description of transhuman technologies and posting online a lengthy response indicating, among other things, their attitudes toward transhuman technologies and what they thought would be the likely scenario in terms of development (including failure or relinquishment) and the likely impact (if any) on identity, society, and religious beliefs. Some strategies of ethno-graphy, including minimizing researcher streering and being receptive to subjective accounts, were practiced in this study.

The students' written responses, or texts, were analyzed along the following lines. For the variable, ATTITUDE TOWARD TRANSHUMAN, texts containing an explicit statement of opposition were coded as "unfavorable," while others containing an explicit statement of support for transhuman technologies were coded as "favorable." A second analysis was conducted on the remaining responses (those without manifest support or opposition) with attention paid to the overall set of impacts mentioned. If negative consequences prevailed, a text was coded as unfavorable and if positive consequences prevailed, a text was coded as favorable. A third value of "neutral/ambivalent" was assigned to those responses that could not be categorized as favorable or unfavorable using the aforementioned method.

For the variable, THREAT TO RELIGION, statements regarding the impact of transhuman technologies on faith, beliefs, doctrine, etc., were identified and if all expressed the sentiment that transhuman technologies oppose or potentially undermine religion, a text was coded as "threat." If all statements indicated expected benefits to religion, the code value of "benefit" was assigned. If the statements varied and both risks and opportunities for religion were expressed, a response was coded as "mixed impact." And finally, for the variable, FATALISM, texts in which expressions of helplessness, resignation, or technological determinism prevailed were coded as "fatalist." Texts in which the respondents emphasized the possibility of human intervention or control were coded as "agency."

Results

The participants were predominately white (92%), female (66%), middle class (86%), between the ages of 18 and 21 (97%), and Catholic (91%). Over 95% of the respondents described themselves as religious and less than 5% as non-religious. According to the frequency distribution displayed in Table 1, nearly 3 of every 4 students expressed an unfavorable opinion of transhuman technologies and only a few students (5) favored these technologies. Students primarily criticized transhuman technologies for what they perceived as a violation of natural or divine order.

Table 1: Frequency Distribution of ATTITUDE TOWARD TRANSHUMAN

	Frequency	Percent	Valid Percent	Cumulative Percent
unfavorable	56	73.7	73.7	73.7
Favourable	5	6.6	6.6	80.3
neutral/ambivalent	15	19.7	19.7	100.0
Total	76	100.0	100.0	

One student wrote:

> Through genetic engineering, by gene therapy or stem cells, scientists will be able to prevent chronic disease or even stop the aging process. At some point this might seem great, but I think that it is again interfering with human nature. I understand if someone needs to use a prosthetic leg, but to get robotic parts just to prevent disease and most injuries, I believe, is dim-witted. We were built with our body for a reason. If previous generations have gotten through life fine without these things, so can we.

Another explained:

> As Catholics, we believe that God created every creature for a purpose and made us each unique and special in our own ways. God did not create us so that we could go and change ourselves.

Although the students did not use the term "hubris," their characterization of transhuman technologies certainly evoke this sense of over-stepping:

> If we try to replicate God's mystical creation, human beings, than we will be going against God's will.
> You were born a certain way and by changing this with enhancing abilities that aren't natural you are messing with who you are supposed to be.

Overall, 30% of this sample asserted that transhuman technologies interfere with human nature and 65% claimed that such applications would violate God's will or divine plan for humans.

According to the frequency distribution displayed in Table 2, nearly 90% of the respondents asserted that transhumanist technologies are inimical to religion. Sometimes this is stated from a third-person perspective but other times it was conveyed quite personally.

> [S]ome people may become less religious if they are dependent on science rather then belief. If modern science and technology is able to offer one all of these desires and perfections, then why would one need God? Religion could become less popular, which could also be detrimental to society.
> Without the respect in God's power to create the beautiful complex humans we are, and without the belief in prayer, or faith, there is no basis of religion. In a transhumanistic society, there is much less emphasis on beliefs, spirituality, and the power of a higher being, but more emphasis on the power of science and technology.
> As a believer of God, I support the belief that God created earth, man, and everything in it…Without true human beings, who are created in the likeness of God, we would be forced to abolish all hope for an afterlife, such as Heaven.

Table 2: Frequency Distribution of THREAT TO RELIGION

	Frequency	Percent	Valid Percent	Cumulative Percent
threat	68	89.5	91.9	91.9
benefit	0	0	0	91.9
mixed impact	6	7.9	8.1	100.0
		97.4	100.0	
Missing	2	2.6		
Total	76	100.0		

None of the students proposed that religion would benefit from transhumanist technologies and only a few respondents held out the possibility that the impact on religion would be neutral, as this student did:

Chances are very minimal that religion would be greatly affected by change in the human race.

> People who have morals will continue to practice religion and not ever forget it.

In keeping with the purpose of this qualitative study and to avoid influencing or steering the students' responses in a certain direction, the respondents were not given specific instructions in terms of how to address the issue of inevitability. For example, they were not instructed to comment on technological determinism or the capability of human control. Nevertheless, approximately one-half of the sample did provide an opinion on this matter, with twice as many students expressing fatalism as asserting agency (see Table 3).

Some of the students used an evolutionary perspective to suggest inevitability, while others emphasized the march of progress:

> Evolution in every aspect is inevitable. People will change as their society, culture, and religion begins to transform making repercussions. Individuals, society, and therefore religion cannot stop changing. If it wasn't for new technology and medical research we wouldn't be as advanced as our present day culture is.
> The world and technology are improving as the day goes on. Everyone has to accept that in order to move on with life, one needs to accept that this is the way things are going to be. Transhuman will pop up in the future more and more.

Table 3: Frequency Distribution of FATALISM

	Frequency	Percent	Valid Percent	Cumulative Percent
fatalist	25	32.9	32.9	32.9
agency	12	15.8	15.8	48.7
no position	39	51.3	51.3	100.0
Total	76	100.0	100.0	

Whereas those two respondents proposed a pragmatic response, others expressed stronger emotions of helplessness and despair:

> It would start out slow. Maybe a few experiments released into society with minimal risk. Then what? As time continues, this phenomenon of technology would be introduced to every newborn in the world and would completely alter the natural pattern of life and would not let man continue to naturally evolve as a species. I also firmly believe that life as we know it would be completely destroyed and the human race will eventually fall…I do believe that this will eventually lead to the total dissipation of all religion because people will no longer need something supernatural to believe in. They will believe in science. People will become infatuated with advancing their bodies and this [will] become the world's obsession.
> It is impossible to stop coming up with new technologies and advancing. I just wonder sometimes if we will ever cross the line.

Although fewer in number, some respondents did assert the role of human agency. For one respondent, the key was a critical stance vis-à-vis science:

> Some scientists argue their point in making super humans by saying it is part of evolution. They believe that they have evolved enough so

> that they can create these cyborgs, so why not? This argument is somewhat valid but nevertheless is just an excuse to take science to the next level. We must monitor and pay attention to where science is taking us, and make sure that religion and ethics play a large role in our future.

Two other students suggested the viability of organized resistance:

> During this artificial evolutionary change there would be many social movements in society. Most of the population would be against these changes, and make organized non-institutionalized efforts to change it through collective action.
> Most likely the response that you would see from the Catholic church would be priests condemning this and telling its followers not to do it… With the Christian religion denouncing it so much, many people wouldn't do it. When you have that type of power as a religion does and you can effectively have a large number of the world denounce something, then you have a lot of control over something.

Of the 56 respondents expressing an unfavorable attitude toward transhuman technologies, approximately twice as many expressed fatalism (20) rather than agency (11) (see Table 4). According to the

crosstabulation displayed in Table 5, of the 68 students describing a threat to religion, 24 expressed

fatalism as compared to 11 emphasizing agency.

Table 4: Crosstabulation of FATALISM and ATTITUDE TOWARD TRANSHUMAN

		ATTITUDE TOWARD TRANSHUMAN			Total
		unfavorable	favorable	neutral	
FATALISM	fatalist	20	2	3	25
	agency	11	0	1	12
	no position	25	3	11	39
Total		56	5	15	76
Pearson Chi-Square: Value of 5.053, 4 df, Sig. of .282.					

Table 5: Crosstabulation of FATALISM and THREAT TO RELIGION

		THREAT TO RELIGION		Total
		threat	mixed impact	
FATALISM	fatalist	24	1	25
	agency	11	1	12
	no position	33	4	37
Total		68	6	74
Pearson Chi-Square: Value of .93, 2 df, Sig. of .628.				

Discussion

The findings confirm the first and second hypotheses- - that this sample of Catholic college students would have a negative perception of transhuman technologies and see these technologies as a threat to religion. The results are less conclusive regarding the third hypothesis, that fatalism would be the most common orientation even for those respondents critical of transhuman technologies. Of this group, twice as many expressed fatalism as did propose agency, however, approximately 50% of the respondents simply did not discuss this issue of inevitability versus control.

My overall impression from reading the students' responses is that a majority of students are, at the very least, anxious about the application of new technologies to the human body and mind. Very little consideration was given to possible higher-order social impacts, for example, the deepening of social stratification. Few appealed to the principle of social justice. Rather, these respondents mainly are concerned with authenticity and integrity both at the personal and species level. Most of the students appealed to some variant of natural law and perceived potential applications of transhuman technologies as transgressions. This conceptualization of the problem is consistent with the approach taken by Catholic theologians.

One of the main "selling points" of transhumanism is that individuals have much to gain from enhance-

ments, including excellent health, longevity, improved performance, and self-determination. However, it is clear that this population has not bought into this. A few possible explanations for this finding can be suggested: 1) These students are not sufficiently exposed to the transhumanist argument to have been persuaded. 2) Their religious culture has effectively immunized them from this appeal (e.g., they accept on faith that mortal limits are *necessary* for salvation). 3) Being relatively young, in good health, and with promising futures, these students may not see the personal need for transhuman technologies. (It is noteworthy that a few students indicated that they or a loved one suffered from a chronic, debilitating disease and they brought this up to justify their support of transhuman technologies.)

The inevitability claim made by the transhumanists, and more comprehensively presented in Western culture as progress, seems to be much harder for many of these students to dismiss. There is ample evidence that this population has been exposed to this rhetoric. Some of the students reveal deep-seated doubts over whether anything can be done, or should be done, to stop scientific and technological developments. It may be that their religious training is incapable of immunizing them against this type of argument. Alternatively, expressions of fatalism could merely be a reflection of American youth and their general tendency to be passive in the face of large-scale forces. This passivity is evident in low voter

turnout and minimal participation rates in social and political movements. Clearly, further research is needed to discern which factor is more important. For example, enlarging the sample of the religious base by including other age groups would allow for a test of the significance of age. Expanding outside this base to sample men and women who are non-religious could provide an interesting look at the success or failure of the transhumanist vision in a secular population. Are the non-religious also affected by the myth of technological determinism?

The social sciences, and in particular STS, offer a secular critique of deterministic accounts of science and technology. Rather than idealize, STS scholars treat science and technology as social constructions and, rather than practice avoidance, STS researchers enter the world of scientists and engineers to investigate their practices. Demystification is the norm. There is also a value set evident throughout contemporary social sciences which favors democracy. In STS, for example, Richard Sclove (1995) has called for public participation in decision-making regarding the design and implementation of technologies.

It is possible that the religious critique may be counterproductive and actually promote fatalism. As mentioned previously, religion often presents science and technology as the "other," but, in doing so, creates a sense of alienation. Moreover, in some conservative religious traditions there is a prophetic expectation that modern society and culture will become more inimical to true believers. In this apocalyptic vision, a transhuman world may be perceived as part of a divine plan. In any case, this study finds that some young men and women, despite (or perhaps in part due to) their religious socialization, have a fatalistic orientation to transhuman technologies.

From a religious perspective it may seem counter-intuitive, but it is possible that religious men and women would benefit from acquiring the secular critique. From an STS perspective, *any* form of technological fatalism is intellectually flawed and politically problematic, and by promoting a demystified account of technology we are supporting a more vigorous public debate. Young men and women, religious and non-religious, should participate in this debate with the attitude that citizens can and should decide the future of the human or transhuman world.

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