

MILLENNIALISM, SCIENCE, AND COLONIALISM IN ANDREW BLAIR'S

*ANNALS OF THE TWENTY-NINTH CENTURY*

by

Johanna Altaría Doty Sedell

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

Master of Arts

in

English

MONTANA STATE UNIVERSITY  
Bozeman, Montana

April 2011

©COPYRIGHT

by

Johanna Altaira Doty Sedell

2011

All Rights Reserved

ii  
APPROVAL

of a thesis submitted by

Johanna Altaira Doty Sedell

This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citation, bibliographic style, and consistency and is ready for submission to The Graduate School.

Dr. David Agruss

Approved for the Department of English

Dr. Linda Karell

Approved for The Graduate School

Dr. Carl A. Fox

## STATEMENT OF PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a master's degree at Montana State University, I agree that the Library shall make it available to borrowers under rules of the Library.

If I have indicated my intention to copyright this thesis by including a copyright notice page, copying is allowable only for scholarly purposes, consistent with "fair use" as prescribed in the U.S. Copyright Law. Requests for permission for extended quotation from or reproduction of this thesis in whole or in parts may be granted only by the copyright holder.

Johanna Altaira Doty Sedell

April 2011

## ACKNOWLEDGMENTS

I owe a debt of gratitude to the faculty of the English Department, including my committee members, Drs. David Agruss, Lisa Eckert, Gretchen Minton but also to Drs. Doug Downs and Amy Thomas, whose guidance and willingness to discuss ideas made this work possible. In addition to support from faculty, this project would not be possible without support from family members, especially my sister, who was always willing to read, my husband, who often made dinner, and my dogs, who patiently waited for walks.

v  
TABLE OF CONTENTS

1. INTRODUCTION .....	1
2. NAVIGATING THE “RIVERS OF THE MILLENNIUM” THROUGH HUMAN AGENCY AND DIVINE WILL .....	14
3. “THE AURORA OF SCIENCE PAVED THE WAY FOR THE SUNRISE OF THE MILLENNIUM”: NATURAL THEOLOGY APPROPRIATES MATERIAL SCIENCE.....	33
4. CULTIVATING “THE HAUNTS OF BARBARISM” THROUGH SCIENCE AND EVANGELICAL AGENCY.....	56
5. CONCLUSION .....	75
WORKS CITED .....	81

vi  
ABSTRACT

Currently little literature discusses Andrew Blair's novel *Annals of the Twenty-ninth Century*. This thesis examines the novel in relationship to its historical context, arguing that millennialism, science, and colonialism interact in a way that both allow the characters agency to create change while simultaneously forcing the characters to act as passive vehicles for divine will. To describe this state of non-agential agency, the author uses the term evangelical agency, highlighting the way in which spiritual change becomes the driving force for action.

## INTRODUCTION

The February 21, 1874, edition of *The Examiner* announces the publication of a new novel, Andrew Blair's *Annals of the Twenty-ninth Century; or, The Autobiography of the Tenth President of the World-Republic*. The review expresses the opinion that "the author has aimed at astonishing by the monstrous proportions of his world prophecies, and he certainly contrives to fascinate the reader by the very extravagance of these" ("Books of the Week" 190-1). Set during the conclusion of the millennium prophesied in Revelation, the novel describes life amid technological advances including electrical wings, microscopic books, and space travel. The novel went through one printing, and by the end of the twentieth century, only nine libraries included it in their holdings. Perhaps due to the difficulty of obtaining a copy in a pre-Google Books era, little modern critical work has addressed Blair's novel. Those working with the text have analyzed aesthetic qualities in an attempt to pinpoint the origins and definition of the science fiction genre. Currently no literature addresses the novel's millennial<sup>1</sup> setting, its conservation of Romantic-era understandings of science, or the way in which these two aspects work to reinforce British cultural hegemony.

---

<sup>1</sup> This thesis follows the example of J.F.C. Harrison, who, like Ernest Tuveson, labels as millennialist those "believers in a gradual triumph of Christian principles, culminating in a holy utopia or millennium," noting that "Contemporaries used the terms millenarian, millenary, and millennialist" interchangeably (231).

Appearing in three volumes, the novel was published anonymously, although authorship was later attributed to Andrew Blair, a Scottish physician and surgeon who would have been twenty-five at the time of the novel's appearance. The primary link between the novel and Blair seems to come from a letter dated 1896 and signed by Alexander Hutcheson of Broughty Ferry, which identifies Blair as the author of the novel and as a well-known amateur chemist. Both the Bodleian Library, at Oxford University, and the Scottish National Library copies of the novel contain the letter, pasted just before the table of contents. Apart from the little biographic information in Hutcheson's letter, no literature has been published on Blair's life.

Blair's convoluted novel purports to be the personal history of Diogenes Milton, engineer, naturalist, explorer, historical commentator, and politician. The novel opens with a brief description of Milton's childhood, explaining the advances in education that have taken place since the world entered the millennium. Born in Africa, Milton leaves for Constantinople, now the capital of the World-Republic, to attend college. Upon arriving in Constantinople, Milton meets Stephenson Watt, who becomes his closest friend. The two study with mentors through travel and observation, including trips to the remains of London and Oxford, the newly fertile plains of Siberia and the Sahara, and to the World-Republic's parliament. Following a motion of parliament, both Milton and Watt join the crews of engineers and trained animals working to reform the planet. All mountains (except those needed for observatory or space exploration) are destroyed, and waterways are redesigned in the interests of efficiency. In the second volume, Milton,

now a member of parliament, makes the first successful flight to the Moon. Here he meets friendly animals and explores lunar geography, sending specimens back to Earth. Other scientists and colonists soon follow. After being elected President of the World-Republic, Milton travels to Venus as Earth's ambassador and finds the Venusians free from original sin and enjoying a blissful paradise. The Venusians, although saddened by Earth's Fallen state, teach Milton their language and show him their technological wonders, which include the ability to shrink or see through objects and to study anatomy by walking inside animals. Milton's two Venusian tutors return with him to Earth to help bring the World-Republic closer to perfection. Marsian ambassadors also travel to Earth to meet with and educate their human neighbors. As the novel closes, Milton prepares for travel to Jupiter.

Milton's autobiography describes life during the waning years of the millennium. The few critical sources that address the novel remain silent on the ways in which the novel interprets the events prophesied in Revelation. However, the chapters describing the destruction of Babylon and the utopian reign of the saints play significant roles in the events Milton describes. J.F.C. Harrison, in his history of popular millenarian movements, explains that while Christians found "general agreement in millennial theology that the world was to be transformed by the second coming of Christ and the establishment of the Kingdom of God on earth," divisions arose over the sequence of events (4). Premillennialists "believed that Christ's second coming would precede the millennium," while postmillennialists believed that Christ would return at the end of the

thousand years (4). *Annals* follows the postmillennial interpretation: as the novel opens, the World-Republic enjoys the peace and prosperity of the millennium, awaiting the return of Jesus and his rule in the promised New Jerusalem.

Although *Annals* purports to tell a story of a harmonious future, free of sectarian religious strife, structural and textual characteristics indicate a moderate evangelical bias. In telling the story of Milton's explorations, *Annals* borrows from the evangelical spiritual biography, refashioning tropes of the genre for the millennium. The novel is subtitled an "autobiography," and Milton praises the genre, which he sees as offering "practical moral philosophy—the true science of living and life" (1: 5). A de-emphasized childhood, conversion, and deathbed scene formed the staples of nineteenth-century spiritual biography. While many evangelicals rejected novel reading, the spiritual biography became a popular alternative, and critic Elizabeth Jay argues, "Just as a tacit recognition of an accepted formula has been detected in the Puritan autobiography, so a similar code, with significant variations, seems to have existed for the Evangelical biographer" (153). Milton sums up his early life by explaining that his "early years were spent without any record-worthy incident" (2). He adds that his "growth in body and mind," as well as his "physical and mental education, were unchequered by any peculiarity" (1: 2). The remainder of the chapter titled "Infancy" describes the differences between education in the twenty-ninth century and "the unpalatable education system of the past" (1: 2). The truncated discussion of Milton's childhood corresponds to the format of the evangelical biography, in which, Jay explains, "A brief chapter was all

that was necessary to fill in the subject's early childhood experiences, from the Evangelical point of view it cannot be said to contain the meat of the matter" (153). Rather than exploring the psychological insights offered by childhood, Jay identifies spiritual conversion as "the first structural climax" in the evangelical biography (153). The novel replaces the spiritual conversion of the characters with the physical conversion of the planet. United in one Christian republic, the characters undertake a worldwide project to "reform" the planet, readying the Earth for Jesus' return. As in the Evangelical biography or novel, which Jay notes "could continue the tale" by "subsequent attempts to bring others, even possible lovers, to Christ," the reforms begun on Earth continue on the Moon and its moonule (153). Rather than an initial individual conversion followed by attempts to bring others to God, the novel imagines an entirely Christian world, in which physical conversion seems to provide external evidence of spiritual conversion.

The novel's depictions of deathbeds also borrow from evangelical biography. Jay writes that the deathbed scene marks "[p]erhaps the only truly distinguishing feature of the evangelical biography," and that these described "death-beds which were morally rather than religiously inspiring" (155). She explains that "[t]he death-bed witness did not merely provide an example of 'a consummation devoutly to be wished', but also assured the circle of attendants that their departing friend was truly saved" (160). The death of Milton's parents provides both Milton and his Venusian hosts with assurance not just of his parents' state of grace, but also gives material evidence for a spiritual world. While visiting Venus, Milton dreams of his parents. Upon awaking, his Venusian friend

Bonitas informs him that “two spirits from the earth had hovered over [his] couch all night long” and draws a picture of the spirits, which Milton immediately recognizes as his parents (3: 201). Milton, upon his return to earth, finds that the spirits appeared “but a few hours after they died” and reports that he felt “more joy than sorrow, for it showed that parental love extended beyond the grave” (3: 201-2). The death of Shakespeare Socrates, Milton’s father-in-law, receives more detail than Milton’s marriage or the birth of his children. Shakespeare Socrates dies shortly after the arrival of the Venusians, near the end of the third volume. The narrator reports, “The death-bed scene, being the first beheld by Experientia and Bonitas, deeply effected them” (3: 218). However, when the Venusians “beheld his soul and saw his happiness” as his soul departs, they rejoice, explaining that “[t]he death-day of the body is the natal-day of the soul” (3: 218-19). The narrator explains the different attitudes towards death brought by the millennium. Witnessing a deathbed in premillennial times would have “rent to pieces every fibre in [a] man’s heart,” but during the millennium “all die that beautiful death like to the sheaf of corn fully ripe” (3: 219). The novel imagines the evangelical deathbed in a future era, in which the nearness of God’s presence has eliminated the fears of death.

The novel’s descriptions of worship, both the language used and the events described, also indicate that while still Anglican, the church of the future is evangelical. Milton rejoices at being chosen to celebrate the first Sunday on the Moon, which until then “never knew Sabbath” (2: 38). Attitudes towards “the Sabbath” separated evangelicals and other Christians. According to Jay, “[t]he very term ‘Sabbath’ was

offensive to non-Evangelical ears” (183). The “offense” given to non-evangelicals may explain some of the vitriol in *The Athenaeum*, whose reviewer notes with apparent sarcasm that “it is pleasing to hear that the British variety of the Jewish Sabbath is to lose none of its charms” in the world of the future (29). While Milton prefers to “pass over with reverential silence” much of the Easter service he attends, he offers a three-page transcript of the address (1: 136). Millions in the church and everyone at home listen to Calvin Luther’s address, in which he decries “the Church’s past contentions in the jungles of sectarianism and its present peace” (1: 132). Jay points to the weight placed on the sermon as a distinguishing characteristic of evangelical worship. She argues, “In the Evangelical emphasis on the sermon, critics claimed, could be seen precisely that undervaluing of the Liturgy, that tendency to set vital preaching above the Sacrament without the word of God, which had led to the schismatic tendencies of Methodism” (122). While the twenty-ninth-century Calvin Luther preaches a sermon of unity, the de-emphasis on liturgy suggests evangelical worship has subsumed other approaches to Christianity.

The substance of the Easter service demonstrates both the evangelical values of the novel and the influence of geography. Calvin Luther’s sermon leads Milton to enthuse that “[t]he Church is liberated from State fetters” (1: 135). Church historian Owen Chadwick writes that “[l]eading evangelicals were attached to the doctrine and discipline of the church of England. They exalted the prayer book, valued the establishment,” and English evangelicals “resented assaults upon a state church” (1: 441).

However, in Scotland, the novelist's home, evangelicals led the fight for independence from state control (1: 224). Like the Scottish evangelicals, Milton sees state sponsorship as a "fetter" to the church.

In order for the Christian brotherhood of the millennium to begin, the Christian church has to unite. While Luther says that the two churches have embraced, the new brotherhood maintains the nineteenth-century evangelical distaste for Catholicism. In his sermon, he explains, "Union was the Aurora of the Church's day" (1: 135). During the twentieth century, "the Roman and the Protestant Churches cast off their perversions and embrace[d] each other as brethren, after their long and painful separation" (1: 134). The narrator celebrates the union of the church at the same time it continues to abhor Catholic ideas. In the third volume, Milton reads a Venusian's firsthand account of hell, which involves diatribes against Catholicism. One denizen of hell, who finds himself "caught in a maelstrom of popish intrigue" acts as the "scene-shifter of history under the commands of a stage-manager called the Pope" (3: 94). The millennial unity of the church, while seeming to be a confluence of all Christian sects, is actually the triumph of moderate evangelicalism.

The novel's embrace of evangelical doctrine creates a tension between the need for spiritual change and the need for action. Chadwick describes evangelicals as people who "had little faith in devices, laws, canon, convocations," noting that "[r]eform was of the heart" (1: 442). He adds, "Their enemies confessed that they laboured. Some of their parishes were shepherded as diligently as any parishes in the land . . . they could be found

foremost in every scheme of charity” (1: 443). The evangelical experience focused believers on the individual’s relationship with God. For the believer, the internal spiritual state of awakening and rebirth was tantamount. Yet, as Chadwick notes, the internal change sparked external changes, the “labor” of the evangelical movement. *Annals* offers an exploration of the gap between passive spiritual experience and active reforms of the physical world, in which God employs believers as instruments of divine change. The characters act, but they do so as divine vessels. I term this state of both passivity and agency “evangelical agency.”<sup>2</sup>

Science acts as the medium for evangelical agency. As modern scholars seek to establish the origins of the science fiction genre, the novel’s embrace of Romantic-era natural theology as the science of the future has created problems of definition. *Annals* appeared as professional scientific communities began to form, some seeking to disentangle themselves from the old, often evangelical approaches to understanding natural phenomena. The novel argues stridently for the continued role of natural theology at a moment when the belief that the natural world could explain biblical revelation became increasingly untenable. Understanding science not as a monolith but as a series of contested discourses that continued to coalesce over the course of the nineteenth century is crucial to understanding the critique the novel offers of contemporary attempts to secularize science. The few modern critics who have written about *Annals* work within an anachronistic, procrustean bed, using twentieth-century

---

<sup>2</sup> Many thanks to Dr. Amy Thomas in the Department of English, Montana State University, for suggesting this useful term to me during conversation.

definitions of science. Critic John Christensen links *Annals* to Edward Maitland's novel of a year before, *By and By*, stating that in each "technology is the handmaid of Christian accord" (248), while critic Darko Suvin identifies a "union of science and religion... under the sign of a positive Deism" in the novel (*Rise* 154). Rather than a union of two discrete entities, the novel understands science as research into the workings of creation and the material evidence of theology.

Suvin offers the largest commentary on the novel to date, accepting the utopian label attached to the novel since its first appearance, but also using the text to develop his own genre, the alternative history. He describes the novel as "mixed up with various utopian socialisms," attributes the destruction of London to "[h]istory and nature (a Chinese invasion and an earthquake)," and sees in the plot "the most disparate borrowings (underground and Moon journey from Verne, Moon inhabitants from R.A. Locke, angellike Venusians from Lach-Szyrma or Swedenborg, etc., ad nauseum)" (*Rise* 154). The deathbed scenes and angelic aliens indicate "the renewed interest in 'higher beings' of occultism" (*Discourses* 332). On Blair's convention for naming characters, Suvin posits that the "future Terran characters have one classical Greek and one English middle-class name, signifying, I suppose, that class's assumption to classical status—while the planetary aliens are simply nearer to God" (*Rise* 156). Suvin's assessment of the novel focuses on the aesthetic qualities of a genre rather than the relationship of the novel to contemporary discourses on millennialism, science, and Radical political reform. Instead of socialism, the novel advocates the contemporary radical platform of free trade,

lionizing politicians such as Richard Cobden and John Bright, and referring to “the golden words” of Adam Smith (1: 47). The narrator directly addresses socialism, willing to acknowledge that in its “coarse, even base, fabric . . . were interwoven many great principles” (2: 192). However, while “politics ha[ve] seen the rugged inequalities of society smoothed and a universal community of goods and virtue established,” this process is described as an “adjust[ment of] the disparities” (1: 107). The novel envisions an end to the extremes of poverty and wealth, with the ultimate aim of economic progress being the universalization of the middle class. Attributing the destruction of London to “history and natural causes” obscures the role of biblical prophesy in the novel’s plot: the destruction of London, through divine means, ushers in the millennium. Reading the “angel-like Venusians” as an exploration of spiritualism or occultism contradicts Milton’s explicit denunciation of these ideas. He laments a time in which a “branch of the black art, called Spiritualism, had the assurance to don the mask of a science; and what was it when stripped of its guise but magic” (2: 179). Rather than occultism, reading the Venusians’ ability to see the spiritual world as both a reworking of the evangelical deathbed scene and as a response to popular science accounts demonstrates the novel’s attempts to imagine contemporary values in a future context. Finally, the names of the characters represent the combination of two last names lionizing Radical politicians, such as Cobden and Bright, or contributors to science and technology, such as the engineers Stephenson and Watt.

*Annals* depicts a world in which all members engaged in public life contribute to the accumulation of scientific knowledge. Science has resolved the problems faced by contemporary Victorian readers, and Milton, the narrator, anticipates further advances that will usher in the return of Jesus, as promised in Revelation. Readyng the world for the second advent requires physical changes to the planet and to humanity, made possible through those scientific advances. The novel defines science and faith in a way that promises human agency, at the same time privileging history and Revelation in a way that undercuts that promise. The resulting vision of the future features an all-white cast of male scientists, freed by scientifically legitimized theology from responsibility for the elimination of nonwhite and non-evangelical peoples.

This thesis seeks to locate the novel within the historical conversations about faith, science, and race which shape it and which it seeks to shape. The first chapter examines the millennial elements of the novel: the elements of plot derived from Scripture and the way Revelation shapes images of human progress. While the characters accept an interpretation of Revelation that seems to suggest human agency can bring about the millennium, commencement of the millennium requires the fulfillment of the historical demands of prophecy. The second chapter explores links between the novel and contemporary popular science texts. Correlations between the work of astronomer and natural theologian Thomas Dick and the novel seem to suggest that Dick's writing inspired parts of Blair's novel, particularly the imagining of other planets' residents. Like Dick, the novel attributes the possibility of the millennium to scientific advances.

However, since science comes from divine sources to further prophecy, God provides the means to create progress. Because God distributes scientific knowledge to further divine plans, the elimination of indigenous and non-Christian peoples in the name of Christian progress becomes justified both scientifically and theologically. The characters of the novel enjoy the benefits of agency (the idyllic life made possible by millennial science), while simultaneously remaining free from racial violence (the elimination of “inferior races” merely fulfills the prophecies of Revelation). The relationship between millennialism, science, and nineteenth-century discourses of “racial” progress in the novel form the final chapter of this paper.

NAVIGATING THE “RIVERS OF THE MILLENNIUM” THROUGH HUMAN  
AGENCY AND DIVINE WILL

As the novel opens, the narrator, Diogenes Milton, introduces himself to the reader, explaining that he will not delve into his genealogy, as “there is not a man but, by tracing his pedigree into the dark, premillennial ages, would find, in the history of his forefathers, the stains of every enormity and criminality” (1: 2). Milton establishes a precise break with the historical era of the reader: he lives in the world of the millennium, the reign of the saints promised in Chapter 20 of Revelation. Milton refers to the millennium as a utopia, the characterization both contemporary and modern critics apply to the novel as a whole. The reviewer for *The Athenaeum* notes that “[f]or the last two years or so, Utopian stories and prospective histories have been a weariness to our souls” and suggests that perhaps *Annals* would mark the end of a literary fad (290). Noting a similar trend, James T. Presley, of the Cheltenham Library, offers a “Bibliography of Utopias” in an 1874 issue of *Notes and Queries*, including *Annals* along with several other titles (252). *The Scotsman* reviewer lists More’s *Utopia* and Plato’s *Atlantis* as “[w]orks of a kindred type,” again highlighting the utopian themes (3). Twentieth-century critic Darko Suvin summarizes the novel as offering “Utopian projections in turgid pseudoclassical style” (*Discourses* 18). I.F. Clarke, in his survey of nineteenth-century utopias, classifies *Annals* alongside other texts of the early 1870s, which he views as being “marked by an unquestioning belief in man’s ability to create the best of

all possible industrial societies” (84). To date, criticism of the novel recognizes its similarities to other works depicting harmonious communities, built by human ingenuity, and remains silent on the millennial setting.

Although biblical prophesy describes the thousand-year reign of Jesus over the city of the saints in utopian terms, the millennium rests on a premise that contradicts utopian ideas. The two strains of thought provide contrary understandings of faith, history, and agency. While the novel draws on Romantic-era beliefs of postmillennialism to argue for the role of human agency in preparing the world for Jesus’ return, at the same time the novel’s understanding of history and the role of prophecy subvert the possibility that human endeavor could speed Jesus’ return. Within the ideological world of the novel, the characters live in tension between utopian expectations that their actions will create a harmonious world and the millennial requirements for the fulfillment of divinely mandated historic epochs. However, critical readings focusing exclusively on the novel’s utopian themes obscure the role that divine will plays in the novel. God has timed the beginning of the millennium and provided the means to usher in an era of peace and scientific exploration. While the characters appear to have agency, busying themselves with the scientific work of the millennium, this agency is predicated on the tenets of divine mandate. Thus, the characters have power to shape their world, but only insofar as they use this power to create the world ordained by God.

While utopian and millennial settings may seem interchangeable, by definition they represent different solutions to human suffering: the millennium explains a

prophesied set of historical events mandated by God, and a utopia focuses on the role of human agency to solve social problems. Suvin defines utopia as “a vivid witness to desperately needed alternative possibilities of ‘the world of men,’ of human life,” and as an answer to “the question formulated by Plato as ‘What is the best form of organization for a community and how can a person best arrange his life?’” (*Metamorphoses* 37-8). Although Milton offers a wide array of social commentary, condemning the nineteenth century for everything from hunting and crew to statue-building and keeping late hours, and assures the reader that the World-Republic now enjoys “the haven of a Utopia” (1: 131), the novel relies on the millennium for the ability to identify and implement the best arrangement for community life. Critic Theodore Olson also defines utopianism as “the search for the good pattern of life in an ahistoric cosmos,” the method of which “is rational and is discovered rationally” (144). Olson, like Suvin, requires a rational rather than supernatural explanation for the ideal world and adds the additional requirement of ahistoricism: at any point in time, as long as the right mechanism is discovered, people can create ideal communities. Rather than a depiction of the best arrangements for human institutions, *Annals* describes life at a point in human history when those arrangements become superfluous. The peace enjoyed by the World-Republic is divine rather than human in origin and begins at the time prophesied in Revelation.

The imaginary space the novel occupies also separates it from utopias. Suvin stresses the importance of the geographic location of literary utopias, arguing that “utopia is an Other World immanent in the world of human endeavor, dominion, and hypothetical

possibility—and not transcendental in a religious sense,” adding that “religion is, as Ruyter notes, counterutopian” (*Metamorphoses* 42). Suvin’s definition requires an imaginary world adjacent to the real world: the ideal world of the utopia existing alongside the world of the reader. Additionally, that ideal world comes into existence without supernatural intervention. In contrast, the world of the millennium occupies the same geographic space as the world of the reader, but projects that world into a transcendental future. Instead of a world adjacent to that of the reader, the millennium represents the reader’s future, achievable only through the means laid out in Revelation.

Unlike the secularism of a utopia, the world depicted in *Annals* represents a Christian vision of the future, with God’s interventions in history acting as the agent for changing social conditions. Milton explains that during the millennium the world “is knit by the cords of Christian unity into one great commonwealth” (2: 48). Instead of an ideal world existing alongside the world of the reader, the World-Republic encompasses the entire planet, creating one Christian world. Rather than through logically possible undertakings, supernatural intervention brings the World-Republic into being. In his discussions of the past, Milton describes the wars predicted in the Gospels and Revelation, represented in the novel as an invasion of Europe by China and Japan. Milton explains, “The sword of Providence dealt its blow against a corrupt member of the world’s commonwealth, that the world’s sorrows might be alleviated” (1: 46). God, not well-reasoned schemes for a better life, determines when and how the millennium begins.

Foregrounding the millennial setting of the novel reveals the emphasis placed on prophecy and fulfillment of historic epochs at the expense of human agency. Olson describes utopianism and millennialism not just as different, but as “two incompatible traditions” (192). Chapter 20 of Revelation describes the binding of the devil for the period of one thousand years (the millennium), which eradicates temptation and evil and ushers in the reign of the saints. Revelation prophesies wars and other upheavals that will warn true believers of the coming millennium, echoing the gospels of Matthew, Mark, and Luke, each of which predict a future time in which “nation shall rise against nation, and kingdom against kingdom: and there shall be famines, and pestilences, and earthquakes, in divers places” (Mat. 24:7).<sup>3</sup> Olson defines three central tenets of millennialism. First, that millennialism provides “an interpretation of history as one story,” in which the events of one part of that history “are seen as significant for all human kind” (15). Second, that the doctrine “establishes periods in history, periods of development (not progressive, improving periods), from a beginning to a climactic end state” (15). Third, that “conflict among contending forces in a dialectical fashion” pushes history through these stages, with the outcome of the conflicts never “in doubt, however, because prior history, rightly understood, discloses to us unmistakably the victor” (15). The belief in the importance of history led generations of believers to extrapolate from past and contemporary events to predict the date of the second coming. Critics Mary

---

<sup>3</sup> This thesis relies on the 1611 King James Version, which, according to *The New International Dictionary of the Bible*, was “still used in preference to any other version in the English-speaking protestant world” until the publication of the English Revised version of 1881 (155-6).

Wilson Carpenter and George P. Landow, argue that “the apocalyptic expositor, like the historical novelist, seeks to give history a meaningful form” (311). While the utopia can come into existence at any time, the millennium arrives in accordance with divine mandate, separating human history into distinct epochs with distinct forms and goals.

Milton’s explanations of human history rework biblical prophecy onto a future setting, demonstrating the need to fulfill historic epochs rather than simply implement social changes. While Milton praises “the coarse, even base, fabric of socialism,” in which “were interwoven many great principles,” these schemes “were ignored simply because they were pearls cast before swinish ages” (2: 192). Describing Earth before the millennium to the Venusians, Milton says, “Society, shattered by discord, pickled in prejudice, and sundered into castes and clans, could not have these constitutional ills healed by the mere external form of government” (3: 168). Thus, human attempts to theorize or legislate a better life are doomed to failure: only the fulfillment of biblically mandated events will usher in the millennium. Studying with the Venusians, Milton “learn[s] that many worlds were older than the earth, and many younger; that at present many worlds were still unborn—some had only seen their first day, others were in the gradations on till the fifth day, and others still in course of being furnished for their Adams and Eves; while others, like ours, had entered upon their histories” (3: 65). Not only human history, but history throughout the cosmos follows the distinct stages represented by a biblical timeline, and, just as Olson argues, each stage requires a specific dialectical resolution before the new era can begin. As Milton’s Venusian source reveals,

worlds moves from chaos to order, from furnished to unfurnished, from unpeopled to peopled, and the history of those people responds to God's intentions. While delighting in the benefits of life during the millennium, Milton reports that "Science and art have now nearly finished their six days in time's hebdomad; so that soon, soon indeed, history shall enter upon its Sabbath" (2: 199). Milton anticipates the end of the millennium, the period of history he occupies, and the beginning of the next, the second advent.

The second advent provides an ultimate aim for the history of the millennium, while a utopia acts as its own end point, with the community solving social problems and enjoying a harmonious state. *Annals* interprets history as a trajectory: the entire arc of human history is propelled by God to the climactic second coming. Because the millennium remains a promised future state rather than a potential present, correctly placing historical events within the trajectory and achieving the aims of history supersede the idea of an end point. Reflecting on death, Milton writes, "Oh death, where is thy sting? Even thy victims shall yet be thy victors, for they only sleep. Ere long the congregation of the dead shall be the congregation of the living," adding, "We knew the heavenly jubilee would soon arrive when this great host of travellers would rest from their wanderings in the heavenly Jerusalem" (1: 226-7). After the council with the Venusians, however, Milton "ruminates sadly over the proceedings," reflecting on "the mighty progress still necessary ere the millennium could have its consummation" (3: 198). The novel's sense of time differs from that of a utopian story: instead of a static land of harmony and plenty, the world of *Annals* has been reborn in the millennium but

continues to progress towards an ultimate aim. The second advent represents the consummation of one epoch and the beginning of another, in which the new Jerusalem arrives.

Although the resolution of historic epochs requires divine intervention, the characters devote their lives to speeding Jesus' return. Human agency and prophesy remain in a state of tension. The characters rely on biblical prophecy to determine the correct courses of action, undertaking three significant reforms following events outlined in Revelation: the geographic reforms discussed in the next section, the abolishment of night, and the spread of the new gospel. Following a parliamentary measure put forward by Argand Bude, the World-Republic undertakes a new engineering feat to abolish the night. Milton reports that "[t]he conclusion was a worthy signal to such praiseworthy exertions, for May 18, 2843, proved the last day on which darkness brooded over the face of the earth" (2: 206). The efforts to abolish night fulfill the prophecy of Revelation 22:5, which, describing the city of the saints, states, "And there shall be no night there; and they need no candle, neither light of the sun; for the Lord God giveth them light: and they shall reign for ever and ever." While Argand Bude's engineering feats represent acts of human agency, the exigency of these feats, the timing, and the results of his actions demonstrate fulfilled prophecy.

Similarly, the new theological knowledge received from the Venusians demonstrates both human agency and prophecy. Revelation foretells the coming of an angel bearing the gospel. John of Patmos explains, "And I saw another angel fly in the

midst of heaven, having the everlasting gospel to preach unto them that dwell on the earth, and to every nation, and kindred, and tongue, and people” (14:6). In the novel, the angel-like Venusians, rather than an angel, bring the new gospel. Following his introduction to the Venusian language, Milton begins to study the Venusian bible, which he describes as a “heavenly illumined volume” (3: 59). Milton writes, “In the Venusian scriptures I luxuriated in treasures of heavenly precepts and divine revelations. There I found the sweetest foretastes ever I enjoyed of the world to come” (3: 60). Milton’s Venusian tutors Veritas and Bonitas return with him to Earth with Milton as “the Venusian apostles” (3: 214). On Earth the two “shed over the earth the rays of a heavenly wisdom. Before the beams of their knowledge all darkness fled” (3: 217). The “heavenly wisdom” the Venusians bring with the New Gospel furthers the progression of humanity toward the final stage in history. By disseminating the New Gospel and reforming the world to reflect the state foretold by Revelation, the characters ready the planet for the second advent. The tension between the ability to produce change and the need to conform to prophecy furthers the passage of the historic epoch.

The novel offers a retelling of the millennium that co-opts contemporary technology, combining that technology with Romantic-era belief in the potential for human progress. Critic J.F.C. Harrison argues “postmillennialists were prone to think that the kingdom of God would come gradually as the result of Christian, human instrumentalities” (4). Thus, the characters act on the belief that their efforts will hasten Jesus’ return, while at the same time, the fruits of their labor reflect the course of history

already determined by biblical prophecy. The novel identifies science and technology as the instruments of moral change, demonstrating the recursive social function of millennial beliefs: eschatology provides an equation that believers can pair with current social conditions to gauge the progress of historical eras.

In the novel the characters work under a moral obligation to bring about the consummation of the historic epoch, with God providing the plan for action. Thus, the agency enjoyed by the members of the World-Republic exists only to fulfill divine ends and comes from a divine source. Critic Edward James, in his exploration of the Christian apocalypse's influence on science fiction, describes postmillennialists as those who "believed that Christ would come at the end of a millennium of peace, and that it was the duty of Christians to prepare for His coming by perfecting the world around them: this chimed in well with the nineteenth-century belief in progress" (54). Thomas Dick, the Scottish astronomer whose popular science texts appear to have influenced the novel, advocated for the role of science and education in advancing the millennium. Dick calls the belief that the millennium would ensue as a result of miracles "fallacious, and contrary to what we know of the general plan and tenor of Divine government," arguing instead that "it will be by the moral and mental energies of man, when properly directed by the Divine Spirit," that will bring about the millennium, and that this "is one chief ingredient in the happiness of man, and an honour conferred on him, that he is selected as an agent, under God, for bringing about such a glorious consummation" (*Christian Philosopher* 163). Even Dick, who denies the need for recourse to miracles,

acknowledges that God *selects* the agent, who only acts *under God*. Dick naturalizes the divine source empowering human activities. Rather than effecting change through miracles, God instead directs human activities to produce change.

Similarly, in the novel, human experiences result from Christian destiny rather than human actions. The Venusian, Veritas, explains that ““Human nature . . . like the glacier, though cold, torpid, and stiff, was, by the agency of a higher hand, all the while moving down Time’s rugged escarpment towards warmer ages, and ultimately, by the genial temper of Christianity, the glacial current was destined to thaw and give birth to the rivers of the millennium”” (3: 196). Veritas’s analysis of human history acknowledges the historic stages of the millennium and makes it clear that God, rather than human effort, impels humanity through the destined epochs. Thus, while the characters operate under a moral imperative to create the correct conditions for the second advent, the ability to create those conditions operates only within the a divine framework. The world of the novel offers the power to create change, but not the power to direct change. Humanity occupies a subordinate position, seeming to possess agency, but actually a conduit for divine power.

Olson describes each epoch as a contest between two forces, and the novel describes the contest leading up to the millennial epoch as a battle in which God chooses and employs human agents to carry out the prophesied events. Again, the characters carry out the actions, but the force behind those actions comes from a divine source. Before the millennium can commence, prophecy requires the destruction of the corrupt

old world, the ruins of which linger into the twenty-ninth century. As a student, Milton tours the remains of London, which he identifies as formerly “one of the mightiest swarms of saints and sinners ever huddled in one spot” (1: 38). Milton notes that “no city in pre-millennial times ever attained to such eminence, or sank into such degradation” (1: 39). London received “the death-blow of its honour—its capitulation to the enemy during the Chinese invasion,” and then an earthquake (1: 39), fulfilling the predictions of the gospel. While expatiating on the crimes of humanity to the Venusians, Milton explains, “God, to purify the world, had for centuries been mustering in China and Japan for those apostles of his vengeance who were destined to overthrow the proud nations of the earth” (3: 153). When human history reaches the destined moment, God musters forces for the war of Armageddon. The narrator explains that “the London of vice and corruption was wiped off the stage of existence by Heaven for the gracious end of making way for the London of the millennium,” adding, “Thanks be to God for his gracious dispensation, the earthquake and fire of London. Blessed was the curse—benignant the calamity” (1: 46). God determines both the correct course of action (the destruction of London), and provides the mechanism (the invasions and disasters), which lead to the next epoch in history (the millennium). Later Milton explains to the Venusians, ““Thus, the races which were erewhile Europe’s derision, were the races which, in the hands of Providence, cast derision upon Europe” (3: 154). The military forces of Japan and China, while appearing to act of their own accord, actually act as the agents of God’s retribution, fulfilling the prophetic roles dictated by Revelation.

Reading *Annals* as a work of millennial, rather than utopian fiction, highlights the novel's solution to social ills: rather than amending the world, humanity must fulfill its destined destruction and rebirth. Instead of the human agents working to create a harmonious society offered by utopian fiction, the novel depicts divinely powered agents intent on the destruction and rebirth of the planet as specified in Revelation. Harrison argues that "[t]he doctrine of the millennium and the second advent implied an overturning of the world as at present constituted" (xv-xvi). The novel argues for such an overturning of the world, not just because of social problems, but because of biblical prophecy. Through the narrator's expository writing on the nineteenth century and also during the council with the Venusians, the novel critiques gambling, smoking, drinking, hunting, politics, missionary projects, women's suffrage, burial customs, monarchies and a host of other perceived ills. Milton complains that in premillennial times, it was "galling to honesty, that everything eaten, drunk, or worn, should be mulcted by the tyrannous hand of taxation" (3: 141). Later he states, "If we analyze the best of those bad federations—Britain under Victoria, Gladstone, and Disraeli—we find the filthy ingredients of seditions, agrarian outrage, discontent, party spirit, and repeated commercial and political eruptions from its volcanic society" (3: 145). While a utopian novel would provide a logical schematic for alleviating the problems Milton identifies, *Annals*, as a vision of the millennium, requires destruction of the old world, through the invasions and earthquakes of Armageddon. Destruction and rebirth of the world

eliminates the ills that Milton identifies, but only because the world enters a new historic epoch, not because human ingenuity has produced solutions to these problems.

Although both utopian and apocalyptic novels create a space for social critique, they differ in the space created to do this. Thus, while *Annals* offers social critique, it does so as a retelling of the millennium rather than as a hypothetical plan for commodious social arrangements. As Suvin notes, the utopian novel presents an ideal world and alongside a world closely resembling the reader's, implying that the reader can obtain the ideal world of the novel through appropriate action. Ernst Bloch adds a temporal element to the critical possibilities of utopias, arguing, "The essential function of utopia is a critique of what is present. If we had not already gone beyond the barriers, we could not even perceive them as barriers" (qtd. in Freeman 67). The critical space created by the utopian novel exists both geographically and temporally adjacent to the reader's own world, highlighting the barriers society must overcome to make a better life possible. A utopian novel supplies the missing links between the reader's world and a better world. In contrast, as a novel of the millennium, *Annals* interprets the events of Revelation and offers a glimpse of the life promised during the millennium. Rather than focusing on the elimination of present constraints, the novel imagines the ways that God will direct human agents to fulfill prophecy.

The apocalyptic novel subsumes the world of the reader, and by definition must occupy the world of the future, as it describes the destruction and rebirth of the entire planet. Critic Carl Freeman argues, "The future is crucial to science fiction not as a

specific chronological register, but as a locus of radical *alterity* to the mundane status quo, which is thus estranged and historicized as the concrete past of potential future. The potential future in science fiction exists, one might say, primarily for the sake of the actual present” (55). He adds that the value of a historicized present comes from “the sense of denaturalizing the present by showing it to be neither arbitrary nor inevitable but the conjunctural result of complex, knowable material processes” (56). Thus, science fiction makes specific use of temporal differences in history: through envisioning the future, the past (the world of the reader) becomes understandable and potentially open for change. *Annals* does create a historicized present: the world of the reader becomes tangible, the inscrutable forces now revealed through the radical alterity of the millennial setting. The world of the reader becomes a concrete past, available for critique and rejection based on the promise of the potential future. The millennial setting offers a critique drawn from a comparison of historical epochs, advocating for a spiritual revolution and asking the reader to become a fellow worker towards God’s plans. However, the potential for change is limited to the fulfillment of God’s plans, occurring at God’s pace.

While critics such as I.F. Clarke attribute the rise of nineteenth-century novels such as *Annals* to the Franco-Prussian wars, the millennial setting of the novel can also be read as a critique of nineteenth-century efforts to create utopian communities. Clarke, who defines *Annals* as utopian, sees a link between the rise in utopian fictions in late Victorian fiction and “the beginning of crisis in the nation’s way of life . . . marked by

doubts and anxieties born of far-reaching changes in religion, economics, and politics” (82). The actual utopias people attempted to build throughout the nineteenth century are not factored into Clarke’s assessment. However, in its vision of a better society, *Annals* appears to parallel some of the ideas of nineteenth-century utopian reformist Robert Owen. Rather than a parallel of Owen’s ideas, the novel offers a critique of human efforts that fall outside of biblically proscribed actions. Historian E. P. Thompson marks an “important difference between Owensim and earlier creeds which gathered millenial impetus. With the Owenites the Millennium was not to arrive, it was to be *made*, by their own efforts” (803). Like the Owenites, the novel appears to place some control of the millennium in human hands. However, divine agency, working through human actions, ultimately makes the better world possible.

*Annals* explores ways to better the world similar to Owen’s, but does so as a story of the millennium, rather than a utopia. Weber calls Owen the “[a]postle of hygiene, education, and rational management,” and says that he “publicized his ideals of subordinating machines to men and women, of nature harnessed by nurture, and of restoring to many the dignity of purpose they had long been denied,” and that he “preached his message in apocalyptic terms” (157). Like the narrator of *Annals*, Owen highlighted labor efficiencies created by new technology. Thompson, quoting Owen’s propaganda, writes that “some individuals ‘forget that it is a modern invention to enable one man, with the aid of a little steam, to perform the labour of 1,000 men’” (787). In the novel, when the characters have successfully harnessed geothermal energy at the caloric

works in Greenland, Milton marvels at the factories where machinery allows for “cloth made at the rate of a mile a minute,” going from raw material in the morning to “the backs of thousands of the human family in the evening” (1: 55). As an appointee to the commission on publishing, Milton reflects, “Man had long seen, with sorrow, how far the present publishing arrangements fell short of the ideal, the minimum of workers performing the maximum of work,” leading his commission to introduce “a plan by which the printing of the world could be performed by one-sixteenth of the present number of men” (1: 140). Owen used increased labor efficiencies as an argument for the feasibility of communal living, and *Annals* predicts the same benefits magnified during the millennium. The benefits of scientific management seem to provide a tangible link between the possibility and the actuality of progress and at the same time to critique the possibility of that link: Owen’s communities are doomed to fail, not because of the failure of his ideas, but because God has not chosen him to bring about the millennium.

Likewise, although the novel shares Owen’s stress on education as the agent of progress, the characters cannot rely on education as the millennium requires historic as well as human progress. James Moore describes Owen’s belief that “human nature is perfectible through education and changed environments” (301). Along with building the city of the saints, the characters in *Annals* use education to eliminate human flaws. Describing his marriage to the daughter of Shakespeare Socrates, Milton remarks that in past ages “I might have deplored how marriage oft unveiled Zantippes under the mask of Helens, and how wedlock was oft padlock.” In contrast, the education received during

the twenty-ninth century “has rescued us from these deceptions, and moulded every woman in a pattern of learning, fascination, virtue, and, last and least, beauty” (1: 145). Though commendable, Owen’s attempts at educational reform remain fruitless until the time of the millennium. While Milton’s world enjoys a utopia by contrast with the nineteenth century, the arrival of the Marsian and Venusian emissaries shine a “benignant effluence” over the “ignorance-stricken” Earth, bringing “divine knowledge to mankind” (3: 224). The “eloquence and lucidity” of the Marisans make “the greatest of this world small, and our teachers but mere dunces” (3: 224). New ideas and modes of education (such as the enlarged animals on Venus, which allow the study of anatomy by traveling through the body of the animal) further humankind’s path towards a more perfect society, yet each of these ultimately result from fulfilled prophecy rather than progress. Until God sets in motion the destruction of Owen’s (and the reader’s) world, attempts to reform will fail. Paradoxically, the novel advocates for a community similar to the one that Owen worked to create and simultaneously reveals the impossibility of realizing such communities without divine agency.

*Annals*, while offering a utopian vision of the future, creates a world in which human agency and divine will work in tension to spur historical progress: the need to complete the requirements of each historical era prevents human success until God decides to intervene. The novel’s current classification as utopian obscures the roles of biblical prophecy, history, and critical space in shaping the ideological world of the twenty-ninth century. As the Venusians explain to Milton, human history exhibits

“something more than an aimless and undesigned, a causeless and a casual chain of causation. Man’s deeds only supplied the links of history. God strung them together, and made them subservient to His inscrutable purpose” (3: 196). The novel imagines the human activities that reveal God at work, stringing together the events that bring about the millennium, and later, the second advent. The utopian allure touted by the narrator becomes possible only when the millennium commences. Rather than ceasing toil once a harmonious way of life has been achieved, the work continues as the characters try to bring about the next stage of biblical prophecy. The characters are active in their efforts, and yet passive in their direction. They are both agents for change and, at the same time, pawns acting out the script provided by Revelation.

“THE AURORA OF SCIENCE PAVED THE WAY FOR THE SUNRISE OF THE MILLENNIUM”: NATURAL THEOLOGY APPROPRIATES MATERIAL SCIENCE

Revelation offers readers a vehicle that provides a template for reading history. Over time, eschatologists adapt differing historic and contemporary events to chart the progress of biblical prophecy. In the world *Annals* depicts, scientific knowledge provides the means to enact prophecy. The novel understands science as natural theology: the study of the natural world which offers material evidence of biblical revelation. Rather than reading contemporary scientific advances as a challenge to prophecy, the ideological world of the novel radically appropriates those advances, using the future setting to refashion seeming discrepancies into proof for the continued relevance of natural theology. As an inquiry that simultaneously explores theology and the natural world, science provides the characters with the means to understand both physical and spiritual worlds. Knowledge about those physical and spiritual worlds leads to a moral imperative to shape the physical world in accordance with biblical prophecy. Thus, science both provides the power to make changes and the imperative to make those changes. While seeming like agency, the peculiar agency that science brings works only in one direction: all scientific knowledge leads to knowledge of God. Attempts to work outside the ideological framework of natural theology will only lead an errant researcher back to the study of God. The seeming disparities between natural knowledge and prophecy work synergistically with the historic epochs required by prophecy. The resolution of

contradictions takes place through further investigations. However, those investigations are predicated upon divine intervention: only because the time appointed for the millennium has arrived are the characters able to undertake the research needed to resolve the apparent contradictions. The relationship between God and the characters remains a treadmill. The agency supplied by science brings them closer to God, and yet, with each advance, the need for further research arises. Although science narrows the distance between God and his people, that distance remains infinite, increasing at the same time that it narrows. By embracing the values of an earlier era, *Annals* offers a harsh critique of contemporary moves towards elite secular science, questioning the decentralization of theology, the rise of theory at the expense of observation, and the loss of the amateur scientist.

While the narrator uses the word science, his definition of science differs from modern understandings of the word's meaning: in the world of the novel, God supplies the source of all knowledge. Contemporary audiences witnessed an ongoing negotiation and revision of science. While the Romantic era saw a continuation of the eighteenth-century understanding of science as natural theology, the second half of the nineteenth century saw a shift away from natural theology toward a secular science based in materialism. Historian Thomas Dixon discusses the shortcomings of previous writing on "simplistic conflict stories" about faith and science in the nineteenth century, arguing "[n]either *science* nor *religion* is a monolithic entity," and adding "[n]either term has had a stable meaning even during one period, let alone across the centuries" (26). *Annals*

navigates the instability in the definition of science, arguing for the conservation of natural theology's values. Natural theology understands science as two branches of inquiry leading to understanding of God and God's creation: natural philosophy, which explores physics, weather, and astronomy, and natural history, which explores geology and the life sciences. In the novel, inquiry works in a circular manner, with theological research leading to scientific advance and scientific research leading to spiritual advance.

The world of the novel requires the maintenance of natural theology because without God both the means and reason for inquiry disappear. Dick defines the purpose of natural philosophy as being "to describe the phenomena of the material world, to explain their causes, to investigate the laws by which the Almighty directs the operations of nature, and to trace the exquisite skill and benevolent design which are displayed in the economy of the universe" (*Future State* 157). Dick makes clear that for the natural philosopher, God *directs* the physical properties of the universe. He says of natural history, "all the objects which it embraces are the *workmanship of God*—the delineations and descriptions of the Natural Historian must be considered as 'The history of the operations of the Creator;' or, in other words, so far as the science extends, 'The history of the Creator himself'" (*Philosophy* 61). According to the ideas of science put forth by Dick, science reveals the way God directs natural laws and describes the history of God himself. While Dick wrote during the Romantic era, textual similarities between the novel and his popular science texts suggest his influence. Rather than an anachronism at the time of *Annals*' appearance, according to biographer William Astore, Dick's work

saw “immense sales . . . in Britain and especially in America from the 1820s to the 1880s” (238-9), suggesting that his ideas, and those of the novel, continued to have currency through the latter half of the century.

Although the novel’s approach places it within a context already becoming unfashionable in elite scientific circles, science historian Barbara Gates notes that “[w]hile professional scientists moved toward scientific naturalism . . . middle class popularizers of science and their audiences remained enthralled by the traditional moral, aesthetic, teleological, and divine qualities of the natural world” (188). Like Dick, *Annals* advocates for an understanding of science that embraces a religious telos: scientific advances confer a greater understanding of God and theology. Dixon urges historians to avoid “overly simple models of *conflict, independence, dialogue, or integration*” when discussing Victorian ideas about science or faith (26). Identifying science and faith as discrete units creates an anachronism, obscuring the novel’s intent. Milton clearly articulates the novel’s position on science and religion, writing that “both were chords in Theology’s harp, striking different yet concordant sounds” (1: 110). Theology subsumes both moral and scientific knowledge, with all knowledge working in synergy to further theological understanding. Without theology, the characters lack both the direction and agency needed to create the world promised in Revelation.

Although some contemporary scientists advocated expunging religion from science, *Annals* identifies science as the mechanism that will bring about the millennium and the return of Jesus, a vision in which science becomes subservient to religion.

Sharing extracts of the book of human history he has composed, Milton writes that because of science “every noble principle has been enfranchised, and the vile brood of ignorance driven backwards to its native quarters in hell. Thou [science] art the chain that has bound the devil” (1: 130). The narrator refers to the first three verses of Revelation 20, in which an angel comes “down from heaven, having the key of the bottomless pit and a great chain in his hand. And he laid hold on the dragon, that old serpent, which is the Devil, and Satan, and bound him a thousand years.” Continuing his encomiums on science, Milton writes, “Thou art the chart of truth by which man has steered his way into the haven of a Utopia” (1: 131). While Milton credits science for making the millennium possible, science functions as an instrument of God, placed in human hands for divine ends. As promised in Revelation, God sends humanity an angel when the predetermined moment in history arrives, and science is that angel. While the postmillennial message of progress seems to allow for human intervention in preparing for the millennium, God chooses the method, time, and means of that intervention. Although science provides the characters with the means to enact change, the ends are predetermined. Science serves divine, not human, purposes.

The novel embraces science as the agent of the millennium, using the future setting to demonstrate the danger contemporary efforts to invalidate natural theology poses to the fulfillment of biblical prophecy. While Dixon rejects the idea of a monolithic battle between science and faith dominating the latter half of the Victorian era, *Annals*, in its valorization of natural theology, takes a decisive stand in opposition to

applications of materialism that reformers such as John Tyndall used to promote secularization. The novel appeared concurrently with John William Draper's *A History of the Conflict between Religion and Science* in the midst of an ongoing debate in the periodical press over secularization. An anonymous letter in the July 1872 issue of *The London Contemporary Review*, introduced and initially attributed to John Tyndall (who later credited the London surgeon Sir Henry Thompson with authorship), sparked the "Prayer Gauge Debate" in the periodical press (Tyndall and Galton 7). The letter, entitled "The Prayer for the Sick: Hints towards a Serious Attempt to Estimate its Value," proposed "a means of demonstrating, in some form, the efficacy of prayer" (13). The anonymous author suggested following an experimental method "somewhat analogous to that which is pursued by the [medical] faculty when a question arises as to the value of any particular mode of treating disease," proposing to divide patients with the same disease into two classes, an experimental and a control group (16). The author went on to suggest a duration for the study of "not less . . . than three or five years," during which the experimental group would be the "object of special prayer by the whole body of the faithful, and at the end of that time, the mortality-rates should be compared" (18). Given sufficient time and a large enough group of subjects, "the experiment will be exhaustive and complete" (18). The proposal uses science, the agent selected by God, to eliminate God's centrality in scientific inquiry.

In response, Milton's history of science offers a sharp critique of the application of empirical inquiry for secular purposes, appropriating materialism to further natural

theology. While science “showed that the universe was an organization of Divine wonders, embracing millions of harmonizing phenomena, all in tune with God’s eternal and irrevocable purpose,” science of the past suffered as “philosophy had bastards in its apprentice days, who affected to draw logic from absurdities, and truth from sophistry. They essayed to make Science spit in the face of its twin-sister Religion, though truth told so boldly how science was the religion of God’s physical laws, and religion the science of God’s moral laws” (1: 110). Milton places inquiry into both physical and moral laws under the umbrella of theology, the hierarchy established by natural theology. Only when applied together, rather than in the antagonistic way proposed by Tyndall and his peers, can research discover scientific truths. The Marsians and Venusians, while visiting Earth, demonstrate “prayer’s phenomena . . . by experimentally showing its wondrous and unflinching reflex reaction” (3: 230). The aliens’ experiment, which suggests a direct response to the prayer gauge debate, co-opts materialism. In the novel natural theology uses the tools of secularism—objective empirical investigation into material causes—to discredit secularism. One cannot accept the premise of secular science without also accepting natural theology. Dixon asks us to avoid perpetuating the myth of a battle between science and faith and instead “learn to ask questions more precise than an employment of the bald *science and religion* rubric allows, questions such as: Whose religion? Which science? When? Where?” (26). Rather than a contention between science and faith, *Annals*’ response to the prayer gauge debate reveals a battle between two kinds of science: natural theology and modern science.

Establishing God as both the source and the subject of science creates a predetermined trajectory for scientific research: all research comes from and explores God, thus knowledge of the natural and spiritual worlds works in tandem. Theology directs the apparent agency that science brings to further the millennium. During the span of the novel, the characters work within the predetermined dialectical struggle and resolution of a historical era prior to Jesus' return, attempting to resolve the physical traces of original sin. Correct reading of the spiritual world guides the actions necessary to improve the physical world. In turn, these changes are necessitated by the desire to realize a world of pure spirit. In contrast to Fallen Earth, the uncorrupted Venusian landscape "displayed such paradisaic beauty, as made me view the fertility of our world as but a short advance from sterility" (3: 49). Humanity's moral lapse resulted in an alteration of the physical planet: physical repair of the planet goes hand in hand with a return to moral rectitude. The belief in a planet marked by sin prompted Dick to argue for the employment of "the moral and mental energies of man, . . . properly directed by the Divine Spirit," to achieve "harmony and order," replacing "the wastes and barren deserts of the physical world . . . with fertility and rural and architectural beauty" (*Celestial Scenery* 163). While Dick urges the moral necessity of returning the planet to a state of "harmony and order," he also notes that God acts as director of these endeavors, not humanity.

Evangelical doctrine focuses the believer's attention on internal spiritual relationships; however, both Dick and the novel advocate action, turning spiritual and

moral doctrine into tangible changes in the physical world. Dick theorizes about the application of “the moral and mental energies of man” to the planet’s rejuvenation; *Annals* describes the characters acting under God’s direction to the same ends. Caught between the moral imperative to create change and the requirements of prophecy, the characters engage in a battle against barrenness, replacing the signs of moral corruption with agricultural fertility. Milton’s instructor “referred jubilantly to the agricultural hygiene applied to those territories of diseased soil found in olden times, called fens, marshes, wildernesses, and deserts, and how Ceres now sweats out of their improved mould the heaviest exactions year after year” (1: 36). They also visit “the beautiful country of the Sahara,” which is now “an Eden” (1: 95). Siberia, too, enjoys the benefits of “agricultural hygiene.” Milton begins his political career as the representative for Siberia, which “even then teemed with a population more numerous per square mile than the Flanders of the nineteenth century” (1: 144). The population growth results from “[t]he genius of agriculture,” which has “drained its mosses, plastered the whole country with rich alluvium, and transformed Siberian barrenness into Egyptian luxuriance” (1: 144). Milton credits hygiene and genius with fecundity: the responsibility for the agricultural plenty enjoyed during the millennium lies with what a contemporary physiology textbook describes as “the art of preserving health and preventing disease” (Huxley and Youmans 18). Milton’s language equates the barrenness caused by original sin with disease, granting knowledge the power to restore both moral and physical health. The knowledge, supplied by God, helps humanity move to a luxuriant

state closer to that enjoyed by the unFallen Venusians. The prophecy of the millennium applies not just to the human spirit, but to the physical world, with the internal phenomena of spiritual rebirth becoming an external process of healing and rejuvenation.

The compulsion created by moral, historical, and spiritual imperatives leads to the recreation of the planet, with natural knowledge and theological knowledge working in a synergistic spiral. Research in one branch necessitates further research in the other, for without scripture and divine will, science has no direction. When Milton visits parliament for the first time, a member puts forward a “bill to level the mountains of the world, fill up its redundant lakes, and widen its rivers” (1: 23). Brindley Telford argues in favor of the bill, as mountains “are the earth’s lumber, which it behoves art to sweep away. They expose the earth’s nakedness—nakedness which man ought to cover with the thrifty garments of vegetation. Nature has stamped them with ruggedness, fierceness, and sterility, to proclaim their uselessness” (1: 23). Rennie Smeaton, also a member, describes mountains as ““scabs on the face of nature””; Sorastrus Jones calls them “hunches on its [Earth’s] back”; and another member “declared they were ‘frowning wrinkles on the brow of the creation’” (1: 23). The members of parliament equate the natural landscape with other parts of the planet marked by original sin. Unproductive or wild areas require reformation, leading to thrift and agricultural plenty. The “sin” of sterility and uselessness manifests physically: the mountains are “scabs,” “hunches,” and “frowning wrinkles.” The World-Republic’s proposed geographic reforms conform to the vision of the world offered in Revelation, which states, “And every island fled away, and

the mountains were not found” (16:20). Ridding the world of those “scabs on the face of nature” helps prepare the world for the second coming of Jesus, who would apparently find offense with “frowning wrinkles on the brow of creation.” Correct reading of scripture and moral imperatives leads to correct reading of the physical landscape. The combined knowledge requires the leveling of the mountains, which spurs worldwide research and engineering feats.

Reading the moral into the physical landscape requires the characters to maintain a spiritual state focused on humility. Although the changes require action, the characters must take these actions as God directs. In *Celestial Scenery*, Dick hypothesizes that prior to the Fall, “the frame of nature, we may confidently suppose, was so arranged as to contribute in every respect both to his [Adam’s] sensitive and intellectual enjoyment,” but after the Fall, the world’s climate became “adapted to man in his present state of moral degradation” (121-2). Dick goes on to speculate that “as man advances in his moral, intellectual, and religious career, and in proportion as his mental and moral energies are made to bear on the renovation of the world, he has it in his power to counteract or ameliorate many of the physical evils which now exist” (122). Having Fallen, humanity has destroyed the world, but in a spiritually awakened state, positive change becomes possible. His proscription includes cultivating all arable land, draining wet lands, and turning “desolate wastes into order and vegetable beauty by the hand of art” (122). In *The Christian Philosopher*, Dick places responsibility on humans to “exert their own genius and physical energies, in beautifying their habitation and reducing the globe to an

approximation of its original state” as “[t]he sin of man was the cause of the original structure of the earth being deranged, and its beauty defaced” (300). Like the members of parliament, Dick equates the physical state of the planet with moral collapse, and the hopes for moral regeneration with human efforts to improve the physical world. While he advocates the role of human labor in bringing about these transformations, he also notes that “man, under present dispensation, is ‘a worker together with God,’—in accomplishing his purposes; and under the agency of that Almighty Spirit . . . is able to accomplish all that is predicted respecting the Millennium” (163). While Dick argues that humanity can work to bring about the millennium, he indicates that the ability to complete this work comes from God through divine dispensation. In the novel the characters already enjoy the promised millennium but continue to work towards the second coming through the geographical reforms made visible by their connection to the spiritual.

The combination of theology and science seems to glorify the possibilities for human endeavors but actually works to maintain the World-Republic’s humility before God. As the geographical reforms near completion, Milton comments, “The prophecy of Isaiah seemed to have its literal fulfillment—‘Behold I will make thee a sharp thrashing instrument having teeth. Thou shalt thrash the mountains, and beat them small, and shall scatter the hills as chaff’” (1: 216). The thrashing instrument making reform possible comes from divine, rather than human, genius. Describing the removal of mountain ranges, Milton, quoting Habakkuk 3:6, enthuses, “In the sublime Scriptural words, ‘The

everlasting hills were scattered, the perpetual hills did bow” (1: 161). The verse from Habakkuk describes mountains bowing in reverential submission before God. Both humanity and the planet come closer to perfection through humility, yet the verse Milton quotes shows the mountains bowing not to the human agency that reduced them to rubble, but to the presence of God.

As the channel for divine agency, science furthers both the character’s humility and simultaneously their mastery over the rest of the planet, thus demonstrating the need for both knowledge of both spiritual and physical states. Extolling a benefit of scientific research, Milton remarks, “Proud man finds in knowledge the best agency to keep him within the holy frontiers of humility” (1: 117). Natural knowledge, knowledge of creation, helps humanity remain in accordance with divine will by maintaining human humility. At the same time, science allows a mastery of the natural world that enables the citizens to reconfigure the planet. Of zoology Milton writes, “The science is exalted to that pitch whereby man has been enabled to resume his primeval sovereignty over the animal kingdom” (1: 79). Elevating the dignity of science results in an elevation of human dignity, restoring humanity’s place of superiority over animals. The sovereignty consists of training and employing animals for tasks such as mining, making music, delivering messages, and masonry. Animal armies build vast bridges that span the oceans, linking the continents. The results lead Milton to reflect, “Steered by the helm of Science, and impelled by the oars of Art, to what perfection has Nature been impelled!” (1: 89). God enables humanity through natural knowledge, granting humanity

the responsibility and the power to force the world into a perfect state. Dominance over the natural world leads Milton to boast “man was the slave of what he is now master” (3: 232). While premillennial humanity found itself enslaved by creation, millennial science allows humanity to master nature. Yet the purpose of this control over the natural world reinforces human inferiority, maintaining the reverential submission necessary to affect change.

Rather than offering a contradiction to the promises of natural theology, the novel uses contemporary advances in astronomy to demonstrate God’s continued presence at the center of scientific research, further demonstrating the relationship between scientific and spiritual knowledge. For Dick, enjoyment of the evening sky opens the viewer’s eyes to the glory of God’s creation. He argues, “There is no scene we can contemplate in which the attributes of the Divinity are so magnificently displayed,” and that “in the heavens alone that we perceive a sensible evidence of the *infinity* of his perfections, of the grandeur of his operations, and of the immeasurable extent of his universal dominions” (*Celestial Scenery* 292). Astronomical research furthers a sense of awe within the scientist, and of all the sciences, offers the greatest chance for understanding the scope of God’s power. Milton expresses a similar sense of awe and humility in the face of the same idea of the infinite. He recommends reflecting on “those vast gyrations, the great heavenly axis which forms the nucleus of infinity,” which he calls “the shekinah of the universe, a shekinah before whose immeasurable immensity arithmetic stands aghast, and whose grandeur blinds the frail eyesight of human conception. Enthroned

here, God views an eternity of space, and an eternity of time, and rules with unfailing wisdom” (1: 117-8). God controls the physical laws of the universe from the tabernacle of the skies. Study of astronomy reveals both the physical properties of that tabernacle, providing material proof of God’s power and wisdom and also highlights the frailty of human understanding. For both Dick and Milton, scientific research provides material evidence of scriptural truth. The agency for research comes from God and furthers the relationship between the researcher and God.

The synergistic relationship between theology and natural philosophy creates a feedback loop in which all study of the natural world works to reinforce knowledge of the spiritual world. Dick extolls the virtues of astronomy, the study of which “tend[s] to amplify our views of that Almighty Being who brought them into existence by his power, and ‘whose kingdom ruleth over all.’ In these arrangements of the stars in reference to our globe, the Divine wisdom and goodness may be clearly perceived” (*Celestial Scenery* 41). Science actually amplifies theology: study of the physical world provides tangible, rather than textual evidence of God’s power and benevolence. Milton reports that when he contemplates the night skies, he is “dissolved in devotional rapture, for the eye of piety views them as altars in the cathedral of infinity—altars upon which are millions of worshipers,” asking the reader, “Does not the dome of night, with its stellar lamps, its candelabra constellations, its borealis and zodiacal illuminations, its cometic and meteoric fireworks, proclaim the wondrous workmanship of the Almighty architect?” (2: 79). Milton’s understanding of astronomical research equates science with devotion.

Before research can obtain tangible proofs of God, the researcher must use a pious eye: correct interpretation of scientific data requires a moral lens. The astronomical research explores the dwelling place of God, and Milton's language equates the night skies to places of worship. While the church reveals scriptural truths, the skies offer material evidence of the God responsible for those truths. Scientific research into the material world becomes an act of worship.

While contemporary astronomical research threatened the view of the universe perpetuated by natural theology, the novel co-opts this research as an argument furthering natural philosophy. Following Charles Darwin's publications on natural selection, Richard Proctor's 1871 astronomy text uses the idea of adaptability as further evidence of other populated worlds. Proctor, extrapolating from new advances in astronomy, speculates on worlds beyond our solar system, "infinitely various . . . but alike in this, that each is peopled by creatures perfectly adapted to the circumstances surrounding them, and that each exhibits in the clearest and most striking manner the wisdom and beneficence of the Almighty" (257). Rather than a threat to theology, Proctor reworks the idea of adaptability to highlight the idea of God's power and love. Dick speculates about the residents of other worlds considering it

highly probable, when we consider the general benignity of the Divine Nature, and the numerous evidences of it which appear throughout the whole animal kingdom of animated nature—that the inhabitants of the greatest portion of the universal system, have retained the moral rectitude in which they were created, and are, consequently, in a state of perfect happiness. (*Philosophy* 206)

Writing before Darwin and Proctor, Dick uses astronomical research to theorize about the nature of the divine, finding in the existence of other planets proof of the same beneficence that Proctor saw. Not only would a loving God create and people other worlds, these worlds offered a glimpse of life without sin, the alien beings having resisted the temptation that led to humanity's Fall. Like Proctor, he bases part of his argument on observations of animal life on Earth. For both writers, astronomical research provides material evidence of the nature and intentions of God in keeping with the truths of scripture. In Proctor's work, the older scientific paradigm of natural theology subsumes new research.

The novel parallels the work of Dick and Proctor, using the idea of multiple worlds to reinforce human humility and to create a system in which humanity always advances without reaching an endpoint. New findings from millennial science, provided by a divine source, make contact with citizens of other planets possible. The presence of other people who maintained moral rectitude furthers the character's humility, both inducing the moral state necessary for research while calling into question the worth of the researchers. Milton sees in "the obscurity of our world a rebuke upon man's arrogance," calling earth "a mere drop in the boundless oceans of the universe" (1: 117). Original sin requires expunging, with astronomical research providing a reminder of Earth's obscurity through contemplation of the infinite. The inhabitants of other worlds, Milton speculates, "view our most noble achievements as the throes of grasshoppers" (1: 118). Even with the advances in science and technology made possible by the

millennium, original sin marks humanity in comparison with other peoples. The residents of the alien planets have resisted temptation and enjoy an unFallen state closer to the spirit world of God. On Venus, Milton “witnessed the noblest creations of Providence, pure as they had come from His hand,” and “citizens [who were] the untarnished and unmutilated images of the Most High” (3: 46). Employing the correct attitude towards research (pious inquiry into God’s tabernacle) and maintaining the values of natural theology in the wake of new information allow Milton to witness life on a planet that enjoys a closer connection to God. By providing a ready vessel for God’s agency, humanity can begin bridging the distance between the barrenness of sin and the purity enjoyed by the Venusians.

The novel appropriates geologic research to demonstrate God’s power and benevolence, simultaneously using that research to reveal the failings of secular science. Milton’s history of science summarizes the creation of the planet. He writes,

Touching geology, and descanting on the first chapters of Genesis, as the *vidimus* of a work which took millions of years to fulfil, and would take a library of volumes to detail, I dwelt on those advances in science by which the dates of rocks can be as accurately ascertained as those of history, and finished by alluding to solar, lunar, and stellar geology. (1: 111)

For Milton, the discoveries of geology indicate the authenticity of Genesis, which explains the creation of the planet over an expanded period of time. Rather than interpreting new information about the age of the planet as a challenge to theology, maintaining a pious approach to data analysis allows the researcher to verify scripture. The inaccuracy of science, not the accuracy of the bible, creates the potential for discord.

An inability correctly to date specimens and a lack of information on astronomical specimens, rather than a failing in scripture, explain the discrepancy between Genesis and geology. Veritas, Milton's Venusian tutor, explains that "God, who alike makes human affairs and the stars to run in their destined orbits, now makes one day do the work of a thousand years" (3: 196). With a God who manipulates time and human action, only inquiry into the nature and laws of God will allow for accurate interpretation of the geologic record. Science without theology is wrought with the potential for error.

The novel's ability to reconcile biblical and scientific research parallels the thinking of many Victorians and uses that parallel as a platform for postmillennialism. Owen Chadwick, in his historical survey of the Victorian church, embraces the idea of a heated dispute between scientists and theologians during the latter half of the nineteenth century. Even so, he acknowledges that for many no contention existed. He cites geologist Charles Lyell as an example, noting that Lyell "remained a practicing Anglican all his days, and if someone had said to him that Darwin proved the Bible untrue, he would not have assented, for his own geology helped create the intellectual situation" that made Darwin's work possible (2: 6-7). While the route *Annals* takes to reconcile religious belief and scientific research differs from modern science, for many Victorians Milton's arguments represented a reasonable explanation of potentially conflicting information. Like Lyell, Milton resolves apparent contradictions between new research and scripture in a way that preserves the integrity of biblical truth. When scientific

research investigates God's laws and creation, no possibility exists that the outcomes of that research could disprove the existence of those laws.

To keep God at the center of research and to insure that humanity will maintain the awe necessary to undertake that research, the universe constructed by the novel must constantly expand: the twin spirals of faith and science continue into the infinite. A finite universe, whose occupants devote themselves to research into God's creation, would jeopardize the moral fabric of the universe. Dick speculates that on some planets the inhabitants "may be only emerging from the first principles of science, like Adam soon after his creation" while others "having contemplated for ages, a wide extent of creation, in *one* district of the empire of God, may be transported to a new and distant province of the universe, to contemplate the perfections of Deity in another point of view" (*Future State* 207). Those beings who maintain moral rectitude spend eternity in endless investigation of creation. Milton's Venusian tutors explain that

"even the souls of the saints find scope for illimitable improvement, for knowledge is infinity, and progress knows no goal. The angels Gabriel and Michael are today . . . infinitely advanced in heavenly truths from the time they had dealings with mankind, but still they are scholars, and will be so for ever and ever. Endless advance being thus open to the glorified spirits, there is in the future life neither monotony nor *ennui*, weariness nor rest." (3: 127)

As humanity nears a return to moral rectitude by separating the chosen from the unchosen, the only goal for the chosen is scientific research, protected by God from any possibility of boredom by exposure to infinite opportunities for new discoveries. For Dick, proof of a Creator comes from careful observations of the natural world, and those

observations will continue into the millennium. He writes that he could “not suppose that there is a holy being throughout the universe that is not employed, in one mode or another, in scientific research and investigation” because such a belief assumes “that there are moral intelligences who are insensible to the displays of the Divine glory, and altogether indifferent, whether or not they make progress in knowledge of their creator” (*Future State* 129). To direct research away from God demonstrates a lack of the qualities that are a prerequisite for natural theology: a sense of awe and humility, guided by moral imperatives in the pursuit of knowledge of creation. The need for progress never ends because, without the gap in knowledge, research—the appropriate occupation of the faithful—would cease.

Because the novel embraces natural theology, no place exists for the elite professional who was just beginning to emerge as the novel appeared, demonstrating the need for collective, external change rather than a purely individual and spiritual change. Science is the province of saints and angels and the employ of all humans working toward moral regeneration. The access to and application of natural knowledge cannot remain in the hands of an elite minority. Dick argues that humanity can facilitate the millennium, “provided his *rebellious will* were subdued, and his moral energies thoroughly directed to this grand object” (*Christian Philosopher* 163). Humanity, rather than a select minority, bears responsibility for moral and scientific investigations. The amateur scientist, whose role in the collection of natural knowledge began to wane in the late nineteenth century, partially embodies the scientist-archangels Gabriel and Michael.

Science historian Bernard Lightman argues that “a sharply demarcated community of scientists working within specialized disciplines like biology and physics did not exist until the 1870s at the earliest” (10). *Annals* reflects the preprofessional understanding of homogenized science; the characters undertake projects from multiple disciplines: geology and geo-engineering, linguistics, botany, wildlife biology, and so on. The politicians who argue to initiate the geographic reform, Brindley Telford and Rennie Smeaton, join Stephenson Watt and the narrator in a survey of the Andes prior to the mountains’ removal (1: 64). In the characters’ abilities to shift between politician, explorer, and engineer, the novel enlarges upon the idea of the Victorian naturalist and curator, imagining the professional scientist of the future as a dynamic investigator working across multiple disciplines. Historian Barbara Gates observes, “Boundaries dividing amateur from professional scientist were fluid” during the nineteenth century (181). She argues that the “central focus on basic observation, rather than on theory, set Victorian natural history apart from the growing scientific professionalism of the middle to later nineteenth century” (182). With God providing the theory that drives inquiry, observation becomes the sole focus of science. Dick argues that “[t]he most appropriate and impressive illustrations of Omnipotence” are “those which are derived from a detail of the facts which have been observed in the material world” (*Philosophy* 17). The amateur scientist of the nineteenth century becomes the saintly scientist of the millennium, guided in observations by laws abstracted not from observation but from

theology. Should one mistake the natural order and use observation to develop theory, the results would confirm theological law, as in the case of the prayer gauge.

Within the world of the novel, Romantic-era natural theology combines with postmillennial ideas of human progress, subsuming contemporary research and resisting calls for the secularization of science. While *Annals* parallels Dick's ideas about both the universe and the relationship between humanity and God, the arguments offered in the novel appear as these ideas begin to wane. The combination of contemporary science with the rapidly disappearing values of an earlier era offers a critique of science, urging readers to conserve those values. The ideological world of the novel requires a constantly expanding universe, with humanity striving towards an unobtainable perfection through scientific knowledge of creation. This world both demands human agency and creates a dynamic in which all actions will ultimately fail to produce perfection. By asking readers to rethink the possibilities of human scientific endeavors and the purpose behind those endeavors, *Annals* acts as a significant cornerstone of what will become the science fiction genre, which at its best invites a rethinking of humanity as a result of scientific knowledge.

## CULTIVATING “THE HAUNTS OF BARBARISM” THROUGH SCIENCE AND EVANGELICAL AGENCY

In *Annals* God provides humanity with science to unite the world in one Christian nation preparatory to the return of Jesus. Revelation prophesies that while “all nations shall come and worship” God (15:4), one people, “they that are written in the Lamb’s book of life” (21:27), will actually inhabit the New Jerusalem. In the novel, only the white citizens of the World-Republic are written in the Lamb’s book, other skin colors having been eliminated through advances in science. God supplies the agency for the millennium in the form of the scientific knowledge necessary to recreate the planet and humanity. Because the novel defines science as natural theology, scientific research and theology work together to justify, valorize, and make possible colonialism. Through this combination, colonialism becomes a divine directive, scientifically sanctioned by moral and material law. Science and scientific progress, indistinguishable from religious and moral progress, validate, naturalize, and obscure the violence of colonialism, shielding the characters from awareness of or responsibility for the elimination of nonwhite, non-Christian peoples. Science grants humanity the means to effect change, but at the same time God directs the researchers’ efforts. As a result the characters enjoy a position in which they have agency but can point to God and prophecy as the means for change. This paradoxical state of both agency and non-agency leads to the need for a new term, “evangelical agency,” as described in the Introduction. The mask of evangelical agency cloaks violence in the guise of brotherly love. Leaving the confines of natural theology

becomes untenable in part because the characters, rather than God, would bear responsibility for their actions. The novel's interpretation of millennialism as a scientific endeavor reveals the way potentially competing ideas about science and faith combined during the Victorian era to celebrate and spur British hegemony and colonial expansion.

In *Annals* God provides the world with technology so that humanity can employ that technology to perpetuate the gospel; God, rather than humanity, selects an agent and a tool. Dick highlights the role of science in the spread of the gospel. He argues that “though ships in abundance were equipped for the enterprise, and thousands of missionaries ready to embark and to devote their lives to the instruction of the pagan world—all would be of no avail, and the ‘salvation of God’ could never be proclaimed to the ends of the world, unless they had a mariner’s compass to guide their course through the trackless ocean” (*Christian Philosopher* 112). Material advantages, knowledge of the gospel, and a willingness on the part of Christians are not enough for the salvation of “the pagan world.” Only with adequate technology—the compass, in Dick’s example—can the gospel spread. Dick concludes from the example of the compass that “[i]n this invention, then, we behold a proof of the agency of Divine Providence, in directing the efforts of human genius to subserve the most important designs, and contemplate a striking specimen of the ‘manifold wisdom of God’” (*Christian Philosopher* 112). God provides humanity with technology with the ultimate aim of creating a Christian world. The power to spread the gospel and the responsibility to do so are divinely mandated and

historically inevitable. The human agents of change are passive vessels propelled by God.

Milton, the narrator, offers a critique of earlier efforts to colonize and Christianize the world, revealing both the need for action and the passive nature of the actors. He acknowledges the links between science, colonialism, and Christianity, lamenting the nineteenth century's inability to capitalize on technology's benefits. To better act as "spiritual lamplighters to illuminate the dark alleys of heathenism," Milton argues that Victorian leaders "ought to have organized huge scientific missions, as the forerunners of Christianity. Legions of men in buckram and moleskin, armed with hammers and trowels, ought to have been sent into the haunts of barbarism to propagate progress" (3: 133). Only scientific knowledge offers the ability to dispel the "haunts of barbarism." Rather than bibles, the instruments of science in the hands of the missionary-observer best "propagate progress" in the "dark alleys of heathenism." Cultural progress, made possible through scientific knowledge, brings the indigenous barbarians into modern history and into the Christian brotherhood. Of his own time Milton writes, "Religion, with its right-arm, science, is going on conquering and to conquer" (2: 193). Natural theology, rather than secular science, makes conquering possible. Only in synergy can science propagate the religious unity required for the second advent. Milton's statement highlights the passive role the World-Republic plays: science and religion, rather than human actors, rid the world of barbarism.

In the novel the technology that science brings (rather than a human agent) works first to demarcate and then to eradicate “the haunts of barbarism.” God supplies technology to make clear the disparities between superior and inferior and arms Europeans to make the elimination of the inferior possible. Theology provides the ultimate aim of science: the creation of a homogenous people morally and physically prepared to welcome Jesus at the second advent. The elimination of inferiors becomes a prophetic mandate, with the responsibility for the ensuing loss erased by divine authority. The Venusians lament the failings of the nineteenth century, which they declare should

Let the iron horse ride its all-conquering course through the deserts of Siberia, into the very heart of Tartary and China. Animate with the genius of knowledge and the spirit of commerce what have been stagnations from the deluge. Do this, that the savages of Tartary and the heathens of China may fall into the ranks of Christianity. Push on, too, your labours into the heart of Africa. Send not isolated travellers, but drive on locomotives, with thousands of the apostles of art, and trains laden with machinery, to plant on its desolate bosom. Do this, that Hottentots and Caffirs may crouch beneath the sovereignty of Christian intelligence. Let the invasions of philanthropy be prosecuted into the haunts of barbarism. There let the assaults of religious science batter down the strongholds of ignorance. Onwards let the glorious cause spread, until all the fungoid vegetations of error be eradicated from God’s earth. (3: 159)

Rather than missionaries with the gospel, the technology of the superior Christian nations conquers the barren lands of the non-Christians. The Venusians equate barrenness and distance from European metropolises with stagnation and desolation. Non-Christian nations, unfit to help God conquer, retard progress toward the millennium. With the deployment of technology, “heathens” will “fall” into Christianity: the indigenous people submit to the power of the railway, making conversion inevitable. Conversion breaks

down the “strongholds of ignorance,” but racial binaries remain intact. The Hottentots and Caffirs “crouch” before their philanthropic prosecutors. The spread of Christian sovereignty, a sovereignty which highlights both authority and state governance, dovetails with the “spirit of commerce” to force “progress” on cultures who have failed to progress in accordance with the historical prerequisites for the millennium. The railroad spans not just the distance between geographic points, but also the distance between the fungoid past and the future of the millennium.

By providing a physical means of demarcating the barbaric past from the productive future, the railroads help eliminate the peoples and ideas that have retarded the millennium. Milton reflects that nineteenth-century statesmen needed “[i]ron horses to invade the land, and iron leviathans to invade the shores and rivers of uncivilized nations,” and that these “ought to have been made the evangels of knowledge; for the moment the highways of progress had been laid, and the iron limbs of art had pierced the hearts of savage lands, the armaments of darkness and superstition would have been hopelessly demolished” (3: 133). Again, technology, rather than the gospel, evangelizes, piercing geography with knowledge that exterminates barbarity in preparation for the millennium. The language frames the appropriation of non-Christian lands in terms of a battle between civilized Christian technology and the darkness of savage ignorance. The physical products of technological knowledge reveal the intangible moral and intellectual superiority of the civilized Christians.

The railways and steamships act as the “seed” of the millennium, planted by loving hands hoping to grow a worldwide brotherhood. Milton reports that as global transportation improved, “[t]hen were cradled the great schemes by which the prejudices of peoples were overthrown, and by which were obliterated those imaginary lines called boundaries” (2: 59). Milton chastises nineteenth-century readers, who focused on “erecting monuments,” while instead, the “British nabobs” ought to “have knit all the nations of the earth by the loving ties of railways and telegraphs” (3: 182). Indigenous rights to sovereign statehood represent a barbarous prejudice that Christian intelligence must overthrow before the world can enjoy the millennium. Rather than violent appropriations, Christianizing the haunts of barbarism unites the world with loving ties. What first pierces the heart of the non-Christian lands later acts as the unifying bond of a worldwide Christian republic. Critic John Rieder argues that although the technological advances of the late nineteenth century “in communications and transportation bound the world economy more tightly together, they also marked out ever more clearly the boundaries separating the developed world from the undeveloped one” (28). The millennium requires the redevelopment of the entire planet and the elimination of undeveloped regions. Telegraphs and railroads act first as boundary markers in a heterogeneous world and then as the binding agent in the homogeneous world. Secular science, unable correctly to interpret data, provides an impediment to the colonial machinery, while natural theology, able to recognize the moral applications of science, makes possible and valorizes colonial appropriations.

While the myth of empty lands often works to hide the violence of colonialism, in the novel the barrenness of empty lands invites appropriation. Milton's explanations of history glorify the acts of colonialism which raise the Christian banner across empty, wasted lands. Once pregnant with verdant agriculture and commercialism, the planet becomes one city of kindred: the metropole completely absorbs the colonies. Rieder notes the prominence in science fiction of the role of the "discoverer's fantasy: We know very well that there are people living in this land, but we act as if it were empty before our arrival" (31). The myth of unoccupied land hides the violence and loss that result from colonization. *Annals* perpetuates this myth by portraying colonized lands as empty before the arrival of explorers. In his travels to Africa with Cobden Bright, Milton reflects on the "pioneers who pierced its [Africa's] arcana," listing Bruce, Speke, Grant, Baker, and Livingstone (1: 94). He explains that the "[f]ormerly unknown and untrodden region" now "pulsate[s] with the full vigour of commercial life" (1: 94). They also visit "the beautiful country of the Sahara," which is now "an Eden" (1: 95). Rather than a continent filled with nations, Milton sees Africa as "unknown" and "empty." Millennial prophecy requires the elimination of the barren desert, with God's science replacing the marks of sin with the verdancy indicative of moral progress. The geographical reform represents moral and physical progress as a temporal step backwards: the culmination of millennial science returns the planet to the physical state enjoyed when humanity retained the moral qualities requisite for life in Eden. Working with the myth of empty lands, critic Anne McClintock develops the idea of "anachronistic space." She argues, "The

colonial journey into the virgin interior reveals a contradiction, for the journey is figured as proceeding forward in geographical space but backward in historical time, to what is figured as a prehistoric zone of racial and gender difference” (41). *Annals* uses anachronistic space not as a way to highlight racial and gender differences, but instead to recapture racial purity. The Eden produced by millennial science is enjoyed by one people, chosen and directed by God.

Millennial progress requires the careful elimination of anachronistic spaces, both on Earth and throughout the solar system. The geographical reformations cleanse the planet of the physical signs of prehistoric time, removing any traces of the primitive. The novel singles out Africa and Siberia for discussion, two areas representing both racial and moral anachronism to contemporary readers. According to McClintock, during the Victorian era “Africa came to be seen as the colonial paradigm of anachronistic space, a land perpetually out of time in modernity, marooned and historically abandoned” (41). Rather than marooned, Africa (the birthplace of the narrator) has been carried into modernity. Contemporary representations of Russia in *The Graphic* depict the nation as backwards and ripe for colonization. Reporting in 1871 on the prosecution of the Netschajew revolutionaries, *The Graphic* expressed “fear that if Russian internal policy does not hasten to conform to the requirements of progress the consequences may be disastrous” (“Revolutionary Conspiracy” 115). A review of Herbert Barry’s *Russia in 1870* describes “[t]he wonderful progress of Siberia, than which no country in the world offers greater interest to the small capitalist,” and notes the “lively sketch of the great fair

of Nijni Novgorod, whither, it would seem, Siberian merchants send their heirs to acquire knowledge of the world and sow their wild oats once for all in one great debauch” (“New Books” 178). Failing to “conform to the requirements of progress” threatens to unleash revolutionary consequences in an anachronistic space used for debauchery. In contrast, devoting resources to progress rewards the capitalist, ridding the globe of the anachronistic spaces that threaten the homogeneous brotherhood of the World-Republic.

By linking contemporary discourses about anachronistic spaces to millennial prophecy, the novel creates a biblical mandate for appropriation: God provides both the solution for political and social problems through science and removes responsibility for the absorption of the colonies by the metropole. Dick sees in the migration of Europeans to colonial territories “a part of those arrangements of Providence, by which the Creator will accomplish his designs, in peopling the desolate wastes of our globe, and promoting the progress of knowledge and of the true religion among the scattered tribes of mankind” (*Christian Philosopher* 71). *Annals* shares Dick’s vision of “peopling the desolate wastes,” ignoring the negative consequences for indigenous peoples. Rieder notes the prevalence of what he calls the “missionary fantasy” in the science fiction genre, which “posits as a matter of faith” the belief that “the old ways must give way to the new ones with the inevitability of the past becoming the present,” and that “this change is ultimately self-evident even to those who may appear to suffer from the process” (31). The geographic reforms prompt Milton to remark, “Chaos had been disinherited of all his former earthly possessions. We had rendered the crust of the globe

but one large piece of artificial typographical sculpture—one large Eden” (1: 218).

Rather than causing suffering, the appropriation of anachronistic space results in the fulfillment of history’s ultimate aim. Milton sees the World-Republic eliminating the sin of chaos, not people. Instead of a “missionary fantasy,” the characters operate under missionary science: history, God, and correct interpretation of natural knowledge demand colonialism. Rather than causing suffering, the elimination of anachronistic spaces leads to the contentment of the millennium.

The need to remove the primitive extends to the physical body: science (God) demonstrates the scale of human “races.” Moral progress requires the elimination of atavistic features linked to sin. God provides the means to recognize and ameliorate the physical signs of sin in the promotion of racial purity. Millennialism, the historical account of the chosen people, combines with nascent anthropology to give a moral and a scientific mechanism for the elimination of nonwhite races, not just naturalizing violence but attributing the elimination to divine strategy. Following the Chinese and Japanese invasions that mark the beginning of Armageddon, Milton reports that “[t]he races of the earth were so commingled, that the rankling rancours between peoples were swept away for ever. Jew and gentile, bond and free, Teuton and Latin, black and white, merged into one great brotherhood. The unity of humanity was, for the first time, practically consummated” (3: 154-5). Milton explores the practical consummation of this unity in a section of his historical treatise entitled “Physiological Incongruities,” explaining that in premillennial times “[e]ven in appearance men were repulsive. Many had skins as black

as pitch, and all were more or less impressed with the die of ugliness. In disposition all were more or less steeped in barbarism. The most handsome were only defaced impressions of the seal of beauty” (2: 185). His analysis links physical features to moral qualities. The elimination of the marks of sin make the brotherhood of the millennium possible. The one people prophesied in Revelation represent a racially as well as religiously homogeneous group, with internal spiritual growth demarcated by external racial changes. As the moral and physical renovation of humanity begins, Milton reveals that “the rivers of science swept away those Augean amenities, Physiological hyssop then washed the pigment of from the skin of the black, and abolished all physical abnormalities; while practical metaphysics, by dint of the heavenly curb of self-denial, blunted the force of the morbid appetites, and, by means of godliness, purified men’s souls” (2: 186). Just as God provides the compass to further missionary activities, millennial “hyssop” washes away physical and racial differences that impede the consummation of the “one great brotherhood.” Science and godliness work to purify humanity. Discussing the different primates that work in the zoological armies, Milton reflects on the difference between the physical abilities between these and humans, which “showed how immeasurably astern of the brute creation was man in corporeal attributes; and that, but for his mind, he could not have maintained a place in creation. Too stiff and slow to flee from danger, and defenceless to face it, but for his artifice a few years would have sufficed for his extermination” (1: 76). Milton removes humanity from the selective pressure Darwin identified as the mechanism for speciation. Mind and artifice, the gifts

from God rather than from evolution, account for the physical changes that distinguish millennial bodies from premillennial bodies.

Milton's explanation of the racial purity of the millennium combines discourses from early nineteenth-century missionaries with newer ideas from nascent anthropology, attributing social progress to racial progress brought about by divine intervention. While Romantic-era missionaries used stereotypical racial characteristics as a metaphor for sin, the Christian conversion of nonwhites remained possible. In the novel the same racial characteristics require not conversion, but elimination: God provides a "hyssop" through science, washing "the pigment from the skin of the black." Milton's discourse on race associates sin with pigment and moral progress with hygiene: the unhealthy, morally corrupt pigment is "washed" through the agency provided by God. Science historian Douglas Lorimer argues that by "[e]xploiting the symbolism of black and white," the discourse of early Victorian abolitionist and missionary groups on race "delighted in the polarities of good and evil," both "depict[ing] the sinful and degraded conditions" of "savage" peoples while simultaneously offering "the possibility of a spiritual conversion that allowed these same savages to express an innate Christianity" (213). The novel makes use of the racial/moral binaries established by missionary discourses, but requires a physical rather than spiritual conversion before the "savage" can express "innate Christianity." According to Lorimer, as anthropological research evolved, the scientific discourse on race preserved "the negative aspects of peoples designated as sinners, or savages" while denying the possibility of change, instead "advanc[ing] the deterministic

case that the existing characteristics and inequalities of race were a fixed product of nature” (214). The novel combines the missionary binary with the anthropological account of fixed, unchanging racial characteristics, not just naturalizing racial inferiority but linking it to the dialectical historical framework of the millennium: God must provide a mechanism for the hygienic elimination of black skin before humanity can unite in a common brotherhood.

At the same time that World-Republic seems to achieve the goal of purity, the solar family and divine plans insure that the goal remains unreachable. Contact with other members of the solar family brings new technology, helping the World-Republic to narrow the racial gap, but also maintains racial stratifications. Milton predicts,

Our inhabitants shall fraternize with their brethren in every planet, and the various planetar races shall go up to our mother-world the sun, and there embrace each other as common children of the Most High. To suppose that brother-worlds shall always be unknown to each other, and that the stars shall roll on in their eternal gyrations, with their inhabitants immured in stellar prisons, is surely derogatory to the ideas of Christian progress.  
(2: 196)

Milton’s language creates a stratified family out of the solar system and its inhabitants.

The sun, at the center, occupies a parental position to the sibling planets, which must unite in brotherhood in order to fulfill the object of Christian progress. The racial purity of the millennium makes the meeting of those brother-worlds possible. Reflecting on premillennial times, Milton remarks, “When the coalescence of the scattered and seemingly heterogeneous fractions of the ruined race of Adam was a work so divine that Heaven sealed it with success, what term is worthy to be applied to the coming federation

of the whole solar family?" (2: 247). Milton equates racial heterogeneity with ruin and attributes the possibility of the solar family to divine agency, which marks the union with success. Racial variation and moral delinquency preclude the meeting of the solar family, but through divine agency family members begin to meet one another.

Although family members will "embrace each other as common children," the same physical/moral binary that mars human progress in the past emerges in the interactions of those common children. While the Venusians give Milton a warm reception, he sees that "it was accompanied with so significant evidence of their sorrowing amazement" due to his "un-Venus-like unsightliness," which fills him with shame (3: 42). Comparing humanity to the Venusians, Milton writes, "Perceiving the goal of purity, I was humbled in the dust, when I saw how distant therefrom was poor man" (3: 46). While the World-Republic has developed from inferior barbarian to civilized brotherhood, the meeting with members of the solar family reveals a new scale of racial purity. Just as Victorian anthropologists linked progress to specific physical traits, those Venusians who have progressed further also bear physical signs of superiority. The Venusians suffer from no illness, partly because of the atmosphere, but also because the "inhabitants possessed no weak links in the chain of their organization" (3: 49). While the Venusians surpass the inhabitants of Earth, the Venusians themselves lag behind the inhabitants of Mercury. The Mercurians, who exhibit a purely spiritual, rather than corporeal, bodies, "were infinitely superior to all the solar races in heavenly wisdom, as they were likewise immeasurably their seniors" (3:

238). Moral and intellectual superiority remain linked to physical characteristics. The characters are subject to their anatomical structure: only time and divine intervention can amend racial shortcomings.

Amending racial inferiority requires divine intervention rather than natural selection in part because contemporary discourses on anthropology interpreted racial and moral features as beyond the scope of evolutionary pressure. The assembling of the solar family allows the viewing of the potential range of anatomical progression, from the all-white brotherhood of the World-Republic to the pure spirits of Mercury. The solar family provides a regulatory regime in which potentially violent appropriations instead demonstrate loving familial ties, with the morally and physically mature members providing parental care to the inferior members. Science historian Nancy Stepan credits Darwin's theory of natural selection with producing "a shift . . . in which culture and the social behaviour of man became epiphenomena of biology," with the result that "[r]aces were no longer thought of as the superficial and changeable products of climate and civilization . . . but stable and essential entities which caused or prevented the flowering of civilised behaviour" (4). While Darwin's theory of natural selection predicated itself on the mutability of traits, Stepan describes the way that Victorian anthropologists both embraced natural selection and still maintained the fixed nature of racial characteristics, explaining that "scientists on the whole interpreted evolution in such a way as to make natural selection no longer operative on physical man, so that racial types could be thought of as extremely old and fixed" (85). The physical signs denoting racial types

required careful measurement. Biometrics, applied to different groups of humans, “suggested that the traditional hierarchy from Negro to European man based on European ethnocentricity was now ‘proved by modern science’” (Stepan 14). Victorian anthropologists interpreted biometrics as “merely a simple and outward sign of the graded series of complexity of mental organisation and animality in man” (Stepan 15). During the latter part of the era, “[t]he standard textbooks in anthropology took the idea of a natural hierarchy of human organisation and function for granted” (Stepan 18). Progress in the world of the novel requires both physical and moral renovation because prevailing ideas of race linked the two: thus, the citizens of the World-Republic constitute a homogenous body partially purified of the moral degradation brought by original sin, and their physical bodies attest to that purification. However, since the possibility for racial progress lies outside the abilities of natural selection, divine agency becomes necessary.

Because the novel’s understanding of natural theology links scientific advances to divine will, the mechanism for racial change is both scientific and natural—acting on body pigment—and also divine. The hierarchies of the solar family legitimize the organization of graded physical and moral characteristics determined by anthropologists. Rather than human in order, the scale becomes universal. McClintock describes the “social evolutionists” as taking “the divine, cosmological tree and seculariz[ing] it, turning it into a switchboard image mediating between nature and culture as a natural image of evolutionary human progress” through the production of the human “Family

Tree” (37). The novel takes that secularized vision and returns it to the realm of religion through natural theology: the mediation between nature and culture requires not secularization, but divine intervention. McClintock uses the racial hierarchies established by anthropologists to illustrate the way “[p]rogress takes on the character of a spectacle, under the form of the family. The entire chronological history of human development is captured and consumed at a glance,” with the result “that anatomy becomes an allegory of progress and history is reproduced as a technology of the visible” (38). The anatomical hierarchy of the solar family reproduces an allegory not just of human history and progress, but of theological progress and divine beneficence. Racial purity provides a gateway to a closer relationship with the divine, through a new gospel, new technology, and the promise of further progress. McClintock argues,

After the 1850s, the image of the natural, patriarchal family, in alliance with pseudoscientific social Darwinism, came to constitute the organizing trope for marshaling a bewildering array of cultures into a single, global narrative ordered and managed by Europeans. In the process, the idea of divine nature was superseded by the idea of imperial nature, guaranteeing henceforth that the “universal” quintessence of Enlightenment individualism belongs only to propertied men of European descent. (45)

In McClintock’s analysis, the Family of Man first depicted by anthropologists becomes cultural ideology, creating a paradigm in which European men become the pinnacle of racial progress, able to categorize “inferior races.” Those categories provide a stable, scientific regime that naturalizes European control over inferior races. The secularized family of man replaces the idea of a human family created by God, creating scientific justification for European imperialism.

The world of the novel requires no such secularization of the Family of Man. Instead of superseding divine nature, imperial nature works in perfect harmony with natural theology. Science combines with theology to valorize the physically and morally superior descendants of the European enlightenment. European superiority becomes not just a product of nature, but of divine will. The more-than-European Venusians, as higher-ranking members of the family, control the flow of knowledge and technology to Earth to promote divine will. During the ecumenical conference on human history, Milton describes himself as “super-amazed to find that Venus possessed not only a knowledge of our affairs, but actually understood many facts concerning us of which we ourselves were uninformed” (3: 65). As a superior race, the Venusians understand humanity better than humanity understands itself and therefore understand (better than humans can) what will best benefit humankind. Upon reaching portions of the Venusian scriptures that he finds “inscrutable,” Milton’s tutors urge, ““Confine thyself to what thy mind can master. Heaven did not intend the mole to grasp such a mighty eyeful as the eagle”” (3: 64). Finding Earth “so far astern of Secundus [Venus] in the highway of progress,” the Venusians Experientia and Bonitas return with Milton “to act as missionaries to mankind” (3: 202). Rather than acts of domination and violence, as the racially and therefore morally superior Venusians intervene in the lives of the World-Republicans, they do so as family members. The cloak of familial ties colors the interventions as acts of love, chosen to speed humanity further along “the highway of progress.”

The world of the novel is predicated upon the continued relevance of natural theology, with material science and moral science both revealing the will of God. The moral and the physical world work like dovetailed joinery: without one, the other fails, suddenly revealing the violence and racial hatred latent in Milton's chronicle of the millennium. Natural theology offers the inner world of evangelical spiritual change the ability to externalize. Spiritual rebirth becomes a physical rebirth for both the planet and humanity. Correct reading of the moral world prompts research into the physical world, with God delivering the means to affect change as humanity reaches the predetermined stage in its progress. Without God at the center delivering the science needed to create change, the actions of the World-Republic become a retelling and glorification of British expansion, with the characters responsible for the loss of indigenous people across the globe. By maintaining the presence of a benevolent and active God at the center of all human endeavors, the events described in the novel become part of an inevitable historical framework bringing humanity closer to God.

## CONCLUSION

Milton's harmonious life during the millennium seems to result from humanity's concerted effort to apply scientific maxims to both the planet and themselves. He seems to invite nineteenth-century readers to develop better methods of agriculture, transportation, and technology to create a Christian utopia. Yet the freedom from strife enjoyed in the millennium comes not from human endeavor, but from the fulfillment of Christian prophecy. God provides science to humanity to further the consummation of historical eras. The non-agency of science, coming from a divine source, creates a theological basis for the elimination of nonwhite and non-Christian peoples as the Christian brotherhood of the millennium coalesces. Because the millennium offers room for only one kind of people, and because the traces of original sin mark the human body, only through the cleansing of the physical body can humanity unite into the promised brotherhood. Rather than a violent extermination, the novel proposes a hygienic and familial response to race: the new technology provided by God will allow brothers to wash away atavistic contaminations. Internal spiritual change necessitates external physical changes, the actions for which become possible through evangelical agency. Spiritual and physical worlds maintain a synergistic balance. The resultant racial purity allows humanity to assume a role in the solar family, furthering moral and technological progress.

Rather than a planetary brotherhood, a new solar family offers further opportunities for human progress. As *Annals* concludes, Milton begins his voyage to Jupiter. With assistance from kind patrons on Mars and Venus, renovations to the Earth's atmosphere create a more purified environment. The Venusians have brought the new gospel, and the World-Republic has benefited from access to new technologies. Scientific research continues to corroborate Christian theology. The novel ends flush with the hope of postmillennialism: by maintaining the values of natural theology and devoting sufficient resources to science and technology, humankind can abandon an existence of sin, despair, and death and instead join the saints of the universe in the ever-expanding search for natural knowledge of the divine. At the same time, the hierarchies of the human family remain entrenched in the solar family, with the Mercurians' bodies of pure spirit representing the pinnacle of development and humanity representing the nadir. With each step forward along the scale of progress, the possibility for perfection becomes both more fully realized and further away. The novel's universe is structured so that God remains at the center of all endeavors, with the characters coming ever closer but never reaching divinity.

Setting the events of the novel during the millennium created a space for critique that made possible the evaluation of human history. While the difference between the world of the novel and the world of the reader makes that critical space possible, it also naturalizes racial and cultural differences and the expunging of those differences. As a fictional account of contemporary conversations about race and science, *Annals* reveals

the inability of researchers to apply the scientific method objectively. The work of early anthropologists suffered from an inability to separate “science” from cultural discourses linking physical traits to moral and psychological traits. The Eurocentric homogeneity of the World-Republic realizes the racist assumptions built into seemingly objective research: that over time, “superior” races would dominate while “inferior” races were destined for oblivion.

The novel appropriates millennialism to naturalize the triumph of one superior people over all others. Following the destruction of Babylon, only the saved Christians remain to rule with Jesus in the city of saints. Just as racial characteristics create what McClintock calls a physical stigmata, the prophesy of Revelation describes physical marks separating the chosen from the doomed. Invoking millennialism transforms the violence of colonialism into the realization of divine will: rather than actions taken by individuals, the agents of colonialism become players in a scripted drama, predestined for world supremacy by a loving God. From his vantage point at the end of history, Milton can assure readers of the mechanism which makes the millennium possible: science, the chain that binds the devil and prepares the world for Jesus’ return. However, since science comes directly from God to accomplish divine will, theology and science work together to form the racially pure World-Republic.

Only through the moral and physical reclamation of the planet and the body can humanity take its place next to the other members of the solar family. Meetings between the World-Republic and the other members of the solar system reinscribe nineteenth-

century colonial discourses. Racially superior members of a loving but heterogeneous family provide paternal care to the inferior members, furthering the goal of universal Christian progress. From the vantage point of the twenty-ninth century, Milton can explain to his nineteenth-century readers the “correct” processes for settlement and spreading of the gospel: scientific exploration, reclamation of “unused” lands, and benevolent intervention, carefully tailored to the understandings of inferior abilities. Through such benevolent intervention, humanity can expand its research efforts across the infinite universe.

The image of saints engaged in research across an ever-expanding universe, motivated by appreciation for the Divine Creator, correlates with Dick’s image of the millennium. *Annals* shares Dick’s belief in the majesty of astronomy, the clockwork universe which demonstrates the love and infinite power of God. *Annals* also shares elements of its vision of the future with other precursors of the science fiction genre. Like Edward Bulwer-Lytton’s *The Coming Race*, the characters use electric wings for travel and recreation. Giant cannons, such as those used by the World-Republic, also allow space travel in Jules Verne’s *From the Earth to the Moon Direct in 97 hours 20 Minutes*, an English translation of which appeared a year prior to Blair’s novel (Clarke 7). Suvin suggests that Blair borrowed from Wladyslaw Lach-Szyrma’s 1883 *Ariel*, a portion of which circulated concurrently with *Annals* (Rise 154). Because of the discrepancy in publication dates, it makes more sense to explain the similarities as coincidentally similar extrapolations of popular science texts which speculated about life on other planets.

Rather than just indiscriminate borrowings, these textual similarities suggest authors responding to a common, ongoing discussion about the changes technology would bring to future life. *The Scotsman's* anonymous reviewer complains that Blair “only pursues to the extreme conclusions to which scientific investigation already points” (3). For this critic, the novel lacks originality because it merely envisions things that popular science suggested would shortly come to pass, not because it shares elements with previously existing works.

Blair’s extrapolation from popular science to create a social critique places the novel firmly within the realm of what critics after 1920 recognize as science fiction. The novel asks readers to re-examine assumptions about what “science” looks like and why, exploring the ways changes in scientific knowledge alter human institutions and relationships. While modern readers may blanch at the mixture of Revelation and science, the book offers an intellectual link between the science of Sir Isaac Newton, himself an eschatologist, and contemporary secular science.

Modern criticism has focused on locating a space for *Annals* in the science fiction genre without attempting to reconcile conflicting visions of what science is and should be. Exacerbated by the novel’s obscurity, current literature reflects in part the trends in the history of science. As the history of science shifted from studies of “great men of science” in the nineteenth century and began to explore popularizers of science, and as a corresponding shift began to problematize the previously accepted idea of a nineteenth-century battle between faith and science, works such as Dick’s have come back into

academic circulation., Historians now recognize the complexity of Victorian discussions about the sciences rather than understanding Victorian science as a monolith with an ultimate trajectory. Working with the precursors that form the roots of science fiction requires a careful delineation of which kind of science the novel purports to fictionalize. *Annals* asks contemporary readers to reexamine their relationship to science and to question the shift away from natural theology towards materialism—for to do otherwise readers would risk losing the benefits of evangelical agency.

## Works Cited

- Astore, William J. *Observing God: Thomas Dick, Evangelicalism, and Popular Science in Victorian Britain and America*. Farnham: Ashgate Publishing, 2001.
- Blair, Andrew. *Annals of the Twenty-ninth Century; or, The Autobiography of the Tenth President of the World-Republic*. London: Samuel Tinsley, 1874. Print.
- “Books of the Week.” *The Examiner* 21 February 1874: 190-1. Print.
- Carpenter, Mary Wilson and George P. Landow. “Ambiguous Revelations: The Apocalypse and Victorian Literature.” *The Apocalypse in English Renaissance Thought and Literature*. Ed. C.A. Patrides and Joseph Wittreich. Ithaca, NY: Cornell University Press, 1985. 298-322. Print.
- Chadwick, Owen. *The Victorian Church: An Ecclesiastical History of England*. New York: Oxford University Press, 1966. Print.
- Christensen, John M. “New Atlantis Revisited: Science and the Victorian Tale of the Future.” *Science Fiction Studies* 5.3 (1978): 243-9. JSTOR. Web. 14 December 2009.
- Clarke, I.F. “The Nineteenth Century Utopia.” *The Quarterly Review* 296 (1958): 80-91. Print.
- Dick, Thomas. *Celestial Scenery: or, The Wonders of the Planetary System Displayed*. New York: Harper and Brothers, 1838. Google Books. Web. 21 November 2010.

- . *The Christian Philosopher, or, The Connexion of Science and Philosophy with Religion*. Hartford, CT: Sumnar and Goodman, 1849. Google Books. Web. 21 November 2010.
- . *The Philosophy of a Future State*. New York: R. Schoyer, 1831. Web. 29 December 2010.
- Dixon, Thomas. "Looking Beyond 'the Rumpus about Moses and Monkeys': Religion and the Sciences in the Nineteenth Century." *Nineteenth-Century Studies* 17 (2003): 25-33. Print.
- Freedman, Carl. *Critical Theory and Science Fiction*. Middletown, CT: Wesleyan University Press, 2000. Print.
- Gates, Barbara T. "Ordering Nature: Revisioning Victorian Science Culture." *Victorian Science in Context*. Ed. Bernard Lightman. Chicago: University of Chicago Press, 1997. 179-186. Print.
- Harrison, J.F.C. *The Second Coming: Popular Millenarianism, 1780-1850*. London: Routledge and Kegan Paul, 1979.
- Huxley, Thomas Henry and William Jay Youmans. *The Elements of Physiology and Hygiene*. New York: D. Appleton and Company, 1869. Web. Google Books. 17 February 2011.
- James, Edward. "Rewriting the Christian Apocalypse as a Science-Fictional Event." *Imagining Apocalypse: Studies in Cultural Crisis*. Ed. David Seed. Basingstoke, UK: Macmillan, 2000. 45-61. Print.
- Lightman, Bernard. "Introduction." *Victorian Science in Context*. Ed. Bernard Lightman. Chicago: University of Chicago Press, 1997. 1-12. Print.

Lorimer, Douglas A. "Science and the Secularization of Victorian Images of Race." *Victorian Science in Context*. Ed. Bernard Lightman. Chicago: University of Chicago Press, 1997. 212-235. Print.

McClintock, Anne. *Imperial Leather: Race, Gender and Sexuality in the Colonial Context*. New York: Routledge, 1995. Print.

Moore, James. "Wallace's Malthusian Moment." *Victorian Science in Context*. Ed. Bernard Lightman. Chicago: University of Chicago Press, 1997. 290-311. Print.

"Netschajew trial." *The Graphic* 29 July 1871: 115. British National Library British Newspapers 1800-1900. 7 January 2011.

"New Novels." *The Graphic* 23 May 1874. Web. British National Library British Newspapers 1800-1900. 31 October 2010.

"Novels of the Week." *The Athenaeum* 28 February 1874: 290. Web. Google Books. 31 October 2010.

Olson, Theodore. *Millennialism, Utopianism, and Progress*. Toronto: University of Toronto Press: 1982. Print.

Presley, James T. "Bibliography of Utopias." *Notes and Queries* S5-II. 39 (1874): 252. Google Books. Web. 21 November 2010.

Proctor, Richard Anthony. *Other Worlds than Ours: The Plurality of Worlds Studied Under the Light of Recent Scientific Researches*. New York: D. Appleton and Company, 1871. Web. 29 December 2010.

“Reviews.” *The Scotsman* 27 February 1874, 3. The Scotsman archive. Web. 31 October 2010.

“Revolutionary Conspiracy in Russia.” *The Graphic* 19 August 1871, 115. British National Library British Newspapers 1800-1900. 7 January 2011.

Rieder, John. *Colonialism and the Emergence of Science Fiction*. Middletown, CT: Wesleyan University Press, 2008. Print.

Stepan, Nancy. *The Idea of Race in Science*. Hamden: Archon Books, 1982. Print.

Suvin, Darko. *Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre*. New Haven, CT: Yale University Press, 1979.

---. *Victorian Science Fiction in the UK: The Discourses of Knowledge and Power*. Boston: G.K. Hall and Company, 1983.

---. “Victorian Science Fiction, 1871-85: The Rise of the Alternative History Sub-Genre.” *Science Fiction Studies* 10.2 (1983): 148-169. JSTOR. Web. 14 December 2009.

Thompson, E. P. *The Making of the English Working Class*. New York: Pantheon Books, 1964.

Tyndall, John, Francis Galton, and others. *The Prayer Gauge Debate*. Boston: Congressional Publishing Society, 1876. Web. Google Books. 29 January 2011.

Weber, Eugene. *Apocalypses: Prophecies, Cults, and Millennial Beliefs through the Ages*. Cambridge, MA: Harvard University Press, 1999. Print.