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WHAT IS MORMON TRANSHUMANISM? AND IS IT MORMON?

Gregory L. Smith

Abstract: *Some sources have described Mormonism as the faith most friendly to the intellectual movement known as Transhumanism. This paper reviews an introductory paper by the past President of the Mormon Transhumanist Association. A syllogism that purports to show that Mormonism is compatible with — or even requires — Transhumanism is analyzed. The syllogism’s premises are shown to misunderstand or misrepresent LDS scripture and doctrine. The proffered Transhumanist conception of “human nature” and the perspective offered by LDS scripture are compared and found to be incompatible. Additional discrepancies between the Transhumanist article’s representation of LDS doctrine and the actual teachings of LDS scripture and leaders on doctrinal matters (the Premortal Council in Heaven, the relationship between substance dualism and LDS thought, and the possibility of engineering or controlling spiritual experiences) are examined. The article does not accurately reflect LDS teachings, and thus has not demonstrated that Transhumanism is congenial to LDS scripture or doctrine.¹*

In conversation recently, I was asked about *Mormon Transhumanism*, a movement about which I knew very little.² A longtime obsession with

1. In this paper, I speak only for myself and not for any group or organization. I’m grateful to three anonymous peer reviewers whose frank (and often blunt) feedback helpfully improved the final paper. They remain unimplicated in any remaining errors and infelicities.

2. My first and only previous encounter with Mormon Transhumanism was an odd, if not incoherent, claim directed at Boyd K. Packer’s teachings about chastity by someone who styled himself a “Mormon Transhumanist.” See Gregory L. Smith, “Shattered Glass: The Traditions of Mormon Same-Sex Marriage Advocates

science-fiction literature made me aware of *Transhumanism*, which urges the alteration of human nature and capability through science and technology, particularly via GNR — Genetics, Nanotechnology, Robotics and information technology. Chief among Transhumanism's goals are the abolition of death from aging,³ the enhancement and replacement of biological cognition with machine equivalents, and the emergence of the Singularity, a moment of explosive cultural evolution triggered by the development of a self-improving machine- or biological-machine hybrid-intelligence.⁴

My initial reaction was to conclude that this was not a research program any would think could dovetail well with Mormon thought. I was, however, mistaken — at least a few individuals believe such a reconciliation is both possible and desirable.

The Mormon Transhumanist Association (MTA) describes itself as “the world’s largest advocacy network for ethical use of technology and religion to expand human abilities, as outlined in the Transhumanist Declaration.”⁵ As of this writing, they report 591 members, of whom 376 have made their names public.⁶

The MTA website includes an article written by the group’s past president, Lincoln Cannon.⁷ It is targeted at a general readership, and Cannon’s other work has been cited in the academic literature as

Encounter Boyd K. Packer,” *Mormon Studies Review* 23/1 (2011): 64n6, <http://publications.mi.byu.edu/fullscreen/?pub=1462&index=6>.

3. Aubrey de Grey and Michael Rae, *Ending Aging: The Rejuvenation Breakthroughs That Could Reverse Human Aging in Our Lifetime* (New York: St. Martin’s Press, 2007).

4. See Vernor Vinge, “Vernor Vinge on the Singularity,” presentation to VISION-21 symposium, NASA Lewis Research Center and the Ohio Aerospace Institute, 30–31 March 1993, <http://mindstalk.net/vinge/vinge-sing.html>. Perhaps the most popular exposition of the idea is Ray Kurzweil, *The Singularity is Near: When Humans Transcend Biology* (Penguin Books, 2005); see also his *The Age of Spiritual Machines: When Computers Exceed Human Intelligence* (Penguin Group, 1999). For a variety of views on such matters, see *What to Think About Machines That Think: Today’s Leading Thinkers on the Age of Machine Intelligence*, edited by John Brockman (New York: Harper Perennial, 2015).

5. “About the Association,” *Mormon Transhumanist Association*, accessed July 10, 2016, <http://transfigurism.org/pages/about/>. See also, “Transhumanist Declaration”, Humanity +, Inc., accessed July 10, 2016, <http://humanityplus.org/philosophy/transhumanist-declaration/>.

6. “Members,” *Mormon Transhumanist Association*, accessed July 10, 2016, <http://transfigurism.org/pages/about/members/>.

7. Lincoln Cannon, “What Is Mormon Transhumanism?” *Theology and Science* 13/2 (2015): 202–18, <http://www.tandfonline.com/doi/abs/10.1080/14746700.2015.1023992>. Parenthetical page citations within my review are to this article.

evidence that “the Church of Latter-day Saints [sic] ... is also the tradition that exhibits the most positive attitude toward transhumanism.”⁸ This is a somewhat extravagant claim when we consider that the Mormon Transhumanist Association then had only 255 members.⁹ If Mormonism represents the most favorable faith, Transhumanism’s stock amongst the religious must be low indeed.¹⁰ An author in *First Things* was more skeptical, writing “rather than rejecting their faith, Mormon transhumanists can come to the movement because of their religion. Or so says Cannon. Mormon authorities, I suspect, would disagree.”¹¹

In this essay, I offer a review and reaction to the claims in Cannon’s article from my own believing LDS perspective. I will say nothing about Transhumanism’s scientific claims, though I have enough of the scientist in me to be deeply skeptical about many of them.¹²

It would be impossible to represent every nuance in perspective held by members of the movement in a brief essay such as Cannon’s. Adding to that difficulty is the reputation that Transhumanists have acquired for being diverse and fractious. As one author observed:

Transhumanism is not a static or crystallized doctrine — it has already had its share of schisms and internecine skirmishes. ... This recent but quickly growing movement is part science,

8. Hava Tirosh-Samuelson, “Transhumanism as a Secularist Faith,” *Zygon: Journal of Religion and Science* 47/4 (December 2012): 727.

9. “Member Results Survey — 2012,” *Mormon Transhumanist Association*, accessed 12 July 2016, <https://www.scribd.com/document/139590746/Mormon-Transhumanist-Association-Member-Survey-Results-2012/>.

10. Cannon may be overly pessimistic. See the qualified support for some of the transhumanist project from a variety of religious traditions discussed in Chris Toumey, “Seven Religious Reactions to Nanotechnology,” *Nanoethics* 5 (2011): 251–67.

11. Wesley J. Smith, “New-Time Religion,” *First Things* (December 2014), <http://www.firstthings.com/article/2014/12/new-time-religion>.

12. For views of some of the ethical dilemmas of Mormon Transhumanism, see Samuel Morris Brown, “Enhancing evolution: Posthumanous dreams and the moral complexity of biomedical aspirations,” *Brigham Young University Studies* 48/2 (2009): 41–49, <https://byustudies.byu.edu/content/enhancing-evolution-posthumanous-dreams-and-moral-complexity-biomedical-aspirations>. For a brief overview of selected research challenges relating to Transhumanist claims from a scientific perspective, see Jeffrey M. Bradshaw, “Can We Become Immortal and Superintelligent by Uploading Our Brains to Supercomputers?,” *Meridian Magazine*, 27 June 2016, <http://ldsmag.com/can-we-become-immortal-and-superintelligent-by-uploading-our-brains-to-supercomputers/>; and Jeffrey M. Bradshaw, “How Close Are We to Being Able to Model the Brain?,” *Meridian Magazine*, 4 July 2016, <http://ldsmag.com/how-close-are-we-to-being-able-to-model-the-brain/>.

part philosophy, but also part science-fiction, and I might add, part faith.¹³

Mormon Transhumanists seem no different. Cannon writes, “Mormon transhumanists do not have one vision of the future. We have many visions — many dreams. And we express them in many narratives” (210).

So, I make no claim that the analysis here applies to all Transhumanists, all Mormon Transhumanists, or even all that Cannon has written and said elsewhere. This review serves as a preliminary study, by a newcomer to these ideas, of a single introductory paper intended to help beginners get up to speed.

A Roadmap for What Follows

In Part 1, I examine a series of syllogisms which Cannon offers as evidence that “Mormonism actually mandates transhumanism” (213). We will find that most of the premises upon which these syllogisms rest are not accurate representations of LDS thought. We will see that Cannon often either misreads or misrepresents LDS scripture. On a superficial reading, his citations may appear to support his argument. A closer look reveals that any support they appear to offer Transhumanism is a mirage.

Of particular significance for orthodox Mormons is my observation that Cannon puts a great deal of emphasis on humanity’s mastering techniques to achieve immortality, which creates what seem to be insurmountable difficulties for his account of LDS doctrine.

In Part 2, I investigate Cannon’s portrayal of human nature and Transhumanism’s purported ability to alter it now and in the future. We find that LDS theology and Transhumanism use the concept of *human nature* in different ways. We note that while Cannon’s account of Jesus highlights the ways in which we might imitate him and adopt his salvific role, it omits discussion of the areas in which his role — as a perfected and glorified celestial being whose Atonement performed a unique and once-and-for-all act to bring immortality and the possibility of eternal life to all mankind — is incommensurate with our role and possibilities as beings living in a fallen world.

In Part 3, I conclude by reviewing some of what I take to be Cannon’s misreadings of LDS doctrine, particularly those focused on matters of dualism, materialism, and the nature of spiritual experiences.

13. Bob Doede, “Transhumanism, Technology, and the Future: Posthumanity Emerging or Sub-Humanity Descending?,” *Appraisal* 7/3 (March 2009): 40.

Part 1: Mormonism Mandates Transhumanism?¹⁴

Cannon advances what he concedes is “a controversial claim.” “Some Mormon transhumanists,” he writes, “contend that ... Mormonism actually mandates transhumanism [O]ne cannot be a Mormon without being a transhumanist.” He goes on to assure us that “we can use Mormon scripture to formulate a supporting argument” (213). He offers four premises, accompanied by appeals to LDS scripture:¹⁵

P1: “God commands us to use ordained means to participate in God’s work.”

Supporting statements:

- 1a) 1 Nephi 3:7 — “God prepares ways for us to accomplish God’s commands.”
- 1b) Alma 60:11, 21–23 — “God will not save us unless we use the means God has already provided.”
- 1c) D&C 58:27–28 — “We should engage in good causes without waiting for God to provide specific commands.”

P2: “Science and technology are among the means ordained of God.”

Supporting statements:

- 2a) 1 Nephi 17:8–11, 16 — “God commands Nephi to construct a ship to save his family.”
- 2b) Alma 37:38–39 — “God gave Nephi a compass to guide his family to the promised land.”
- 2c) D&C 88:78–79 — “God commands us to study and teach everything from astronomy and geology to history and politics.”
- 2d) D&C 121:26–33 — “We will learn all the physical laws of the world before attaining heaven.”

14. A video of the same name is featured prominently on the Mormon Transhumanist Association (MTA hereafter) website. Clearly, this is a point of view that MTA is actively advocating. See Mormon Transhumanist Association (website), accessed July 10, 2016, <http://transfigurism.org/>. See also Mormon Transhumanist Association, “Mormonism Mandates Transhumanism,” YouTube video, 2:18, July 6, 2014, <https://www.youtube.com/watch?v=VePRByRNIAC>. I here review only Cannon’s printed account.

15. I have here organized Cannon’s claims into schematic form for brevity and clarity. Material in quotes is his from page 241; I have omitted the scripture references provided for P4 (Ether 3:7–16; D&C 76:70; 93:33–36), since I take both P4’s claim and the scriptures offered in its support as noncontroversial among Latter-day Saints.

P3: “God’s work is to help each other attain Godhood.”

Supporting statements:

- 3a) 3 Nephi 12:48 — “Jesus commands us to be perfect like God.”
- 3b) D&C 76:58–60, 92–95 — “God would make us Gods of equal power with him.”
- 3c) Moses 1:39 — “God’s work is to make us immortal in eternal life.”

P4: “An essential attribute of Godhood is a glorified immortal body.”

Given these four premises, Cannon declares that “we can reason” and thereby draws three conclusions:¹⁶

First Conclusion: “Because God commands us to use ordained means to participate in God’s work [P1], and because science and technology are among those means [P2], we can deduce [C1] that *God commands us to use science and technology to participate in God’s work.*”

Second Conclusion: “Because God commands us to use science and technology to participate in God’s work [C1], and because God’s work is to help each other attain Godhood [P3], we can deduce [C2] that *God commands us to use science and technology to help each other attain Godhood.*”

Third Conclusion: “Because God commands us to use science and technology to help each other attain Godhood [C2], and because an essential attribute of Godhood is a glorified immortal body [P4], we can conclude [C3] that *God commands us to use science and technology to help each other attain a glorified immortal body.*”

Cannon concludes, “If we began with premises that accurately reflect Mormonism, then Mormonism mandates transhumanism” (214). Even a valid argument (i.e., one that follows the rules of logic) produces truth only if its premises are true — and we will find that none of his premises accurately reflect LDS doctrine.

16. I have labeled the premises upon which I believe Cannon’s conclusions are based. (These labels are utilized elsewhere in this essay.) Material in quotes is Cannon’s; emphasis is mine to highlight conclusions.

Note that each conclusion depends upon the truth of the conclusion that went before: the first must be true for the second to have any force, while the second is required for the third. A failure at any point destroys the entire argument downstream.

Let us first examine the use to which Cannon's argument puts the scriptures invoked in his first two premises.

The First Premise (P1)

Few Latter-day Saints would quarrel with the idea that God provides means for mortals to accomplish the purposes he sets them (1a).

Cannon's second scripture is cited to support the idea that "God will not save us unless we use the means God has already provided" (1b). This formulation trades on the fact that the scripture cites Captain Moroni's speaking of being "delivered" (Alma 60:11, 20, 21) from a temporal, military threat — yet oddly Cannon uses the term *save* instead, a term never used in the verses cited.¹⁷ Rendering Moroni's claim as "saved" allows the argument to imply matters of eternal salvation rather than deliverance in war. The remainder of Cannon's argument requires that Moroni's words be understood in a religious sense.

Perhaps without intending to do so, Cannon has already shifted the scriptural ground — a command about using available means to escape a mortal, physical threat in the political realm has been shaded through choice of language into a command about how we ought to approach matters of human salvation (in the eschatological sense). This shift is not an inconsequential move. Either Cannon is unaware of what he has done, or he hopes we won't notice.¹⁸

This lack of precision is compounded when Cannon's third scripture is used to argue that we "ought to engage in good causes without

17. "Save" and "salvation" are nowhere used in Alma 60, except in verse 8, where Moroni says the political leaders could have sent armies and "saved thousands" from death in war: clearly a claim about a mortal, temporal outcome that has nothing to do with salvation in the religious sense. (If those who suffered death were righteous, Moroni doubtless would have seen them as *not saved* from the war but *saved* in a religious or eschatological sense.)

18. The technical name for such an error is the *fallacy of equivocation*. This logical error trades on the fact that a word or sentence may have two different meanings. The error lies in invoking the equivocal word or phrase in the first sense in a premise, and then proceeding as if it were used in the second sense in the conclusion(s) drawn. [See Hans Hansen, "Fallacies," *The Stanford Encyclopedia of Philosophy* (Summer 2015 Edition), edited by Edward N. Zalta, accessed 11 April 2017, <https://plato.stanford.edu/archives/sum2015/entries/fallacies/>.]

waiting for God to provide specific commands” (1c). Here the argument implicitly lays the ground to assume — without evidence — what it will eventually be enlisted to prove. An admonition to engage in good causes without being commanded in the details (1c) applies in this case only *if the transhumanist approach to salvation is a good one*.¹⁹ But that is ultimately the point at issue. We cannot assume it at the outset.

One is justified, for example, in spending vast human resources, research capital, and intellectual firepower to digitize and upload a human personality only if such an undertaking is (1) possible and (2) desired by God. If such things are either impossible or improper, such efforts are at best a colossal waste of time, money, and talent that could be better spent on a thousand other pressing needs or at worst a type of fatal hubris, sin on a vast scale. They would not then be “good causes” in the sense required by Cannon’s argument, even if they arise out of noble motives with lofty goals.

Let me draw an analogy from technological advancements in my field of study and career (medical science): (P1) God wants happy families and (P2) many scientists have worked wonders to ease the technical and legal obstacles to elective abortion as a contraceptive method. But abortion as contraception is hardly an undertaking that LDS doctrine endorses, even if we believe it will make for a happier family (a good cause!) and even if the means have been “given us” to carry it out.

This analogy is not farfetched. Cannon writes somewhat rhapsodically of one of “many narratives ... reflecting some common expectations and aspirations, and illustrating parallels between Mormonism and transhumanism” (210). He then describes how in one Mormon Transhumanist future, “Reproduction technology permits infertile and gay couples, as well as individuals or groups, to conceive their own genetic children. Some recoil from perceived threats to tradition, while others celebrate perceived gifts to new families” (210).

I have trouble seeing the common aspirations and parallels between this vision of Transhumanism and Mormon thought. As a footnote to this scenario, Cannon refers to D&C 88:33, which I will quote, though Cannon did not: “For what doth it profit a man if a gift is bestowed upon

19. The scripture in question was addressed to Bishop Edward Partridge, discussing the means whereby he and his counselors could best fulfill the specific calling given them by God and the commandment regarding the establishment of a storehouse. The Lord urged them to “counsel between themselves and me,” regarding “bring[ing] their families to this land [Missouri]” (D&C 58:24–25).

him, and he receive not the gift? Behold, he rejoices not in that which is given unto him, neither rejoices in him who is the giver of the gift.”

It is not clear how this is relevant to his argument, which is perhaps why the text was not included — does Cannon mean that such capacity for single individuals or groups of more than two individuals or partners of the same sex to create children through technology ought to be seen as a gift from God? Or that Mormon Transhumanists view it as such?

It seems so, since some see these techniques as “gifts to new families.” But in the LDS view, an infertile married couple does not become a “new family” when children arrive — it is a family already. It does not need biological children to become one.²⁰ And single individuals, homosexual unions, or scenarios which allow a child to have more than two biological parents are not family structures conducive to God’s purposes, given LDS doctrine reflected in the *Proclamation on the Family*.²¹

Cannon seems to classify a negative religious reaction to these projects as merely due to “perceived threats to tradition,” but the Mormon view would probably see it as inimical to the very foundation

20. “Sweethearts should realize before they take the vows that each must accept literally and fully that the good of the *little new family* must always be superior to the good of either spouse. Each party must eliminate the ‘I’ and the ‘my’ and substitute ... ‘we’ and ‘our.’ Every decision must take into consideration that there are *two or more affected* by it” (Spencer W. Kimball, “Marriage and Divorce: An Address,” [Salt Lake City: Deseret Book Co., 1976], 18, emphasis added.) Also reproduced in “Oneness in Marriage,” *Ensign* (March 1977): 4, <https://www.lds.org/ensign/1977/03/oneness-in-marriage?lang=eng> and “Chapter 18: Honorable, Happy, Successful Marriage,” *Teachings of Presidents of the Church: Spencer W. Kimball* (2006), 189–201, <https://www.lds.org/manual/teachings-spencer-w-kimball/chapter-18?lang=eng>.

21. One possible exception might be the use of mitochondria DNA (mtDNA) from a donor egg into which a husband and wife’s genetic material is placed in order to avoid passing maternal mitochondrial disease on to the child. (With rare exceptions only the egg, and thus the mother, contributes to a child’s mtDNA.) In such a case, the child has DNA from three people — the main “autosomal” DNA from his parents, and mtDNA from the egg donor. This at least is a scenario that could potentially harmonize with LDS doctrine and praxis. One suspects, however, that such technology could also be used by polyamorous partnerships to produce a child with three, four, or more “parents,” which LDS doctrine would almost certainly see as deeply problematic. I suspect it is to this latter application that some Mormon Transhumanists refer. This technology was recently approved in the United Kingdom to treat mitochondrial disease. See: Catharine Paddock, “Three-parent embryos approved in UK,” (4 February 2015), <http://www.medicalnewstoday.com/articles/288943.php>; Gráinne S. Gorman, *et al.*, “Mitochondrial Donation — How Many Women Could Benefit?,” *New England Journal of Medicine* 372 (26 February 2015): 885–87, <http://www.nejm.org/doi/full/10.1056/NEJMc1500960#t=article>.

of the divine family and exaltation itself. One begins to suspect this particular Mormon Transhumanist view is not terribly Mormon at all and even hostile to Mormon thought in spots. To cite scripture wholly out of both its context and the broader LDS understanding of these matters is troubling, especially when Cannon aims to provide “premises that accurately reflect Mormonism” (214).

In short, the first premise sets the stage for a circular argument; it prepares to “beg the question” and must twist LDS scripture to do it. This is not an auspicious beginning.

The Second Premise (P2)

The second premise holds that “Science and technology are among the means ordained of God.” As an accurate description of LDS doctrine, this formulation is also flawed, since the argument uses it as if the premise were “*any and all* science and technology are among the means ordained of God.” The implied claim is clearly false — again, we can draw no conclusions about whether or not the technological wonders offered by Transhumanism are consistent with God’s purposes without examining each case. Poison and nuclear weapons are forms of human science and technology, yet God does not necessarily mandate their use.

To pick an example not more extreme than some Transhumanist reveries, one might conceive of a brain-control device that prevents humans from committing acts of sin. God clearly does not want humans to sin, yet using technology to assure that they would not or could not do so is not a righteous act in LDS theology.²²

The scriptures cited do not help the position that Cannon advances. True, Nephi built a ship to save his family (2a) — but he did so at God’s explicit command, and under God’s tutelage. Nephi emphasizes that he “did not work the timbers [of the ship] after the manner which was learned by men, neither did I build the ship after the manner of men; but I did build it after the manner which the Lord had shown unto me; wherefore, it was not after the manner of men” (1 Nephi 18:2). So Nephi did not use human-inspired or -directed technology at all. He did not undertake a kind of naval Manhattan Project in the pre-Second Temple era. The Lord did not send him to shipwrights and carpenters, though plenty of these existed.

22. LDS scripture teaches that Satan and his followers were cast out from heaven over precisely the issue of whether tampering with moral agency was a means that justified the desired end (Moses 4:1–4; see also 2 Nephi 2:17, D&C 29:36–37, Abraham 3:27–28).

For the example of Nephi's ship to be on point, we must ask if God has explicitly commanded that we focus our efforts on Transhumanist approaches. Clearly, he has not — and it is this difficulty that the second premise attempts to paper over.

Cannon's second scripture, like the first, makes precisely the opposite point that his argument requires. True, Lehi and family were guided by the compass-like Liahona in their journey (2b), but here again Lehi did not design the device, nor did technocrats help forge it. Instead, it appeared fully-formed outside Lehi's tent. (Alma even insists that its construction was beyond any human ability; see Alma 37:39.) Despite being a material object (and thus "technology" by some definitions) it did not work according to any physical principles or scientific laws known to Lehi or us — instead "it did work for them according to their faith in God". It was a "miracle" like "many other miracles wrought by the power of God". It would stop working when they "were slothful, and forgot to exercise their faith and diligence" (Alma 37:40–41). The Liahona is simply not a model for man's technological prowess contributing to the accomplishment of God's purposes — if anything, it is a call for faith, obedience, humility, and trust in God's revelations.

In neither case do Nephi and Lehi urge their followers to a research program to develop the technocratic tools they think God might want. God simply provides the expertise with the explicit rationale that his purposes need to be accomplished. Nephi's nautical construction does not set off a pre-Columbian shipbuilding renaissance. Lehi does not need to understand the principles by which the Liahona works, much less build his own mass-production line so every Nephite home can have one. Instead, he learns that it works via diligent faith in the arm of God — hardly a Transhumanist virtue. Transhumanism, by contrast, applauds empiricism and technical mastery over nature through humanity's native powers. Nephi's ship and the Liahona help to accomplish a specific purpose and are then retired from use. The Nephites do not continue to use and improve their ocean-crossing tech based on Nephi's prototype; Nephite armies are not equipped with Liahonas.

The third scripture serves Cannon's argument no better. True, the Saints are enjoined to study many topics, even "all things that pertain unto the kingdom of God" (2c). These include "things both in heaven and in the earth, and under the earth; things which have been, things which are, things which must shortly come to pass; things which are at home, things which are abroad; the wars and the perplexities of the nations, and the judgments which are on the land; and a knowledge also of countries and of

kingdoms” (D&C 88:78–79). Such study explicitly includes analyzing wars and political strife — yet we do not thereby conclude that war is to be a tool we seize to implement God’s purposes. If anything, a study of war and the like ought to temper any illusions we have about human adequacy to solve the fundamental problems we face through technology.

Why study such things? The scripture tells us, but Cannon’s argument ignores the implications. The recipients are to study so

that ye may be prepared in all things when I shall send you again to magnify the calling whereunto I have called you, and the mission with which I have commissioned you. Behold, I sent you out to testify and warn the people, and it becometh every man who hath been warned to warn his neighbor. Therefore, they are left without excuse, and their sins are upon their own heads Therefore, tarry ye, and labor diligently, that you may be perfected in your ministry to go forth among the Gentiles for the last time. (D&C 88:80–82, 84)

God does not, we note well, command such study so that his children can solve the technical problems that will enable resurrection or personal continuity beyond the grave. He has already solved those problems and through the Atonement of Christ will provide them freely to all humanity (Alma 40:4). Instead, we are commanded to study such “worldly” or “secular” matters so we will be more able and convincing when we warn others of the need to repent. The little band of Saints was doing and could do nothing whatever to inch humanity along the road to the Singularity. But through their efforts to preach the Gospel, they could prepare mortals to stand singly at the bar of God to answer for their deeds and moral agency.

The fourth and final scripture is even less relevant. Cannon glosses it as saying that “We will learn all the physical laws of the world before attaining heaven,” (2d) but this is misleading. The scripture text describes a method of knowledge acquisition that differs from that of science: “God shall give unto you knowledge *by his Holy Spirit*, yea, by the unspeakable *gift of the Holy Ghost*, that has not been revealed since the world was until now” (D&C 121:26, emphasis added). Such knowledge is not merely the operation of the spirit of Christ on one’s reason or intellect, and it is not the product of inspired scientific research or experiment, however valuable those may be — rather, it is knowledge *revealed* to those who possess the gift of the Holy Ghost.

This revelatory experience will reveal everything — presumably “everything” will include physical laws, but that is not the focus or thrust

of the promise: “A time to come in the which nothing shall be withheld, whether there be one God or many gods, they shall be manifest” (v. 28). These are simply not in the main the sort of facts with which Transhumanist science — or any science — has anything to do, even though God promises to reveal “glories, laws, and set times” (v. 31).

As for such knowledge coming to mortals “before attaining heaven,” verse 32 avers that God’s council declared such things “should be reserved unto the finishing and the end” of the “dispensation of the fulness of times ... when every man shall enter into his eternal presence and into his immortal rest” (D&C 121:31–32). Such revelation does not seem so much a prerequisite to attaining heaven but is instead a final gift of divine self-disclosure that makes heaven possible. Given that the time of their revelation is decreed for “the end,” an aggressive scientific research program is unlikely to reveal them any sooner.

So the second premise, like the first, has elements of circularity baked into it. Here the degree of scriptural distortion and special-pleading is even more pronounced.

Taking Stock: The First Conclusion (C1)

Cannon’s first conclusion fails, since both premises are faulty accounts of LDS thought and scripture. The syllogism is also misleading since it leaves unaddressed the core question: which technologies does God command, and which would he oppose?²³ Cannon evinces no awareness that this question needs to be addressed.

Furthermore, since each subsequent conclusion relies upon this first one, none of his “reasoned” syllogisms produce logical truth. We could stop here, since the argument has been reduced to shambles.

The Second and Third Conclusions (C2 and C3)

The second and third conclusions move even further than the first from anything that can be called an accurate sketch of LDS theology. Cannon tells us that since God’s purpose is to achieve our exaltation, “God commands us to use science and technology to help each other attain Godhood,” (C2) and since godhood requires a physical body, “God

23. Numerous authoritative statements by general authorities could be provided as to God’s approval, inspiration, or revelation of technology to help hasten his work. It should be noted that such statements are categorically different than concluding that God commands the use of any particular technology or even all technology.

commands us to use science and technology to help each other attain a glorified immortal body” (C3).²⁴

Immortality

What Cannon’s account ignores is the fact that receiving a glorified physical body is something LDS theology tells us has already been taken care of on our behalf. “It is requisite and just,” taught Alma, “according to the power and resurrection of Christ, that the soul of man should be restored to its body, and that every part of the body should be restored to itself,” and thus “there is a time appointed that *all* shall come forth from the dead” (Alma 41:2; 40:4). Christ has already been resurrected, and at that time “many bodies of the saints which slept arose, and came out of the graves after his resurrection, and went into the holy city, and appeared unto many” (Matthew 27:52–53). The resurrection is already in motion; God did not need to await human technical mastery to bring it about. Furthermore, no human action is needed to assure a universal resurrection. God’s work and glory certainly targets “the immortality and eternal life” of his children, but the immortality is a done deal. It is strange, then, to see Transhumanists suggest that scientific research is needed or even commanded to accomplish it. There is a point of contact with traditional LDS thought here, but that brief touch quickly veers off on a tangent.

Eternal Life and Exaltation

In contrast to immortality, the receipt of exaltation, or *theosis*, remains a matter that human agency — coupled with the grace of God — can influence. Each individual must choose to make divinely-ordained covenants as part of priesthood ordinances, and then endure to the end in faithfulness to those covenants. We are surely called to labor in that undertaking, both for our own sakes (D&C 18:15) and the sakes of others (Alma 29:15).

Technology can certainly be enlisted in such efforts — just as hand-copied texts could have wider dissemination than oral preaching, so now printed or digital scriptures are easier to make and cheaper to distribute than handwritten ones. Boats transported the apostle Paul as he preached; intercontinental airlines now deliver modern apostles to their destinations. Telephones and video conferencing help govern

24. One detects more than a hint of what Alfred Nordman described as Transhumanism’s tendency to use “speculative ethics . . . to invent a mandate for action” (“If and Then: A Critique of Speculative NanoEthics,” *Nanoethics* 1 [2007]: 33).

a worldwide Church while, by contrast, a much smaller primitive Church soon lapsed into apostasy, lacking frequent contact with steadying apostolic hands. In a rapid eclipse of the communication technologies that preceded it, the Internet allows individuals to teach others anywhere in the world in real-time. Thus, in one sense, it is certainly true that “God commands us to use science and technology to help each other attain Godhood,” and few Latter-day Saints would find such uses as I’ve described remarkable or novel in the least. Such means are not, however, the primary substance of Transhumanist hopes.

After all, it is not in this trivially true sense that Cannon’s syllogism intends the idea that God endorses the use of science and technology to help exalt his children. None of these or a thousand other examples have anything to do with the technical implementation of resurrection and exaltation that Cannon’s syllogism mandates.²⁵ The Transhumanist project of his syllogism ironically focuses on the one thing — personal immortality — that can already be checked off the to-do list under LDS doctrine. These claims risk, then, distracting us from the work still to be done: “Perhaps someday we might transfigure ourselves into ageless bodies” (207).

One would not know it from Cannon’s formulation, but God has repeatedly told us what role we have in accomplishing his purposes. God nowhere says, “Develop the technology to have ageless bodies” (see 207), nor “Go out and resurrect your fellows via ‘complete models of the bodies and brains of our dead ancestors individually’” (see 211). Nor does he say, “Use data-mining to restore lost ecosystems” (see 210–11). He instead tells us, “Say nothing but repentance unto this generation” (D&C 6:9; 11:9). God focuses relentlessly on the nature of our wills, our fallen nature, and our mortal propensity to sin.

The concept offered by Cannon’s syllogism is also egocentric and presentist. In his formulation, the entire world has been waiting for us or our technological near-heirs. There is no way the Israelites — a bunch of Bronze Age pastoralists — could hope to participate in (for example) the project to somehow retrieve and archive all humans’ past genetic codes to assure a universal resurrection (217). At best, for Cannon’s syllogism, the vast majority of humanity is merely marking time, unable to do much of

25. As one author observed, “But in fact, the Christian concepts of glorification and ascension do not refer to the scales of space, time, power, pleasure, and knowledge used in technological utopianism” (Bruce N. Lundberg, “Hans Jonas on Technology, Mathematics and Human Nature,” *Journal of Interdisciplinary Studies* 25 No. 1/2 [2013]: 84). One could easily say the same about specifically Latter-day Saint Christian concepts of exaltation.

anything toward achieving God's purposes. Even we, today, cannot do much.

If, instead, the problem is human nature and moral agency — as the scriptures repeatedly affirm — the modern has no privileged place in the sun. Indeed, we may even be at something of a disadvantage if we entertain hubristic dreams of a crescendo of redemptive science and technology. A Palestinian peasant under the Caesars was at least at scant risk of mistaking himself for someone potent, transcendent, or world-changing.

And so the second and third conclusions, like the first, fail to be accurate accounts of LDS theology.

We could, once again, stop our investigation here — Cannon has chosen to conclude his introduction to *Mormon Transhumanism* with a deeply flawed attempt to suggest equivalencies where there are none.

This degree of confusion or muddled thinking is unlikely, however, to exist in a vacuum. As we prod Cannon's argument, we find that when Transhumanism and Mormonism are in conflict, it is Transhumanism that prevails.

Part 2: Human Nature and Transhumanism

Cannon begins his article by announcing:

As transhumanists, we have discarded the old assumption that human nature is or ever was static — not only because science has demonstrated biological evolution, but especially because history itself is cultural and technological evolution. (202)

Such a claim trades on the multiple possible understandings of the term “human nature.” To be sure, if we see the term to refer to something like “human nature began with a hunter-gatherer life-style using stone-age tools,” it is trivially and obviously true that human nature has been and likely will continue to be in constant flux. Literacy, numeracy, metallurgy, moveable type, the scientific method, calculus, materials science, cybernetics, information technology — all have altered “human nature” in this sense, or the nature of the types of lives that humans live.

One sees the same tension around “human nature” in Cannon's footnoted source. He cites Nick Bostrom, a leading Transhumanist philosopher and advocate. Like Cannon, Bostrom holds that:

The new paradigm [of Transhumanism] rejects a crucial assumption that is implicit in both traditional futurology and practically all of today's political thinking. This is the assumption that the “human condition” is at root a

constant. Present-day processes can be fine-tuned; wealth can be increased and redistributed; tools can be developed and refined; culture can change, sometimes drastically; but human nature itself is not up for grabs.

This assumption no longer holds true. Arguably it has never been true. Such innovations as speech, written language, printing, engines, modern medicine and computers have had a profound impact not just on how people live their lives, but on who and what they are.²⁶

In Cannon's essay, we see the same conviction that human nature is plastic, "up for grabs." And that human nature is determined and altered by technology, meaning not merely new styles of life, but a change in "who and what [humans] are" at a fundamental level. Cannon appeals to the same types of ideas, invoking technology such as a computing device to read; glasses, contacts, or surgically modified eyes; hearing aids or cochlear implants; clothing; and drugs that target pain, heighten attention, or facilitate growth as examples of changes in human nature wrought by science (206).

In religious terms, however — especially LDS religious terms — none of these shifts represent changes to what is most basic and important in human nature.

To pick one simple case, we are mortal with fallible memories — thus speech, written language, moveable-type printing, and computer information technology can compensate for the fact that fallible memory is part of human nature (in the Cannon/Bostromian sense), and thus these technologies can change "who and what [we] are."

This is not, however, what LDS scriptures address when discussing human nature.

For example, King Benjamin advised his people that "the natural man is an enemy to God, and has been from the fall of Adam, and will be, forever and ever, unless he yields to the enticings of the Holy Spirit, and putteth off the natural man and becometh a saint through the atonement of Christ the Lord" (Mosiah 3:19).

He does not, we remark, suggest that more rapid access to information or an eidetic memory would change this fundamental aspect of human nature. Instead, only through an exercise of moral agency — a yielding of the will to the Holy Spirit — can human nature be changed. And this

26. Nick Bostrom, "What Is Transhumanism?," (paper, University of Oxford, rev. 2001) <http://www.nickbostrom.com/old/transhumanism.html>.

change comes not from biotechnology or nanotechnology or drugs or cybernetics — but through the Atonement of Christ enabling us to “put off” the natural man. Without the Atonement, the human nature of the natural man persists eternally.

Nephi too cautioned,

O that cunning plan of the evil one! O the vainness, and the frailties, and the foolishness of men! When they are learned they think they are wise, and they hearken not unto the counsel of God, for they set it aside, supposing they know of themselves, wherefore, their wisdom is foolishness and it profiteth them not. And they shall perish. But to be learned is good if they hearken unto the counsels of God. (2 Nephi 9:28–29)

For Nephi, more learning, more knowledge, and more technical prowess do not change the fundamental dynamic. Indeed, he argues that such things can actually exacerbate the problem — learning and technical mastery can stir us to pride and an exaggerated trust in our own capabilities and perspectives. This can lead us to disregard counsel from God and his Holy Spirit — we therefore do not yield, and we perish despite our knowledge.

Neither Nephi nor I desire to denigrate knowledge — it is better to have knowledge than not to have it — but it is not the scientific or engineering knowledge that saves us. It may, in fact, threaten us if we are not wary.

Alma is blunt and speaks in terms that could be addressed to a modern Transhumanist. Humans have “become carnal, sensual, and devilish, *by nature*” (Alma 42:10, emphasis added).

Modernity seems, to me, to offer very little ground for believing that much about human nature has changed despite our accelerating technical and scientific knowledge. Intelligent and educated modern luminaries such as Rousseau, Marx, Ibsen, Tolstoy, Hemmingway, Bertrand Russell, and Jean-Paul Sartre present a melancholy spectacle with their neglect or abandonment of their children, serial infidelities, mistreatment of women, and the vacuity of their moral lives.²⁷ The

27. Historian Paul Johnson made this point forcefully in *Intellectuals* (London: Weidenfeld & Nicolson, 1988). Sadly, Johnson himself proved no more able than the intellectuals whom he criticized to honor marriage vows, saying only that “[if you acquire any kind of fame, that’s the kind of thing that’s liable to happen”—as if his eleven-year affair was simply something that befell him, like a flood or act of God (Elizabeth Grice, “Paul Johnson: ‘After 70 you begin to mellow,’” *The Telegraph* [4 June 2010], <http://www.telegraph.co.uk/lifestyle/7800902/Paul-Johnson-After-70-you-begin-to-mellow.html>). But Johnson’s admitted failure serves simply as one

great physicists of quantum physics fare little better.²⁸ The problem of the natural man or woman is perennial.

Mormon Transhumanism and Jesus

Cannon's article makes much, initially, of Mormonism as "an immersive discipleship of Jesus Christ" (203). But after this introductory paragraph, little or nothing is said about Jesus or his Atonement. Even this paragraph paints mortals as "messiahs" and "saviors for each other," though these terms mean something quite different in Mormonism when applied to us than they do in the Transhumanist context — another example of the fallacy of equivocation. Invocation of the terms in that context is less about Jesus than about us. "With Jesus, we would trust in, change toward, and fully immerse our bodies and minds in the role of Christ" (203). Again, the emphasis is on what *we* do — which matches the Transhumanist technocratic approach to the problems of human existence: sickness, scarcity, death, and so forth.

I am not convinced that Cannon's description of discipleship is on target. We do not take on "the role of Christ" except in a very circumscribed sense different from his paper's implication. Cannon appeals to but does not quote from Mosiah 5:9: "whosoever doeth this shall be found at the right hand of God, for he shall know the name by which he is called; for he shall be called by the name of Christ" (215n15).

This verse says nothing about taking on the *role* of Christ. Instead, the saved are called by his name because Jesus claims them as his own: "the good shepherd doth call you; yea, and in his own name he doth call you, which is the name of Christ; and if ye will not hearken unto ... the name by which ye are called, behold, ye are not the sheep of the good shepherd" (Alma 5:38). In fact, immediately after the verse cited by Cannon, the scripture continues: "For how knoweth a man the master whom he has served ...? [D]oth a man take an ass which belongeth to his neighbor, and keep him? I say unto you, Nay ... [E]ven so shall it be among you if ye know not the name by which ye are called" (Mosiah 5:13-14). Servants and

more example of my point and takes nothing from the damning facts assembled by him. Similar issues are discussed in E. Michael Jones, *Degenerate Moderns: Modernity as Rationalized Sexual Misbehavior* (Ignatius Press, 1993), though with varying degrees of persuasiveness.

28. Sheila Jones, *The Quantum Ten: A Story of Passion, Tragedy, Ambition, and Science* (Oxford University Press, 2008), 20, 173, 246, 255-79 (Bohr); 175, 241 (Born); 23, 55-58, 57-58, 70-71 (Einstein); 194, 201, 207-8, 238-39 (Heisenberg); 13-14, 23-24, 240-41 (Jourdan); 20-21, 261, 274 (Pauli); 25, 183, 221 (Schrodinger).

asses do not take upon themselves the master's role or decide that *they* claim the master — it is the *master* who claims them (see also Revelation 22:3–4; 3 Nephi 27:5; D&C 18:23–25, 76:59).

Of the redeemed, the Doctrine and Covenants asserts frankly, “They are Christ’s,” and others less valiant “are Christ’s at his coming” (D&C 88:98–99). Jesus blessed those who gave even a cup of water to his disciples, “because ye *belong* to Christ,” (Mark 9:41, emphasis added). These have taken his name upon them; they have not taken on the messianic role.

Here we see one of Cannon’s many light contacts with an LDS idea, only to have Transhumanism angle off into decidedly non-LDS territory.

Cannon says we should be “consoling and healing and raising, as exemplified and invited by Jesus” (203) — which is certainly true. But this focus on outward ethics and acts leaves unmentioned the problem of the inner nature and its transformation effected by the Atonement, for it is only “by the blood [that] ye are sanctified” (Moses 6:60). Likewise, the Prophet Joseph Smith taught that “[b]eing born again comes by the Spirit of God through ordinances,”²⁹ but nowhere are the ordinances mentioned in Cannon’s essay. The ability to meaningfully console, heal, and help in the salvation of others is all predicated upon Christ’s gracious transformation of our nature — and I fear that omitting this fact from mention may not be coincidental because it touches precisely upon those areas Transhumanism reserves for itself.

Part 3: Mistaking LDS Theology

Given his apparent confusion about how LDS doctrine sees human nature, it is perhaps not surprising that Cannon seems either to misunderstand or misrepresent LDS scripture and theology in other areas.

The Council in Heaven

Elsewhere, Cannon’s article writes of how “[a]t a grand council in heaven before the creation of this world, the children of God presented two plans. ... God chose the first and war ensued” (204). In fact, LDS doctrine teaches that *God* presented a single plan. Satan offered an

29. Joseph Smith, Jr., “Discourse, between circa 26 June and circa 4 August 1839-A, as Reported by Willard Richards,” 72, *The Joseph Smith Papers*, <http://www.josephsmithpapers.org/paper-summary/discourse-between-circa-26-june-and-circa-4-august-1839-a-as-reported-by-willard-richards/10>. Also reproduced in Andrew F. Ehat and Lyndon W. Cook, *Words of Joseph Smith* (Provo, UT: Religious Studies Center — BYU, 1980), 12. Also in *History of the Church* 3:392 and *TPJS*, 162. Ehat and Cook cross reference to: D&C 52:13–20; 84:19–25; Moses 6:57–68; JST Exodus 34:1–2.

alternative scenario, which God rejected. There were not two possible plans, and God did not need to choose between them. There could, in fact, only be one option from God's perspective.³⁰ God's children could choose to either support or reject God's plan. That Cannon muddles this matter does not increase the reader's confidence that his more speculative attempts to tie Mormonism to Transhumanism will be accurate.

Dualism?

An additional illustrative example is Cannon's discussion of Mormonism and *substance dualism*, the idea that physical bodies and mind/spirit/soul are different types of things. Each has a separate existence, with "mental things ... [lacking] any extension in the physical world":³¹

Mormonism posits a metaphysics, in contrast to classical substance dualism, that is consistent with some accounts of physicalism and naturalism. According to our scriptures, everything is material, including our minds; and everything is embodied, including God. (203)

30. Russell M. Nelson taught: "A council in heaven was once convened in which we participated. There our Heavenly Father announced His divine plan. It is also called the plan of happiness, the plan of salvation, the plan of redemption, the plan of restoration, the plan of mercy, the plan of deliverance, and the everlasting gospel [Russell M. Nelson, "The Creation," *The Ensign*, May 2000]. Boyd K. Packer emphasized that "The plan of the Eternal Father was sustained" [Boyd K. Packer, "The Play and the Plan" (CES Fireside, Kirkland, Washington, May 7, 1995)]. Neal A. Maxwell: "It's extremely important to get straight what happened in that premortal council. It was *not* an unstructured meeting, nor was it a discussion between plans, nor an idea-producing session to formulate the plan for salvation and carry it out. Our Father's plan was *known*, and the actual question put was whom the Father should send to carry out the plan" [Neal A. Maxwell, *Deposition of a Disciple* (Salt Lake City: Deseret Book, 1976), 11–12]. Bruce R. McConkie wrote: "Although we sometimes hear it said that there were two plans — Christ's plan of freedom and agency, and Lucifer's of slavery and compulsion — such teaching does not conform to the revealed word. Christ did not present a plan of redemption and salvation nor did Lucifer. There were not two plans up for consideration; there was only one, and that was the plan of the Father: originated, developed, presented, and put in force by him" [Bruce R. McConkie, "Who Is the Author of the Plan of Salvation?," *Improvement Era* 56/5 (May 1953): 322, <https://archive.org/stream/improvementera5605unse#page/n27/mode/2up>].

31. Philosophy Index, s.v. "Substance dualism," accessed 10 July 2016, <http://www.philosophy-index.com/philosophy/mind/substance-dualism.php>; see also *Stanford Encyclopedia of Philosophy*, s.v. "Dualism," revised February 29, 2016, <https://plato.stanford.edu/entries/dualism/#SubDua>.

The claim that Mormonism is “consistent with some accounts of physicalism and naturalism” lacks a footnote, which is unfortunate — it would be helpful to know more precisely of which accounts Cannon is speaking. *Physicalism* and *naturalism* hold that physical matter of the everyday kind — the sort that makes up tables and flowers and human brains — is all there is. There is no ineffable “spirit” or “mind” which exists on a different plane or level of reality; minds require only physical embodiment. To create an exact copy of my physical brain would be to completely duplicate my mental processes — I am “nothing but” my physical body.³²

Cannon is correct that substance dualism does not quite capture Mormon doctrine — but it is misleading to leave the matter there with the claim that “some accounts” of physicalism do Mormon thought justice.

Why does this matter? Because the Transhumanist vision insists very strongly upon physicalism or naturalism. One thread of Transhumanist thought is convinced that the road to a posthuman future includes the ability to “upload” human minds to digital computers:

In her celebrated book *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (1999), N. Katherine Hayles summarizes the features of the posthuman condition: patterns of information are more essential to the state of being than any material instantiation; the embodiment in a biological substrate is seen as an accident of history rather than an inevitability of life; there is no immaterial soul, and consciousness is an epiphenomenon; the body is nothing more than a prosthesis, and to exchange this prosthesis for another is simply an extension of that relation; and a human being is capable of being seemingly articulated with intelligent machines. Posthuman existence meant that there is no demarcation between bodily existence and computer simulation, cybernetic mechanism and biological organism, robot technology and human goals. In the posthuman condition there no separation between humans and their environment, between “the thing that thinks and the thing that is thought,” and “no inherent dichotomy between mind and matter.”³³

32. See extensive discussion in *Stanford Encyclopedia of Philosophy*, s.v. “Physicalism,” revised 9 March 2015, <https://plato.stanford.edu/entries/physicalism/>.

33. Tirosh-Samuelson, “Transhumanism as a Secularist Faith,” 714. See also Robert Pepperrell, *The Post-Human Condition* (Bristol, UK, and Portland, OR: Intellect, 2003 [1995]), 33–34.

Given how central such a vision of mind is to Transhumanism, it is not surprising that Cannon focuses on any parallels for it in LDS thought. He seems to invoke these ideas when he writes:

The ability to read and write data to and from every neuron in the brain begins to connect us experientially, both sensorially and emotionally, with each other and with our environment. ... The functions of the brain and body are virtualized, and we begin extending or transitioning our minds into more robust bodies, biological and otherwise — as innumerable and diverse as the stars. ...

Data storage and materials engineering ensures our minds and bodies are maintained or restored as needed in perpetuity, banishing death as we know it. (211)

Visions of reading and writing data to every individual neuron and the ability to “virtualize” the brain and “transition ... our minds” to other bodies (biological and otherwise) all echo the standard Transhumanist line. Likewise, “data storage” which “ensures our minds ... are maintained or restored as needed in perpetuity,” is bread-and-butter Transhumanism with no Mormon gloss whatever.

Nevertheless, Cannon seizes on the fact that LDS doctrine insists that spirit is also material: “There is no such thing as immaterial matter. All spirit is matter” (D&C 131:7).³⁴ So far, so good, but, he stops his analysis there and ignores the implications of the rest of the verse and the one that follows it:

7 There is no such thing as immaterial matter. All spirit is matter,
but it is more fine or pure, and can only be discerned by pure eyes;
8 We cannot see it; but *when our bodies are purified* we shall
see that it is all matter. (D&C 131:7–8, emphasis added)

Cannon is correct; classical substance dualism is not really at home in Mormonism. But physicalism and naturalism are likewise uneasy boarders in LDS thought. Spirit is matter, true — but a type of matter that cannot be perceived by mortals. This is not an invitation to create better electron microscopes, since glorified, perfected, *purified* bodies are needed to detect it.³⁵ Spirit matter is not amenable to scientific research,

34. Cannon cites this verse, though he does not quote it (203; 215n29).

35. Alternatively, mortals can temporarily be aided and allowed to see matter that they do not normally perceive, as in a vision or visitation, for example.

measurement, or manipulation, and it is not simply a subset of “regular” matter. These caveats leave us a metaphysics that looks a lot like dualism.

The implications for a Mormon Transhumanism are substantial — any idea of uploading the mind, “virtualizing” it, off-loading its core functions to silicon, or backing up and restoring it is simply a non-starter. If we cannot detect the finer spirit matter, we cannot measure it. And if we cannot measure its properties and states, we can hardly instantiate it in another coarse physical medium. Reading and writing to each individual neuron — even if possible — is simply not enough.

Likewise, Cannon’s account of “brain and body preservation patients from previous decades [being] resuscitated” is implausible from an LDS point of view — a resuscitated brain requires something else that departs at death: the purer-material spirit.

A standard objection to physicalism is the issue of *qualia* — the interior, subjective *experience* of receiving sense input.³⁶ A canonical thought experiment involves a scientist who lives in a black and white world — for her entire life she has been surrounded by only shades of black and white. Despite this, she knows additional colors have been reported by other observers. She studies optics and visual processing and manages to learn everything about what happens to eyes and brains when they encounter visible light of the color frequency. Then suddenly one day she is able to walk out of her black-and-white world and into a world of color. She *sees* color for the first time. Does she know something more or something different than she knew before? Non-physicalists argue that she does: she knows what the *subjective* experience of color is like for her. A computer or robot could receive all the same inputs and do all the same signal processing and yet still not have the internal experience a conscious being can have.³⁷

Not surprisingly, this remains a contentious issue and is one facet of what has been dubbed “the hard problem of consciousness.”³⁸ Some regard it as fundamentally insoluble, others as a non-problem.³⁹

36. One classic paper is Thomas Nagel, “What Is It Like to Be A Bat?”, *The Philosophical Review* 83/4 (October 1974): 435–50, http://organizations.utep.edu/portals/1475/nagel_bat.pdf.

37. Frank Jackson, “Epiphenomenal Qualia,” *Philosophical Quarterly* 32 (April 1982): 127–37, <http://rintintin.colorado.edu/~vancecd/phil201/Jackson.pdf>. I am grateful to an anonymous reviewer for suggesting I reference this paper in this context.

38. David Chalmers, “Facing up to the problem of consciousness,” *Journal of Consciousness Studies* 2/3 (1995): 200–19, <http://consc.net/papers/facing.html>.

39. An intriguing and highly accessible thought experiment is Arnold Zuboff, “The Story of a Brain,” quoted in Douglas R. Hofstadter and Daniel C. Dennett, eds.,

This entire issue has provoked an enormous philosophical literature. I do not expect that Cannon would have the space to settle or even address such issues, any more than I would attempt to do so here.⁴⁰ He should at least help the reader realize, however, that this presumption is a prerequisite for his arguments' cogency. I suspect most Latter-day Saints would be uncertain that physicalism in the sense required for his argument accurately reflects revealed doctrine.

Engineering Spiritual Experiences

I conclude with a final example of Cannon's thoroughgoing materialism (in the classical sense):

As spiritual experiences become easily reproducible and malleable, teachers shift focus from general encouragement to careful discernment between helpful and harmful esthetics. (211)

Of all Cannon's claims, this one troubled me most. His formulation appears to assume that:

1. "spiritual" experiences are strictly materialist in the scientific sense (or otherwise, they could not be easily reproduced by technology), and
2. these experiences are "malleable," meaning they can be controlled, altered and manipulated at will.

But this is not how LDS doctrine understands the workings of the Holy Spirit upon the believer. Mormons see such experiences as actual communication from one being to another. One can reproduce or manipulate such events with science no more than one could replace my telephone conversation with a friend by manipulating my auditory cortex so that I hallucinate about chatting, even though no one else is on the line. It might be a delightful aesthetic experience but not a conversation.

The Mind's I: Fantasies and reflections on self and soul I (New York: Basic Books, 1981/2001): 202–12, <https://philarchive.org/archive/ZUBTSO-2v1>. Accounts by those who argue for physicalism/reductionism include: Paul Churchland, *Matter and Consciousness* (Cambridge: M.I.T., Revised edition, 1988); Daniel Dennett, *Brainstorms* (Montgomery, VT: Bradford Books, 1978); Patricia S. Churchland, *Touching a Nerve: Our Brains, Our Selves* (New York, NY: W.W. Norton, 2013).

40. A technical collection of recent thought by those who dispute physicalism is Robert C. Koons and George Bealer, editors, *The Waning of Materialism* (Oxford: Oxford University Press, 2010). A more accessible treatment by a leading advocate of this view is Thomas Nagel, *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False* (Oxford: Oxford University Press, 2012).

Thus, the inevitable conclusion from Cannon's approach seems to me to be:

3. Because they are strictly materialist (from a), and because they can be manipulated with technical means (from b), spiritual experiences are not "real" in the sense of being actual communication from a divine being (because a divine being is not needed to manipulate, reproduce, and control them — only science is).

Cannon pictures a future in which a techno-teacher, equipped with the ability to reproduce and alter spiritual experiences, can help the posthuman believer learn to "careful[ly] discern ... between helpful and harmful esthetics."

The point seems not to be the truth of the divine communication — because for Cannon's schema there is no divine being needed, and no "more pure matter" spirit to receive the divine communion. Instead, we have only brute, "common" matter responding on the level of neurons and neurochemicals.

One is reminded of C.S. Lewis' classic essay, *Men without Chests* — for everything is happening in the spiritual pupils' heads:

Values are now mere natural phenomena. Judgements of value are to be produced in the pupil as part of the conditioning. ... The ultimate springs of human action are no longer, for them, something given. They [the springs] have surrendered — like electricity: it is the function of the Conditioners [the Transhumanist technocratic teachers] to control, not to obey them. They know how to *produce* conscience [and spiritual experiences] and decide what kind of conscience [and spiritual experiences] they will produce. [The Conditioners and Transhumanist technocrats] themselves are outside, above.⁴¹

41. *The Abolition of Man* (Oxford University Press, 1943), https://archive.org/details/TheAbolitionOfMan_229; reproduced in *The Essential C.S. Lewis*, ed. Lyle W. Dorsett (New York: Touchstone, 1996), 451–52, italics in original, material in square brackets is my own. Catholic philosopher Peter Kreeft's book-length discussion of Lewis' essay is well worth reading in this context: *C.S. Lewis for the Third Millennium: Six Essays on the Abolition of Man* (San Francisco: Ignatius Press, 1994).

Conclusion

Like perhaps many readers, I began my study of Cannon's article knowing only a little about Transhumanism, and even less about the Mormon variety.

As should now be clear, I have come away neither convinced nor reassured. Cannon's presentation of even some of the basics of LDS doctrine seems shaky at best. The slightest parallel between Transhumanism and LDS thought is emphasized, but none of the profound and weighty differences are acknowledged or addressed. At best, the Transhumanism presented has a thin skin of Mormon-like terms, hiding a world of difference beneath.

As I concluded my research, I learned that the Mormon Transhumanist Association has annually surveyed its members about their beliefs. Approximately 14% of their membership responded to the 2014 survey: 59% of these were believers in God, while 21% were agnostics, 13% atheists, and 4% had "no opinion."⁴² One must wonder in what meaningful sense an organization can embody "Mormon"⁴³ ideas if roughly 40% do not even affirm the existence of God.⁴⁴

Although I believe what I have read of Mormon Transhumanism seriously misrepresents Mormonism, I do not attribute malign motives to Cannon or others who share his beliefs. The more contentious Transhumanist proposals are, for now, little more than amusing

42. "Member Results Survey — 2014," *Mormon Transhumanist Association*, accessed 10 July 2016, <http://transfigurism.org/pages/about/member-survey-results/>.

43. It is popular in some circles to argue that anything Mormons do constitutes an authentically "Mormon" activity or belief. In a trivial sense this is true; it remains misleading, however, to conflate anything that some Mormons happen to do with the faith practiced by The Church of Jesus Christ of Latter-day Saints or taught in its scriptures. Trying to appropriate the label "Mormon" for anything one wishes to do, say, or believe is more confusing than enlightening.

44. The previous year's survey had 68% theists and noted "Members Are Mostly LDS Theists But A Substantial Proportion Is Not[,] Non-Theist Composition Is Increasing." ["Member Results Survey — 2013," *Mormon Transhumanist Association*, accessed 10 July 2016, 24–25, <https://www.scribd.com/document/217324323/Mormon-Transhumanist-Association-Member-Survey-Results-2013>.] Given the relatively low number of participants in both surveys, and the risk that voluntary respondents are unrepresentative of the entire population, it is difficult to know what this means about the organization as a whole. One presumes that those who answer the survey are more likely to be actively involved in and committed to the organization. Thus the surveys may not perfectly capture the entire group's makeup but probably serve as a useful measure of the more involved members. The MTA, at least, relies upon the data to discuss their group's characteristics among themselves, so they must regard it as reasonably informative.

speculations, much like some of the unfortunate detours taken during High Priests' Group lessons on warm Sunday afternoons.⁴⁵ The *implications* of the Transhumanists' views are, however, much less amusing.

I suspect and hope that Cannon and other Mormon Transhumanists do not rely on their mistaken claims and premises to embrace the ultimate conclusions implied by them. That would not be unusual — people often avoid embracing the logical consequences of their beliefs, decreasing error at the cost of internal consistency.

But there is always the possibility that some members or interested outsiders will mistake these mistaken premises for an accurate account of LDS scripture and doctrine. It would be unfortunate if they followed those missteps to their logical end. There are enough Men Without Chests in the world.

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45. It is unclear whether the recent dissolution of High Priests' Groups (April 2018) will result in fewer unfortunate detours and amusing speculations.

With 12 years of classical piano training, he is a lifelong audiophile and owns far too many MP3 files. A self-described biblioholic, he would probably be buried in books had he not discovered the Kindle and is grateful he didn't have e-books to distract him in medical school.

He lives happily with his one indulgent wife, four extraordinary children, and two cats.

