

ABSTRACT

New Knowledge and Hopeful Spaces: The Significance of the Frontier in Martian History

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The frontier has been an enduring mythical structure in American history and discourse and is often applied to rhetorics surrounding American space exploration. This project identifies shifts in the frontier myth in discourse surrounding growing attempts to land a human on Mars and uses Dr. Neil deGrasse Tyson, Elon Musk, and President Barack Obama as case studies. They are placed within G. Thomas Goodnight's argumentative spheres: the personal, the technical, and the public, respectively. Constrained by their sphere of discourse, each rhetor uses the frontier to transition from Aristotelian *endoxa* to social knowledge and consensus in specific ways.

New Knowledge and Hopeful Spaces:
The Significance of the Frontier in Martian History
by

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CHAPTER ONE

To Suffer Woes Which Hope Thinks Infinite

Exploration is in our nature. We began as wanderers, and we are wanderers still. We have lingered long enough on the shores of the cosmic ocean. We are ready at last to set sail for the stars.

–Carl Sagan, *Cosmos*

Introduction

On August 6, 2012, after a harrowing thirteen minutes of no communication with Earth, the Mars Science Laboratory successfully deposited the robotic rover *Curiosity* onto the Red Planet's surface. The \$2.5-billion craft carries fourteen unique scientific instruments and represents the most expensive and in-depth effort by humanity to study Mars. Since landing in 2012, the rover has remained in the public eye, primarily because NASA and its affiliates continue to make plans to send *Curiosity* a partner.¹

Mars is now the next goal for manned exploration, succeeding the drive to the Moon in the 1960s. As such, the discourse surrounding these planned missions offers a unique opportunity to study and critique rhetorical techniques used to convince the American public of the need to put human explorers there, and the need to develop the

¹ Nicholas St Fleur, "Cassini Is Gone. Here Are the Next Space Missions to Watch Out For.," *The New York Times*, September 15, 2017, sec. Science, <https://www.nytimes.com/2017/09/15/science/cassini-nasa-missions.html>; mars.nasa.gov, "Overview - Mars 2020 Rover," accessed September 21, 2017, <http://mars.nasa.gov/mars2020/mission/overview/>.

required technology.² The discursive structures that connect rhetorics of science and technology, American citizenship, the frontier myth, and identity articulate a version of rhetorical hope intricately tied to the ideal of reaching Mars.

In the introduction to the project, I first engage with the major theorists and scholars whose work I use to analyze the discursive structures. I build on G. Thomas Goodnight's theory of argumentative spheres: the personal, technical, and public spheres, respectively.³ Within those spheres, I define a specific *endoxic* relationship utilized by the rhetor using Ekaterina Haskins' interpretation of Aristotelian *endoxa*.⁴ Finally, I argue that *endoxa* grows into what Thomas Farrell calls "social knowledge," constrained by each particular argumentative sphere and most importantly for this project, guided by the frontier myth. Farrell shows that social knowledge should be thought of as "the relationships of knowledge-in-use to the social system."⁵ Goodnight's argumentative spheres provide a useful, simple breakdown of the United States' social system. I address these rhetors and match each one with one of Goodnight's spheres. The spheres let me show how each rhetor prefers to connect with their audience based on the rhetorical

² See National Geographic, *Why Should We Go to Mars?* | *MARS*, n.d., <https://www.youtube.com/watch?v=aCEvMY3nZoU>; Gary Daines, "NASA's Journey to Mars," Text, NASA, February 13, 2015, <http://www.nasa.gov/content/nasas-journey-to-mars>; Jeffrey Kluger Tweeten Lon, "How We Can Finally Get to Mars," Time, accessed September 22, 2017, <http://time.com/4492792/mars-mission-space/>.

³ G. Thomas Goodnight, "The Personal, Technical, and Public Spheres of Argument: A Speculative Inquiry into The Art of Public Deliberation," *Journal of the American Forensic Association*; *Orono, ME* 18, no. 4 (Spring 1982): 214.

⁴ Ekaterina V. Haskins, "Endoxa, Epistemological Optimism, and Aristotle's Rhetorical Project," *Philosophy & Rhetoric* 37, no. 1 (February 2004): 1–20.

⁵ Thomas B. Farrell, "Social Knowledge II," *Quarterly Journal of Speech* 64, no. 3 (October 1978): 329.

forms they use and the purpose of their rhetoric. Therefore, I place Dr. Tyson in the personal sphere, Mr. Musk in the technical sphere, and President Obama in the public sphere. However, while the spheres provide a useful categorization, each rhetor certainly speaks to other spheres, and as the project progresses I will point out spaces in which the lines delineating spheres become increasingly blurred.

This project seeks to understand shifts in the frontier myth in the twenty-first century, first and foremost. The frontier has long been a place of hope for those who settled it, but for those who were already present – or not allowed to settle it – it was rather less welcoming. Often, this limitation was based on identity, as Leroy Dorsey, Janice Hocker Rushing, and Michael K. Johnson all show in different ways.⁶ My primary argument is that the frontier is the vehicle by which *endoxa* becomes social knowledge. The frontier, however, is often still limited by identities, capitalist discourses, and mythic structures that have been identified by other scholars. However, in an increasingly globalized and interconnected world, identities become more fluid, and slowly, the frontier is becoming – or at least has the potential to become – a place of hope for more and more people. As Hillary Jones notes, identities may be put into new “liminal spaces

⁶ See: Leroy G. Dorsey, *We Are All Americans Pure and Simple: Theodore Roosevelt and the Myth of Americanism*, 1 edition (Tuscaloosa: University Alabama Press, 2007); Janice Hocker Rushing, “Mythic Evolution of ‘The New Frontier’ in Mass Mediated Rhetoric,” *Critical Studies in Mass Communication* 3, no. 3 (September 1, 1986): 265–96, <https://doi.org/10.1080/15295038609366655>; Janice Hocker Rushing, “Frontierism and the Materialization of the Psyche: The Rhetoric of Inner Space,” *The Southern Communication Journal* 56, no. 4 (Summer 1991): 243; Michael K. Johnson, *Black Masculinity and the Frontier Myth in American Literature* (U of Oklahoma P, 2002), http://gateway.proquest.com/openurl?ctx_ver=Z39.88-2003&xri:pqil:res_ver=0.2&res_id=xri:ilcs-us&rft_id=xri:ilcs:rec:abell:R03413098. I will be delving much deeper into the work of each of these scholars in succeeding chapters.

in between the poles of the traditional dialectics [of the frontier] to create a new political frontier.”⁷ Not all the rhetors I have identified use the frontier in a positive sense, and some show marked difficulty in navigating these liminal spaces as all of them work through tensions, contradictions, and rhetorical limitations. To put it more simply, the frontier is complicated, and the twenty-first century brings a rash of new intricacies that must be identified and analyzed.

Literature Review and Conceptual Focus: Frontier Myth and the Mission of Mars

For this project, I engage with the frontier as a way to understand the progression of *endoxa* to social knowledge and how the frontier is used to engender rhetorical hope. The frontier myth is a set of rhetorical structures that organize the American consciousness around rugged individualism, migration to an unknown area, and the conquest of that area.⁸ The myth evolves as American culture evolves in terms of the location of the “unknown land.” Frederick Jackson Turner defined the frontier as “the meeting point between savagery and civilization” that represents the “line of most rapid and effective Americanization.”⁹ I argue that shifting notions of *endoxa* and how rhetors utilize it contribute to and may even drive that mythic transition. Ekaterina Haskins

⁷ Hillary A. Jones, “‘Them as Feel the Need to Be Free’: Reworking the Frontier Myth,” *Southern Communication Journal* 76, no. 3 (July 1, 2011): 231, <https://doi.org/10.1080/1041794x.2010.507109>.

⁸ Janice Hocker Rushing, “The Rhetoric of the American Western Myth,” *Communication Monographs* 50, no. 1 (March 1983): 15–16.

⁹ Frederick Jackson Turner, *The Frontier In American History* (New York: Henry Holt and Company, 1921), <http://xroads.virginia.edu/~hyper/turner/>.

defines *endoxa* as “reputable or received opinions.”¹⁰ Put another way, *endoxa* are cultural understandings or opinions about a particular topic. Haskins argues that Aristotle constructed his project around *endoxic* epistemological optimism.¹¹ Building on this idea, I examine how each rhetor examined in this project has what I call an *endoxic* identity. This identity or personality is a combination of how they see themselves, and how that identity is received by an audience. I name it *endoxic* because both components rely on opinions about the role the rhetor plays in public discourse: a scientist, a CEO, and a President. This *endoxic* identity both informs and limits the ways they can use the frontier myth and therefore limits the kinds of social knowledge each can create.

The frontier myth in relation to space has been discussed and thoroughly theorized in communication literature. Discussion of space travel necessarily invites discussion of the frontier myth. John F. Kennedy famously employed the frontier myth when the United States set their sights on the Moon in the 1960s. As John W. Jordan notes, the “New Frontier” Kennedy transposes onto the Moon allows him to first, minimize spatial distance and emphasize technological capability, and second, actuate a public that understands the moon as both tangible and sublime.¹² Jordan’s essay informs historical usages of the frontier myth in relation to space travel. When placed in conversation with analyses like Richard Slotkin’s work, it becomes clear that the frontier

¹⁰ Haskins, “Endoxa, Epistemological Optimism, and Aristotle’s Rhetorical Project,” 1.

¹¹ Haskins, 2.

¹² John W. Jordan, “Kennedy’s Romantic Moon and Its Rhetorical Legacy for Space Exploration,” *Rhetoric & Public Affairs* 6, no. 2 (July 24, 2003): 214–15, <https://doi.org/10.1353/rap.2003.0047>.

myth exists and shifts within society. This project focuses on those iterations of the myth that play out in outer space, or at least the discourse surrounding outer space.

Moreover, the frontier myth constantly shifts in terms of how the American people use it to organize mythic understandings of their identity. Janice Hocker Rushing argues that shifts in how we use the myth “progress gradually, as elements of the old scene are initially grafted onto the new in the mythic imagination.”¹³ I argue that rhetorical structures – religion, capitalism, and the presidential role – are used to shift the myth. The frontier myth alters American identity *even while* it is being altered by new identities. Leroy Dorsey and Rachel Harlow argue the frontier myth has informed conceptions of American identity since before the birth of the country, while both the myth and American identity formation underwent important alterations.¹⁴ Mary Stuckey concurs with Dorsey and Harlow and contends that the frontier myth was used by President Ronald Reagan “as an important locus for the creation and articulation of [American] values,” and specifically to “reunite into one single American audience that was ideologically committed to Reagan’s deliberative ends.”¹⁵ However, reading Rushing, Stuckey, Dorsey, and Harlow in conversation with one another show how the

¹³ Rushing, “Mythic Evolution of ‘The New Frontier’ in Mass Mediated Rhetoric,” 266. See also Hillary A. Jones, “‘Them as Feel the Need to Be Free’: Reworking the Frontier Myth.” *Southern Communication Journal* 76, no. 3 (July 2011): 230–47. <https://doi.org/10.1080/1041794x.2010.507109>.

¹⁴ Leroy G. Dorsey and Rachel M. Harlow, “‘We Want Americans Pure and Simple’: Theodore Roosevelt and the Myth of Americanism,” *Rhetoric & Public Affairs* 6, no. 1 (Spring 2003): 58–59.

¹⁵ Mary E. Stuckey, *Slipping the Surly Bonds: Reagan’s Challenger Address* (College Station: Texas A&M University Press, 2006), 10–11.

frontier changes in practical discourse, as well as in mythic discourse. I focus on how public speakers use it to target the values of nationalism in audiences and actuate them to act toward a unifying, hopeful goal – going to Mars.

The alteration of the frontier myth I examine is the use of the myth as a means to unify. In previous analyses of the frontier myth and its connection to space, Jordan and Stuckey both show how the overriding fear of the Cold War drove space exploration; Kennedy used the space race as a comforting frontier myth woven blanket to throw over the fears associated with mutually assured destruction and the spread of communism. As Stuckey notes, Reagan used frontier language in the *Challenger* address as a balm for grief while also redefining “public activity” to something altogether more unified.¹⁶ However, the Cold War no longer drives American exploration. Indeed, the International Space Station exists largely because of cooperation between the United States and the Russian Federation. As such, fear of losing the space race no longer provides the driving force behind the unifying power of the frontier myth. I suggest that unity and the desire to explore both physical outer space and the inner space of self-understanding have replaced Cold War fears.

To begin understanding this new driving force to the New Frontier, I start with the Aristotelian concept of *endoxa*. Ekaterina V. Haskins argues that “much of *Rhetoric*’s cultural content was provided by *endoxa*, or ‘reputable or received opinions.’”¹⁷ Aristotle defines *endoxa* in the *Topics* as “the things believed by everyone or by most people or by

¹⁶ Stuckey, 98.

¹⁷ Haskins, “Endoxa, Epistemological Optimism, and Aristotle’s Rhetorical Project,” 1.

the wise (and among the wise by all or by most or by those most known and commonly recognized).”¹⁸ In *On Rhetoric*, Aristotle states that “humans have a natural disposition for the true and to a large extent hit on the truth; thus an ability to aim at commonly held opinions [*endoxa*] is a characteristic of one who also has a similar ability to regard to the truth.”¹⁹ As a rhetorical concept, then, *endoxa* become *topoi* available for inventive use by appealing to popular, informed opinions about the truth. Glen W. Most provides a more persuasion focused definition for *endoxa*, saying that they have a “specifically rhetorical purpose: the construction of rhetorical enthymemes out of the *protaseis* [beginning] furnished by the *endoxa*.”²⁰ Most argues that *endoxa* furnish the cultural material for enthymemes. The enthymematic nature of the frontier is assumed; when the frontier is invoked, expansion follows. I argue that each rhetor’s *endoxic* identity allows them to make use of the frontier as a space for the cultivation of hope.

The function of these new spaces of invention depends heavily on the culture in which they are used. Haskins argues that for Aristotle, the human soul (*psuchē*) is a “mirror of the real.”²¹ Our perception allows us to see the relative truth of things. Our

¹⁸ Aristotle, *Aristotle: Posterior Analytics. Topica.*, trans. Hugh Tredennick and E. S. Forster, Reprint edition (Cambridge, Mass: Harvard University Press, 1960), 100b20.

¹⁹ Aristotle, *On Rhetoric: A Theory of Civic Discourse*, trans. George A. Kennedy (New York: Oxford University Press, 1991), 1355a11.

²⁰ Glenn W. Most, “The Uses of Endoxa: Philosophy and Rhetoric in the Rhetoric,” in *Aristotle’s “Rhetoric”: Philosophical Essays*, ed. David J. Furley and Alexander Nehamas, Reprint edition (Princeton, NJ: Princeton University Press, 2015), 182.

²¹ Haskins, “Endoxa, Epistemological Optimism, and Aristotle’s Rhetorical Project,” 3.

perception is largely formed through language choices and deployment of particular symbols. Haskins further defines *endoxa* as “objects of belief and not as statements expressing beliefs in various social contexts.”²² *Endoxa* are tangible, revealed by a “process of assimilation and differentiation” through “linguistic resources” defined by human culture.²³ *Endoxa* serves as a way of understanding how these rhetors are construct their identities as tangible locations for belief. Each rhetor approaches the frontier in particular ways. The frontier then lets them construct hope. Travel to Mars is the processual and physical manifestation of that hope.

The discursive end result of the frontier’s journey in this case is rhetorical hope, constituted through social knowledge. If practicality defines good rhetoric, then rhetorical hope must be practical and actionable as well, rather than some lofty concept left ill-defined by a rhetor. The rhetors I selected take *endoxa* in their respective spheres and alter it to form social knowledge revolving around hope. Thomas Farrell defines social knowledge as comprising “conceptions of symbolic relationships among problems, persons, interests, and actions, which imply (when perfected) certain notions of preferable public behavior.”²⁴ Farrell notes that his end goal “sought a prescriptive view of the rhetorical art for the rendering of decision, action, and judgment on practical questions.”²⁵ He argues that social knowledge must be characterized by a “state of

²² Haskins, 7.

²³ Haskins, 6.

²⁴ Thomas B. Farrell, “Knowledge, Consensus, and Rhetorical Theory,” *Quarterly Journal of Speech* 62, no. 1 (February 1976): 4, <https://doi.org/10.1080/00335637609383313>.

²⁵ Farrell, “Social Knowledge Ii,” 334.

potential” leading to “some subsequent decision and action.”²⁶ These rhetors all begin with specific *endoxa* relative to their sphere as *topoi*, but through the use of various forms of language, they shift those general *topoi* to the more specific, more actionable, social knowledge. The frontier and its various uses provides the mechanism of this shift.

I am working here with *rhetorical* hope. I define rhetorical hope quite simply: the use of rhetoric to actuate an audience to some kind of actionable end. This end, in the rhetor’s opinion, somehow increases or changes the state of being human in a positive moral or social direction. In other words, the rhetor asks the audience to do something that will make them “better humans.” The potential for positively oriented action is key

There have been a few studies that examine rhetorical hope in other ways. For example, Mark Ferrara shows how President Obama deployed hope and defines hope as discourse that “envisions social betterment brought about by the force of shared values and... founded upon a fundamental belief in the innate goodness of nature and man.”²⁷ However, hope can also be used to alleviate grief. Mary Stuckey shows how the *Challenger* disaster reframed American hope (in the Space Race) from pure optimism to an optimism tempered by recognition of loss.²⁸ Hope costs something. Similarly, Mars as a unifying frontier has been and is being used as a new locus for hope, but what might potentially be required as sacrifice remains unclear, whether it be a literal sacrifice, like the *Challenger* crew, or a metaphorical sacrifice, like some facet of American identity.

²⁶ Farrell, “Knowledge, Consensus, and Rhetorical Theory,” 4.

²⁷ Mark S. Ferrara, *Barack Obama and the Rhetoric of Hope* (Jefferson, North Carolina: McFarland, 2013), 11–12.

²⁸ Stuckey, *Slipping the Surly Bonds*, 99.

Whether or not the constructions of hope are *actually* hopeful remains to be seen, but I will show that, at the very least, each rhetor utilizes the frontier myth as a way to actuate hope for their respective sphere, rather than simply appeal to it. The difference, as I see it, between rhetorical hope and a more traditional philosophical hope is in this potential to achieve the goal.

I suggest that Farrell's understanding of social knowledge is necessary to the process of creating an effective rhetorical hope. A requirement of social knowledge is practicality, or, as Farrell summarizes, "probable human decision-making... validated through the *reasoned judgment* and action of an audience" (emphasis mine).²⁹ Reasoned judgment, while not equivalent to *endoxa*, has similar origins. Both are found in some form of consensus, and in particular, consensus that stems from educated opinion of some kind. I argue that the difference between *endoxa* and social knowledge is in origin. *Endoxa*, as Most notes, is a rhetorical beginning, *topoi* for invention. Haskins writes that "the knowledge one expresses through the choice and deployment of *endoxa* is extra-rhetorical."³⁰ In this case, that extra-rhetorical beginning is the rhetor's own understanding of their identities. Farrell's social knowledge is a rhetorical result. In this case, the frontier myth is used to create social knowledge from *endoxa*. The frontier acts as a directing force on *endoxa*, creating the potential for action. In this case, that potential is centered on rhetorical hope. The actual action under these rhetors'

²⁹ Farrell, "Knowledge, Consensus, and Rhetorical Theory," 9, 12.

³⁰ Haskins, "Endoxa, Epistemological Optimism, and Aristotle's Rhetorical Project," 16.

consideration – reaching Mars – will not happen for some time. It is the *potential* for an actionable end that is the concern here.

Therefore, hope starts in the frontier’s promise of a new “something,” whether a physical space or metaphorical destiny for humanity, and is completed in a successful construction for a *potential* action by a social group. The frontier myth connects this rhetorical process as representing the call to some action in order to solve a public problem. I further specify those problems below in the description of methodology. While their respective spheres constrain the rhetors stylistically and argumentatively, they all rhetorically shift *endoxa* to social knowledge through appeals to the frontier myth grounded in unifying hope. The patterns of progression through these appeals are the same, but the exact methods of progression are different based on the spheres within which each rhetor operates. Each individual chapter, presented as a case study, will therefore elucidate that method.

Methodology

In this section, I describe the structure of this project. I organize the project by utilizing G. Thomas Goodnight’s spheres of argumentation: personal, technical, and public.³¹ I do this for three reasons. First, division into spheres matches well with Farrell’s theory of social knowledge. Goodnight writes, “rhetoric is an art, a human enterprise engaging individual choice and common activity... citizens test and create social knowledge in order to uncover, assess, and resolve shared problems.”³² The

³¹ Goodnight, “The Personal, Technical, and Public Spheres of Argument.”

³² Goodnight, 214.

frontier represents some sort of shared approach to addressing problems for society, whether it represents some kind of lack or a tension between culture and savagery.³³ Roughly dividing the problem into argumentative spheres allows for easier delineation between the kinds of social knowledge I will be discussing and the rhetorical methods utilized in each sphere. Briefly, Goodnight defines the spheres as “branches of activity – the grounds upon which arguments are built and the authorities to which arguers appeal.” Each of the three rhetors use approaches that open some spaces for rhetorical invention and close others, but they are roughly defined by Burkean notions of identification with the work done in a sphere.³⁴

Second, Haskins notes that *endoxa* are “a way of constructing and defending the borders between different areas of knowledge.”³⁵ Quite simply, the spheres provide ready-made, albeit permeable, borders for social knowledge in this context. Haskins further acknowledges this as she delineates *endoxa* in “all three levels of philosophical discourse (theoretical science, moral philosophy, and productive arts of poetics and rhetoric),” which *roughly* correspond to the three argumentative spheres.³⁶ This holds especially true as Haskins argues that critical uses of Aristotle’s work lack engagement with Aristotle’s cultural context.³⁷ Similarly, Goodnight’s original project was dedicated

³³ Rushing, “The Rhetoric of the American Western Myth.”

³⁴ Goodnight, “The Personal, Technical, and Public Spheres of Argument,” 217.

³⁵ Haskins, “Endoxa, Epistemological Optimism, and Aristotle’s Rhetorical Project,” 17.

³⁶ Haskins, 2.

³⁷ Haskins, 1.

to revitalizing deliberative argument in American culture,³⁸ so I maintain that the combination of the two concepts allows for an interesting reading of the frontier myth in our current cultural context.

Third, I am interested in how myth functions in the various spheres. I hope to show that the *endoxic* personalities I identify help construct myths differently based on the sphere in which the *endoxa* are located. I propose this is a particularly important subject to consider in the twenty-first century. As Goodnight says, “the generative complexity of rhetoric grows. Publics are now explored with national qualities, global reach, and democratic difference.”³⁹ The question of democracy and the New Frontier will become more apparent in my discussion of President Obama, but the theme of “which identities are allowed in the frontier” runs the length of the project.

To these three ends, I selected three rhetors as case studies, each of which corresponds to one of Goodnight’s spheres: Neil deGrasse Tyson to the personal, Elon Musk to the technical, and President Barack Obama to the public. As Goodnight notes, each of the spheres are essential for robust public deliberation, particularly for an undertaking the size of Mars, and democracy organizes itself around the demarcation of the spheres.⁴⁰ I argue that each of the spheres should work in conjunction with one another to actuate an audience to support Mars travel, as President Kennedy did in the

³⁸ Goodnight, “The Personal, Technical, and Public Spheres of Argument,” 215.

³⁹ G. Thomas Goodnight, “The Personal, Technical, and Public Spheres: A Note on 21st Century Critical Communication Inquiry,” *Argumentation & Advocacy* 48, no. 4 (Spring 2012): 262.

⁴⁰ Goodnight, “The Personal, Technical, and Public Spheres of Argument,” 217.

1960s.⁴¹ Each case study will build on the previous one and show not only how the rhetor operates within the respective sphere, but how that specific sphere is influenced and influences the other two in its articulation of the frontier. These case studies also form the basis of each chapter.

Dr. Neil deGrasse Tyson, Director of the Hayden Planetarium

Neil deGrasse Tyson is a prominent public educator with a doctorate in astrophysics. He has published thirteen popular books dedicated to bringing astrophysics to a wider audience – one helpfully titled *Astrophysics for People in a Hurry* – and speaks frequently on the importance of science education in the 21st century. Tyson holds a doctorate from Columbia University in astrophysics and completed his postdoctoral studies at Princeton University.⁴² Selected by Carl Sagan’s widow in the early 2010s, he hosted the rebooted *Cosmos* television show (renamed *A Spacetime Odyssey*). He has also appeared on National Geographic’s *Mars*, a show that blends a fictional narrative of Martian exploration with expert interviews. He hosts a weekly podcast titled *Startalk Radio* which “bridges the intersection between science, pop culture and comedy with clarity, humor, and passion,” now in its eighth season.⁴³ Tyson’s celebrity often precludes

⁴¹ Jordan, “Kennedy’s Romantic Moon and Its Rhetorical Legacy for Space Exploration,” July 24, 2003. While Jordan does not analyze Kennedy’s speech through this lens, aspects of each sphere certainly appear scattered throughout both the speech and Jordan’s analysis.

⁴² Rebecca Mead, “Starman,” *The New Yorker*, February 10, 2014, <https://www.newyorker.com/magazine/2014/02/17/starman>.

⁴³ “About Us,” StarTalk Radio Show by Neil deGrasse Tyson, accessed October 7, 2017, <https://www.startalkradio.net/about-us/>.

his performing a more technical role in public discourse. He rarely publishes studies in his field, preferring instead to write popular scientific books and host the programs mentioned above.

In many of these rhetorical situations, Tyson frames Mars as a location absolutely necessary to visit. He asks his audience to understand Mars as the next phase in human evolution, following his rhetorical predecessor Carl Sagan. Sagan was famous for, among many other things, his statements regarding humankind's positivistic destiny in the stars.⁴⁴ In a preview for National Geographic's *Mars* series, Tyson lays out his congruent reasoning simply: "I need a good reason to cross this ocean. Well, because we haven't done it before. How's that for a good reason?"⁴⁵ As Thomas Lessl has shown, scientists often utilize a form of positivism to bolster their arguments regarding science's importance to society. Lessl argues, "the most direct way to bring history within the compass of the natural sciences was to make it a product of nature, as evolution."⁴⁶ Elsewhere, Lessl maintains that the focus on evolution-as-myth constructs scientists as more in touch with the "evolutionary essence of the cosmos."⁴⁷ Tyson frequently follows this tendency, asking his readers in *Space Chronicles* to:

⁴⁴ Carl Sagan, "The Gift of Apollo : Draft Essay," manuscript/mixed material, Library of Congress, Washington, D.C. 20540 USA, 1989, <https://www.loc.gov/item/cosmos000039/>; Carl Sagan, "Advocating Science and Hope : Draft Essay," manuscript/mixed material, Library of Congress, Washington, D.C. 20540 USA, 1994, <https://www.loc.gov/item/cosmos000080/>.

⁴⁵ National Geographic, *Why Should We Go to Mars?*

⁴⁶ Thomas M. Lessl, *Rhetorical Darwinism* (Baylor University Press, 2012), 168.

⁴⁷ Thomas M. Lessl, "Science and the Sacred Cosmos: The Ideological Rhetoric of Carl Sagan," *Quarterly Journal of Speech* 71, no. 2 (May 1985): 178.

Imagine a world in which everyone, but especially people with power and influence, holds an expanded view of our place in the cosmos. With that perspective, our problems would shrink – or never arise at all – and we could celebrate our earthly differences while shunning the behavior of our predecessors who slaughtered each other because of them.⁴⁸

Here, Tyson indicates that this “expanded view” of humanity’s role in the cosmos acts as balm to the human tendency of violence. He argues that a trip to Mars is the first step to this expanded consciousness. The prologue to *Space Chronicles* frames the entire compendium as a response to “politics and war trump[ing] the urge to discover.”⁴⁹ Leah Ceccarelli notes that arguments “framing scientists as bold explorers... identifies progress in research as essential to national character.”⁵⁰ Tyson does this by drawing connections between a positivistic “destiny” and travel to Mars, as well as fundamental to our own national culture.

It bears mentioning that Dr. Tyson is almost certainly one of the most visible black scientists in America today, yet he refuses to speak about race in the sciences.⁵¹ I argue that this has important implications regarding this “new frontier” and who we allow to take part in it. Michael K. Johnson argues that historically, black men have had a

⁴⁸ Neil deGrasse Tyson, *Space Chronicles: Facing the Ultimate Frontier*, ed. Avis Lang (New York: W. W. Norton & Company, 2012), 353.

⁴⁹ Tyson, 5.

⁵⁰ Leah Ceccarelli, “Crossing Frontiers of Science,” in *After the Genome: A Language for Our Biotechnological Future*, ed. Michael J. Hyde and James A. Herrick (Waco, Texas: Baylor University Press, 2013), 85.

⁵¹ Rembert Browne, “A Conversation With Neil DeGrasse Tyson About ‘Cosmos,’ Race, and Celebrity,” *Grantland* (blog), June 9, 2014, <http://grantland.com/hollywood-prospectus/a-conversation-with-neil-degrasse-tyson-about-cosmos-race-and-celebrity/>.

complex relationship with the frontier.⁵² Michael Butterworth notes that the individualistic frontier hero is always understood as white, and that such a construction “marginalized competing visions that might oppose values of individualism or exceptionalism, especially if those competing images created a racial opposition.”⁵³ Furthermore, the hero is often coded as wealthy, a status generally unavailable to black men. As Slotkin contends, the frontier hero mythos was constructed by Roosevelt as an “aristocrat-hunter.”⁵⁴ Tyson has seemingly accepted the “aristocrat” part of that construction, holding science as the ultimate potentiality for a human to reach, while choosing to ignore other parts of his identity (at least in a public sense).

Nationalism often forces race into the background, and the frontier myth is fundamentally nationalistic. Leroy Dorsey shows how Teddy Roosevelt used public discourse to create conditions of citizenship that “revolved around a combination of physical strength, moral character, and the understanding that equality must be earned and not simply given,” even for immigrants and non-whites.⁵⁵ However, this again suggests a problematic assumption regarding which kinds of identity should be accepted in the frontier. Samuel Perry suggests that black folk “successfully appropriating an archetype unusually available to them should not cede aspects of their racial identity in

⁵² Johnson, *Black Masculinity and the Frontier Myth in American Literature*.

⁵³ Michael L. Butterworth, “Race in ‘The Race’: Mark McGwire, Sammy Sosa, and Heroic Constructions of Whiteness,” *Critical Studies in Media Communication* 24, no. 3 (August 1, 2007): 238, <https://doi.org/10.1080/07393180701520926>.

⁵⁴ Richard Slotkin, “Nostalgia and Progress: Theodore Roosevelt’s Myth of the Frontier,” *American Quarterly* 33, no. 5 (1981): 613, <https://doi.org/10.2307/2712805>.

⁵⁵ Dorsey, *We Are All Americans Pure and Simple*, 4.

order to embody the character appropriated.”⁵⁶ The new frontier potentially provides the space to that, but when comparing Tyson to that description, it becomes clear that he has chosen to ignore not just his identity, but even the appearance of tension in that identity. Mental prowess and identity replaces the physical in determining who is allowed to settle the frontier within Tyson’s narrative. Prowess is further defined by the level of faith one places in science.

Working from Lessl’s elucidation of myth in scientific discourse, I place Dr. Tyson in the personal argumentative sphere for the following reasons. While Slotkin defines myth as a story “drawn from a society’s history that have acquired... the power of symbolizing that society’s ideology,” Tyson deploys this myth in a unique method that builds space as a pseudo-savior.⁵⁷ He aestheticizes the Big Bang as a secular creation story. Rather than simply relating the “facts” of the Big Bang, he articulates it as a way for humanity to feel connected with the universe and with each other.⁵⁸ This idea bears a striking similarity to Carl Sagan’s famous quote that “we are a way for the Cosmos to know itself.”⁵⁹ Indeed, the introduction to Tyson’s version of *Cosmos* references Sagan as

⁵⁶ Samuel P. Perry, “Chained to It: The Recurrence of the Frontier Hero in the Films of Quentin Tarantino,” in *Quentin Tarantino’s Django Unchained: The Continuation of Metacinema*, ed. Oliver C. Speck (Bloomsbury Academic, 2014), 209.

⁵⁷ Richard Slotkin, *Gunfighter Nation: Myth of the Frontier in Twentieth-Century America, The*, 21809th edition (Norman: University of Oklahoma Press, 1998), 5.

⁵⁸ TIME, *How Neil DeGrasse Tyson Would Save The World | 10 Questions | TIME*, accessed March 24, 2017, <https://www.youtube.com/watch?v=wiOwqDmacJo&feature=youtu.be&t=2m14s>.

⁵⁹ “The Shores of the Cosmic Ocean,” *Cosmos: A Personal Voyage*, September 28, 1980.

fundamental to Tyson's development as both an astrophysicist and as a public educator.⁶⁰ Public educators can make use of the prophetic role to show how they fit into the educational system writ large. Tyson sees Sagan as a *scientific* prophet. James Darsey notes the prophetic tradition has a long history in American public consciousness. Darsey shows that prophetic *logos* determines the values of a society defined by covenant.⁶¹ The promise of the frontier creates the covenant in this case. Tyson, therefore, is a priest that follows in Sagan's footsteps, come to bring the Good News about Space. This iteration of religious/mythic discourse directs itself toward a kind of "personal relationship" with space. It is this identity of "scientific priest that forms Tyson's *endoxic* identity. Tyson attempts to constitute his listeners as needing to have this personal relationship. The relationship has widespread effects on a public, but it must start with the personal.

Elon Musk, CEO of SpaceX

Elon Musk began his career with a physics degree from the University of Pennsylvania. He started his first company, Zip2, in 1995 after two days in a Ph.D. program for applied physics and materials science at Stanford University. After founding several other successful companies, he started Space Exploration Technologies (SpaceX) in 2002 with 100 million dollars (US) of his own money. Musk entered into a unique moment in the history of humanity's space travel – the privatization of space. Carl Sagan

⁶⁰ Ann Druyan, Brannon Braga, and Bill Pope, "Standing Up in the Milky Way," *Cosmos: A Spacetime Odyssey* (FOX, March 9, 2014).

⁶¹ James Darsey, *The Prophetic Tradition and Radical Rhetoric in America* (New York; London: NYU Press, 1997), 20.

expressed doubts about the viability of this trend, and Dr. Tyson has also expressed doubts regarding it.⁶²

However, Musk, like Tyson, espouses positivism, but in a different sense. While Tyson couches his version of positivism in scientific discourse, Musk connects it to an overt Manifest Destiny for humanity and constructs himself as a capitalist frontier hero. In a paper submitted to the journal *New Space*, he states: “History is going to bifurcate along two directions. One path is we stay on Earth forever, and then there will be some eventual extinction event... The alternative is to become a space-bearing civilization and a multi-planetary species.”⁶³ Musk argues the natural progression of human evolution will result in a space-faring civilization, else we experience an extinction-level event of some kind. To that end, the overall goal of SpaceX as an organization is to reduce the exorbitant costs of Mars travel to roughly the median cost of a house in the United States in an effort to spark the next phase of that evolution. Musk wants to make this available to the average citizen.⁶⁴ His brand of positivism revolves around the physical locations of the new frontier and the raw materials needed to get there, unlike Tyson’s, which focuses on the mythical dimensions of that space. In other words, the technical sphere is the only thing that can save humanity.

⁶² pateli2008, *Carl Sagan on Human Missions to Mars*, 1993, <https://www.youtube.com/watch?v=ICifZSpaNSo>; Robert Ferris, “Neil DeGrasse Tyson Says It’s Tough for a Company to Settle Mars,” September 25, 2017, <https://www.cnbc.com/2017/09/25/neil-degrasse-tyson-says-its-tough-for-a-company-to-settle-mars.html>.

⁶³ Elon Musk, “Making Humans a Multi-Planetary Species,” *New Space* 5, no. 2 (June 1, 2017): 46, <https://doi.org/10.1089/space.2017.29009.emu>.

⁶⁴ Musk, 48.

If positivism is defined as “an effort to envision a *history of science that was also a science of history*” in relation to all of human history, Musk sees Mars as the logical next step.⁶⁵ Privatization and technology are the steps to that literal Manifest Destiny. Jacques Ellul takes positivism further with a definition of what he and Janicaud call “technodiscourse”:

Technodiscourse is a discourse which is not strictly technical or autonomous, a parasitic language which is based on technique, which helps spread it, or which, for lack of anything better, makes any radical retreat, any specific questioning of the contemporary technical phenomenon, nearly impossible.... It is advertising... There takes place a work of autosymbolization which tends to recodify all reality in an informational, manipulable glaze.⁶⁶

In society, Ellul argues, technodiscourse “submits all things to humanity... the first man to walk on the moon fulfilled at last what had been the dream of the race from the very first.”⁶⁷ Musk shoves together Tyson’s version of positivism with this techno-discourse and adds in “advertising.” Musk’s view of human history through the use of technodiscourse creates a Manifest Destiny devoid of the same kind of religio-mythic rhetoric utilized by Tyson. Instead, Musk relies on technology. A recent speech to the International Astronautical Congress on September 29, 2017 exemplifies this rhetoric. He only briefly touches on the normal myths utilized by orators discussing space. He undercuts his discussion of the final frontier with his focus on the technology that will

⁶⁵ Lessl, *Rhetorical Darwinism*, 142.

⁶⁶ Dominique Janicaud, *La Puissance du rationnel* (Paris: Gallimard, 1985).

⁶⁷ Mr Jacques Ellul, *The Technological Bluff* (Grand Rapids, MI: Wm. B. Eerdmans Publishing Co., 1990), 126.

take humanity there.⁶⁸ In a 2013 TEDtalk, Musk reduces most of human cognition to physics, saying “When you want to do something new, you have to apply the physics approach...Physics is really figuring out how to discover new things that are counterintuitive, like quantum mechanics.”⁶⁹ Bruno Latour notes in his discussion on modern “fetishes” that so-called moderns “deny to the objects they fabricate the autonomy they have given them.”⁷⁰ Elsewhere, he defines these objects as facts, the nature of which we know “because we have developed them in circumstances that are under our complete control.”⁷¹ The facts of space travel are the same, and they are, at their core, advertising; facts of human cognition and development that Musk controls.

Just what Musk is advertising with these modern fetishes of techno-discourse remains somewhat unclear. At times, he seems to be advertising solely for his company as a competitive corporate entity. Robert McChesney makes advertising a fundamental part of his definition of “political economy,” stating that “the political economy of communication looks specifically at how ownership, support mechanisms (advertising)

⁶⁸ SpaceX, *Making Life Multiplanetary*, 2017, https://www.youtube.com/watch?time_continue=198&v=tdUX3ypDVwI; SpaceX, *Making Humans a Multiplanetary Species*, 2016, <https://www.youtube.com/watch?v=A1YxNYiyALg>.

⁶⁹ Elon Musk, *The Mind behind Tesla, SpaceX, SolarCity ...*, 2013, https://www.ted.com/talks/elon_musk_the_mind_behind_tesla_spacex_solarcity.

⁷⁰ Bruno Latour, *On the Modern Cult of the Factish Gods* (Durham NC ; London: Duke University Press Books, 2010), 61.

⁷¹ Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter (Cambridge, Mass: Harvard University Press, 1993), 18.

and government policies influence media behavior and content.”⁷² McChesney’s comment connects Musk’s espousal of positivism to a little-known facet of SpaceX’s work. In 2017, financial disclosures revealed that SpaceX spent nearly two million dollars lobbying Congress in varying capacities.⁷³ In 2016, the total number of lobbying firms employed by SpaceX had risen to nine.⁷⁴ As Goodnight predicted, the technical sphere begins to invade the public one.⁷⁵ The *LA Times* reported that SpaceX heavily lobbied against an amendment last year that would have prevented the United States from utilizing Russian-built rocket engines for satellite launches, something clearly in the company’s economic favor.⁷⁶ Techno-discourse is invariably tied up in capitalist discourse. At the end of the day, SpaceX is a company that exists to make money, not solely to take humanity to Mars. One of these ways in which SpaceX makes money is through government contracts, and so I will also discuss how SpaceX works within the modern military-industrial complex. This understandably raises questions about the connections between Musk’s frontier and the military-industrial complex.

⁷² Robert W. McChesney, “The Political Economy of Communication and the Future of the Field,” *Media, Culture & Society* 22, no. 1 (January 2000): 110.

⁷³ Hamza Shaban, “SpaceX, Uber Reach New Heights In Lobbying Spending,” BuzzFeed, January 24, 2017, <https://www.buzzfeed.com/hamzashaban/spacex-uber-reach-new-heights-in-lobbying-spending>.

⁷⁴ Garrett Evans, “Bottom Line,” Text, TheHill, March 21, 2016, <http://thehill.com/business-a-lobbying/lobbying-hires/273810-bottom-line>.

⁷⁵ Goodnight, “The Personal, Technical, and Public Spheres of Argument,” 215–16.

⁷⁶ Samantha Masunaga, “How Politics Could Disrupt the SpaceX Rocket Revolution,” *Los Angeles Times*, May 12, 2016, <http://www.latimes.com/business/la-fi-rocket-politics-spacex-20160512-snap-story.html>.

The military-industrial complex further raises questions about the influence of a capitalist New Frontier on democratic structures. McChesney argues communication studies should invariably take up the effect of communication on participatory democracies.⁷⁷ Damien Smith Pfister defines something similar as a “rhetoric of corporate posthumanism” that are “most often articulated in rhetorics of technology that circulate in commercial advertising.”⁷⁸ McChesney and Pfister’s work, respectively informs my examination of how Musk’s techno-discourse affects and influences *both* policy and audience as the technical sphere exudes its influence on both the public and personal spheres, and thereby uncover precisely for what he is advertising and the ways in which techno-discourse informs and creates capitalist discourse. As such, I argue that Musk’s *endoxic* identity as a heroic entrepreneur who, through technology, will be the first to colonize the New Frontier. He then makes it available to the average American house-owner through capitalist structures.

President Barack Obama

President Barack Obama oversaw NASA from 2009-2017 as the organization transitioned away from the Space Shuttle and to the current model of Russian partnership in launches. Obama’s tenure as president included the rise of SpaceX to the organization that we know today, further pulling the public and technical spheres of argument both apart and together. While President Obama’s direct mentions of travel to Mars are few,

⁷⁷ McChesney, “The Political Economy of Communication and the Future of the Field,” 114.

⁷⁸ Damien Smith Pfister, “Against the Droid’s ‘Instrument of Efficiency,’ For Animalizing Technologies in a Posthumanist Spirit,” *Philosophy & Rhetoric* 50, no. 2 (April 2017): 204.

his influence on overall space policy undoubtedly has a rhetorical effect on how the public sphere relates to space.

Obama's version of the Frontier Myth seems rife with contradictions. While he uses similar language to former Presidents like John. F. Kennedy and Ronald Reagan, it is paired with policy initiatives that seem to indicate some hesitancy regarding humanity's future in space. In his 2011 State of the Union Address, President Obama referenced the Space Race with the Soviets, but in a context that speaks more to generalized science research rather than specific research related to space. He also frequently maintains the connection to capitalism. In his 2011 State of the Union, Obama states that science "unleashed a wave of innovation that created new industries and jobs."⁷⁹ In his 2015 State of the Union, he specifically mentions Mars, but it is his only State of the Union mention of the planet.⁸⁰ The President's final State of the Union holds his only use of the word "frontier" in relation to space when he states "We made change work for us, extending America's promise outward, to the next frontier, to more people."⁸¹ Only once does he use the State of the Union to mention an actual policy, rather than deploying space as a historical metaphor. Again in 2015, he mentions the

⁷⁹ Barack Obama, "Remarks by the President in State of Union Address" (Washington, DC, January 25, 2011), <https://obamawhitehouse.archives.gov/the-press-office/2011/01/25/remarks-president-state-union-address>.

⁸⁰ Barack Obama, "Remarks by the President in State of the Union Address," January 20, 2015, <https://obamawhitehouse.archives.gov/the-press-office/2015/01/20/remarks-president-state-union-address-january-20-2015>.

⁸¹ Barack Obama, "Remarks of President Barack Obama – State of the Union Address As Delivered" (Washington, DC, January 13, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/01/12/remarks-president-barack-obama-%E2%80%93-prepared-delivery-state-union-address>.

NASA directive to develop a new rocket to replace the Space Shuttle, which was retired in 2010.⁸² The most significant mentions of science revolve around job creation.

Space is therefore generally deployed as a reference to something else – science, innovation, and most importantly for my purposes here, jobs – rather than as a place in and of itself. In less visible spaces, he speaks more specifically on the subject. He called for a permanent Martian colony by 2030 in a CNN op-ed the final year of his presidency,⁸³ but as the *Atlantic* noted, his administration did little to realize this goal, and cut the budget for space travel while increasing a budget that propped up private space ventures.⁸⁴ Much of the rest of Obama’s rhetoric on space speaks to this tension. The frontier, then, is something to be advocated for but privatized. In remarks made on the return of Cpt. Scott Kelly after a year in space, Obama deploys space as the “final frontier,” but in a context that, like the 2011 State of the Union Address, relates space more to the “spillover affect” it has on other scientific disciplines.⁸⁵

This more explicit connection of space to something-not-space - here, privatization - means that the materiality of space does not function as the referent for

⁸² Obama, “Remarks by the President in State of the Union Address.”

⁸³ Barack Obama, “Barack Obama: America Will Take the Giant Leap to Mars,” CNN, October 11, 2016, <http://www.cnn.com/2016/10/11/opinions/america-will-take-giant-leap-to-mars-barack-obama/index.html>.

⁸⁴ Marina Koren, “Obama’s Cognitive Dissonance About Mars,” *The Atlantic*, October 13, 2016, <https://www.theatlantic.com/science/archive/2016/10/obama-nasa-mars/504008/>.

⁸⁵ Barack Obama and Cpt. Scott Kelly, “Remarks by the President with Astronaut Scott Kelly and Mark Kelly” (Washington, DC, October 21, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/10/21/remarks-president-astronaut-scott-kelly-and-mark-kelly>.

space. Rather, Obama deploys space as a mediation metaphor, something that tries to balance the personal/mythic representations of space with the technical aspects – the literal cost of going to space – both in a financial sense and the effort required. Privatization and the methods of going to space are the new frontier. Obama attempts to use his role as president, the ultimate expression of the American public sphere, as a mediation between the personal and technical spheres. Goodnight states in his original article that he wished to revitalize the state of deliberative argument in the public sphere and show public life is “diminished” when the “personal and technical spheres presently substitute the semblance of deliberative discourse for actual deliberation.”⁸⁶ I further suggest that this focus on “mediation” stems from Obama’s identity as the first black president, and as an individual who feels keenly the divide between white American and black America. Robert Terrill writes that Obama’s discourse is “an unusually rich site for the exploration of doubled talk as an inventional resource.”⁸⁷ Whether Obama succeeds in mediating between the spheres remains to be seen in the pages of this project. I believe that he thinks he is; in the same CNN op-ed, he closes with a belief that “we’ll know because of the choices we make now, [astronauts have] gone to space not just to visit, but to stay – and in doing so, to make our lives better here on earth.”⁸⁸

⁸⁶ Goodnight, “The Personal, Technical, and Public Spheres of Argument,” 215.

⁸⁷ Robert E. Terrill, *Double-Consciousness and the Rhetoric of Barack Obama: The Price and Promise of Citizenship* (Columbia, South Carolina: University of South Carolina Press, 2015), 19.

⁸⁸ Obama, “Barack Obama.”

Conclusion

This project at its core seeks to examine and explain the ways in which the frontier myth catalyzes a shift from *endoxa* to social knowledge and, potentially as a result of that shift, a new kind of social consciousness that uses hope as a rhetorical grounding for practical action. How this occurs depends on the sphere in which each rhetor speaks. In other words, the goal of this project is not to answer the question of whether or not we *should* go to Mars; I leave that to politicians and scientists. I examine how rhetors in each sphere make use of their *endoxic* attitudes within the strictures of the frontier myth to actuate an audience to some hopeful goal. Rebecca Solnit, in a powerful look at hopeful activism, implores us: “I believe you can talk about both the terrible things we should engage with... as well as the wins and achievements that give us the confidence to endeavor to keep pursuing the possibilities.”⁸⁹

The spheres are not always distinct, however, and I will consider how each rhetor uses tools for deliberation that belong to the other spheres. Public sphere theory purports to seek a better kind of discourse in democratic society. Despite the frontier myth’s violent history, it clearly remains in social consciousness, so I plan to show how it can be used, as a space for invention, as a more inclusive myth of unification, much as Dorsey does.⁹⁰ To that end, each chapter will proceed in similar ways. After some background and contextualization, I will identify the various *endoxa* at play in the specific sphere and show how *endoxic* identities are used to move audiences through the frontier myth. As

⁸⁹ Rebecca Solnit, *Hope in the Dark: Untold Histories, Wild Possibilities*, 2 edition (Chicago, Illinois: Haymarket Books, 2016), 142.

⁹⁰ Dorsey, *We Are All Americans Pure and Simple*.

each case study progresses, I will continue to elucidate the concept of rhetorical hope as it relates to public discourse writ large. By the final case study, I hope to have answered Goodnight's charge and shown how, through the use of an enduring myth, provided at least one potential path toward civil public discourse in a democratic society. The frontier may just be one of those possibilities, as long as we hope for it correctly.

CHAPTER TWO

The New Frontier's Priest of Science

Introduction

As a young man applying to colleges, Neil deGrasse Tyson met Carl Sagan while on a tour of Cornell University. While Tyson ended up attending Harvard University, he frequently expresses the influence that meeting Sagan had on his life. Tyson says “I already knew I wanted to be a scientist, but that afternoon I learned from Carl the kind of person I wanted to become.”¹ By his account, he learned the importance of science *education*, not just science. Tyson muses, “To this day I have this duty to respond to students who are inquiring about the universe as a career path, to respond to them in the way that Carl had responded to me.”² Tyson sees himself as the latest in a long line of public communicators of scientific information, arguably starting from Aristotle through the likes of Newton, Huxley, Hawking, Dawkins, and Sagan. To understand Tyson's place on such a list, at the very least Sagan must be considered, and certainly the broader patterns of scientific communication need to be examined.

This chapter will primarily focus on the interplay between the frontier myth and *scientific* discourse. Thomas Lessl argues that “the intermingling of scientific and cultural symbols produces a rhetoric often more characteristic of religious than scientific

¹ Druyan, Braga, and Pope, “Standing Up in the Milky Way.”

² Arizona PBS, *Horizon Neil DeGrasse Tyson*, <https://www.youtube.com/watch?v=UIHOAUlUuq0>.

discourse.”³ He describes Sagan’s show *Cosmos* as “mediational rhetoric... [focusing] on the underlying values and premises guiding scientific research and to identify those values with public needs.”⁴ The various modes and methods that this mediational rhetoric feature likely varies from scientist to scientist. However, given Tyson’s appreciation for Sagan and his inheritance of Sagan’s rebooted show, it seems that Tyson learned more than just empathy from Sagan. Besides the updated television show (of which a second season was just announced⁵), Tyson’s prolific writing and tour schedule, combined with frequent Reddit AMAs (six since 2011) and an active Twitter account, means that Tyson has far more opportunities to disseminate scientific knowledge to the public. Underlying this scientific knowledge is the impression of destiny, that humans are meant for the stars. This is another part of Tyson’s rhetorical inheritance from Sagan.

This chapter elucidates several central features of Tyson’s rhetoric. As I stated in the introduction to this project, I locate Tyson in Goodnight’s personal sphere of argument. I show how Tyson inherits a rhetorical style from his predecessor, Carl Sagan, and how constructions of Sagan as prophet and Tyson as priest describe the religious nature of their rhetoric. This inheritance affects the way in which Tyson constructs science as a savior concept, which is why I place him in the personal sphere. In using the frontier myth combined with this scientific discourse, he further collapses all knowledge

³ Thomas M. Lessl, “Science and the Sacred Cosmos: The Ideological Rhetoric of Carl Sagan,” *Quarterly Journal of Speech* 71, no. 2 (May 1, 1985): 175, <https://doi.org/10.1080/00335638509383727>.

⁴ Lessl, 177.

⁵ Joe Otterson, “‘Cosmos’ to Return for Second Season on National Geographic and Fox,” *Variety* (blog), January 13, 2018, <http://variety.com/2018/tv/news/cosmos-season-2-national-geographic-1202663444/>.

into science, and then all science into fields related to space. Here, Mars provides a mythologized space for the frontier, as opposed to Elon Musk's treatment of Mars as a *material* space taken up in the next chapter. Because all knowledge is under science's purview, then, social knowledge shifts toward a consensus based around "fact." Hope is easy for Tyson to construct once that argument is made because science is constantly evolving and moving forward in his mind.

Endoxa from Non-Material Space

I begin here with how Tyson constructs his *endoxic* identity, suggesting that he uses the *topos* of space as salvific frontier to begin the process of shifting *endoxa* to social knowledge. *Endoxa* are especially well suited to Tyson here. Ekaterina Haskins writes that the endoxic method is a "process of assimilation and differentiation" of "linguistic resources" that allow "insight into how the boundaries among different areas of knowledge are drawn and defended."⁶ Tyson draws upon mythical and religious resources and uses them to *open* boundaries between knowledge bases. This redraws those epistemological boundaries so that everything eventually falls under the purview of science. By assimilating linguistic resources from other disciplines, Tyson forces other knowledge bases to defend themselves, in a sense creating a epistemic frontier of expansion with scientists as the explorers. Glenn Most argues *endoxa* can constitute a *protaseis*, or beginning, for rhetorical procedures, and indeed, should be seen as such so

⁶ Haskins, "Endoxa, Epistemological Optimism, and Aristotle's Rhetorical Project," 6.

as to pursue a “philosophically respectable end.”⁷ The respectable and necessary end, for Tyson, is putting human boots on Mars. However, in attempting to subsume all knowledge under “science,” he embodies Goodnight’s concern that civic deliberation in the public sphere is being minimized. Lessl suggests that “for the modern scientific gnostic, science saves because it puts the human person in a right relationship to the perceived grounds of its being.”⁸ Lessl further argues that this mindset completely eliminates the need for civic deliberation at all.⁹ The personality of the religious myth invades the public sphere.

By focusing on space exploration specifically, Tyson can conceal this expansion into the public sphere. Mars provides a material location for a non-material goal in a familiar rhetorical structure. The goal, according to Tyson, is two-fold: because Mars is *there*, and travel to Mars is necessary to reinvigorate the human drive to explore and wander based on the species’ origins. He says of the first: “I need a good reason to cross this ocean. Well, because we haven’t done it before. How’s that for a good reason?”¹⁰ He writes of the second: “The results of our searches on Mars... will be laden with significance in judging the prevalence of life in the cosmos.”¹¹ For Tyson, all knowledge

⁷ Glenn W. Most, “The Uses of Endoxa: Philosophy and Rhetoric in the Rhetoric,” 182, 184.

⁸ Thomas M. Lessl, “Gnostic Scientism and the Prohibition of Questions,” *Rhetoric & Public Affairs* 5, no. 1 (Spring 2002): 134.

⁹ Lessl, 147–51.

¹⁰ National Geographic, *Why Should We Go to Mars?*

¹¹ Neil deGrasse Tyson and Donald Goldsmith, *Origins: Fourteen Billion Years of Cosmic Evolution*, Reprint edition (New York: W. W. Norton, 2005), 387.

is presumed to eventually fall under science, and all science eventually relates back to astronomical studies. Tyson's *rhetorical* goal is to facilitate this through science education. However, these rhetorical constructions are abstract and difficult to define, and therefore ill-suited to accomplish an equally abstract goal, and so Tyson must displace it onto a material space - Mars. Here, that is the frontier, a rhetorical construction that is already present and easily modified, with Mars as the new West.

I suggest that Tyson first makes use of the ubiquity of the frontier myth as a primary *endoxon*, as each of the case study rhetors do, but Tyson's particular alteration is centered around the peculiarly religious nature of his rhetoric and his identity as a priestly rhetor. Normally, *endoxa* are seen as opinions, or the "things believed by everyone or by most people or by the wise."¹² I suggest that one interpretation of this may be the audience's understanding of the rhetor. Haskins writes that "Aristotle approaches *endoxa* as objects of belief and not as statements expressing beliefs."¹³ Tyson uses Mars as that object while actually arguing for the expansion of science into all other knowledge. I suggest *endoxa* should be extended to the effect that myth has on culture, because as Richard Slotkin argues, "cultural activity is an aspect of real world behavior."¹⁴ Haskins again: "The process of collecting and ordering *endoxa* thus amounts to reconstructing the

¹² Aristotle, *Aristotle*, 100b20.

¹³ Haskins, "Endoxa, Epistemological Optimism, and Aristotle's Rhetorical Project," 7.

¹⁴ Richard Slotkin, "Myth and the Production of History," in *Ideology and Classic American Literature* (Cambridge University Press, 1986), 75.

true signification of words and assertions.”¹⁵ The opinion of the audience regarding both the myth and Tyson’s religiously-structured rhetoric helps Tyson to mask his project.

Science becomes an object of belief masked as *fact*, not belief. *Endoxa*, despite Aristotle’s general acceptance of them as both rhetorical and logical resources, are potentially dangerous when divorced from the acknowledgment that they are opinions.¹⁶ Haskins, in one explication of a contextual use of an *endoxon*, shows how when a statement is “incorporated into the exposition of [origins]” the “opportunity for questioning the situation” is precluded.¹⁷ Notably she cites Eric Havelock directly after, who says that “narrativized usage has turned into a logical one.”¹⁸ The mythical structure of the frontier has been used to turn a political statement – that science is the only form of knowledge necessary for humanity to succeed – into a fixed assertion.¹⁹

In this case, that assertion is that Mars will reveal something about what it means to be human. Because of science’s primacy, no questions may be asked, and because of

¹⁵ Haskins, “Endoxa, Epistemological Optimism, and Aristotle’s Rhetorical Project,” 4.

¹⁶ Neil deGrasse Tyson, “There Are No Right or Wrong Opinions, Unless You Have Invalidated Yours for Having Ignored Facts That Conflict with Them.,” Tweet, @neiltyson (blog), November 17, 2015, <https://twitter.com/neiltyson/status/666688761053487104?lang=en>. This tweet considers no epistemological questions of “fact,” because science *is* fact, full stop.

¹⁷ Ekaterina V. Haskins, *Logos and Power in Isocrates and Aristotle* (Columbia, S.C: University of South Carolina Press, 2009), 25.

¹⁸ Eric A. Havelock, *The Muse Learns to Write: Reflections on Orality and Literacy from Antiquity to the Present*, New edition edition (New Haven, Mass.: Yale University Press, 1986), 105.

¹⁹ Haskins, *Logos and Power in Isocrates and Aristotle*, 25.

the frontier narrative's imperative to explore and expand, the statement has become logical in the mind of the rhetor. After all, Haskins says, "*endoxa* are to be sifted through only to reveal what is common about human behavior in general."²⁰ I believe it is helpful to think of Mars here as an *endoxic* focus, a singular object or concept in which a cultural opinion – whether true of the culture or in the mind of the rhetor – can be concentrated. This now-singular *protaseis* allows Tyson to use the scientific frontier as a method of consensus-building toward Farrell's social knowledge. In constructing an *endoxic* identity by using Carl Sagan's familiar rhetorical structures, Tyson can further and promote the process of traveling to Mars as a logical outcome of scientific inquiry that inherently benefits humankind..

Tyson's Religious Inheritance: "Make Straight in the Desert a Way"

Tyson's first column in the "Universe" series for *Natural History* suggests a prophetic inheritance that influences his rhetoric. Written before he was famous, Tyson describes a typical night conducting imaging research at the Cerro Tololo Inter-American Observatory in the Chilean Andes Mountains.²¹ He frames the tale not in descriptions of what it's like to "do research," but as though he's a modern-day Prometheus, stealing fire – or knowledge – from the gods. He begins the column with a reference to Zeus and Ptolemy, and then closes with this statement: "We [astrophysicists] traveled great distances. We ascended great mountains. We met the universe and its photons face to

²⁰ Haskins, 28.

²¹ Neil deGrasse Tyson, "Romancing the Mountaintop," *Natural History Magazine*, 1995.

face.”²² Right at the start of Tyson’s popular career, he anthropomorphizes the universe as something that can be met, a character in the life of humanity. This is a foundational myth for Tyson, and it forms the basis of his connections with his audience. Thomas Rosteck and Thomas S. Frenz propose a specific definition of myth in their reading of Al Gore’s *An Inconvenient Truth*, saying myths are a “narrative form of personal transformation. As such, myth has a great deal of rhetorical potency; it may well function as a suatory vehicle for political decision by offering its audience a template for action.”²³ This harkens back to Carl Sagan, who I argue is, for Tyson, his rhetorical ancestor. In the first episode of the 1980 *Cosmos* show, Sagan stated “The cosmos is also within us. We’re made of star-stuff. We are way for the cosmos to know itself.”²⁴ This rhetorical construction frames Tyson’s frontier as a creation story and humanity’s efforts to understand itself.

This foundational myth functions as a secular creation story for Tyson. It provides a necessary framing for the religious rhetoric Tyson uses. In an interview with *Time Magazine*, Tyson recounts what he feels to be the “most astounding fact” about the universe.

The most astounding fact is the knowledge that the atoms that comprise life on Earth, the atoms that make up the human body, are traceable to the crucibles that cooked light elements into heavy elements in their core under extreme temperatures and pressures. These stars, the high mass ones among them, went unstable in their later years. They collapsed and then exploded, scattering their

²² Neil deGrasse Tyson, 73.

²³ Thomas Rosteck and Thomas S. Frenz, “Myth and Multiple Readings in Environmental Rhetoric: The Case of An Inconvenient Truth,” *Quarterly Journal of Speech* 95, no. 1 (February 1, 2009): 4.

²⁴ “The Shores of the Cosmic Ocean.”

enriched guts across the galaxy. Guts made of carbon, nitrogen, oxygen and all the fundamental ingredients of life itself. These ingredients become part of gas clouds that condense, collapse, form the next generation of solar systems, stars with orbiting planets. And those planets now have the ingredients for life itself. So that when I look up at the night sky and I know that yes, we are part of this universe, we are in this universe, but perhaps more important than both of those facts is that the universe is in us. When I reflect on that fact, I look up—many people feel small because they're small and the universe is big—but I feel big, because my atoms came from those stars. There's a level of connectivity. That's really what you want in life, you want to feel connected, you want to feel relevant, you want to feel like you're a participant in the goings-on of activities and events around you. That's precisely what we are, just by being alive.²⁵

I suggest recognizing its similarity with Sagan's quote about the "pale blue dot" is essential for understanding its rhetorical power. The speech was written after Sagan directed NASA to spin the *Voyager* craft and photograph Earth. Sagan argued:

Look again at that dot. That's here. That's home. That's us. On it everyone you love, everyone you know, everyone you ever heard of, every human being who ever was, lived out their lives. The aggregate of our joy and suffering, thousands of confident religions, ideologies, and economic doctrines, every hunter and forager, every hero and coward, every creator and destroyer of civilization, every king and peasant, every young couple in love, every mother and father, hopeful child, inventor and explorer, every teacher of morals, every corrupt politician, every "superstar," every "supreme leader," every saint and sinner in the history of our species lived there--on a mote of dust suspended in a sunbeam... Our posturings, our imagined self-importance, the delusion that we have some privileged position in the Universe, are challenged by this point of pale light. Our planet is a lonely speck in the great enveloping cosmic dark. In our obscurity, in all this vastness, there is no hint that help will come from elsewhere to save us from ourselves.²⁶

A good religious myth needs a prophet, and by clearly directing an audience back to Sagan with this quote, Tyson frames Sagan as a scientific prophet in whose steps he can

²⁵ TIME, *How Neil DeGrasse Tyson Would Save The World | 10 Questions | TIME*.

²⁶ Carl Sagan, *Pale Blue Dot: A Vision of the Human Future in Space*, 1 edition (New York: Random House, 1994), 12–13.

follow. Lynda Walsh discusses how these scientist-prophets in the mid to late 1980s used new forms of media to speak directly to lay people on topics that were nominally “beyond their ken,” and Tyson, makes use of rhetorical strategies in similar mediums that were developed by Sagan, among others.²⁷ Sagan’s influence on Tyson is personal, and Tyson sees it as his duty to “interact with students in the same way that Carl Sagan interacted with [him].”²⁸ This influence extends to their rhetorics. I briefly focus on Sagan to describe the prophetic *ethos*.

This *ethos* shapes how Tyson views science as nearly ideographic. James Darsey centers the prophetic *ethos* in submission to a divine call, a rebirth, and the charismatic reception of the prophet by the audience.²⁹ Sagan describes in the preface to *The Demon-haunted World* how he came to dream of science as a young boy, asking questions of teachers, parents, and submitting to the call of science; the twin gods Wonder and Skepticism called.³⁰ His rebirth happened years later, at the University of Chicago, where under the tutelage of scientists like Gerard Kuiper (for which the asteroid belt that Pluto orbits in is named) he learned “back-of-the-envelope calculations,” which function

²⁷ Lynda Walsh, *Scientists as Prophets: A Rhetorical Genealogy*, 1 edition (Oxford ; New York: Oxford University Press, 2013). See Chapter 8: “Media, Metaphor, and the ‘Oracles of Science.’”

²⁸ Reuven Goldstein, *Carl Sagan’s Influence on Neil Tyson.*, https://www.youtube.com/watch?time_continue=1&v=eeqrN3Bfro8.

²⁹ Darsey, *The Prophetic Tradition and Radical Rhetoric in America*, 28–29, 33.

³⁰ Carl Sagan and Ann Druyan, *The Demon-Haunted World: Science as a Candle in the Dark*, Reprint edition (Ballantine Books, 1997), 3.

strikingly like a brief, spur of the moment prayer to Wonder and Skepticism.³¹ Sagan learned at Chicago how to be a scientific prophet. Indeed, he also mentions Harold Urey, the chemist, who ironically was responsible for Sagan being originally denied tenure at Harvard.³² Darsey notes that the prophet must face accusations of madness, but in facing down the madness, often finds his charisma and following.³³ In his biography of Sagan, Keay Davidson states that while Sagan was well liked by the public, his reception in the scientific community was more lukewarm, and even polarizing for some. Other than Urey's efforts to deny him tenure, other scientists felt Sagan's work sought popularity over accuracy.³⁴

This prophetic *ethos* meshes well with how Sagan presented himself in public. Walsh lists four ways that science prophets of the 1980s *needed* extremely public mediums – mostly books and TV shows/films – to form their charismatic personas: mass media frames scientific claims through “lay values,” through controversy, heavily utilizes visual and verbal metaphor, and is, in some ways, uncontrollable by the rhetor.³⁵ Sagan's

³¹ Sagan and Druyan, 4–5. Sagan here refers to the joy he feels when an idea strikes with such force he must find any available writing surface and jot down the calculations that solve the problem. This often happens to be an envelope or napkin.

³² Keay Davidson, *Carl Sagan: A Life* (Wiley, 2000), 203-04. Darsey also suggests that the rebirth must be harsh, a confrontation with death; there is no greater brush with metaphorical death for an academic than being denied tenure. See Darsey, *The Prophetic Tradition and Radical Rhetoric in America*, 30.

³³ Darsey, *The Prophetic Tradition and Radical Rhetoric in America*, 31.

³⁴ Davidson, *Carl Sagan*, 227. Interestingly, Davidson claims in his later years Urey came to understand and appreciate the importance of Sagan's place in promoting science to a public and even wrote a letter congratulating Sagan's book *The Dragons of Eden*. See Davidson, 297.

³⁵ Walsh, *Scientists as Prophets*, 140–41.

The Demon-haunted World, *The Pale Blue Dot*,³⁶ and *Billions upon Billions*³⁷ all deal with controversial subjects: science versus religion, humanity's place in the cosmos, and (though a compendium of essays), science's view on death and the culpability of science in creating a nuclear world. By framing something through controversy makes it simple to connect it to lay values, or vice versa; occasionally, a subject that is not overtly controversial will be *made* controversial by a prophet to either better make their point or increase their prophetic *ethos* by reinforcing a divine call that subsumes all other considerations.

Consider Sagan's comments on traveling to Mars in May of 1993. When asked about the presumable cost of such a mission, he placed it at anywhere between 300 to 500 billion dollars. However, he compares that to the amount of money "stolen: in the S & L Crisis of the late 1980s and early 1990s."³⁸ Most people understand that 300 billion dollars is expensive and given the prevalence of scientific reporters in the room, many of his immediate audience would have known NASA's budget for 1993 – 14.3 billion dollars.³⁹ Money is both controversial when framed through a scandal and easily accessible by laypeople. Audiences understand price tags. He situates himself on the side of the common people by claiming their money was stolen by both rich bankers and the

³⁶ Sagan, *Pale Blue Dot*.

³⁷ Carl Sagan, *Billions & Billions: Thoughts on Life and Death at the Brink of the Millennium*, Reprint edition (New York: Ballantine Books, 1998).

³⁸ pateli2008, *Carl Sagan on Human Missions to Mars*.

³⁹ Audrey T. Leath, "NASA Budget Increases for 1994," *Eos, Transactions American Geophysical Union* 74, no. 17 (April 27, 1993): 201–2, <https://doi.org/10.1029/93EO00416>.

government. This implies that science and all it has to say about anything is on the side of the common folk, despite economics being soundly outside the realm of Sagan's expertise. Tyson often creates a similar theme. In *Death by Black Hole*, Tyson devotes an entire chapter to a comparison of budgetary restraints on NASA with the central argument structured around a comparison to the price tag of a \$250 million dollar robotic mission to Mars amounting to "pennies on the dollar" for the average American taxpayer.⁴⁰ Again, the scientist is on the side of the common man based on the price tag. We can all afford a few extra pennies come tax season. The reference to taxation is interesting, as well. Despite SpaceX's popularity, which I will discuss more in the following chapter, Tyson believes that a private company cannot settle Mars based primarily on the cost, suggesting that the trip will take all of humanity working together.⁴¹ Here, the frontier of Mars is suggested as a near-democratic ideal. Tyson wants to push us to unite for Mars above all else. Prophets, Darsey suggests, are sincere at heart, driven by an "abolition of personal motive" so that the true nature of the prophet "becomes synonymous with the divine message."⁴² That divine message is a personal one, attributable to the prophet's charisma and ability to reach an audience on an intimate level based on the necessity of the prophetic message.

Sagan also makes use of visual metaphor in his television show. The first episode is titled "The Shores of the Cosmic Ocean," and the episode opens with Sagan standing

⁴⁰ Neil deGrasse Tyson, *Death by Black Hole: And Other Cosmic Quandaries*, 1 edition (W. W. Norton & Company, 2014), 302.

⁴¹ Ferris, "Neil DeGrasse Tyson Says It's Tough for a Company to Settle Mars."

⁴² Darsey, *The Prophetic Tradition and Radical Rhetoric in America*, 86.

near a booming surf, comparing humans to the explorers of Europe who set out on an unknown ocean. To reinforce this particular metaphor, the entire series is framed through Sagan's physical journey through the universe by way of the "Spaceship of the Imagination," shaped like a dandelion seed.⁴³ Sagan's dearest hope, he writes, is that humans would return to the stars after the gift of Apollo,⁴⁴ because "we were wanderers from the beginning."⁴⁵ This certainly evokes a sense of Manifest Destiny, which Janice Hocker Rushing refers to as a "perspective, point of view, even a philosophical orientation."⁴⁶ As a philosophical orientation combined with visual metaphor, it allows Sagan – and Tyson, later – to reinforce a religious call to join them on the frontier. Anyone can create a "Ship of the Imagination."

Interestingly, Sagan also uses a "cosmic" calendar to reinforce how seemingly infinitesimal humanity is, but his final charge to "enhance life, or squander our fifteen billion year heritage" seems to problematize the question of humanity's place in the cosmos; after all, if the entirety of the universe is our heritage, would not we have a place of more importance? I will return to this contradictory view of uncertainty in the scientific frontier below.

⁴³ "The Shores of the Cosmic Ocean."

⁴⁴ Sagan, "The Gift of Apollo."

⁴⁵ Sagan, *Pale Blue Dot*, 5. This quote was used to narrate a short film – Erik Wernquist, *Wanderers - a Short Film by Erik Wernquist*, 2014, <https://vimeo.com/108650530> - that is a gorgeously rendered, four-minute long metaphor for space as our manifest destiny, which reinforces the importance of visual metaphor in advocating for space exploration.

⁴⁶ Rushing, "Mythic Evolution of 'The New Frontier' in Mass Mediated Rhetoric," 282.

I begin with Sagan's prophetic status to both elucidate the historical links between Sagan and Tyson and understand Tyson's rhetorical situation in terms of the first iteration of *Cosmos*. I think that understanding the rhetorical tactics Sagan utilized can illuminate what the audience expected from Tyson; while Tyson had enjoyed a fair amount of publicity with books and column, the rebooted *Cosmos* was what really pushed him into a wider public eye. Each of the visual metaphors Sagan uses in his show, Tyson repeats: the shape of the Ship of the Imagination, nearly the same Cosmic Calendar scene, and even down to the recycling of pieces of the original *Cosmos* script. In fact, the rebooted show *begins* with a quote from Sagan: "The cosmos is all that is, or ever was, or ever will be. Come with me." Of the universal timeline, Sagan stated: "Everything humans have ever done occurred in that bright speck, at the lower right of the Cosmic Calendar." Tyson repeats this, using the same visual of a small glowing beam on December 31. He said: "Everything in the history books happened here, in the last seconds of the Cosmic Calendar."⁴⁷ Both speakers must situate humanity in a particular *kairotic* moment to reinforce the notion that the frontier beckons *now*; the difference is that Tyson is speaking at a time when space exploration is ramping up again and selecting a particular moment to speak that reinforces this sense of inheritance.

Given the religious aspects of both their rhetorics, I suggest that this indicates an inheritance of the prophet moving to the priest. Thomas Lessl describes what he calls the "priestly voice." as a voice which insists "on its origins outside of ordinary human experience as revelations of spirit or nature" and "creates a sense of people's identity

⁴⁷ "The Shores of the Cosmic Ocean"; Druyan, Braga, and Pope, "Standing Up in the Milky Way."

with respect to the wholly Other.”⁴⁸ This is similar, but distinct, to Darsey’s prophetic *ethos*. While the prophet is exterior to the status quo, the priest is interior, but still manages the divine connection for the people. Once the prophet has made straight the path for the savior and eventually been accepted by the people post-martyrdom, the priest helps the people further understand the prophet’s message.⁴⁹ Sagan is Tyson’s prophet, and Tyson is the priest of the universe carrying on Sagan’s prophetic message and ethos. Lessl notes that priests stand at the periphery of the culture, but not outside.⁵⁰ Admittedly, the line between these two rhetorical positions is easily blurred, but existent. While both in their own situations slipped from one to the other and back again, my argument is specifically that Tyson *constructs* Sagan as his prophet in an effort to legitimize his rhetorical inheritance from Sagan. A prophet is a *myth-maker*; a priest is a *myth-actuator*. Furthermore, this provides a simple connection to the frontier through this priestly voice. Richard Slotkin writes of cultural myths as a genre that “the language of myth assimilates the peculiar and contingent phenomena of secular history to archetypal patterns of growth and decay.”⁵¹ The public has been primed for this mythic evolution by the ubiquity of Sagan’s rhetoric, but as Slotkin argues, Tyson must work within his own rhetorical context which has shifted from Sagan’s day. In a renewed era of space exploration, the time has come for Tyson to use the myth for growth once more after a

⁴⁸ Thomas M. Lessl, “The Priestly Voice,” *Quarterly Journal of Speech* 75, no. 2 (May 1, 1989): 184–85, <https://doi.org/10.1080/00335638909383871>.

⁴⁹ Darsey, *The Prophetic Tradition and Radical Rhetoric in America*, 33.

⁵⁰ Lessl, “The Priestly Voice,” 186.

⁵¹ Slotkin, “Myth and the Production of History,” 70.

brief time of decay. Sagan's time had seen the devolution of the Moon program, but his rhetorical structures are still of use to Tyson.

Space as Savior: "You Want to Feel Connected, You Want to Feel Relevant"

Tyson sees the "cosmos" as a secular savior. A priest must have a god for whom they proselytize. In the United States, that is usually the Christian God with a salvific Son. Tyson, like many other scientific communicators, believes that science is the answer to many, if not all, of society's ills. In a short text modeled after Lincoln's Gettysburg Address, he writes that "innovations in science and technology form the primary engine of economic growth" and "the time has come for remembering [Honest Abe] for setting our Nation on a course of scientifically enlightened governance, without which we all must perish from this Earth."⁵² Given the time period, Lincoln's rhetoric of the frontier and science is notably absent, so it's significant here that Tyson uses him in an effort to legitimize his understanding of history. Lessl notes that most scientists see society not as a series of cultural evolutions or historical events, but as scientific innovations or events leading from one scientific discovery to another.⁵³ A few things in this text bear closer examination here; in one 272-word text, we see Tyson's view of science-as-savior. The

⁵² Neil deGrasse Tyson, "America's Science Legacy," *Science* 350, no. 6263 (November 20, 2015): 891–891, <https://doi.org/10.1126/science.aad8408>. This 272-word speech originally appeared in Abraham Lincoln Presidential Library Foundation, *Gettysburg Replies: The World Responds to Abraham Lincoln's Gettysburg Address* (Guilford, Connecticut: Lyons Press, 2015), a collection of 272-word speeches written by people from Jimmy Carter to Steven Spielberg to Sandra Day O'Connor.

⁵³ Lessl, *Rhetorical Darwinism*, 165–67.

savior is a personal construct, and it allows Tyson to seemingly speak directly toward individuals as priest to invite them to know the savior.

First, when Tyson discusses “innovations in science,” it should be understood he references two specific branches of science: climatology and astro/aeronautical sciences. Further, he nods to John F. Kennedy’s 1963 address to the National Academy of the Sciences at its centennial. Kennedy states in the address that one of four central problems science must solve is that of conservation.⁵⁴ Tyson explicitly states “As we warm our planet, climatology may be our only hope to save us from ourselves.” There is no nod to the policies that would need to work with science to accomplish such a lofty goal, the political complexities, or the social standing of science in a culture obsessed with controversy; the answer is simply “science.”

Interestingly, the need for collaboration between policy-makers and scientists is a central theme of the Kennedy speech, given a year after Rachel Carson’s *Silent Spring*, which was famously used as a basis to ban the pesticide DDT. Kenny Walker and Linda Walsh argue that Carson in fact used *uncertainty* as a means of activism, showcasing a different understanding of science and its place in policy-making,⁵⁵ but Tyson uses

⁵⁴ John F. Kennedy, “Address at Anniversary Convocation of National Academy of Sciences” (Washington, DC, October 22, 1963), <https://www.jfklibrary.org/Asset-Viewer/Archives/JFKPOF-047-037.aspx>.

⁵⁵ Kenny Walker and Lynda Walsh, “‘No One Yet Knows What the Ultimate Consequences May Be’: How Rachel Carson Transformed Scientific Uncertainty Into a Site for Public Participation in *Silent Spring*,” *Journal of Business & Technical Communication* 26, no. 1 (January 2012): 27, <https://doi.org/10.1177/1050651911421122>.

religio-mythic discourse in a secular context to provide a sense of *certainty* in the vein of E. O. Wilson.⁵⁶

Tyson does *feign* potential uncertainty. In another *Universe* column for *Natural History*, he claims that historical scientists exist on the “perimeter of ignorance,” only calling upon God “from the lonely and precarious edge of incomprehension. Where they feel certain about their explanations, however, God hardly gets a mention.”⁵⁷ When asked the question, “Does the Universe have a purpose?” he answers with “I’m not sure. But anyone who expresses a more definitive response... is claiming access to knowledge not based in empirical foundations.”⁵⁸ Tyson subsumes all other forms of science under astro/aeronautical sciences because he thinks they provide a certainty about questions that traditionally fall under the purview of the divine, namely those of existence.

Tyson uses positivism as a mode of certifying the uncertifiable but pretends to do otherwise. Lessl suggests that “throughout Western history... myth has sought to relate itself to science, simply because mythologies that are shown to comport with technical conceptualizations of nature” are more successful than those that do not.⁵⁹ As rhetorically

⁵⁶ Edward Osborne Wilson, *Consilience: The Unity of Knowledge*, Reprint edition (Cambridge: Vintage, 1999), 5, 9. Wilson’s overall argument in this text is that *everything*, even down to what art we find affectively compelling, can be explained by one scientific branch or another, and all scientific roads eventually lead to the temple of physics. For a rebuttal from another scientist, see Stephen Jay Gould, *The Hedgehog, the Fox, and the Magister’s Pox: Mending the Gap between Science and the Humanities*, Reprint edition (Cambridge, Mass: Belknap Press, 2011).

⁵⁷ Neil deGrasse Tyson, “The Perimeter of Ignorance,” *Natural History Magazine*, November 2005, 29.

⁵⁸ minutephysics, *Does the Universe Have a Purpose? Feat. Neil DeGrasse Tyson*, 2012, <https://www.youtube.com/watch?v=7pL5vzIMAh>s.

⁵⁹ Lessl, *Rhetorical Darwinism*, 213.

authoritative forms, the two rely upon one another.⁶⁰ Uncertainly is not part of either equation, but it cannot be if the savior is to be believed. The frontier has similar understandings of uncertainty. Janice Hocker Rushing writes that “a frontier is a place that at first seems infinite and unknown, but eventually becomes confining and familiar.”⁶¹ At the same time, Slotkin argues that “mythological narrative does not admit a multiplicity of perspectives.”⁶² Science confines with each new discovery, and Mars provides Tyson a space onto which to project this uncertainty about humanity’s origins and limit the potential perspectives by elevating space’s salvific potential. The appearance of uncertainty, then, allows him to use the frontier, but scientism – what Lessl defines as “the assumption that only the techniques of inquiry used within the natural sciences have any epistemic worth – mitigates this uncertainty.”⁶³

This confident mindset is essential to the second aspect of the rhetorical construction of space-as-savior because it is figured as a new frontier. This new frontier understands science as fundamental to the historical success of America. Tyson writes “Quantum physics, discovered in the 1920s, now drives nearly one third of the world’s

⁶⁰ For the same argument on the different side, consider the desperation of the Young Earth Creationism movement to prove that their understanding of life’s origins is scientifically viable. See Nathan Frankowski, *Expelled: No Intelligence Allowed*, Documentary, 2008, <http://www.imdb.com/title/tt1091617/>; Michael J. Behe, *Darwin’s Black Box: The Biochemical Challenge to Evolution*, 2nd edition (New York: Free Press, 2006); Francis S. Collins, *The Language of God: A Scientist Presents Evidence for Belief*, Reprint edition (New York: Free Press, 2007) for representative examples.

⁶¹ Rushing, “Mythic Evolution of ‘The New Frontier’ in Mass Mediated Rhetoric,” 266.

⁶² Slotkin, “Myth and the Production of History,” 83.

⁶³ Lessl, *Rhetorical Darwinism*, 22.

wealth” and that “as a young nation, we had plucked the engineering fruits of the Industrial Revolution that had transformed Europe.” These developments allowed America to conquer the “frontier of science” and its contributions to “health, wealth, and security of its residents.”⁶⁴ Because Tyson does not believe in a *religious* savior, in a country reliant on civil religion he must, at least on the surface, displace the savior onto concept other than the divine right of America to lead the world.⁶⁵

Ideas of American exceptionalism posit America at the forefront of world moral leadership and practical leadership. For Tyson, this leadership must be “scientifically enlightened.” Were Tyson to imply that science has not or cannot yet answer (or even suggest an answer) some metaphysical questions, his argumentative position is weakened. Therefore, he must project a sense of certainty that science is able to eventually answer any question with empiricism, and that America’s ability to produce those intrepid scientists puts the country in the forefront of world leadership. However, this works in opposition to the unknown of the frontier and how the frontier scientist penetrates the epistemological unknown.⁶⁶This is why Tyson’s rhetorical inheritance from Sagan is so essential and effective. As a priest following a prophet, Sagan is the one who has first ventured into the unknown. Tyson’s job is not to tread the same spaces, but

⁶⁴ Tyson, “America’s Science Legacy.”

⁶⁵ See Robert N. Bellah, “Civil Religion in America,” *Daedalus* 134, no. 4 (September 1, 2005): 40–55, <https://doi.org/10.1162/001152605774431464> for further discussion on civil religion in America.

⁶⁶ Leah Ceccarelli, *On the Frontier of Science: An American Rhetoric of Exploration and Exploitation*, 1 edition (East Lansing: Michigan State University Press, 2013), 4, 58.

to further Sagan's old goal of directing the layperson toward the same place. Without that inheritance, Tyson would be more of a frontier hero archetype. Instead, as a priest, he can point the way for his audience and give them the tools to reach their own, personal unknowns. We *all* learn something about ourselves if we get to Mars, Tyson argues.⁶⁷

Tyson's Frontier: "Lament the Day Americans Become Bystanders"

The frontier provides Tyson a method of invention to produce a desired effect in audiences. Myths as a genre, Richard Slotkin suggests, are capable of "evoking a complex system of historical associations by a single image or phrase."⁶⁸ It is essential to understand how Tyson positions himself as priest, Sagan as prophet, and space as savior, respectively, to fully see how salvation is equated with space as frontier. The frontier saves, it transforms, it pushes and molds its inhabitants. Into *what* depends on how the frontier is constructed. For example, Leroy Dorsey elucidates the connection between the Puritans' jeremiadic tradition and the frontier myth,⁶⁹ and he argues that Theodore Roosevelt used the frontier as a space for the Americanization of immigrants and people of color on the one hand, and to "dampen public fears" on the other.⁷⁰ Dorsey maintains

⁶⁷ National Geographic, *Why Should We Go to Mars?*

⁶⁸ Slotkin, *Gunfighter Nation*, 6.

⁶⁹ Dorsey, *We Are All Americans Pure and Simple*, 39. Tyson's rhetoric also bears the hallmarks of the jeremiadic tradition, perhaps unsurprisingly, but a discussion of that section of the myth is beyond the scope of this project; suffice it to say, the jeremiad, as Sacvan Bercovitch argues, is ever present in American rhetoric, and especially the idea of "movement." See Sacvan Bercovitch, *The Rites of Assent: Transformations in the Symbolic Construction of America*, 1 edition (New York: Routledge, 1992), 6, 41.

⁷⁰ Dorsey and Harlow, "'We Want Americans Pure and Simple,'" 57.

that for Roosevelt, the *process* of becoming American constituted the essential function of the Frontier, and that “early immigrants’ experiences on the mythical and untamed North American continent became benchmarks for the establishment of social order in America.”⁷¹ As immigrants moved West, they *became* more American, and at the same time America became the America we understand today. As we move toward Mars, two things happen in Tyson’s view. First, we become somewhat more human as we learn more about our biological origins. In terms of the frontier, this fairly equates with becoming more American, as Dorsey argues. Second, Tyson essentially makes the argument for American exceptionalism as a reason for visiting Mars when he writes that “with missions and projects such as those [he specifically references a manned mission to Mars in the previous paragraph] the US can guarantee itself an academic pipeline bursting with the best and brightest.”⁷² The frontier, and especially the New Frontier of space, is always a place to reinforce American exceptionalism.

Tyson implies that we are immigrants, of a sort, in the universe. Walsh maintains that visual metaphors are essential for scientific prophets, and as I noted above, Tyson recreates the visual metaphors Sagan used. He opens the first episode of the new *Cosmos*: “A generation ago, the astronomer Carl Sagan stood here, and launched hundreds of millions of us on a great adventure: the exploration of the universe, revealed by science. It’s time to get going again.”⁷³ The final phrase references what Tyson sees as the

⁷¹ Dorsey, *We Are All Americans Pure and Simple*, 112.

⁷² Neil deGrasse Tyson, “Reaching for the Stars: America’s Choice,” *Natural History Magazine*, April 2003, 21.

⁷³ Druyan, Braga, and Pope, “Standing Up in the Milky Way.”

“decay” that Slotkin mentions. The lack of manned spaceflight troubles Tyson and has caused what he feels is a stagnation of America’s science goals. In *Space Chronicles*, he writes “New wonders supplant old wonders, induced by modern mysteries instead of old. We must ensure that this forever remains true, lest our culture stagnate through time and space.”⁷⁴ Without wonder (recall, one of Sagan’s Twin Gods), America falls to the wayside, lamenting the day when Americans become “bystanders rather than leaders on the Space Frontier.”⁷⁵ Wonder becomes the ticket to the frontier, the cosmic American Dream, and, as everything eventually must be, it is the purview of science; those who think they have a *religious* answer are the kinds of immigrants we do not want.

Who we *do* want on the frontier, in this particular case, has strange racial overtones in this particular situation. For Tyson there is certainly a requirement that one confidently worship Wonder and Skepticism, but the frontier hero and frontiersmen have typically been understood as a white hero. Dorsey notes that prior to Roosevelt, frontier heroes were unquestionably white, the “gentleman hunter.”⁷⁶ Ceccarelli connects these heroes directly to science, saying that linking the frontier to scientific work was a “transfer of an American pioneering spirit... to scientists, molding them in the image of fiercely individualistic, authority-averse archetypes of virile white masculinity – coarse, competitive, and isolated from a fearful public.”⁷⁷ In this case, Tyson is black, but now

⁷⁴ Tyson, *Space Chronicles*, 102.

⁷⁵ Tyson, 99.

⁷⁶ Dorsey, *We Are All Americans Pure and Simple*, 51.

⁷⁷ Ceccarelli, *On the Frontier of Science*, 30.

refuses to discuss how being black affects his status as a public intellectual, saying: “I don’t come up and say, “I’m your black scientist. Here’s what black people think about science. Here’s how astrophysics affects black people.”⁷⁸ The scientific frontier, too, is the great equalizer, as it the American frontier was for Roosevelt. Tyson chooses not to address the ways in which science makes use of patriarchal and racist structures, or even as an argument for those structures.⁷⁹ On the surface, this aspect of the personal sphere is not allowed to intrude into the racial history of the public sphere.

The site of equalization has changed from race to an epistemological consideration. Furthermore, Tyson has a noted distaste for social sciences and the humanities. This seems to reinforce that argument. Ironically, a few years before he made that statement, he was a member of a panel and was asked about “genetic differences” between men and women in the sciences. He acknowledged the social forces that attempted to prevent him from becoming an astrophysicist, wondering “Where is the blood on the tracks, that I happened to survive, and others did not? Where are the others?”⁸⁰ In the intervening five years, Tyson seems to have cashed in on the frontier’s need to trade in masculinity but ignored the scholarship that shows why this is problematic. Michael K. Johnson notes the complicated and diverse relationship various iterations of black masculinity have had

⁷⁸ Browne, “A Conversation With Neil DeGrasse Tyson About ‘Cosmos,’ Race, and Celebrity.”

⁷⁹ For an extended historical overview of the topic, see: John P. Jackson and Nadine M. Weidman, eds., *Race, Racism, and Science: Social Impact and Interaction* (New Brunswick, NJ: Rutgers University Press, 2005), especially a discussion of the use of science to argue for colonialism in the Age of Exploration on pp. 8–12.

⁸⁰ Center for Inquiry, *Panel Discussion: Dawkins, Tyson, Druyan, Stenger, Grothe*, 2009, <https://www.youtube.com/watch?v=KEeBPSvcNZQ#t=1h1m20s>.

with the frontier, saying that “by claiming as their own a narrative structure that is associated with the dominant white culture, black writers also claim as their own a place in a society that refuses to acknowledge African American participation in and contribution to that culture.”⁸¹ Ceccarelli also notes the peculiar nature of the scientific masculine frontier hero; they “have an impulse to penetrate the unknown and a temperament that is bold, aggressive, and competitive. In short, they are archetypes of hegemonic masculinity.”⁸² Incredibly, the panel in which Tyson refuses to be called a “black scientist” referenced above was asked a question about women in the sciences. Tyson chose to answer the question in terms of race. There was a woman sitting right next to him. Even more incredibly, the woman was Ann Druyan, the wife of the late Carl Sagan. Johnson writes that black writers were often concerned that the identity constructed for them by the dominant culture – that of the “primitive, savage” brutish black man – and found themselves repeating “problematic elements of the dominant culture’s masculine ideal without much critical self-reflection.”⁸³ This is a tension Tyson finds himself avoiding so he can make his argument about science and Mars. As a scientist, he can claim to take his place in the dominant culture, but at the expense of an awareness of social oppression.

⁸¹ Michael K. Johnson, *Black Masculinity and the Frontier Myth in American Literature* (U of Oklahoma P, 2002), 19.

⁸² Ceccarelli, *On the Frontier of Science*, 141.

⁸³ Johnson, *Black Masculinity and the Frontier Myth in American Literature*, 242.

Conclusion: The Knowledge of the Worthy

As Tyson makes use of an *endoxic* frontier and priestly identity, he moves all knowledge under the purview of science. The materiality of Mars provides an effective place for this non-material movement to happen. While Farrell has a fairly optimistic view of what social knowledge can do in a democratic society if used properly, it should be clear that in Tyson's case, this is not always to be desired. The issue with Tyson is that people *listen* to him. He has successfully created consensus on at least the level of accessibility.

In the *Structure of Scientific Revolutions*, Thomas Kuhn proposes that scientific revolutions be thought of in terms of "paradigms." Paradigms must be attractive enough to entice adherents to a different theory away from their present scientific research and be "open-ended enough to leave all sorts of problems for the redefined group of practitioners to resolve" that spark some kind of scientific tradition.⁸⁴ The trend of public scientific intellectuals is a strange hybrid of science and rhetoric. Kuhn, in a postscript written several years after the original publication, discusses the function of scientific communities in paradigm creation, writing that they consist of scientific specialists bounded by their literature base and often in competition with other communities. As such, "they see themselves and are seen by others as the men uniquely responsible for the pursuit of a set of shared goals, including the training of their successors."⁸⁵ This definition of a scientific community is incompatible with the sharing of knowledge, given

⁸⁴ Thomas S. Kuhn, *The Structure of Scientific Revolutions: 50th Anniversary Edition* (University of Chicago Press, 2012), 11.

⁸⁵ Kuhn, 176.

the often-esoteric jargon that makes up the bounding literature base. According to Daniel Brouwer and Catherine Squires, the goal of a public intellectual is the:

Characterization of knowledge as a means for clarifying one's subjectivity and the possibility of freedom through knowledge... To occupy the grand role of moral conscience requires the grand liberal theme of the sovereign subject and the ability to imagine a broad, coherent public in the manner of John Dewey's "Great Community."⁸⁶

Brouwer and Squires identify three *topoi* of public intellectuals: breadth, location, and legitimacy.⁸⁷ Put simply: what kind of information is the individual trying to disperse, are they properly positioned to do so, and do they have the right to speak? Tyson uses his public intellectual status to alleviate the tension between scientific communities and the dispersal of scientific knowledge. Recall that he does very little publishable scientific work, but audiences still assume him to be speaking for "scientists." Conceptually, the requirements, opportunities, and limitations of being a public intellectual are suited to understanding how Tyson's rhetoric creates social knowledge.

Arguing that "public intellectualism" places a rhetor in the public sphere is a contradiction in terms, on the surface. Zarefsky argues that Goodnight transformed spheres from "categories of social behavior to categories relevant to deliberation, the process by which people collectively confront their predicaments and come to conclusions under conditions of uncertainty;" of the personal sphere, Zarefsky again summarizes Goodnight and defines it a space where "the argumentation affects only those who are interacting, and only those in the particular personal relationship *should*

⁸⁶ Daniel C. Brouwer and Catherine R. Squires, "Public Intellectuals, Public Life, and the University," *Argumentation & Advocacy* 39, no. 3 (Winter 2003): 203.

⁸⁷ Brouwer and Squires, 203–6.

participate” (emphasis mine).⁸⁸ This is the effectiveness of both religious/mythical forms of speech and the frontier myth. By giving the *concepts* of science and space salvific powers, Tyson invites everyone to participate, and therefore science and space are individualized in each person’s . Farrell writes of social knowledge: “It depends upon an ‘acquaintance with’ or a *personal relationship* to other actors in the social world.”⁸⁹ Scientific understandings of space reinvigorate our relationships with ourselves, with each other, and with knowledge. Consider again Tyson’s secular creation story – “We are a part of the universe, and the universe is in us”⁹⁰ – and note, too, how evoking Sagan’s rhetorical forms positions space as a concept with which one can have a personal relationship, again evocative of religious rhetoric.

Salvation is intended to provoke some kind of change in the listener. Tyson suggests that not only do we learn something about our own origins in going to Mars, but we also simply *learn*. The technological gains in developing technology that can land a human on Mars seems invaluable, as were the gains from sending men to the Moon. John W. Jordan identifies this theme in John F. Kennedy’s “transcendent” rhetoric, writing that in “minimizing distance and emphasizing technology, the question of exploration was practically reversed... space [was] the only place worthy of our skills as explorers.”⁹¹ The

⁸⁸ David Zarefsky, “Goodnight’s ‘Speculative Inquiry’ in Its Intellectual Context,” *Argumentation & Advocacy* 48, no. 4 (Spring 2012): 212.

⁸⁹ Farrell, “Knowledge, Consensus, and Rhetorical Theory,” 5.

⁹⁰ TIME, *How Neil DeGrasse Tyson Would Save The World | 10 Questions | TIME*.

⁹¹ Jordan, “Kennedy’s Romantic Moon and Its Rhetorical Legacy for Space Exploration,” July 24, 2003, 217.

frontier returns. Technology here is ideographic; Tyson rarely goes into the details of precisely what technological advances will help take us to Mars.⁹² Consensus, the hallmark of social knowledge, comes in through a communal desire to go there, “because it’s there,” and because “there” is required to understand ourselves.

Tyson’s use of these various myths all finally merge in the acknowledgment of Mars as a material place connected to our understanding of origin. Mircea Eliade writes that “By every means at his disposal, he [religious man] seeks to reside at the very source of primordial reality, when the world was *in statu nascendi*.”⁹³ By borrowing wholesale from various mythic traditions, as well as his construction of Sagan as prophet, Tyson puts himself philosophically at the forefront of the push to Mars, the nearest place with potential to inform these origins. As such, it structures an audience around the *philosophical* requirements of simply getting there. Eliade continues:

If religious man feels the need of indefinitely reproducing the same paradigmatic acts and gestures, *this is because he desires and attempts to live close to his gods*... But the mythical time whose reactualization is periodically attempted is a time sanctified by the divine presence, and we may say that the desire to live in *the divine presence* and *in a perfect world* (perfect because newly born) corresponds to the nostalgia for a paradisaical situation.⁹⁴

The narrative construction of the frontier is not new, nor are the religious structures Tyson utilizes. They are the paradigmatic acts. The goal here for Tyson is using those structures to create a new understanding of what science is and can do; a new consensus,

⁹² The closest Tyson comes is National Geographic’s 2016 series *Mars*, and even then, Tyson is only attached tangentially.

⁹³ Mircea Eliade, *The Sacred and The Profane: The Nature of Religion*, trans. Willard R. Trask (San Diego: Harcourt Brace Jovanovich, 1987), 80.

⁹⁴ Eliade, 91–92.

which Thomas Farrell argues is the foundation for social knowledge. He writes that “there is a corresponding necessity for assuming a kind of knowledge applicable to this ‘inner nature.’”⁹⁵ In using familiar mythic structures as an *endoxa*, Tyson assumes all knowledge is applicable to the personal. Eliade, once more: “Sacred time appears under the paradoxical aspect of a circular time, reversible and recoverable, a sort of eternal mythical present that is periodically reintegrated by means of rites.”⁹⁶ Reintegration occurs as Tyson leads his audience toward a consensual understanding of what putting people on Mars would mean for science, and what is true for science is true for all. Consensus is assumed.

This assumption is where I suggest Tyson’s effectiveness shows some cracks in the structure. Some months ago, he tweeted that “In school, rarely do we learn how data become facts, how facts become knowledge, and how knowledge becomes wisdom.”⁹⁷ Understandably, the pushback was substantial, with historians of science, school teachers, and philosophers replying that this was, in fact, all that they taught. I contend that Tyson is running up against the limits of the consensus he has created. In ignoring the mythical structures and alternative forms of knowing, he runs into precisely what Lessl predicts for scientific rhetors: “A scientific culture tempted by the interests of self-preservation to

⁹⁵ Farrell, “Knowledge, Consensus, and Rhetorical Theory,” 5.

⁹⁶ Eliade, *The Sacred and The Profane*, 69.

⁹⁷ Neil deGrasse Tyson, “In School, Rarely Do We Learn How Data Become Facts, How Facts Become Knowledge, and How Knowledge Becomes Wisdom.,” Tweet, @neiltyson (blog), September 4, 2017, <https://twitter.com/neiltyson/status/904861739329708034?lang=en>.

resist any meaningful conversation with the broader world of thought.”⁹⁸ As Farrell notes, radical communities tend to “attribute consensus far in excess of its actual state.”⁹⁹ The tension lies within the decision-making aspect of social knowledge. While Tyson’s rhetoric has its issues in terms of its *endoxic* beginnings in problematic uses of religious and frontier myths, the final push toward a decision has been undeniably effective. Elon Musk is in fact fully planning on going to Mars, and with the launch of the Falcon Heavy may just get us there. Furthermore, NASA’s Space Launch System is scheduled to be ready in 2019.¹⁰⁰

However, this is also where Tyson attempts to create his version of rhetorical hope. In his view, the world would simply be a better place if we were all to unify in a communal effort to go to Mars; getting there requires consensus of the purest kind. Tyson’s hope, however, is bound up in epistemological limitations and American exceptionalism. Tyson specifically denigrates religious folk, and thus, they are not permitted to take part in the frontier and therefore not allowed to be hopeful. It is Wonder and Skepticism that reveals hope. Haskins suggests that optimism is bound up in the “human desire and aptitude for learning,” but this desire cannot be disjointed from culture and history.¹⁰¹ Tyson, based on the frontier and a limiting of knowledge by increasing the

⁹⁸ Lessl, *Rhetorical Darwinism*, 268.

⁹⁹ Farrell, “Knowledge, Consensus, and Rhetorical Theory,” 11.

¹⁰⁰ Lee Mohon, “Space Launch System (SLS) Overview,” Text, NASA, March 16, 2015, <http://www.nasa.gov/exploration/systems/sls/overview.html>.

¹⁰¹ Haskins, “Endoxa, Epistemological Optimism, and Aristotle’s Rhetorical Project,” 3.

private sphere in importance, has restricted the possibility of hope for those that disagree, but for those that concur with his call for action toward Mars, this hope does create a sense of unity and consensus. Celeste Condit, however, notes that exclusionary discourse has negative effects on public morality, and especially given Tyson's ignorance of moral and ethical philosophy in favor of scientism, he is particularly vulnerable to what Condit describes as the "pessimism of privatized morality."¹⁰² The rhetorical systems that Tyson uses, unfortunately, contribute to a kind of pessimism for anyone not invited to the frontier.

Tyson alone is not responsible for these systems, but I cautiously submit that Tyson is at least *partially* responsible for the maintenance of public attitudes toward space travel and these rhetorical constructs.¹⁰³ He has placed himself within what Crick calls the "philosophical situation" and used his status as public intellectual to "conceptualize and provide direction for solving longstanding and pervasive problems and are then successful in helping change the habits and practices of a public."¹⁰⁴ Farrell's requirements of direct, concrete decision making are, in the cases of intellectual work, too restricting. Tyson here uses and has used his position here to pave the way for people like Musk, just as President Obama used his position to mediate tensions between

¹⁰² Celeste Michelle Condit, "Crafting Virtue: The Rhetorical Construction of Public Morality," *Quarterly Journal of Speech* 73, no. 1 (February 1987): 87.

¹⁰³ Seth Motel, "NASA Popularity Still Sky-High," *Pew Research Center* (blog), February 3, 2015, <http://www.pewresearch.org/fact-tank/2015/02/03/nasa-popularity-still-sky-high/>.

¹⁰⁴ Nathan Crick, "Rhetoric, Philosophy, and the Public Intellectual," *Philosophy & Rhetoric* 39, no. 2 (May 2006): 138.

the philosophical and technical situations. Hope is incomplete, in Tyson's case, and it requires input from the other spheres to be thus completed.

CHAPTER THREE

Manifest Capitalism

Introduction

Elon Musk's best and only joke predicts his death. He enjoys quipping that he wants to die on Mars, "just not on impact."¹ Musk is the young, multibillionaire CEO of a number of companies, among them Tesla, Inc., Neuralink, OpenAI and SpaceX. SpaceX has stated on multiple occasions their goal is to make humanity a multiplanetary species by developing sustainable colonies on Mars. As such, the past decade of SpaceX developments has been primarily devoted to researching, creating, and testing technologies necessary to safely deliver a human being to the Red Planet.² This chapter examines the rhetorical techniques Musk uses in service of that goal. Given Musk's reputation as a micromanager, I think it is likely that whenever someone speaks on behalf of SpaceX, they speak with the blessing and direction of Mr. Musk.³ When appropriate, I will also discuss the rhetoric of Musk's surrogates. This chapter argues that Musk cultivates Mars as a space that lets him invoke what I call a "cult of the vision," and

¹ Elien Blue Becque, "Elon Musk Wants to Die on Mars," *Vanity Fair*, March 10, 2013, <https://www.vanityfair.com/news/tech/2013/03/elon-musk-die-mars>.

² spacexcmsadmin, "Company," Text, SpaceX, November 27, 2012, <http://www.spacex.com/about>.

³ Fremont and Sparks, "The Falcon Heavy's Creator Is Trying to Change More Worlds than One," *The Economist*, February 10, 2018, <https://www.economist.com/news/briefing/21736597-failure-most-definitely-option-falcon-heavys-creator-trying-change-more-worlds>.

figures himself in a position analogous to the frontier hero, to reinscribe connections between capitalism and the frontier.

While Dr. Tyson uses his status as public intellectual to create a frontier centered around the *topoi* of myth, salvation, and a positivistic view of science, I want to argue in this chapter that Mr. Musk has a somewhat more practical view of the frontier and what it will take to arrive on Mars. In short, Musk uses Mars as a physical frontier to achieve a material goal. Tyson uses Mars as a mythical space to achieve a non-material goal; Musk actually wants to go, and has both the money, infrastructure, and influence to achieve that goal.⁴ However, those privileges come with rhetorical baggage. Musk's version of the frontier is practical in the sense that it is irrevocably connected with the cost and material requirements of going, as well as the practical implications of making humans a "multiplanetary species." He specifically discounts any sort of transcendental understanding of space, saying:

This is not the result of a childhood epiphany. Why would I have a childhood epiphany, because I watched *Star Trek*? That's kind of silly. My interest in space stems from thinking about what are the important problems facing humanity and life itself.⁵

In terms of this project, this brings up questions of neoliberal conceptions of capitalism and neoliberalism, and how Musk actuates networked relationships between what Robert McChesney calls "political economy" and neoliberal reliance on rhetorics of expertise to

⁴ Ferris, "Neil DeGrasse Tyson Says It's Tough for a Company to Settle Mars." Note here that Tyson is reluctant to admit the possibility Musk could achieve this goal by emphasizing the *government* did it first; his version of the frontier myth relies on nationalism, exceptionalism, and constructs of civil religion.

⁵Elon Musk, qtd. in: Chris Dubbs, Emeline Paat-Dahlstrom, and CHARLES D. WALKER, *Realizing Tomorrow: The Path to Private Spaceflight* (University of Nebraska Press, 2011), 254, <http://www.jstor.org/stable/j.ctt1df4gw6>.

argue that he can, in fact, *do it*. Musk's "practical" frontier relies mostly on technical descriptions of SpaceX technology, obfuscating with jargon, data, and graphs. This reliance is significant. Musk is a poor public speaker, especially when compared to Tyson and Obama, and so techno-discourse acts as a rhetorical safety blanket for him and places him firmly within the technical sphere. Put another way, he makes use of the frontier's raw material by focusing on the technologies his company is developing.

I begin this chapter with a brief history of SpaceX, especially the last few years which have seen a realization of Mr. Musk's preliminary technical goals. I'll next show how Musk articulates technological requirements of his rockets and locates *endoxa* in *risk*. Musk uses this risk-oriented techno-discourse to form a "cult of the vision" that is reinforced when SpaceX accomplishes something previously or popularly thought impossible. This progression from risk to success creates a social knowledge predicated on the discourse of neoliberal capitalist discourse which reward risk taking and speculation.

A Brief History of the Craziest Company in the World

Musk founded SpaceX in June of 2002 using funds made from selling Zip2 and PayPal, an internet ad company and a transaction management company, respectively. Musk claims the idea for these companies were born because he immediately understood the power of "exponential growth" in internet networks in 1995.⁶ By 2001, the idea for "Mars Oasis" had been percolating; having sold PayPal to eBay for 1.5 billion dollars and

⁶ Elon Musk, "Risky Business," IEEE Spectrum: Technology, Engineering, and Science News, May 30, 2009, <https://spectrum.ieee.org/aerospace/space-flight/risky-business>.

barely past 30, Musk found himself bored and needing something to do. He decided to put a small greenhouse on Mars, partially an effort to reinvigorate waning interests in NASA and space exploration (interest that would continue to fall with the *Columbia* disaster in early 2003).⁷ He writes of this effort that he immediately realized the cost of the launch at the time would be prohibitive at upwards of 60 million, and quickly gathered a group of engineers together to try and get costs down; by 2002, Mars Oasis had been scrapped, and Space Exploration Technologies (more commonly known as SpaceX) was born. This company had the express goal of making access to space “cheap and reliable.”⁸ Four years later, the maiden voyage of the Falcon 1 ended in failure, and by September 2008, SpaceX was in dire financial straits. Two more failures and 100 million dollars of Musk’s personal funds had been unable to achieve low orbit, but Flight 4 succeeded.⁹ SpaceX was in the game.

By 2012, SpaceX was safely out of financial trouble. On May 25, the Dragon capsule, launched on the Falcon 9 rocket successfully docked with the International Space Station – the first time a private craft had done so – and people seemed to finally take Mr. Musk and his company seriously. He was no longer a “trillionaire,” but a serious competitor for companies long connected to NASA, Boeing and Lockheed-

⁷ Leslie Wayne, “A Bold Plan to Go Where Men Have Gone Before,” *The New York Times*, February 5, 2006, sec. Business Day, <https://www.nytimes.com/2006/02/05/business/yourmoney/a-bold-plan-to-go-where-men-have-gone-before.html>.

⁸ Wayne.

⁹ Stephen Clark, “Spaceflight Now | Falcon Launch Report | Successful Launch for Falcon 1 Rocket,” SpaceFlight Now, September 28, 2008, <https://spaceflightnow.com/falcon/004/index.html>.

Martin. Boeing and Lockheed-Martin came to a similar conclusion in 2014 when NASA signed an agreement for future supply missions to the ISS exclusively with SpaceX.¹⁰ Finally, in 2015, SpaceX again did the impossible, landing a rocket that had successfully delivered a payload into orbit for the first time.¹¹ The reusability of rockets, now proven, kicked development of the Falcon Heavy rocket into high gear, which would, by Musk's estimate, reduce the cost of a launch by two-thirds.¹² The launch of the Falcon Heavy earlier this year, proved the heaviest and cheapest of the modern options for space travel. This again cemented the viability of Mr. Musk's vision.¹³

Mr. Musk has made quite a lot of money over the years and spent quite a lot in return – mostly on SpaceX and Tesla. This brief history of SpaceX is intended to underscore Musk's personal investment in the project and the goals behind it. The connections between his original goal of a robotic greenhouse on Mars back in 2002 evolving to a desire to establish a fully-functioning colony on the planet speak to the hold the Red Planet has on his imagination. Musk's gifts, despite uncharismatic speaking

¹⁰ Sarah Buhr, "NASA Partners With Boeing And SpaceX To Send Astronauts Up In Space Taxis," *TechCrunch* (blog), September 16, 2014, <http://social.techcrunch.com/2014/09/16/nasa-partners-with-boeing-and-spacex-to-send-astronauts-up-in-space-taxis/>.

¹¹ Kenneth Chang, "SpaceX Successfully Lands Rocket After Launch of Satellites Into Orbit," *The New York Times*, December 21, 2015, sec. Space & Cosmos, <https://www.nytimes.com/2015/12/22/science/spacex-rocket-landing.html>.

¹² Wayne, "A Bold Plan to Go Where Men Have Gone Before."

¹³ Alan Yuhas, "SpaceX Falcon Heavy Launch: World's Most Powerful Rocket Blasts off – Live," *The Guardian*, February 6, 2018, sec. Science, <http://www.theguardian.com/science/live/2018/feb/06/spacex-falcon-heavy-launch-elon-musk-live-updates>.

styles, trades in on his personal popularity, both within and without his company, as his *endoxic* beginning.

Cult of the Vision

The late Apple CEO Steve Jobs infamously produced what co-founder Bud Tribble called the “reality distortion field,” an odd but potent combination of “a charismatic rhetorical style, indomitable will, and an eagerness to bend any fact to fit the purpose at hand.”¹⁴ At the root of the “RDF”, Isaacson claims, “was Jobs’ belief that the rules didn’t apply to him.”¹⁵ In late 2016, Mr. Musk, frustrated with traffic in the Los Angeles area, decided to start yet another company, The Boring Company. This new company intends to reduce traffic congestion by developing financially feasible tunneling techniques to create a “hyperloop.” Rather than wait for proper permits from the city, Mr. Musk directed employees, seemingly on a whim, to begin digging a test tube in SpaceX’s company parking lot. Reportedly, he was told it would take two weeks to remove all the cars from the lot. He asked workers to begin digging that weekend, and the cars were gone in three hours.¹⁶ Musk, like Jobs before him, seems to have little use for conventional application of the rules.

Anecdotes like this abound at SpaceX as well; just seven weeks after losing their third Falcon flight in 2008, SpaceX had another rocket on the pad, which resulted in their

¹⁴ Walter Isaacson, *Steve Jobs* (Simon and Schuster, 2011), 118.

¹⁵ Isaacson, 119.

¹⁶ Neil Strauss, “Elon Musk: The Architect of Tomorrow,” *Rolling Stone*, November 15, 2017, <https://www.rollingstone.com/culture/features/elon-musk-inventors-plans-for-outer-space-cars-finding-love-w511747>.

first success. Josh Boehm, a former SpaceX employee, responded to a forum question on working at SpaceX, saying that Musk does not require anyone to work long hours, but people do anyway out of passion for the project.¹⁷ Dolly Singh, former head of talent acquisition at SpaceX, concurs, saying that working for Musk, “you have to accept the discomfort [of being pushed]. But in that discomfort is the kind of growth you can’t get anywhere else.”¹⁸ Goodnight and Sandy Green suggest with state interventions into economic culture, risk culture is transformed into something more desirable and “investors escape disciplined terms of risk and embrace ambiguous symbols of fortune.”¹⁹ In Musk’s case, this translates to actually seeking out risk. Each time the risk pays off, the cult of the vision becomes that much stronger and the public seems to *assume* the next project will succeed. The vision of success – and the risk associated with it – is supreme for Musk and his company, along with public supporters.

This conceptual “vision” forms Musk’s *endoxic* personality. Musk’s rhetoric starts at the intersection of what E. Johanna Hartelius identifies as the rhetoric of expertise and the assumptions the audience has about Musk. She writes that expertise is rhetorically constructed along two pathways: autonomy and attribution, or expertise

¹⁷ Josh Boehm, “I Worked At SpaceX, And This Is How Elon Musk Inspired A Culture Of Top Performers,” *Forbes*, November 8, 2017, <https://www.forbes.com/sites/quora/2017/11/08/i-worked-at-spacex-and-this-is-how-elon-musk-inspired-a-culture-of-top-performers/#74d06186438f>.

¹⁸ Dolly Singh, “What Is It Like To Work With Elon Musk?,” *Forbes*, June 24, 2016, <https://www.forbes.com/sites/quora/2016/06/24/what-is-it-like-to-work-with-elon-musk/>.

¹⁹ G. Thomas Goodnight and Sandy Green, “Rhetoric, Risk, and Markets: The Dot-Com Bubble,” *Quarterly Journal of Speech* 96, no. 2 (May 1, 2010): 119, <https://doi.org/10.1080/00335631003796669>.

“beyond others’ awareness” versus a “symbolic relationship” that is performative and acknowledged by an audience.²⁰ Musk’s public persona is a combination of both. It is impossible to deny his material success, and the acknowledgment of his intelligence by his employees is also persuasive. The simplest definition of *endoxa* is “common or received opinions.”²¹ More specifically for this case study, Glen Most identifies a multitude of uses for *endoxa* and writes that *endoxa* are partially enthymematic, and possibly (though not always) based upon the *ethos* of the rhetor as well as their motivations.²² I argue that this “cult of the vision” can and does function enthymematically. Ekatarina Haskins contends that a rhetor can “reify rhetorical knowledge... embedded in enthymemes.”²³ *Endoxa* allows Musk to make use of his personality as justification for just about anything, including the sale of flamethrowers.²⁴ I suggest that this enthymematic personality is reinforced by the myth of the frontier hero, and as with Tyson, the frontier begins the process of moving *endoxa* toward social

²⁰ E. Johanna Hartelius, *Rhetoric of Expertise* (Lanham: Lexington Books, 2010), 4.

²¹ Haskins, *Logos and Power in Isocrates and Aristotle*, 6.

²² Glenn W. Most, “The Uses of Endoxa: Philosophy and Rhetoric in the Rhetoric,” 173.

²³ Haskins, *Logos and Power in Isocrates and Aristotle*, 8.

²⁴ Consider the publicity stunt of selling “not-flamethrowers” to raise money for the Boring Company. Twenty thousand were sold for “exorbitant” amounts of money. See “Not A Flamethrower,” The Boring Company, n.d., <https://www.boringcompany.com/not-a-flamethrower/>. This article from Wired magazine even uses the phrase “cult of Musk.” Victoria Turk, “We Asked People Who Bought Elon Musk’s \$500 Flamethrower: Why?,” WIRED UK, February 1, 2018, <http://www.wired.co.uk/article/elon-musk-flamethrower-boring-company>.

knowledge. As the cult of the vision is verified again and again, consensus becomes easier and easier to create.

In the last chapter, I argued that Dr. Tyson constructs the frontier as mythically salvific, using Mars as a material space for accomplishing a non-material goal – the primacy of science in public intellectual discussions. Musk maintains Mars as a material end, but the goals here are also material in that he sees Mars as a *literal* salvific space, as opposed to mythical. The difference between Tyson’s frontier and Musk’s is in their goals: mythical salvation versus material, physical salvation. Recall SpaceX’s mission statement: the maintenance of the human race in the face of potential global extinction events, whether by asteroid, climate change, or some other natural event. Specifically, Musk writes that “By talking about the SpaceX Mars architecture, I want to make Mars seem possible—make it seem as though it is something that we can do in our lifetime. There really is a way that anyone could go if they wanted to in the face of a statistically likely extinction event.”²⁵ This is Musk’s vision, and though SpaceX is a company of hundreds, its rhetorical persuasiveness is centered on Musk. It’s Musk who gives the TEDtalk,²⁶ Musk who appears at the COP21 climate conference,²⁷ and Musk who attends

²⁵ Musk, “Making Humans a Multi-Planetary Species,” 46.

²⁶ TED, *The Mind behind Tesla, SpaceX, SolarCity ... | Elon Musk*, n.d., <https://www.youtube.com/watch?v=IgKWPdJWuBQ>; Get Motivated, *Elon Musk Interview 2017 | The Future The World & Technology*, accessed August 23, 2017, <https://www.youtube.com/watch?v=sVMMsDZNiF8>; Elon Musk, *The Future We’re Building -- and Boring*, 2017, https://www.ted.com/talks/elon_musk_the_future_we_re_building_and_boring.

²⁷ “Full Text of Elon Musk’s Paris COP21 Speech,” Autoblog, n.d., <http://www.autoblog.com/2015/12/05/full-text-of-elon-musks-paris-cop21-speech/>.

the ISS2017 conference.²⁸ Despite his deficit in public speaking skills, Musk chooses to personally attend these conferences to best deliver his vision to the public.

In doing so, Musk receives credit for most of SpaceX's accomplishments. Hartelius argues that the audience must first buy into the expertise of the rhetor, resulting in a kind of tension between attribute and autonomous expertise, and second, the audience must not be skeptical about the epistemological aspects of whatever the expert is selling, and when they buy in, there is a potential for an "economy of expertise" in which the expert volunteers to share knowledge with the layperson.²⁹ In successfully crafting his vision, Musk has delimited SpaceX's accomplishments into his own heroic persona and focused on making travel to Mars equal to the median cost of a house in the United States.³⁰ Interestingly, the introduction to a 2012 interview with *Wired* magazine makes the argument that to be a successful entrepreneur, one has to "believe in their own visions, so much so that they think what they're embarking on isn't really that risky."³¹ This suggests that the rhetor must believe in the audience's opinions of them. This is a central feature of the *endoxic* identity. Even for the rhetor, in economic spheres risk must be pushed to the side.

²⁸ iGadgetPro, *FULL Elon Musk's Speech at ISS 2017 Conference 7/19/17*, <https://www.youtube.com/watch?v=XqYPmshyCDU>.

²⁹ Hartelius, *Rhetoric of Expertise*, 14.

³⁰ Musk, "Making Humans a Multi-Planetary Species," 48.

³¹ Chris Anderson, "Elon Musk's Mission to Mars," WIRED, October 21, 2012, <https://www.wired.com/2012/10/ff-elon-musk-qa/>.

I suggest this is because risk lets Musk sidestep the epistemological considerations of risk. Haskins argues the goal of the *endoxic* rhetor is to “distill the truth implicit in preserved opinions.”³² The *endoxic* personality functions as a rhetorical justification here. Recall that Musk also intentionally steers away from a mythic understanding of his goals: “This is not the result of a childhood epiphany.” It is the bottom line, risk versus reward, and it is this attitude toward risk versus reward that makes Musk’s individualistic vision so powerful and connects to the discourse of neoliberal capitalism. Goodnight and Green suggest that in the digital age, “Attention is the scarce commodity. The “economy of attention” finds value in intellectual property that designs and tropologically stylizes participation for audiences.”³³ The combination of risk-taking and a heroic persona allows audiences, familiar with the frontier myth, to more closely identify with the push to Mars by following Musk’s near-wild work ethic, various investments, and capitalist logics which all serve to reinforce Musk’s vision. Musk’s cult of the vision, combined with the frontier myth, allows for audience participation.

Heroism as Capitalist Innovation

The frontier hero is perhaps the most enduring feature of the frontier myth in American history. The frontier needs people – traditionally white men – to de-frontierize a space. Janice Hocker Rushing argues that the frontier is tied up with understanding the physical space of the historical frontier as feminine – the Mother Earth construction – and

³² Haskins, *Logos and Power in Isocrates and Aristotle*, 6.

³³ Goodnight and Green, “Rhetoric, Risk, and Markets,” 131.

the patriarchal ego-hero as subduing and forcing a shift in the feminine toward the masculine. In other words, the chaotic, untamed frontier is feminized and dangerous; order is brought by the egoistic male.³⁴ Slotkin takes this connection in the direction of the capitalist drivers of Western Expansion. He writes that “both capitalists and workers are descendants of the conquering race,” but the capitalists are “more daring entrepreneurs and more stubborn contenders for power.”³⁵ He further connects the frontier as a theory to economic development and contends that the frontier was driven by economic crises, bonanzas, and the “opportunity to acquire or produce at low cost some commodity that has a high commercial value.”³⁶ It stands to reason, then, that a frontier hero could conceivably be seen as the producer of that commodity, arrayed against forces that would suppress their intellect.

Indeed, Musk describes his companies as visions which are predicated on performing the impossible economically. In the Rolling Stone interview referenced above, he says “I expect to lose.”³⁷ At the same, the Economist describes both Tesla and SpaceX as ways of “hastening Mr. Musk’s dreams.”³⁸ In another article, the magazine

³⁴ Janice Hocker Rushing, “Evolution of ‘the New Frontier’ in Alien and Aliens: Patriarchal Co-Optation of the Feminine Archetype,” *Quarterly Journal of Speech* 75, no. 1 (February 1989): 5–6.

³⁵ Slotkin, *Gunfighter Nation*, 162.

³⁶ Slotkin, 18.

³⁷ Strauss, “Elon Musk.”

³⁸ “The Mega-Rich Have Ambitious Plans to Improve the World,” *The Economist*, February 8, 2018, <https://www.economist.com/news/leaders/21736517-should-be-cause-celebration-or-concern-mega-rich-have-ambitious-plans-improve>.

reports that Musk “wants to open up fundamental opportunities with which he thinks the market would not trouble itself,” and that in service of that goal, he deploys “special talents as a strategist, manager and source of inspiration, as well as lofty ambitions.”³⁹ This “specialness” echoes Carpenter and Rushing’s description of the quintessential frontier hero: sacrifice, a tension between community, savagery, and dormancy, and the individualistic drive to “do what a man’s gotta do” in the face of long odds.⁴⁰ While they identify a physical space for the hero to exist within, economic frontiers and the attendant heroes bear consideration as well. Samuel Perry shows what an economic frontier might look like in describing Douglas MacArthur’s view of Asian countries post-Korean War, contending that MacArthur erased Asian self-determination and sentience in favor of inscribing the desire to bring capitalism to an area endangered by communism, just as pioneers forced Western modes of thought and culture on Native peoples.⁴¹ The vision that Musk has articulated is incontrovertibly tied up with a stereotypical capitalist desire to reduce costs and increase efficiency, and to import that model to a place not

³⁹ Fremont and Sparks, “The Falcon Heavy’s Creator Is Trying to Change More Worlds than One.”

⁴⁰ Ronald H. Carpenter, “Revisiting Janice Rushing About ‘The Western Myth’ (More Important Now Than Ever Before),” *Southern Communication Journal* 71, no. 2 (July 1, 2006): 181, <https://doi.org/10.1080/10417940600683539>; See also: Janice Hocker Rushing, “The Rhetoric of the American Western Myth,” *Communication Monographs* 50, no. 1 (March 1983).

⁴¹ Samuel P. Perry, “Douglas MacArthur as Frontier Hero: Converting Frontiers in MacArthur’s Farewell to Congress,” *Southern Communication Journal* 77, no. 4 (September 2012): 276–78, <https://doi.org/10.1080/1041794X.2012.659791>.

necessarily commensurate with capitalism for any number of reasons.⁴² The economic logic here performs that same function.

I suggest this too reinscribes the “cult of the vision” I identify above. Musk’s jumping from PayPal to SpaceX to Tesla to the Boring Company to Neuralink showcases the restless nature of the frontier hero when placed into an economic frontier. Rushing writes that the frontier hero “defines his character in relationship to that which is outside himself.”⁴³ Perry further suggests this outward gaze means the frontier hero always “looks outward onto the frontier for the next task that might allow them to prove their worth.”⁴⁴ The logic of capitalism rewards this restlessness, however, when it seemingly serves the expansion of the community, as Mary Stuckey says.⁴⁵ She writes that “in a nation that has always sought a solution to its problems in both geographical and ideological expansion, the idea of being trapped had – and continues to have – particular resonance.”⁴⁶ Each new economic leap makes a new space available for economic colonization. Because the cult of personality is so essential to Musk’s *endoxa*, these new spaces are tied up with that *endoxic* personality.

Musk’s restlessness has undoubtedly produced some positive material effects in the world, as most writers admit. Despite the uncertainty of SpaceX’s long-term goals,

⁴² Dubbs, Paat-Dahlstrom, and WALKER, *Realizing Tomorrow*, 255–56.

⁴³ Rushing, “Frontierism and the Materialization of the Psyche,” 246.

⁴⁴ Perry, “Douglas MacArthur as Frontier Hero,” 277.

⁴⁵ Mary E. Stuckey, “The Donner Party and the Rhetoric of Westward Expansion,” *Rhetoric & Public Affairs* 14, no. 2 (Summer 2011): 241–47.

⁴⁶ Stuckey, 233.

Tesla has reinvigorated the electric car business with its “gigafactory.”⁴⁷ Musk offered to use Tesla’s battery technology to reconstruct Puerto Rico’s power grid in the aftermath of Hurricane Maria.⁴⁸ He later started a company intended in the short term to help treat rare brain diseases and in the long term create human-brain interfaces intended as cybernetic defenses against the dangers of artificial intelligence.⁴⁹ Furthermore, these side interests also underscore Musk’s actual expertise, in that they are all practical accomplishments (or the ability to easily accomplish the goal, in the case of Puerto Rico). This also lets Musk counter any criticism that space travel distracts from problems here on Earth.

However, a shift to economic frontiers from physical spaces mean that economic heroes must also shift. Instead of pulling a six shooter or bravely blasting into space atop a Saturn V rocket, the frontier then becomes the site of the next technological innovation. Perhaps the most central feature of Musk’s rhetoric is that he *actually* wants to go to Mars, and that this journey will require new technologies and understandings of the

⁴⁷ “On a Charge,” *The Economist*, March 19, 2016, <https://www.economist.com/news/business/21695012-tesla-becomes-more-regular-carmaker-it-faces-bumpier-ride-charge>; “Tesla Increases Deliveries of Electric Cars,” *The Economist*, April 6, 2017, <https://www.economist.com/news/business/21720340-real-test-will-be-whether-it-can-churn-out-its-new-model-3>.

⁴⁸ Andrew J. Hawkins, “Elon Musk Offers to Rebuild Puerto Rico’s Power Grid Using Solar,” *The Verge*, October 6, 2017, <https://www.theverge.com/2017/10/6/16438054/elon-musk-puerto-rico-solar-power-tesla>.

⁴⁹ Samantha Masunaga, “A Quick Guide to Elon Musk’s New Brain-Implant Company, Neuralink,” *latimes.com*, April 21, 2017, <http://www.latimes.com/business/technology/la-fi-tn-elon-musk-neuralink-20170421-htmlstory.html>.

human body in space.⁵⁰ Recall that Roosevelt reconstructed the frontier's function as a space for Americanization⁵¹; Kennedy used the frontier as a space for the transcendental triumph of capitalism⁵²; previously, I argued that Tyson uses it as a space to show the supremacy of the astrosciences. In short, the frontier is *always* a space for expansion and innovation, with the heroic persona (or prophetic, in Tyson's case) being a possible vehicle for that expansion and innovation. The empty space in the case of Musk is literally economic uncertainty wherein the heroic CEO sacrifices his own money to provide space for others in that frontier. Slotkin argues that:

The hero's inner life – his or her code of values, moral or psychic ambivalence, mixtures of motive – reduces to personal motive the complex and contradictory mixture of ideological imperatives that shape a society's response to a crucial event. But complexity and contradiction are focused rather than merely elided in the symbolizing process.⁵³

Mars provides a material distillation of that empty economic space and shows how the contradiction between the cult of the vision and material gains reduces the crucial nature (or what Musk argues is the crucial nature) of SpaceX's goals to place humans on Mars. Before I deal with that, however, a brief explanation of how Musk understands the economic frontier is needed. The economic frontier then plays into how he deploys the

⁵⁰ See: Loren Grush, "No, Space Did Not Permanently Alter 7 Percent of Scott Kelly's DNA," *The Verge*, March 15, 2018, <https://www.theverge.com/2018/3/15/17124312/nasa-twins-study-dna-scott-kelly-international-space-station>.

⁵¹ Dorsey and Harlow, "We Want Americans Pure and Simple."

⁵² Jordan, "Kennedy's Romantic Moon and Its Rhetorical Legacy for Space Exploration," July 24, 2003.

⁵³ Slotkin, *Gunfighter Nation*, 14.

conceptual space of the frontier in public appearances. At the same time, however, remember that not only does Musk literally want to die on Mars but might actually be creating the tools to get there. As such, the economic and material frontiers intersect once more, as Perry shows. The economic frontier feeds into the material one by creating the ability to settle the physical frontier. Put another way, Musk tilts the frontier toward materiality with both economic and heroic logics while Tyson tips to the mythical with religious logics.

The Limitations of Privatization

I suggest that understanding the *limits* of the frontier – especially frontiers of the 21st century – has been undertheorized in recent literature. Traditionally, the limits of the frontier were anything regarding civilization. Rushing wonders whether the “urban cowboy” hero might represent a transcendence of the individual/civilization dialectic, but whoever a new hero might be, they must “sacrifice something precious to the fulfillment of a Dream.”⁵⁴ Sacrifice defines the hero, and a lack of potential spaces for sacrifice defines the limits of the economic frontier, or in economic terms, risk, which shows up frequently in Musk’s rhetoric.

After SpaceX’s third failure to successfully launch, Musk wrote that it was a difficult choice to build a rocket from the ground up versus using “legacy parts” (parts purchased or contracted from another company). The choice, he wrote, came to limiting opportunity costs in the long run.⁵⁵ However, risks allow freedom, an original aspect of

⁵⁴ Rushing, “The Rhetoric of the American Western Myth,” 32.

⁵⁵ Musk, “Risky Business.”

the frontier. In a commencement speech to the 2014 University of Southern California graduating class, Musk encouraged them to take risks at a time when the audience has no children: “It gets harder to do those things that might not work out [once you have kids]... before you have those obligations, I would encourage you to take risks now, and to do something bold.”⁵⁶ The tension here is framed between the ability to take risks and take care of a family. Rushing shows how the frontier hero is a “unique and undivided individual.”⁵⁷ She also notes that “certain proclivities, present in all human beings, are denigrated and suppressed” by heroic status.⁵⁸ Earlier in this particular speech, Musk jokingly notes a former girlfriend had to sleep in his office if she wanted to see him because he was working so hard. Again, domestic obligations are both economically limiting and worth shunting to the side in order to hustle sufficiently, as it were. Slotkin identifies the connection between “red-bloodedness” and individualism to the “ideological needs of an industrial economy and managerial policy.”⁵⁹ This red-bloodedness can and should be interpreted in terms of the economic frontier as an acceptance of risk at the cost of all else. Those needs, I contend, include the realization and reification of risk at the expense of personal and moral development.

⁵⁶ USC, *Elon Musk USC Commencement Speech | USC Marshall School of Business Undergraduate Commencement 2014*, 2014, https://www.youtube.com/watch?time_continue=2&v=e7Qh-vwpYH8.

⁵⁷ Rushing, “Frontierism and the Materialization of the Psyche,” 247.

⁵⁸ Rushing, 245.

⁵⁹ Slotkin, “Myth and the Production of History,” 87.

Consider again Jobs' reality distortion field. Rumors abounded of employees actively being deceived by Jobs.⁶⁰ Another individual claiming to work for SpaceX dismissed Musk as a poor boss and poor leader (corroborated by a confirmed SpaceX employee).⁶¹ This once again plays into the heroic persona and the cult of the vision, and the tension between achieving the impossible through acceptance of risk and civilized practices (here, being an effective boss). Whether or not Musk is or is not a good boss is beside the point. The conflicting personas speak to how economic frontier heroes are seen, and what they are willing to be seen as, in service of their vision. Bruno Latour suggests that a possible "repertoire" for dealing with the reality of technological advancement is "one in which construction and truth become synonyms."⁶² A reality-distortion field may lead to the same kind of positivism that Lessl identifies and which I discussed in the previous chapter, but when dealing with technologies and a more material frontier such a field increases danger for those seeking to settle it in terms of physical harm. Mircea Eliade again: "The way in which a reality came into existence is revealed by its myth."⁶³ Musk does not care for anything but the settling of the frontier. A

⁶⁰ Tom McNichol, "Be a Jerk: The Worst Business Lesson From the Steve Jobs Biography," *The Atlantic*, November 28, 2011, <https://www.theatlantic.com/business/archive/2011/11/be-a-jerk-the-worst-business-lesson-from-the-steve-jobs-biography/249136/>.

⁶¹ Richard Feloni, "Former SpaceX Employee Explains What It's Like To Work For Elon Musk," *Business Insider*, n.d., <http://www.businessinsider.com/what-its-like-to-work-for-elon-musk-2014-6>.

⁶² Latour, *On the Modern Cult of the Factish Gods*, 23.

⁶³ Eliade, *The Sacred and The Profane*, 76.

reality-distortion field centered in a single mythic persona is difficult to mediate by other means. Latour argues that:

Mediations are necessary everywhere. If you forbid them, you become mad, fanatic, but there is no way to obey the command and choose between the polar opposites [reality or construction]: either it is made, or it is real. That is a structural impossibility...⁶⁴

By creating for himself in an *endoxic* personality based almost entirely on restlessness and risk, Musk cannot mythically provide the mediation necessary to avoid reifying capitalist logics inherent in the frontier, and a reality outside that risk ceases to exist. Indeed, philosophically Musk believes there “is a one in billions chance” reality itself *is* a simulation.⁶⁵ The push to Mars and helping humanity is the only way he feels he can make something real. Thomas Farrell writes that social knowledge is “characterized by a state of ‘potential’ or incipience.”⁶⁶ Musk is using risk to remind audiences of the potential benefit should the risk pay off.

Risk, then, becomes the limiting factor in the economic frontier in an *endoxic* sense; risk is something commonly assumed to be avoided. Musk is an especially interesting case study here because he frequently creates his own risk in more tangible ways than other high-profile CEOs each time he starts a new company, seemingly on a whim. The Boring Company is a point in case. The frontier then becomes even more individualized in this case, because it begins not as the journey into uncharted physical

⁶⁴ Latour, *On the Modern Cult of the Factish Gods*, 81.

⁶⁵ Recode, *Is Life a Video Game? | Elon Musk | Code Conference 2016*, n.d., https://www.youtube.com/watch?v=2KK_kzrJPS8&index=1&list=PLKof9YSAshgyPqIK-UUYrHflQaOzFPSL4.

⁶⁶ Farrell, “Knowledge, Consensus, and Rhetorical Theory,” 4.

space, but uncharted economic space with each new idea from Musk himself. However, Musk easily brings the average American along with him, allowing for the possibility of democratic action *after* the hero has gone ahead.

Here we see another shift in the terms of the frontier. Robert McChesney points out that historically, monopolies in a specific economic market equal less risk.⁶⁷ There is no corporation that can compete with SpaceX.⁶⁸ With the retirement of the shuttle and NASA's Space Launch System (SLS) still years away from use, SpaceX is the only viable national option for space travel in the United States. Historically, the government has assumed most of the risk – both literal and economic – when it comes to space travel. As Goodnight and Green point out, state intervention in economic sectors usually results in a shifting of risk, but here, the government is divesting itself of risk. Interestingly, this is a central component of arguments forwarded by both Tyson and Sagan. The complexities and costs of space travel, for them, meant that private corporations could never develop the technology and infrastructure required to make space reachable.⁶⁹ Again, Musk's version of the frontier is predicated on the accomplishment of the impossible, but the impossible here is the new risk assumed with the passing of the torch from government to corporation, with Musk as the ultimate arbiter of that transfer based on his vision. Opinions about the risks he assumes provide a motivating force, but

⁶⁷ Robert W. McChesney, *Digital Disconnect: How Capitalism Is Turning the Internet Against Democracy* (New York: The New Press, 2013), 37.

⁶⁸ Though some have tried – see Elon Musk Viral Videos, *Elon Musk Completely Destroys Jeff Bezos*, 2017, https://www.youtube.com/watch?v=Qe_TTI64fJA.

⁶⁹ See: pateli2008, *Carl Sagan on Human Missions to Mars*; Tyson, *Space Chronicles*, 13–36.

jeopardizes potentially divesting the frontier of its connection to capitalism and American exceptionalism.

The New Frontier and the Military-Industrial Complex

As SpaceX grows in prominence and Musk's vision extended itself outside the borders of the company, the company – and the terms of the economic frontier – began to shift more into the public consciousness. At the same time SpaceX began to bid for more government contracts, it became clear that they had the capabilities to deliver on Musk's promises. McChesney brings up another essential connection between economies and marketing. He argues that communication practices were first implemented to hide *risk* from the public.⁷⁰ As a rhetorical strategy here, risk is to be admired *after* the fact but concealed or mitigated beforehand; put another way, the *endoxa* of the risky personality is only truly useful after the risk has been eliminated, as Musk has now done with successful launches. This further served the purpose of concealing the extent to which military technology went to funding technological advances developed through SpaceX by turning attention onto the next risk.⁷¹ McChesney also discusses the extent to which the U.S. Imperial Triangle relies on the combination of mass media and rising employment based on imperialist expansion. The triangle is made of military production, propaganda, and the absorption of propaganda by the masses because of high employment based on military production.⁷² I suggest that events like the recent launch of

⁷⁰ McChesney, *Digital Disconnect*, 58.

⁷¹ McChesney, 100–101.

⁷² Robert W. McChesney, *Blowing the Roof off the Twenty-First Century: Media, Politics, and the Struggle for Post-Capitalist Democracy* (NYU Press, 2014), 106.

the Falcon Heavy – complete with videos of Musk’s emotional reaction to the launch - are utilized as essentially propaganda to conceal the growing connections between Musk’s persona and vision and the military-industrial complex.⁷³ In terms of the frontier, and Musk more specifically, SpaceX’s connections with the military industrial complex fulfills the first leg of that triangle, while Musk himself functions as propaganda with his heroic persona of risk-taker.

Propaganda is frequently reliant on not just communication practices, but the technologies developed to disseminate those practices. Jacques Ellul defines propaganda as functioning only “within the context of the modern scientific system” as an expression in public discourse of scientific modes of thought.⁷⁴ Propaganda is technically based but exists in the public sphere. I read this as being yet another intrusion of the technical sphere into the public, as Ellul concludes propaganda helps one “disseminate democratic ideas as a credo and within the framework of a myth... but drain[s] democratic content.”⁷⁵ He lists four aspects of the genre: it is based on scientific analyses, it establishes a set of rules, it requires a specific discursive environment, and it is increasingly controlled by science.⁷⁶ For Musk and SpaceX, the frontier is updated to reflect modern standards of propaganda to obfuscate the darker side of both space race

⁷³ Calla Cofield, “Watch Elon Musk React to Falcon Heavy Launch in Exclusive National Geographic Video,” Space.com, February 10, 2018, <https://www.space.com/39655-elon-musk-falcon-heavy-launch-natgeo-video.html>.

⁷⁴ Jacques Ellul, *Propaganda: The Formation of Men’s Attitudes*, trans. Konrad Kellen and Jean Lerner, 58206th edition (New York: Vintage, 1973), 3.

⁷⁵ Ellul, 256.

⁷⁶ Ellul, 4–5.

history and implications of an increased drive to Mars, bearing striking similarities to the rhetoric of missile defense and what Gordon Mitchell calls “strategic deception.” Mitchell describes strategic deception as based in a “carefully constructed and masterfully managed hyperreality.”⁷⁷ While Mitchell uses the hyperreality of Patriot missile strikes interpreted as video games to locate hyperreality, I suggest that the very character of the frontier hero can function as hyperreality. Musk’s cult of the vision and the “reality-distortion field” serve a similar purpose here, albeit even more rhetorically constructed than video of a Patriot strike. Strategic deception as a rhetorical tactic lets Musk use the frontier as a discursive space to propagandize.

Musk uses the raw material of the frontier to fund this strategic deception. Alone among the people focused on in the case studies of this project, Musk may actually set foot on Mars someday. This gives him precisely the discursive environment Ellul identifies. With each new success, Musk’s vision is proven right and the fantasy of settling the frontier becomes more tangible. Meanwhile, in order to fund the continuing advances of their technology, SpaceX sought and received contracts with the US Air Force and NASA both to develop the Dragon spacecraft as viable for human passengers and to launch GPS and climatology satellites.⁷⁸ These initial contracts are seemingly

⁷⁷ Gordon R. Mitchell, “Placebo Defense: Operation Desert Mirage? The Rhetoric of Patriot Missile Accuracy in the 1991 Persian Gulf War,” *Quarterly Journal of Speech* 86, no. 2 (May 2000): 123.

⁷⁸ See: Steven Sicheloff, “Mission Awards Secure Commercial Crew Transportation for Coming Years,” Text, NASA, January 3, 2017, <http://www.nasa.gov/feature/mission-awards-secure-commercial-crew-transportation-for-coming-years>; Samantha Masunaga, “Next Steps for SpaceX’s Falcon Heavy — Air Force Qualification,” *L.A. Times*, February 8, 2018, <http://www.latimes.com/business/la-fi-falcon-heavy-air-force-20180208-story.html>; Buhr, “NASA Partners With Boeing And SpaceX To Send Astronauts Up In Space Taxis.”

benign, but as SpaceX proved more and more successful with government property, the company launched a satellite for the National Reconnaissance Office in mid 2017 and the infamously secretive “Zuma” payload in early 2018.⁷⁹ Each time, the booster rockets landed with nary a fault and a round of applause in the media. Mitchell notes strategic deception is “politically seductive but scientifically elusive,” and “stretching technical claims to serve political interests.”⁸⁰ The science that built the Falcon 9 and Falcon Heavy has clearly proven sound. I suggest this is another important function of Mars. I suggest that strategic deception functions here not through secrecy, but in the rhetorical use of the frontier myth.

By displacing the materiality of the frontier onto Mars while actively trying to reach it, Musk and SpaceX displace this elusive scientific value onto Mars. Carl Sagan, incidentally, frequently expressed a reluctance to fund manned space exploration. He believed a robot could do most anything a person could, with one exceptional difference. The value of human spaceflight in terms of propaganda was invaluable.⁸¹ However, the scientific value could more safely and easily be achieved by robots, and indeed, the

⁷⁹ Irene Klotz, “SpaceX Launches US Spy Satellite on Secret Mission, Nails Rocket Landing,” Space.com, May 1, 2017, <https://www.space.com/36666-spacex-launches-first-spy-satellite-nails-landing.html>; Scott Neuman, “SpaceX Rocket Launches Secret Government Payload Into Orbit,” NPR.org, January 8, 2018, <https://www.npr.org/sections/thetwo-way/2018/01/08/576401432/spacex-rocket-launches-secret-government-payload-into-orbit>.

⁸⁰ Gordon R. Mitchell, *Strategic Deception: Rhetoric, Science, and Politics in Missile Defense Advocacy*, 1 edition (East Lansing: Michigan State University Press, 2000), 4–5.

⁸¹ Carl Sagan, Carl Sagan, interview by Charlie Rose, Video, January 5, 1995, <https://charlierose.com/videos/18982>.

Sojourner landed on the red surface twenty-one years ago. The rules Ellul identifies are the rules of the frontier myth in American consciousness, and the technology to go to Mars is, quite literally, controlled by science. The interplay between the frontier myth and the modern military industrial complex suggest that contrary to Tyson’s optimistic use of myth without the materiality attached, once physical spaces and physical means of travel are introduced to the frontier the connections become inescapable.

Recall too that SpaceX only hires Americans, which is also a stipulation of the company’s national security contracts.⁸² Despite the global implications of landing people on Mars, the initial wave of explorers can only be American, reinscribing the terms of the frontier hero as a singular, male, white American. Robert Asen reminds public sphere scholars that “an imperialist technical reason claims ever more aspects of shared social life as the special province of experts.”⁸³ McChesney also warns that “fundamentalist dissent against the military- imperial system... is decidedly off-limits” and needs to focus on extending “the range of legitimate debate” in public discourse.⁸⁴ Unfortunately, the limitation of American workers and military engagements in foreign policy now bring up geopolitical questions that I suggest even further reinforce the rhetorical connections between Musk, capitalism, and the military-industrial complex.

⁸² Inverse, *Elon Musk Explains Why SpaceX Only Hires Americans*, 2016, <https://www.youtube.com/watch?v=CIVtiNpKEY0>.

⁸³ Robert Asen, “Critical Engagement through Public Sphere Scholarship,” *Quarterly Journal of Speech* 101, no. 1 (January 2, 2015): 137, <https://doi.org/10.1080/00335630.2015.999983>.

⁸⁴ McChesney, *Blowing the Roof off the Twenty-First Century*, 117–18.

The Slightly Icier Cold War

The Cold War indelibly hangs over the achievements of NASA in the mid-to-late twentieth century. The Moon Landing *was* a giant step for mankind and is generally considered to have contributed to the downfall of the USSR.⁸⁵ The Moon Landing was a well-documented propaganda win for the United States, and John Jordan describes the symbolic importance of the space race for the American public.⁸⁶ Kennedy created a transcendent journey for his audience that “was the ultimate measure of a nation and a people’s worth.”⁸⁷ The Cold War is long over now, but SpaceX’s most recent achievements have come at a time of rising tensions with the Russian Federation. The extended debate in the US media regarding the role of Russia in the 2016 presidential election and lingering anxieties over the 2014 Crimean crisis, as well as Vladimir Putin’s potential connections with Donald Trump, all contribute to a strained relationship between the two countries and have brought up feelings that were present in the Cold War once again. With the retirement of the Shuttle, Russia is the US’s only option for

⁸⁵ See Martin J. Collins, *Space Race: The U.S.-U.S.S.R. Competition to Reach the Moon* (Pomegranate, 1999). See also Jeffrey R. Thomson, *U.S./U.S.S.R. Strategic Forces, Asymmetrical Developments: A Net American Assessment* (Washington: University Press of America, 1977), <https://catalog.hathitrust.org/Record/006194629>, for a grand strategic view of the situation. Finally, for a brief technical overview of the rocket that caused the intense cost breakdown of the original USSR space program, see Avery Thompson, “Why Didn’t Russia Ever Make It to the Moon?,” *Popular Mechanics*, August 24, 2016, <https://www.popularmechanics.com/space/rockets/a22531/why-didnt-russia-make-it-to-the-moon/>.

⁸⁶ Jordan, “Kennedy’s Romantic Moon and Its Rhetorical Legacy for Space Exploration,” July 24, 2003, 213–14, 223.

⁸⁷ John W. Jordan, “Kennedy’s Romantic Moon and Its Rhetorical Legacy for Space Exploration,” *Rhetoric and Public Affairs* 6, no. 2 (2003): 224, <https://doi.org/10.2307/41940312>.

personnel delivery to the International Space Station. Until the Dragon capsule is certified for human passengers, the Soyuz craft is still the only way to retrieve and deliver astronauts to the station. I contend this balancing of relational tension in the international sphere with the need to maintain a space presence has contributed to SpaceX's rapid rise.

In particular, the Russian connection further reinforces the connections between SpaceX and the military industrial complex, as well as Mitchell's strategic deception. McChesney explains the motivations of political economy: "U.S. militarism was therefore motivated first and foremost by a global geopolitical struggle, but was at the same time seen as essentially costless (even beneficial) to the U.S. economy."⁸⁸ McChesney describes the dubious claim that active-war levels of spending might stimulate the economy⁸⁹, but the tensions described briefly above make any substantive connection with Russia *non grata*. We turn to a company to relieve us of this connection, then, and celebrate its achievement, even as Putin reportedly pledges fifty billion dollars to reinvigorate the Russian space program.⁹⁰ Again we see strategic deception. An American company purports to lead the charge to space, while putting bodies in space relies upon a former – and maybe present – enemy. To maintain the frontier, it must be kept in American borders.

⁸⁸ McChesney, *Blowing the Roof off the Twenty-First Century*, 110.

⁸⁹ McChesney, 60.

⁹⁰ Elon Musk, "Interesting... 'Putin Unveils \$50B Drive for Russian Space Supremacy [Http://Phys.Org/News/2013-04-Putin-Unveils-Bn-Russian-Space.Html](http://Phys.Org/News/2013-04-Putin-Unveils-Bn-Russian-Space.Html) ...' via @physorg_com," Tweet, @elonmusk (blog), April 12, 2013, <https://twitter.com/elonmusk/status/322906572814696448?lang=en>.

Musk himself is not well liked by Russia. A report from *Bloomberg* lays this out even more clearly: “Even China is likely to have a superheavy launch vehicle before Russia. But it’s the success of [boyish looking] upstart Musk that smarts. Roskosmos has the full power of the state behind it.”⁹¹ While SpaceX is not intertwined with the Department of Defense to the extent of Boeing, Lockheed Martin, or Northrop Grumman, the company is barely fifteen years old, and as it sees more success it will undoubtedly continue to siphon contracts away from other aerospace companies and increase its lobbying power in Washington, DC.⁹² The imperialist/militaristic triangle McChesney references relies on propaganda to function, but the media content of political economies – a part of the triangle – also contribute to that propaganda. Furthermore, Russia seems to be taking Musk seriously. As early as 2015, a Russian spokesperson for Roskosmos described Musk as “stepping on our toes.”⁹³ If history is to be repeated, I would posit that Musk is indeed under close scrutiny from the Russian Federation, especially given SpaceX’s increasing government ties.

Despite that, Musk, other than the tweet referenced above, publicly tries to stay out of geopolitical discussions and prefers not to comment on politics (especially international situations), with a few notable exceptions. First, he received much criticism for choosing to sit on President Donald Trump’s committee for American manufacturing,

⁹¹ “How Elon Musk Beat Russia’s Space Program,” *Bloomberg.Com*, February 7, 2018, <https://www.bloomberg.com/view/articles/2018-02-07/how-elon-musk-beat-russia-s-space-program>.

⁹² Evans, “Bottom Line.”

⁹³ Don Reisinger, “Russia Says Elon Musk Is ‘Stepping On Our Toes,’” *Fortune*, December 30, 2015, <http://fortune.com/2015/12/30/russia-elon-musk-spacex/>.

but attempted to remain as apolitical as possible, saying he only cared about politics “because SpaceX has to battle Boeing and Lockheed for national security and civil space launch contracts. If we don’t battle them, then we’ll lose.”⁹⁴ Again, Musk is discussing risk here. Politics has always been a touchy subject for Elon Musk, but if he is *too* apolitical, he risks losing out on business contracts.⁹⁵ McChesney’s entire corpus of work is dedicated to elucidating the dangers of the wrong kind of money in politics. He writes specifically that those who “care about democracy and the key issues surrounding the relationship of communication to democracy and capitalism” need to pay attention to connections like the one I have identified.⁹⁶

Second, Musk has been rather famously opposed to the unlimited development of artificial intelligences and concerned especially with the impact it will have on the human race as a whole, which reinforces the logic of strategic deception in another arena.⁹⁷ This

⁹⁴ Alasdair Wilkins, “Here’s Everything Elon Musk Has Ever Said About Donald Trump,” *Inverse*, August 18, 2017, <https://www.inverse.com/article/35196-everything-elon-musk-has-ever-said-about-donald-trump>.

⁹⁵ Tim Fernholz, “Elon Musk’s Politics Are as Enigmatic as His Businesses,” *Quartz* (blog), September 18, 2015, <https://qz.com/493152/elon-musks-politics-are-as-enigmatic-as-his-businesses/>. This brief piece references Musk’s “remarkable evenhandedness” between Democratic and Republican candidates since he made his fortune. Of the roughly \$500,000 he’s donated, \$258,000 went to Democrats and \$263,000 went to Republicans.

⁹⁶ McChesney, “The Political Economy of Communication and the Future of the Field,” 109.

⁹⁷ His comments on the risks of AI were widely criticized, but Steven Pinker took particular umbrage with them, albeit subtly. Fellow billionaire entrepreneur Mark Zuckerberg was less subtle about it See: Steven Pinker, “Doomsday Is (Not) Coming: The Dangers of Worrying about the Apocalypse,” February 24, 2018, https://www.theglobemail.com/opinion/the-dangers-of-worrying-about-doomsday/article38062215/?utm_medium=Referrer:+Social+Network+Media&utm_campaign=Shared+Web+Article+Links.

is the other primary reason he involves himself with international politics. In response to Putin stating that “whoever becomes the leader in [the AI] sphere will become the ruler of the world”⁹⁸ Musk simply tweeted the article with the caption “It Begins”⁹⁹ implying a potential World War III sparked by the advent of AI. In response, Musk has recently funded Neuralink, and OpenAI; both companies dedicated to the safe development of AI in conjunction with “human enhancement.”¹⁰⁰ Mitchell reminds us that strategic deception often constitutes a “full-on assault on the public sphere as a legitimate site for public discussion” resulting in the potential “unraveling of the democratic fabric.”¹⁰¹ This is also in keeping with the persona of expertise Musk projects. I suggest Musk’s attitude toward geopolitics and domestic politics, correlated with SpaceX’s increasing connections with the military, open a new kind of strategic deception based on the tenants of the frontier I have articulated above and use of economic risk as an actuating factor in technological development.

⁹⁸ Sean Illing, “The Rise of AI Is Sparking an International Arms Race,” Vox, September 13, 2017, <https://www.vox.com/world/2017/9/13/16287892/elon-musk-putin-artificial-intelligence-war>.

⁹⁹ Elon Musk, “It Begins ...<https://twitter.com/Verge/Status/904628400748421122> ...,” Tweet, *@elonmusk* (blog), September 4, 2017, <https://twitter.com/elonmusk/status/904633084309422080>.

¹⁰⁰ Masunaga, “A Quick Guide to Elon Musk’s New Brain-Implant Company, Neuralink.”

¹⁰¹ Mitchell, “Placebo Defense,” 138.

Strategic Technodiscourse

A primary rhetorical tactic of SpaceX has been the idea of “progress,” or phrased another way, “technological development.” Progress is generally a *result* of the frontier’s expansion into new spaces. Tyson’s development of progress is purely epistemic in nature, attempting to subsume everything under the heading of science with his use of myth. Like the physical space of Mars as the frontier, Musk’s economic journey has been material as SpaceX has developed each new component of the Falcon, Falcon-9, and Falcon Heavy. SpaceX builds as much as it can in-house. The way Musk talks about this technological development evokes what Jacques Ellul calls “technodiscourse.” He writes:

All technodiscourse either is or seeks to be discourse about humanity, about human primacy and objectives. It does not merely seek to assure us of happiness, nor does it discuss power. (There is never any question of power in this pious talk.) Its theme is true human fulfillment, which it rates very highly. Nothing is more important than the human race.¹⁰²

Musk’s reasoning behind the push to Mars is the preservation of the human race. It is risk, it is economies, it is contracts and technical specifications, full stop.¹⁰³ However, like Tyson’s use of religious rhetorical structures in the service of science, Musk makes use of other aspects of myth, concealed by his heroic persona. Technodiscourse, as

¹⁰² Ellul, *The Technological Bluff*, 126–27.

¹⁰³ Musk, “Making Humans a Multi-Planetary Species”; “Full Text of Elon Musk’s Paris COP21 Speech”; TED, *The Mind behind Tesla, SpaceX, SolarCity ... | Elon Musk*; iGadgetPro, *FULL Elon Musk’s Speech at ISS 2017 Conference 7/19/17*. I reference these speeches and interviews as representative examples of what I am talking about. Most of what Musk says in them is related to the above categories. He is describing the specs of SpaeX rockets, limitations the company has run into, and ways to increase efficiency. When talking specifically about SpaceX’s goals, he usually leads with some variation of the “making humans a multiplanetary species” line and quickly moves on.

elucidated by Janicaud, is advertising.¹⁰⁴ McChesney discusses the relationship between propaganda, advertising, and problem-solving when he writes “In other words, advertising sells the idea that purchasing a product or service can solve a problem, sometimes one only loosely related to the actual product. Advertising amounts to propaganda.”¹⁰⁵ The use of technodiscourse in this case is the strategic deception.

This is Musk’s elision of the technical sphere into the public sphere. As Goodnight suggests, “A culture of expertise [displaces] citizen determination of risks and concealing these maneuvers by inventing media products to draw attention.”¹⁰⁶ Musk assumes the risk but conceals other aspects of SpaceX, or attempts to, while trading in on his attributed expertise. Hartelius again: “Being a successful expert requires locating one’s expertise at the center – not the periphery – of every day life.”¹⁰⁷ I think Musk’s push to do this can be summed up thusly. The frontier is settled, all peoples are equal, when towns and cities spring up, when the tension between civilization and savagery has been solved and the frontier hero has left town.¹⁰⁸ The hoped-for price tag of a Martian trip is the average cost of a home in America, the *ultimate* expression of the American

¹⁰⁴ Dominique Janicaud, *La Puissance du rationnel* (Paris: Gallimard, 1985), quoted in Ellul, *The Technological Bluff*, 126.

¹⁰⁵ Robert Waterman McChesney, *The Problem of the Media: U.S. Communication Politics in the Twenty-First Century* (New York: Monthly Review Press, 2004), 142–43, <https://catalog.hathitrust.org/Record/004371134>.

¹⁰⁶ Goodnight, “The Personal, Technical, and Public Spheres,” 261.

¹⁰⁷ Hartelius, *Rhetoric of Expertise*, 29.

¹⁰⁸ Carpenter, “Revisiting Janice Rushing About ‘The Western Myth’ (More Important Now Than Ever Before),” 180–81.

dream, the center of everyday life, and, provided the markets are strong, a sign of a healthy economy. Musk has quite literally made the frontier a place to settle by using a home price as the benchmark, and done so by strategically concealing uses of myth in techno-discourse by cashing in on the frontier hero persona and rhetorics of attributed expertise.

Conclusion: Networks of Consensus

This all seems decidedly *unhopeful*. Using the frontier to reinforce capitalism is not new, nor something to be desired. Ellul says of technical propaganda that one function is “representing a complete reconstruction of reality in the minds of its citizens... to form, rather than to inform.”¹⁰⁹ This is the basis of Musk’s evolution from *endoxa* to social knowledge. I argued above that *endoxa* was formulated on the basis of the “cult of the vision,” and as that vision moves through rhetorics of risk and the heroic persona, it shifts to social knowledge. Consensus begins to form in the discourse of capitalism because of capitalism’s ease of understanding to the average audience member.

Technodiscourse, however, has its risks. Damien Smith Pfister points out that understanding “how technology shapes human possibility [is] a necessary task in gauging the value(s) of new technologies.”¹¹⁰ He also cautions that advertising can “work within a

¹⁰⁹ Jacques Ellul, *The Technological Society*, trans. John Wilkinson, 4th ed. (New York: Alfred A. Knopf, 1967), 371.

¹¹⁰ Smith Pfister, “Against the Droid’s ‘Instrument of Efficiency,’ For Animalizing Technologies in a Posthumanist Spirit,” 211.

political economy that fetishizes the posthuman as an efficiency machine.”¹¹¹ I did not mention Musk’s connections to AI research on a whim; the fact that the same man is heavily involved in physically altering both humanity’s location in the cosmos and in consciousness, using the frontier and notions of “efficient” travel to do so, is concerning in that the frontier is subtly altered by technodiscourse to push a consensus which might not be fully understood by members of the public sphere. Ellul also warns that as technology increases, freedom and “open space” is destroyed, a kind of reverse frontier, but contradictorily, we feel as though our freedom increases with each new technological marvel as we can “do what we could not do before.”¹¹² Where is hope here?

I suggest, as Farrell does, that democratic structures are essential to the creation and maintenance of rhetorical hope. What Musk is doing is not really new, as I have said. Edwin Black writes, however, that the persona implied by a discourse may be an artificial creation, but one that must receive a moral judgment if we, as critics, are to “satisfy our obligation to history.”¹¹³ For all his many faults, there is little doubt that Musk *wants* to go to Mars. Despite his near-Machiavellian use of the problematic structures of capitalism and the frontier, it seems he believes humanity may truly be in danger from some existential threat. I am not equipped to confirm or deny that theory, but I do believe that Musk believes it. Haskins writes that “endoxology may be vulnerable once it is thrust

¹¹¹ Smith Pfister, 213.

¹¹² Ellul, *The Technological Society*, 328; Ellul, *The Technological Bluff*, 127.

¹¹³ Edwin Black, “The Second Persona,” *Quarterly Journal of Speech* 56, no. 2 (April 1970): 110–11.

back into the context out of which it arose.”¹¹⁴ I suspect that this is what is occurring with Musk. The use of persona and pre-existing structures, like capitalism and the frontier that precede civic participation have created, in this case, a rhetorical circle.¹¹⁵ Consensus and social knowledge lie in the successful use of the raw materials of the frontier, which Musk has at his disposal, because the public *cannot* participate in the way Musk wants them to until he succeeds in reducing costs of the trip. Latour, then, offers a modicum of hope when he says “morality is from the beginning inscribed in the things which, thanks to it, oblige us to oblige them. If technology causes dislocations, it is to readjust.”¹¹⁶ Farrell suggests that these readjustments can occur in the “assumption of a wider consciousness” that stems from a sincere desire, tested by rhetoric, that tests a “deeper identity, between the self and its conscious extension – the human community.”¹¹⁷ Musk is, I think, attempting this extension. The morality of that extension must be left up to the public sphere. As ever, the frontier is a place of tension with a difficult history. Hope for Musk lies in the belief that if nothing is done, the human race is eventually doomed, and so the only hope to be had is in effort.

¹¹⁴ Haskins, “Endoxa, Epistemological Optimism, and Aristotle’s Rhetorical Project,” 17.

¹¹⁵ Haskins, 16.

¹¹⁶ Bruno Latour, “Morality and Technology,” *Theory, Culture & Society* 19, no. 5/6 (October 2002): 258.

¹¹⁷ Farrell, “Knowledge, Consensus, and Rhetorical Theory,” 15.

CHAPTER FOUR

The Tensions of the Frontier

Introduction

When President Barack Obama entered office in 2008, he did so on a wave of hope. On the night of the election, the *New York Times* declared him a “phenomenon.”¹ The *Washington Post* described his speeches as “inspirational exhortations of hope.”² In his victory speech, the President stated that he “has never been more hopeful than I am tonight.”³ The theme of hope was one Obama returned to again and again over the next eight years. Mark Ferrara summarizes the gist of this rhetoric when he writes that “it seeks the middle ground between ideology and realism.”⁴ In this chapter, I articulate some of the ways in which Obama’s speeches – States of the Unions and more directed – showcase a tension between the personal and technical spheres.

¹ Adam Nagourney, “Obama Elected President as Racial Barrier Falls,” *The New York Times*, November 4, 2008, sec. Politics, <https://www.nytimes.com/2008/11/05/us/politics/05elect.html>.

² Robert Barnes and Michael D. Shear, “Obama Makes History,” November 5, 2008, <http://www.washingtonpost.com/wp-dyn/content/article/2008/11/04/AR2008110404246.html>.

³ Barack Obama, “Address in Chicago Accepting Election as the 44th President of the United States” (Chicago, Ill., November 4, 2008), <http://www.presidency.ucsb.edu/ws/index.php?pid=84750>.

⁴ Ferrara, *Barack Obama and the Rhetoric of Hope*, 13.

The previous chapters described the ways in which Tyson uses religious rhetoric to actuate the frontier myth, while Musk uses the risk-oriented heroic persona to articulate *material* versions of the frontier. They represent the personal and technical spheres. In this chapter, I want to focus on President Obama's mediation of the tension between the personal and technical spheres. Goodnight calls for a "productive entry into public communication" for the technical, but at the same time, cautions that in the post-communication revolution, "communicative actions to the person remain in the balance."⁵ President Obama showcases this balance by his continued use of the frontier, but I suggest that unlike Tyson, Obama's identity as a black president, along with his overseeing the shift from public to corporate support of space exploration, make the presidential role essential to his treatment of the frontier. Furthermore, Obama's general attitude towards science writ large reinforces the argument I forward regarding Tyson's articulation of the frontier myth and scientism. With regards to Musk's focus on risk, Obama prefers to mitigate economic risk and focus on concepts of innovation, showing that a president cannot cede the space for rhetorical invention that capitalism provides. I focus on some smaller, topical addresses to show how the presidency is required to deal with capitalist discourse in the frontier. In discussing the innovative potential of space exploration, he attempts to limit capitalist rhetorics and emphasize unity brought about by a trip to the Red Planet.

⁵ Goodnight, "The Personal, Technical, and Public Spheres," 265.

The Presidential Role as Endoxa

The role of the president in scientific innovation has a long history. Abraham Lincoln signed the Morrill Act into law in 1862, forming several major land grant universities that have been hotbeds of scientific research and innovation, among them MIT. He later signed the charter for the National Academy of the Sciences in 1863.. Ever since, the presidency has been responsible for broadening the NAS charter, occasionally understanding the importance of scientific innovation to a shifting American culture as President Woodrow Wilson did in the post-World War I years.⁶ Wilson issued an executive order extending the charter specifically to “serve as a means of bringing American and foreign investigators into active cooperation” with branches of the government, while also asking the Academy to focus on problems “in connection with national defense.”⁷ Dwight Eisenhower further expanded the connections between national security and the Academy, while also providing for the classification of some information that would affect the general public and clarifying the need for scientific leadership of the American public.⁸ George H. W. Bush maintained that national security

⁶ “Academy History,” National Academy of Sciences, n.d., <http://www.nasonline.org/about-nas/history/>.

⁷ “Woodrow Wilson: Executive Order 2859—National Research Council of the National Academy of Sciences,” May 11, 1918, <http://www.presidency.ucsb.edu/ws/index.php?pid=58834>.

⁸ “Dwight D. Eisenhower: Executive Order 10807—Federal Council for Science and Technology,” March 13, 1959, <http://www.presidency.ucsb.edu/ws/index.php?pid=106503>.

focus while limiting funding from the government to the Academy.⁹ A comprehensive historical view of the connections between the presidency and the sciences would constitute a project in and of itself. I mention these three executive orders because they indicate a general disposition of the presidency to use the NAS as a tool for directing national research while elucidating influences between such direction, the private sector, and national defense.

The role of the president, then, becomes that of a director, sometimes allowed to focus on one side of the research/funding divide, and sometimes forced to focus on the other. Mary Stuckey reminds us that “all presidents face tensions between the universal principles that they profess to endorse and the political consequences of those principles” and that “presidential language seeks to mediate between where they perceive public opinion to be and where they wish it to go.”¹⁰ Obama, then, enters the presidency on the heels of eight years of questionable scientific decision making under Bush,¹¹ but in his

⁹ “George Bush: Executive Order 12832—Amendments Relating to the National Research Council,” January 19, 1993, <http://www.presidency.ucsb.edu/ws/index.php?pid=368>.

¹⁰ Mary E. Stuckey, “‘The Domain of Public Conscience’: Woodrow Wilson and the Establishment of a Transcendent Political Order,” *Rhetoric & Public Affairs* 6, no. 1 (Spring 2003): 18.

¹¹ See: “Manipulation of Global Warming Science,” Union of Concerned Scientists, 2002, <https://www.ucsusa.org/our-work/center-science-and-democracy/promoting-scientific-integrity/manipulation-of-global.html>; Katrina vanden Heuvel, “Bush’s War on Science,” *The Nation*, July 20, 2004, <https://www.thenation.com/article/bushs-war-science/>; David Ewing Duncan, “The Anti-Science President,” MIT Technology Review, July 12, 2007, <https://www.technologyreview.com/s/408236/the-anti-science-president/>.

own words, a desire to “restore science to its rightful place.”¹² This indicates that the former place of science was one of importance but during the Bush administration fell out of favor. This recalls Tyson’s priestly need to alleviate a time of darkness or denigration.

Bush’s prior role as an “anti-science” president means that there were particular expectations for Obama as he entered office. Climate scientists were growing more and more vocally concerned with the Bush administration’s lack of action. Obama therefore faced pressure on two scientific fronts. First, he had to use “technology’s wonders” to pass universal healthcare.¹³ Second, he had to take substantive action to mitigate or reverse climate change. Karlyn Kohrs Campbell and Kathleen Hall Jamieson write that the presidency is “an amalgam of roles and practices shaped by what presidents have done.”¹⁴ In their use of generic discourse, each president develops rituals that help the president play a “role as the symbolic, as well as the real, head of state.”¹⁵ The public expects the president to act and speak in particular ways, and despite the more limited nature of the president’s scientific discourse, it performs the same function. When Obama entered office, the expectation was that he would *both* undo the Bush administration’s scientific obfuscation *and* create a new direction for scientific discourse that reinforced

¹² Barack Obama, “President Barack Obama’s Inaugural Address” (Washington, DC, January 21, 2009), <https://obamawhitehouse.archives.gov/blog/2009/01/21/president-barack-obamas-inaugural-address>.

¹³ Obama.

¹⁴ Karlyn Kohrs Campbell and Kathleen Hall Jamieson, *Presidents Creating the Presidency: Deeds Done in Words*, 61922nd edition (Chicago: University Of Chicago Press, 2008), 2.

¹⁵ Campbell and Jamieson, 7.

its primacy. One of the ways he attempted to do this was through constructing Mars as a transcendent frontier, much like Kennedy's use of the Moon.¹⁶ The presidential role let Obama use his unique personal identity to meet those challenges, and Mars proved particularly effective.

In terms of direct scientific discourse, the question then becomes the role a president plays in mediating the public's opinions and assumptions of science *beyond* the occasional executive order that I referenced above. Obama focused time and effort on environmental policy and attempting to mitigate the damage done and being done by continuing inaction on climate change, but any mention of space limited Obama's use of his *endoxic* role to the frontier because, as Leah Ceccarelli notes, "language conflating promising new scientific research with an American pioneering ethos has become so ubiquitous that it is hard for presidents to avoid it when talking about science."¹⁷ Obama presided over NASA at a time of particular interest: the final flight of the space shuttle, the longest stay in space by a human to date, and the increasing privatization of space specifically as an effort to reach Mars. These varied situations contributed to the tension Obama was forced to negotiate. Because the frontier is so ubiquitous in American consciousness, he could not cede this space for invention, and due to the prevalence of capitalist rhetoric in the American public, he cannot *not* talk about the influence space exploration will have on technology. Thus, he is stuck somewhere between Tyson's mythic rhetoric and Musk's focus on risk and reward.

¹⁶ Jordan, "Kennedy's Romantic Moon and Its Rhetorical Legacy for Space Exploration," 2003, 211–12.

¹⁷ Ceccarelli, *On the Frontier of Science*, 112.

I suggest that Obama first located *endoxa* in the office of the president and specific genres of presidential speeches. I argued in the introduction to this project that *endoxa* acts as *protaseis*, a rhetorical beginning or the proposition that begins an enthymeme. Aristotle writes that “it is first of all necessary for a speaker to have propositions on these matters,”¹⁸ and Ekaterina Haskins argues that “the conceptual vocabulary employed by Aristotle points away from the speech act and its circumstances toward its propositional, topical content.”¹⁹ This project is not intended to become generic criticism of presidential speech. Rather, my argument is that Campbell and Jamieson are right to categorize presidential discourse by genre. In doing so, they identify what Haskins calls “the limit of... the claim of public speech to political knowledge while preserving its claim to power.”²⁰ For example, an audience expects a particular speech from a president to do a particular thing because all the other presidents have done that thing with that kind of speech. It is why we are surprised when a presidential speech does something *other* than what we expect of it. Haskins argues that *endoxa* are “objects of belief and not... statements expressing belief in various social contexts and through a diversity of genres.”²¹ While in a presidential speech political beliefs are certainly expressed, I suggest that what is important here is the way that the audience receives them, based on the generic conventions Campbell and Jamieson identify, can constitute

¹⁸ Aristotle, *On Rhetoric*, 1359a7.

¹⁹ Haskins, *Logos and Power in Isocrates and Aristotle*, 60.

²⁰ Haskins, 62.

²¹ Haskins, “Endoxa, Epistemological Optimism, and Aristotle’s Rhetorical Project,” 7.

endoxa as the presidential role, an object of belief as to what should be said.²² Defining an *object* of belief as a role, then, lets me situate Obama's discourse as a component of what a discourse *should* be, just as Haskins situates *endoxa* as versions of reality (*pragmata*) defined by various enthymemes.²³ Put another way, Obama's role comes with certain expectations as identified by Campbell and Jamieson. I argue that these expectations make up part of Obama's *endoxic* identity, which in turn pushes him to acknowledge the frontier as a place of tension and contradiction.

The Limiting Frontier

Contrary to Tyson and Musk, who see the frontier as an epistemological and capitalistic space for expansion, respectively, I suggest that Obama's *endoxic* role as president means that he is forced to deploy the frontier metaphor, but at the same time, limited by it. The frontier is nominally seen as *only* a space for expansion, but as Eliade writes, myth is often "bound up with ontologies."²⁴ Because Obama's role as the first black president is so different, the ontology of the myth as he uses it has also fundamentally shifted. Robert Ivie and Oscar Giner suggest that Obama's sense of hope

²² For another explanation of "what should be said," see: Michael Leff, "Decorum and Rhetorical Interpretation:: The Latin Humanistic Tradition and Contemporary Critical Theory," in *Rethinking Rhetorical Theory, Criticism, and Pedagogy*, The Living Art of Michael C. Leff (Michigan State University Press, 2016), 163–84, <http://www.jstor.org/stable/10.14321/j.ctt1d10hh7.14>.

²³ Haskins, "Endoxa, Epistemological Optimism, and Aristotle's Rhetorical Project," 7, 13.

²⁴ Eliade, *The Sacred and The Profane*, 95.

was “premised on a discourse of restoration, renovation, and renewal.”²⁵ The ontology of the frontier myth as only expansionist has become filled with new tensions in the twenty-first century as the public has grown more concerned with other cultural myths – like American exceptionalism – and the potentially harmful impacts of those myths in an increasingly globalized world. Obama, ever the pragmatist,²⁶ was forced to use the potential of mythic discourse to actuate an audience; the president cannot cede the rhetorical space that myth provides.

At the same time, Obama needed to admit, even if only tangentially, the problematic aspects of those myths. Robert Danisch writes that Obama’s pragmatic style, “responsive to contemporary democratic life,” lets him create “collective narratives of reconciliation.”²⁷ Pragmatism required that Obama deal with these material effects, and this was a tactic that was ill-received by political opposition and seen by political allies as necessary, given the material, harmful effects the rhetoric of the West.²⁸ The ontological

²⁵ Robert L. Ivie and Oscar Giner, “American Exceptionalism in a Democratic Idiom: Transacting the Mythos of Change in the 2008 Presidential Campaign,” *Communication Studies* 60, no. 4 (October 9, 2009): 360, <https://doi.org/10.1080/10510970903109961>.

²⁶ See: Robert Danisch, “The Roots and Form of Obama’s Rhetorical Pragmatism,” *Rhetoric Review* 31, no. 2 (April 2012): 148–68, <https://doi.org/10.1080/07350198.2012.652038>.

²⁷ Danisch, 149, 150.

²⁸ See: Nile Gardiner and Morgan Lorraine Roach, “Barack Obama’s Top 10 Apologies: How the President Has Humiliated a Superpower,” The Heritage Foundation, June 2, 2009, [/europe/report/barack-obamas-top-10-apologies-how-the-president-has-humiliated-superpower](http://www.heritage.org/europe/report/barack-obamas-top-10-apologies-how-the-president-has-humiliated-superpower); Ron Fournier, “Obama’s New American Exceptionalism,” *The Atlantic*, July 28, 2016, <https://www.theatlantic.com/politics/archive/2016/07/obamas-new-american-exceptionalism/493415/>; Greg Jaffe, “Obama May Have Found a Way to Respond to Criticism That He Doesn’t Love America Enough,” *Washington Post* (blog),

necessities of the traditional frontier myth are difficult to reconcile with what Obama attempted to do rhetorically throughout much of his presidency, as Ivie and Giner point out. However, as Hillary Jones argues, the myth can be “reworked rhetorically by using the sociopolitical as its constitutive element.”²⁹ It is only by pragmatically reckoning with the frontier as it formerly existed in the public sphere that we can reclaim it as something different and more equal.

As such, the frontier becomes not only a space to work for expansion, but a place to work out tension. It is still the frontier, as the language of heroism, expansion, and exceptionalism are often present in Obama’s rhetoric. Consider the closing lines of his Democratic National Committee Convention acceptance speech in 2008. He said:

It is that American spirit, that American promise, that pushes us forward even when the path is uncertain; that binds us together in spite of our differences; that makes us fix our eye not on what is seen, but what is unseen, that better place around the bend. That promise is our greatest inheritance.³⁰

He recognizes the tension and difference inherent in the American experience and blends it with the metaphor of forward motion,³¹ trying to deal with what Joseph Rhodes and Mark Hlavacik call the “constant tension” of Obama’s pragmatic approach to the

n.d., <http://www.washingtonpost.com/sf/national/2015/06/03/obama-and-american-exceptionalism/>.

²⁹ Hillary A. Jones, “‘Them as Feel the Need to Be Free’: Reworking the Frontier Myth,” *Southern Communication Journal* 76, no. 3 (July 2011): 234, <https://doi.org/10.1080/1041794x.2010.507109>.

³⁰ Barack Obama, “Barack Obama’s Acceptance Speech,” August 28, 2008, <https://www.nytimes.com/2008/08/28/us/politics/28text-obama.html>.

³¹ See also: Barack Obama, “Keynote Address at the 2004 Democratic National Convention” (Illinois, July 27, 2004), <http://www.presidency.ucsb.edu/ws/?pid=76988>.

presidency.³² The frontier describes movement, a goal distant but reachable, but in Obama's case, it also represents work yet unfinished. This work is an imperative to move forward in the face of uncertainty. In his 2012 inaugural address, he said "We must act, knowing that today's victories will be only partial and that it will be up to those who stand here in four years and 40 years and 400 years hence to advance the timeless spirit once conferred to us in a spare Philadelphia hall."³³ The frontier is a story always uncompleted even as the location of the frontier shifts. In Obama's rhetoric, goals are generally unreached in some capacity, whether material or social. The hope lies in the journey to accomplish them, and the knowledge that there is another goal waiting after we, as a nation, complete the present goal. In other words, hope starts in the constant need to unify in order to complete the present goal.

This pervading sense of incompleteness began to take a toll on Obama and the veracity of his rhetoric. Ferrara noticed the tension inherent in the 2012 campaign as the idealism of the 2008 campaign began to run up against the harsh realities of a slowing economy, continued military entanglements abroad, and the perception of a "lack of audacity."³⁴ There are important connections here, too, with Musk's vision of the

³² Joseph Rhodes and Mark Hlavacik, "Imagining Moral Presidential Speech: Barack Obama's Niebuhrian Nobel," *Rhetoric & Public Affairs* 18, no. 3 (Fall 2015): 477; See also: John M. Murphy, "Barack Obama and Rhetorical History," *Quarterly Journal of Speech* 101, no. 1 (February 2015): 213–24, <https://doi.org/10.1080/00335630.2015.995927>; Danisch, "The Roots and Form of Obama's Rhetorical Pragmatism."

³³ Barack Obama, "Inaugural Address by President Barack Obama" (Washington, DC, January 21, 2013), <https://obamawhitehouse.archives.gov/the-press-office/2013/01/21/inaugural-address-president-barack-obama>.

³⁴ Ferrara, *Barack Obama and the Rhetoric of Hope*, 178, 183.

economic frontier. Part of American exceptionalism is economic in nature, and along with the frontier proper, Obama can only admit so much difficulty in an economic recession. Therefore, the selection of the 2012 slogan in and of itself speaks to the beginnings of a tension within Obama's rhetoric.³⁵

Part of this is likely due to Obama's own identity. This pragmatism shows up in much of Obama's rhetoric, and Martin Medhurst identifies Obama's "narrative signature" as bound up in his life story. Medhurst writes that a narrative signature is a "unique form of identity that only the narrator can perform with complete fidelity."³⁶ Specifically, Medhurst argues that Obama's signature is constructed as a "journey toward his destiny as well as America's journey toward the fulfillment of the promises made in its founding documents."³⁷ James Darsey suggests that the American journey is one toward equality,³⁸ which can only be achieved when African Americans enjoy the fullness thereof. When it comes to Obama, Darsey says that the President is gifted at making his journey move

³⁵ It should be noted too that despite Obama's stated admiration for Niebuhr, who, in his day, wrote against positivists like Dewey and Lipmann, he often deploys science in a similar way to Tyson, but less divorced from the frontier because he is forced to discuss it in so many different realms of public life, most often the environment and climate change. See Rhodes and Hlavacik, "Imagining Moral Presidential Speech," 477.

³⁶ Martin J. Medhurst, "Barack Obama's 2009 Inaugural Address: Narrative Signature and Interpretation," in *Making the Case: Advocacy and Judgment in Public Argument*, ed. Kathryn M. Olson et al., 1 edition (East Lansing: Michigan State University Press, 2012), 194.

³⁷ Medhurst, 197.

³⁸ James Darsey, "Barack Obama and America's Journey," *Southern Communication Journal* 74, no. 1 (February 2, 2009): 94, <https://doi.org/10.1080/10417940802571151>.

from the personal to the collective.³⁹ Making rhetoric collective is essential to the presidency, as Campbell and Jamieson suggest. As president, Obama must make the expansion inherent in the frontier relevant to his audience, and does so with his narrative signature based around his identity. Dorsey argues that Roosevelt used his identity as a frontiersman to show presidential leadership and alter the terms of the frontier, which “reorients the audience’s understanding and acceptance” of the myth.⁴⁰ Obama is using a similar rhetorical strategy in the use of his personal identity to shift the terms of the frontier.

Obama uses his identity as a way to both connect with his African American audience and invite non-African Americans to participate in the promise of America. Robert Terrill writes that “inventive resources of democratic double-consciousness might inhabit discourse beyond confines of race-talk.”⁴¹ This tension in the frontier functions much the same as double-consciousness in terms of the rhetorical strategies utilized in mediating both racial identity and the frontier. As a black man, Obama cannot ignore the racist aspects of the frontier. Despite Roosevelt’s rhetorical efforts to make the frontier a place of equality,⁴² the legacy of colonialism is generally maintained in frontier

³⁹ Dorsey, 100.

⁴⁰ Leroy G. Dorsey, *Theodore Roosevelt, Conservation, and the 1908 Governors’ Conference* (College Station: Texas A&M University Press, 2016), 60, 62.

⁴¹ Robert E. Terrill, *Double-Consciousness and the Rhetoric of Barack Obama: The Price and Promise of Citizenship* (Columbia, South Carolina: University of South Carolina Press, 2015), 134; See also Ferrara, *Barack Obama and the Rhetoric of Hope*, 97.

⁴² Dorsey, *We Are All Americans Pure and Simple*, 71.

discourse.⁴³ Michael Johnson suggests that for black folk, the frontier offered “an imaginative space free from racial oppression where... human potentiality might be investigated.” At the same time, however, the “myth also encodes existing constraints.”⁴⁴ Especially for the first black man holding the highest office in America, this kind of imaginative space becomes even more essential.

The imaginative space of the frontier is difficult to define for a variety of reasons and especially for Obama. In “Fear of a Black President,” Ta-Nahesi Coates argues that Obama’s rhetoric on race was fundamentally limited by the fact that “acceptance” for black men is predicated on being “twice as excellent and half as black.”⁴⁵ For Coates, Obama consistently avoided talking about race, except when using the rhetoric of personal responsibility. At the same time, however, writers like Coates could not deny the importance of a black president, evidenced in the closing lines of “My President Was Black.” The essay written as Obama was leaving office in the face of an incoming Trump administration. Despite Coates’ long criticisms of Obama, he “knew that it was his [Obama’s] very lack of countenance, his incredible faith, his improbable trust in his

⁴³ I say generally only in an effort to make a totalizing statement. It’s safe to say almost always, the frontier retains a legacy of racism and genocide, no matter how commendable the goals of the rhetor may be or how empty the space targeted for colonization.

⁴⁴ Johnson, *Black Masculinity and the Frontier Myth in American Literature*, 247–48.

⁴⁵ Ta-Nehisi Coates, “Fear of a Black President,” *The Atlantic*, September 2012, <https://www.theatlantic.com/magazine/archive/2012/09/fear-of-a-black-president/309064/>.

countrymen, that had made” it possible for Coates to have any faith in America.⁴⁶

Anthony Sparks argues that Obama first had to alter public opinion as a black man “that could speak well.”⁴⁷ The president is *endoxic* because even just the sight of a black man taking up residence at Pennsylvania Avenue for the first time, shifted the understanding of the identity of the office of the President. As such, the imaginative space of the frontier begins to shift along with President Obama’s identity.

Obama was a president that campaigned on hope and change, and the frontier can be either static or dynamic. Mark West and Chris Carey identified the “cowboy fantasy” narrative utilized by George W. Bush and Dick Cheney after September 11, 2001.⁴⁸ The frontier here is static and familiar as Bush and his vice president deployed the “notion of frontier justice... to secure consent” for the War on Terror.⁴⁹ For Obama, the frontier becomes dynamic based first and foremost on his identity. Obama’s identity as black president was essential in making this message work, because a new potential had been realized the moment a black man became president, and therefore, a new version of hope. On the other hand, Ivie and Giner show that Obama often trades on “democratic

⁴⁶ Ta-Nehisi Coates, “My President Was Black,” *The Atlantic*, February 2017, <https://www.theatlantic.com/magazine/archive/2017/01/my-president-was-black/508793/>.

⁴⁷ Anthony Sparks, “Minstrel Politics or ‘He Speaks Too Well.’ Rhetoric, Race, and Resistance in the 2008 Presidential Campaign,” *Argumentation & Advocacy* 46, no. 1 (Summer 2009): 36–37.

⁴⁸ Mark West and Chris Carey, “(Re)Enacting Frontier Justice: The Bush Administration’s Tactical Narration of the Old West Fantasy after September 11,” *Quarterly Journal of Speech* 92, no. 4 (November 2006): 385–93, <https://doi.org/10.1080/00335630601076326>.

⁴⁹ West and Carey, 380.

exceptionalism” which can be used as a “vehicle for pursuing the American dream,” but one more centered on interdependence and equality.⁵⁰ The narrative of exceptionalism kept black men from being president. Having identified Obama’s *endoxic* identity in relation to previous iterations of the frontier, I turn now to how Obama used frontier rhetoric when discussing NASA, space exploration, and Mars, with an eye towards how he uses rhetorical skills gained in mediating his own identity to parse tensions in the public sphere.

The Newest Frontier, in Two Parts

Above, I argued that as president, Obama was forced into utilizing the frontier. This section describes a cross section of some of those uses based around the evolving frontier identity I described. Interestingly, Obama tends to divide how he utilizes the frontier myth based on the type of speech he is giving. While his use of frontier language in States of the Union, for instance, is limited, it nearly always comes in conjunction with the language of innovation, job creation, and other references to capitalism. Outside States of the Union, he tends to more closely connect it with scientism, similar to Tyson. Campbell and Jamieson say that an essential factor of the annual message is to “remind the country that presidents have a unique role in our system of government” while articulating values that warrant policy assessments.⁵¹ Both are present in a multiple of Obama’s States of the Union; while I do not have the space to deal with all eight, I pick

⁵⁰ Ivie and Giner, “American Exceptionalism in a Democratic Idiom,” 372–73.

⁵¹ Campbell and Jamieson, *Presidents Creating the Presidency*, 138.

out a few notable instances of frontier rhetoric that articulates values I identified in previous chapters.⁵²

States of the Union

I focus partially on States of the Union here because it is in the annual address that presidents summarize the policy initiatives for the past year and propose new ones for the upcoming year, and some important political shifts limited the specific policy proposals Obama could make.⁵³ Often, the frontier is deployed as historical reference in order to advocate for innovation. In the 2011 State of the Union, Obama does not use the word “frontier,” but he does reference the Space Race with the Soviet Union. He said:

Half a century ago, when the Soviets beat us into space with the launch of a satellite called Sputnik, we had no idea how we would beat them to the moon. The science wasn’t even there yet. NASA didn’t exist. But after investing in better research and education, we didn’t just surpass the Soviets; we unleashed a wave of innovation that created new industries and millions of new jobs.⁵⁴

W.D. Kay argues that while the United States did in fact “heat up” the Space Race, at the same time John F. Kennedy “was simultaneously engaged in an equally unparalleled effort to promote U.S.-Soviet cooperation.”⁵⁵ Kay further suggests that Kennedy “saw no

⁵² It should also be noted that aspects of the Narrative Signature identified by Medhurst are present in the States of the Union, though more abstract and framed as a collective journey rather than an individual one. However, Campbell and Jamieson remind us that the purpose of the annual address is to unify and inform the nation, as opposed to most of the speeches Medhurst analyzes.

⁵³ Campbell and Jamieson, *Presidents Creating the Presidency*, 139–40.

⁵⁴ Obama, “Remarks by the President in State of Union Address.”

⁵⁵ W. D. Kay, “John F. Kennedy and the Two Faces of the U.S. Space Program, 1961-63,” *Presidential Studies Quarterly* 28, no. 3 (Summer 1998): 573.

contradiction” between competition and cooperation.⁵⁶ The frontier, incidentally and depending on who is speaking, often results in similar tensions.⁵⁷ Kennedy’s Rice University address successfully married discussions of the Space Race to the New Frontier, a construction that has endured to this day, albeit with varied success.⁵⁸ In Obama’s State of the Union, the Space Race is deployed as a call for more innovation as “our generation’s Sputnik moment.”⁵⁹ The innovation here is specifically related to jobs, similar to Elon Musk’s attitude towards innovation as a series of sequential steps towards Mars. The New Frontier provides a space to deliver on policy goals of creating job and innovating new technologies.

Obama was coming into office after the Great Recession and needed to reassure the public that the economy was on track, and using science and technology to stand in as metonyms for positive economic development did the trick. By 2011, the ACA had been passed and the moment required he turn his attention to the economy. Joshua Hanan, Indradeep Ghosh, and Kaleb Brooks identify the centrality of *kairos* – the proper rhetorical moment – in the rhetoric of mediating economic crises.⁶⁰ The 2010 State of the

⁵⁶ Kay, 574–79.

⁵⁷ Consider Dorsey’s elucidation of the frontier as a space for cooperation versus/and rugged individualism. See: Dorsey, *We Are All Americans Pure and Simple*, 139–48.

⁵⁸ Jordan, “Kennedy’s Romantic Moon and Its Rhetorical Legacy for Space Exploration,” 2003, 225–26.

⁵⁹ Obama, “Remarks by the President in State of Union Address.”

⁶⁰ Joshua S. Hanan, Indradeep Ghosh, and Kaleb W. Brooks, “Banking on the Present: The Ontological Rhetoric of Neo-Classical Economics and Its Relation to the 2008 Financial Crisis,” *Quarterly Journal of Speech* 100, no. 2 (May 2014): 155–56, <https://doi.org/10.1080/00335630.2014.961529>.

Union argues that the “worst of the crisis has passed,” but here again in the 2011 address the *threat* of crisis looms always-already.⁶¹ Technological development is an effective way to convince the public that the economy is turning in the right direction.⁶² Again, a connection between the frontier and the economy, or economic development, emerges.⁶³

By 2015, the economy was even more firmly on track, and Obama first mentions space *exploration* as such in a State of the Union. He said:

I want Americans to win the race for the kinds of discoveries that unleash new jobs... Pushing out into the solar system not just to visit, but to stay. Last month, we launched a new spacecraft as part of a reenergized space program that will send American astronauts to Mars. And in two months, to prepare us for those missions, Scott Kelly will begin a year-long stay in space. So good luck, Captain. Make sure to Instagram it. We're proud of you.⁶⁴

Again, he uses the framing of a “race” and economic development in conjunction with space, but here, it is explicitly predicated on space exploration. A few notable events in 2015 bear discussion, some of them mentioned by Obama above. First, Cpt. Scott Kelly, along with cosmonaut Mikhail Kornienko spent 340 days aboard the International Space

⁶¹ Barack Obama, “Barack Obama: Address Before a Joint Session of the Congress on the State of the Union,” January 27, 2010, <http://www.presidency.ucsb.edu/ws/index.php?pid=87433>.

⁶² Michael J. Steudeman, “Entelechy and Irony in Political Time: The Preemptive Rhetoric of Nixon and Obama,” *Rhetoric & Public Affairs* 16, no. 1 (Spring 2013): 79, 82.

⁶³ Obama again mentions the Space Race in almost exactly the same fashion in 2013, saying “Now is not the time to gut these job-creating investments in science and innovation. Now is the time to reach a level of research and development not seen since the height of the Space Race. We need to make those investments.” See: Barack Obama, “Remarks by the President in the State of the Union Address,” February 12, 2013, <https://obamawhitehouse.archives.gov/the-press-office/2013/02/12/remarks-president-state-union-address>. No mentions of a Space Race occur in the 2012 or 2014 addresses.

⁶⁴ Obama, “Remarks by the President in State of the Union Address.”

Station in an effort to predict the changes an extended stay in zero gravity would have on the human body.⁶⁵ The experiment was specifically framed as a precursor to a trip to Mars.⁶⁶

Second, the mention of a “reenergized space program” refers to the retirement of the Space Shuttle in mid-2011. The shuttle’s retirement was planned before Obama’s tenure, but concerns over funding, accessibility of the Russian Soyuz capsule, and progress on the shuttle’s replacement necessitated the retirement’s delay.⁶⁷ However, by 2015 the Orion spacecraft was assumed to be well on its way to carrying a crew into space by the early 2020s.⁶⁸ Unfortunately for Obama, the “reenergized space program” he envisioned would not materialize in his tenure. On the other hand, SpaceX had produced

⁶⁵ The gendered aspect of this experiment should be noted. A woman was not chosen, as it is generally assumed female bodies function the same as male bodies and anything that holds true for the male body will also hold true for a female’s. The frontier hero is male, as ever. See: Miriam Kramer, “Female Astronauts Face Discrimination from Space Radiation Concerns, Astronauts Say,” Space.com, August 27, 2013, <https://www.space.com/22252-women-astronauts-radiation-risk.html>; Kate Lunau, “Why We Desperately Need to Study More Female Astronauts,” Motherboard, April 19, 2016, https://motherboard.vice.com/en_us/article/4xa38j/why-we-desperately-need-to-study-more-female-astronauts-nasa-sally-ride.

⁶⁶ Karen Northon, “NASA Astronaut Scott Kelly Safely Back on Earth after One-Year Mission,” Text, NASA, March 1, 2016, <http://www.nasa.gov/press-release/nasa-astronaut-scott-kelly-returns-safely-to-earth-after-one-year-mission>.

⁶⁷ Tariq Malik, “NASA Delays Space Shuttle Program’s End to 2011,” Space.com, July 1, 2010, <https://www.space.com/8694-nasa-delays-space-shuttle-program-2011.html>; Bill Posey and Suzanne Kosmas, “Shuttle Flights Would Continue under New Proposal,” *Orlando Sentinel*, March 7, 2010, https://web.archive.org/web/20100307012940/http://blogs.orlandosentinel.com/news_politics/2010/03/shuttle-flights-would-continue-under-new-proposal.html.

⁶⁸ Mark Garcia, “Orion Overview,” Text, NASA, April 12, 2015, <http://www.nasa.gov/exploration/systems/orion/about/index.html>.

effective, efficient rockets and talks were already under way for the development of a privately-owned astronaut capsule, heavily subsidized by the government.⁶⁹ Again, Obama was caught between two poles: the necessity to maintain the perception of government control in a State of the Union speech while pragmatically acknowledging the constraints his administration faced.⁷⁰ These constraints speak to the dangers Goodnight identifies in the public sphere, which I will come back to in a moment.

In 2016, Obama again returns to the Space Race. He describes a “spirit of discovery in our DNA,” or a “spirit of innovation” that can conquer “our biggest challenges.”⁷¹ Notably, this speech also contains the only use of the word “frontier” to “extend America’s promise outward.”⁷² Ceccarelli notes the general usage of this specific frontier construction when she writes that “American presidents insisted that it is a national duty for citizens to face the future with hope and courage as they venture across the frontiers of science.”⁷³ I suggest that the use of “DNA” in this speech reinforces Obama’s recognition that the frontier is a rhetorical edifice he must use; it is too powerful not to, especially as he was leaving office and attempting to cement his legacy. However,

⁶⁹ Jerry Hirsch, “Elon Musk’s Growing Empire Is Fueled by \$4.9 Billion in Government Subsidies,” *Los Angeles Times*, May 30, 2015, <http://www.latimes.com/business/la-fi-hy-musk-subsidies-20150531-story.html>.

⁷⁰ Campbell and Jamieson, *Presidents Creating the Presidency*, 140.

⁷¹ Obama, “Remarks of President Barack Obama – State of the Union Address As Delivered.”

⁷² Obama.

⁷³ Ceccarelli, *On the Frontier of Science*, 120.

out of eight States of the Union, the frontier appears directly only once, the Space Race only twice, Mars only once, and all of the above are used in conjunction with innovation.

I suggest this general *lack* of focus on space in States of the Union is indicative of two things. First, through much of his tenure, Obama did not *need* to deploy the myth. Rhodes and Hlavacik note the especially *moral* nature of Obama's 2009 Nobel Peace Prize acceptance speech, and specifically note the attempt to "expand the audience's moral imagination."⁷⁴ This is indicative of Obama's dual identity as a black man and the first black president, which I described above; the frontier is a dangerous place for him, but it *can be* a space for imagining alternative publics. Obama, in this context, can replace overt frontier rhetoric with rhetorical pragmatism. John Murphy writes that "it does not seem likely that an African American would conflate... endless progress with pragmatism's commitment to social reform and, indeed, he does not."⁷⁵ A pragmatist view of the presidency and the frontier recognizes its bloody history, but also its ability to be reintegrated and shifted to advocate *for* social reform based on innovation combined with social reform. This is an especially democratic point of view.

Obama shows that he has the rhetorical tools to at the very least *begin* working through the history of the frontier. Terrill writes that Obama "reaches deeply into American political traditions to articulate his thoughts about the economy" which should have a "more complex and flexible capacity for appreciating and sustaining dual perspectives without the imperative to reduce or resolve their seeming contradictions."⁷⁶

⁷⁴ Rhodes and Hlavacik, "Imagining Moral Presidential Speech," 474.

⁷⁵ Murphy, "Barack Obama and Rhetorical History," 217.

⁷⁶ Terrill, *Double-Consciousness and the Rhetoric of Barack Obama*, 133.

Contradictions in identity are less important the frontier, where all needed to exist together to survive. Ivie and Giner write of Obama's rhetoric that "the theme of democracy, expressed both explicitly and implicitly, inspired the living heritage of American exceptionalism with a familiar, yet transforming, sense of interdependency."⁷⁷ Second, and on the other hand, like his dual identity Obama cannot shake the bloody side of the frontier, and especially its connections with capitalism. Coates took Obama to task for creating an "uncertain foundation" predicated on "soothing race consciousness among whites."⁷⁸ Whites are well acquainted with the frontier, and well acquainted with the American dream and what it means for them. Obama had to acknowledge his identity but act white. Consensus, while looked for, is uncertain. Thomas Farrell showed that "rhetoric is a succession of available and unavailable means of persuasion. The contingency of the former cannot be grasped adequately without the background horizon of the latter."⁷⁹ The frontier is available to him as a president, but unavailable as a black man, *except* when he reconstitutes it as a utopian space for innovation. This raises the same question Tyson asked: who is allowed to go to Mars? For Tyson, race does not enter into the equation. It is faith in science that provides the train ticket West. That easy answer is not available to Obama, however. His *endoxic* identity requires that he deal with race. The other major historical feature of the frontier is, as I showed with Musk, capitalism, and Obama must work through tensions in that realm as well. The specific

⁷⁷ Ivie and Giner, "American Exceptionalism in a Democratic Idiom," 362.

⁷⁸ Coates, "Fear of a Black President."

⁷⁹ Thomas B. Farrell, "Rhetoric in History as Theory and Praxis: A Blast from the Past," *Philosophy & Rhetoric* 41, no. 4 (November 2008): 329.

addresses I will now examine show even more clearly the need to use capitalist language when discussing the frontier as president.

Topical Addresses

Another legacy of the Bush administration Obama inherited was the goal to return to the moon as a part of the Constellation program, the replacement to the space shuttle. However, the Obama administration cancelled the program after the Augustine Commission declared the program to be over budget and behind schedule. Instead, NASA turned their attention to the Orion capsule and the Space Launch System, or SLS.⁸⁰ As opposed to a stepping-stone idea – first return to the Moon, then place astronauts on a large asteroid between Earth and Mars, then finally, Mars – the SLS was designed to land humans on Mars in one giant leap for humankind.⁸¹ In these topical addresses, Obama can focus more on the mythic potential of the frontier by using overt frontier language while *acknowledging* the frontier’s past. These topical addresses have a different rhetorical purpose than States of the Union, but I argue that strengthens the sense of tension in the public sphere. A State of the Union asks of the speaker particular things, while in a topical address, the president has more freedom to speak with nuance and complexity, which are essential to democracy. As such, while the tensions remain

⁸⁰ Tariq Malik, “Obama Budget Scraps NASA Moon Plan for ‘21st Century Space Program,’” Space.com, February 1, 2010, <https://www.space.com/7849-obama-budget-scraps-nasa-moon-plan-21st-century-space-program.html>.

⁸¹ Loren Grush, “Obama’s NASA Made Strides on Commercial Space, but Stumbled on Exploration,” The Verge, January 19, 2017, <https://www.theverge.com/2017/1/19/14211964/obama-administration-nasa-legacy-private-sector-moon-vs-mars>.

present, Obama has a chance to delve into the topics and work through these tensions more precisely.

In October of his final year, Obama penned a brief op-ed for CNN in which he argued that his administration had paved the way for landing on Mars. The piece essentially functions like a final State of the Union except focused on space exploration. He begins with a callback again to his Narrative Signature, using a personal anecdote that sparked a “a sense of wonder” in which his own journey – his destiny – is conflated with America’s destiny in the stars.⁸² Part of the Narrative Signature, Medhurst suggests, should “create knowledge as the narrative moves forward.”⁸³ The personal narrative Obama used remained much the same. In an address at the Kennedy Space Center, he references the exact same moment with his grandparents, sitting on their shoulders watching astronauts land.⁸⁴ At the same time, the contextual narrative had shifted. In the Kennedy Space Center address, the Space Shuttle was not yet retired but the Constellation program had already been canceled. SpaceX was not yet on the public’s mind, so Obama had the ability to focus primarily on the government’s potential to achieve distant manned spaceflight again.

Importantly, however, he also acknowledges the economic difficulties. He said, “We’ve got to do it in a smart way, and we can’t just keep on doing the same old things

⁸² Obama, “Barack Obama.”

⁸³ Medhurst, “Barack Obama’s 2009 Inaugural Address: Narrative Signature and Interpretation,” 196.

⁸⁴ Barack Obama, “Space Exploration in the 21st Century” (Kennedy Space Center, April 15, 2010), https://www.nasa.gov/news/media/trans/obama_ksc_trans.html.

that we've been doing and thinking that somehow is going to get us to where we want to go." He argues for the importance of privatization of spaceflight while pointing out that NASA has worked with "pennies on the dollar." Most interesting, I think, is this extended quote.

I understand that some believe that we should attempt a return to the surface of the Moon first, as previously planned. But I just have to say pretty bluntly here: We've been there before. Buzz has been there. There's a lot more of space to explore, and a lot more to learn when we do. So I believe it's more important to ramp up our capabilities to reach -- and operate at -- a series of increasingly demanding targets, while advancing our technological capabilities with each step forward. And that's what this strategy does. And that's how we will ensure that our leadership in space is even stronger in this new century than it was in the last.⁸⁵

This particular frontier has been closed, and therefore, the Moon no longer performs the same transcendental argument for innovation that Jordan identifies in Kennedy's speech.⁸⁶ Obama faced criticism from Buzz Aldrin to Neil deGrasse Tyson on giving up "American space leadership," but this speech recognizes the practical limits of the space program in the twenty-first century. In order to move attention from economic difficulties and the closing of one, he opens up another. Again, it is far, it is difficult, but in reaching it, American leadership is reaffirmed, jobs are created, and technology advances, just as it did under Kennedy.

Once this frontier has been closed and Mars opened as the new one, we see an opening of the public sphere to intrusion by both the personal and technical spheres. In a joint address given with Cpt. Kelly upon his return, Obama said:

⁸⁵ Obama.

⁸⁶ Jordan, "Kennedy's Romantic Moon and Its Rhetorical Legacy for Space Exploration," 2003, 218.

I'm a big space fan... [NASA has] been working closely with me to maximize the investments that we make, to try to encourage Congress to work with us so that that final frontier is something that continues to inspire, continues to motivate the imaginations of young people, and creates enormous spillover effects -- because when we learn about space, we're also learning about ourselves.⁸⁷

The theme of “learning about ourselves” through studies of the universe appears again, and explicitly connected to “investment.” Note too how this echoes Tyson’s secular creation myth: “We are a part of the universe, we are in this universe, but perhaps more important than that fact is that the universe is in us.”⁸⁸ Learning about ourselves is the same as creating new technologies in this instance, neatly combining the rhetorical goals of both Tyson and Musk. Janice Hocker Rushing explains how Reagan “used technoscience to rescript history so as to remove the markers of time and space. This leaves science free to continue its traditional purpose of achieving progress.”⁸⁹ I argue Obama does much the same here. His narrative signature and identity are essential contextualization for an audience.

Obama’s identity as the first black president was centered around the concept of being a “dreamer.” His memoir, titled *Dreams From My Father*, describes how as a

⁸⁷ Obama and Kelly, “Remarks by the President with Astronaut Scott Kelly and Mark Kelly.” While normally an address like this would be minor and little worth analysis, lost in the every day news cycle, Cpt. Kelly proved particularly adept at social media with 1.1 million followers on Instagram and 5.45 million followers on Twitter, as well as doing several “Ask Me Anything” posts on Reddit and Tumblr from space. Finally, he is the twin brother to Mark Kelly, husband to former congresswoman Gabby Giffords. As such, the “year in space” received substantial coverage in the popular press.

⁸⁸ TIME, *How Neil DeGrasse Tyson Would Save The World | 10 Questions | TIME*.

⁸⁹ Janice Hocker Rushing, “Ronald Reagan’s ‘Star Wars’ Address: Mythic Containment of Technical Reasoning,” *Quarterly Journal of Speech* 72, no. 4 (November 1986): 416.

young boy ignorant of both race and fatherhood, he “occupied the place where” his grandparents and mother had placed their dreams, and indeed, he describes how his father and grandfather discussed Kennedy’s New Frontier. They asked “how America could send men into space and still keep its black citizens in bondage?”⁹⁰ White men had the space to dream on the frontier, while black men did not, nor did they have the space to innovate, either technologically or socially. Terrill shows how Obama learned to slip from identity to identity in his youth, dream to dream, and this skill meant he could see both sides of the issue.⁹¹ However, it also means that he occasionally falls prey to a particularly neoliberal viewpoint that ignores some of the complexity of race in favor of reaching out to a predominantly white audience.⁹² The use of the frontier is a perfect stand-in for the personal quest in Obama’s Narrative Signature Medhurst identifies.⁹³ This, again, is a tension that Obama must work through, and does so through the quest, through achieving his own dream but also helping the country achieve its own dream by making it to Mars. Obama’s personal story, then, is *literally* affecting the public sphere by indelibly influencing his rhetoric through the narrative signature, but also *mythically* in much the same as Tyson. At the same time, because of the economic concerns and

⁹⁰ Barack Obama, *Dreams from My Father: A Story of Race and Inheritance* (New York: Broadway Books, 2004), 27, 23.

⁹¹ Terrill, *Double-Consciousness and the Rhetoric of Barack Obama*, 28–29.

⁹² Terrill, 79; see also J. David Cisneros, “A Nation of Immigrants and a Nation of Laws: Race, Multiculturalism, and Neoliberal Exception in Barack Obama’s Immigration Discourse,” *Communication, Culture & Critique* 8, no. 3 (September 2015): 356–75, <https://doi.org/10.1111/cccr.12088>.

⁹³ Medhurst, “Barack Obama’s 2009 Inaugural Address: Narrative Signature and Interpretation,” 197–99.

importance of innovation to the economy, that myth must be more closely connected to an ideographic conception of innovation.

Conclusion: Complex Hoping in the Capitalist Mindset

One more essential contextual feature of Obama's discussions about space, and Mars more specifically, must be addressed. The increasing privatization of space, which I discussed in the previous chapter, occurred mainly under Obama's watch, especially the contracts between SpaceX and the government. For someone who spoke constantly about innovation, Marina Koren of *The Atlantic* writes that Obama "didn't always find the money to pay for it."⁹⁴ However, in the op-ed for CNN, Obama argued that the privatization could not have occurred without "groundwork laid by the men and women of NASA."⁹⁵ In terms of funding, each year of the Obama administration saw more money devoted to developing and maintaining the bonds between corporations like SpaceX and NASA.⁹⁶ Mars is a place to be reached, just like for Musk, but NASA will likely not be the one to arrive there first – at least not alone. This is the era of what Elon Musk calls the "public-private partnership."⁹⁷ The frontier, again, is economic in nature.

⁹⁴ Koren, "Obama's Cognitive Dissonance About Mars."

⁹⁵ Obama, "Barack Obama."

⁹⁶ Koren, "Obama's Cognitive Dissonance About Mars."

⁹⁷ Christian Davenport, "How Obama Brought Capitalism to Outer Space," *Washington Post*, October 11, 2016, sec. The Switch, <https://www.washingtonpost.com/news/the-switch/wp/2016/10/11/how-obama-brought-capitalism-to-outer-space/>.

The States of the Union I discuss above show how innovation is used as a primer for the more topical addresses that deal in a more nuanced fashion. This nuance, I suggest, is the strength and weakness of the public sphere and a particular strength of Obama's, centered on hope. Derek Sweet and Margret McCue-Enser write that "at the heart of Obama's rhetoric is an attempt to reconstitute the U.S. electorate's understanding of "the people" and of their collective agency as citizens capable of self-governance."⁹⁸ Ferrara locates Obama's particular notion of hope in utopian rhetoric that has "carefully defined" parameters based on unity and pragmatism.⁹⁹ As such, Obama could not fail to recognize the direction space exploration was moving; his budgetary appropriations for NASA indicate that. At the same time, however, he refused to cede that rhetorical ground in major addresses like States of the Union. Farrell asks what a "guiding cognition" might be for "even the most optimistic of epistemologies."¹⁰⁰ I suggest that is where we look to Obama's rhetorical identity, and where I have argued we locate *endoxa* for this case study. A final aspect of the narrative signature, Medhurst writes, is that it must generate knowledge.¹⁰¹ For Obama, then, this guiding cognition lies in his own story, but most importantly, in making that story relevant to his audiences.

⁹⁸ Derek Sweet and Margret McCue-Enser, "Constituting 'the People' as Rhetorical Interruption: Barack Obama and the Unfinished Hopes of an Imperfect People," *Communication Studies* 61, no. 5 (December 11, 2010): 603, <https://doi.org/10.1080/10510974.2010.514679>.

⁹⁹ Ferrara, *Barack Obama and the Rhetoric of Hope*, 187.

¹⁰⁰ Farrell, "Social Knowledge II," 334.

¹⁰¹ Medhurst, "Barack Obama's 2009 Inaugural Address: Narrative Signature and Interpretation," 195, 203.

This is difficult, and rhetorical ground is given in the mediation of black identity for white audiences, as Coates noted. The nuance of being an *unfinished* people helps here, as Sweet and McCue-Enser suggest.¹⁰² The frontier and constructing Mars as the next move for the frontier gives Obama, like Musk, a practical location to achieve. The myth itself helps to build consensus based on his deployment of hopeful rhetoric. I suggest, then, that Farrell is proven right when he writes “the overall function of social knowledge is to transform the society into a community.”¹⁰³ The location serves as the practicality Farrell requires. Capitalism is required as a “zone of relevance,” providing a way forward on innovation and jobs in a difficult economic climate, and Obama uses his identity to test “prior commitments” of his audience.¹⁰⁴

I cautiously suggest that out of all the case studies I selected, Obama perhaps is the best example of an *endoxic* movement towards a social knowledge of hope. First, there is his overtly hopeful rhetoric, which I have discussed at length. More importantly though, he explicitly connects the frontier and his identity to a democratic view that Ivie and Giner call a “sensible ethos” that could “recover public trust.”¹⁰⁵ The turn from NASA, a government body subject to democratic oversight, to capitalism, is concerning, but unavoidable to some extent in terms of the rhetorical requirements of the presidency. Again, a tension is being worked out in the public sphere. Hope is not achieved, but it

¹⁰² Sweet and McCue-Enser, “Constituting ‘the People’ as Rhetorical Interruption,” 630.

¹⁰³ Farrell, “Knowledge, Consensus, and Rhetorical Theory,” 11.

¹⁰⁴ Farrell, 12.

¹⁰⁵ Ivie and Giner, “American Exceptionalism in a Democratic Idiom,” 373.

could be; the requirements for making a “Mars Shot” are predicated on achieving fundamental strides in progressive education, tax policy, and scientific discovery. Capitalism is along for the ride, limited by a democratic ethos constituted by the *recognition* that there is always work to be done.

CHAPTER FIVE

To Hope Till Hope Creates

To suffer woes which Hope thinks infinite; To forgive wrongs darker than death or night; To defy Power, which seems omnipotent; To love, and bear; to hope till Hope creates From its own wreck the thing it contemplates; Neither to change, nor falter, nor repent; This, like thy glory, Titan, is to be Good, great and joyous, beautiful and free; This is alone Life; Joy, Empire, and Victory!

—Percy Bysshe Shelly, *Prometheus Unbound*

Prometheus stole fire from the gods, and in revenge, Zeus gave to humankind Pandora's box containing all the ills of the world... and Hope. Shelley's drama shows the dangerous power of hope. Something must be destroyed, or given up, before what hope creates can take its place in the world. The final lines of the drama represent the goals of this project. Why is rhetorical hope so difficult to pin down, and why must it go hand in hand with the ills of the world? It seems that often, Americans look to the stars for one possible answer.

Nearly six decades ago, John F. Kennedy boldly proclaimed that before the decade was out, Americans would land on the Moon. "We choose to go to the moon," he said, "not because [it] was easy, but because [it] was hard, because that goal will serve to organize and measure the best of our energies and skills."¹ Throughout this project, I have pointed out some of the difficulties inherent in constructing space as the New Frontier, and how those difficulties appear in the twenty-first century. Technology

¹ John F. Kennedy, "Address at Rice University on the Nation's Space Effort" (Rice University, September 12, 1962), <https://www.jfklibrary.org/Asset-Viewer/MkATdOcdU06X5uNHbmqm1Q.aspx>.

marches ever forward and identities are constantly in flux. The intersections of cultural myth, identity, capitalism, and the powerful rhetoric of science show that we have not yet solved these difficulties. However, as Kennedy said, a goal has value because it is hard. It is impossible to deny the hopeful power of science and the frontier; the endurance of the frontier myth in American discourse and the privileged place of scientists in our culture speak convincingly to that. In this conclusion, I will briefly summarize each chapter. I'll then focus on the themes of the project, future directions and further questions, and some final thoughts about what it means to constitute a rhetorical hope.

Looking Back Down to Earthly Sphere(s)

With Dr. Tyson, I showed how the frontier and religious rhetorical forms interact to form the *endoxic* identity of the priest directing other seekers on the path toward enlightenment. In Tyson's case, this enlightenment is to be found on Mars, where any evidence of life would "transform biology as we know it."² Science is epistemologically privileged here, and all other knowledge should be subservient to its strictures. Mars provides a material location to for this non-material, epistemological goal. Put another way, Mars provides Tyson with a physical space he can point to while undercutting other knowledge bases. Haskins suggests that from a performative standpoint, "Aristotle's articulation of rhetoric as a *technē* available to a properly habituated political agent is based on a *separation* of moral education from public performance."³ Tyson performs a similar function; in undercutting other knowledge bases, he ignores the insights that

² CBSN, *Neil DeGrasse Tyson on the Possibility of Life on Mars*, 2015, <https://www.youtube.com/watch?v=1sIX7nhzmiM>.

³ Haskins, *Logos and Power in Isocrates and Aristotle*, 130.

things like moral philosophy can offer the public sphere and attempts to make the personal relationship with science the end of all knowledge. G. Thomas Goodnight reminds us of the Burkean nature of the personal sphere here as “consubstantiality ground[s] personal relationships.”⁴ In this case, the priestly persona means that an audience must be consubstantial with Tyson before traveling to the frontier. Pointing to Mars and assuming it holds answers about our identity as the human species allows him to maintain this persona. The consensus he creates is limited to those who believe in the primacy of science. Social knowledge is present, but restricted. Thomas Farrell states that social knowledge allows a rhetor to assume something about the “relative priority of collective commitments,”⁵ and Tyson’s case shows the dangers of allowing an *endoxic* personality to freely define those collective, epistemological commitments with no rhetorical checks in place. As a consequence, hope, too, is limited. Only those who can enter into the frontier with a scientific perspective or approach are allowed to take hope in the saving grace of the Red Frontier. However, there *is* rhetorical hope to be found. Tyson *does* argue for unity, communal action on issues like science education and climate change, and seems to be excited about the prospect of self-knowledge gained from Mars. The frontier is often a place of tension.

Elon Musk allowed me to discuss the capitalist functions of the frontier and how they are intricately connected with the military industrial complex. Musk is able to maintain strategic deception and divert attention from SpaceX’s connections with the

⁴ Goodnight, “The Personal, Technical, and Public Spheres,” 259.

⁵ Farrell, “Knowledge, Consensus, and Rhetorical Theory,” 12.

Department of Defense by using the frontier myth as the *endoxic* basis for what I called the “cult of the vision.” This vision is predicated on reaching the physical space of Mars as a realistic goal achieved through material means; epistemology does not really factor into Musk’s calculations in the same ways as Tyson’s musings. As Goodnight argues, “Technical arguments are stamped with procedure and rule where state of the art practice is always at issue.”⁶ Musk wants to die on Mars and has both the technology and capital to accomplish that macabre goal.

I further identified the propagandic functions that Mars provides for Musk. The strategic deception and propagandic nature of the frontier for Musk is problematic for a number of reasons. Haskins suggests that *endoxa* can be “unsettling” when they are used to shift a “narrative into a proposition” while concealing that proposition as a “politically neutral, almost natural process.”⁷ Recall that Musk prefers to avoid overt political statements. The proposition of going to Mars is natural to him, and the cult of the vision provides the rhetorical platform he needs to make that proposition a reality. However, the military-industrial complex certainly constitutes an unsettling proposition. The technological advancement of the human race supersedes public deliberation. The heroic persona will go first, and then make the frontier available to us for the low price of the average American home. As such, social knowledge is based on a seeming desire to do good for humanity through the use of technology and our consensus that “something must be done,” but problematized by the connections with capitalism, propaganda, and

⁶ Goodnight, “The Personal, Technical, and Public Spheres,” 260.

⁷ Haskins, *Logos and Power in Isocrates and Aristotle*, 25.

the military industrial complex. I do not think Musk's iteration of social knowledge is particularly hopeful as it stands now. It is too bound up in his individual cult of the vision and the military-industrial complex at this point; I argued in the first chapter that rhetorical hope should allow for communal action. In Musk's case, it is all on his ability to fail or succeed, to successfully mitigate the economic risk and make the frontier accessible for us, rather than allowing us to band together and settle the frontier. Musk's frontier construction is not filled with the same nuance and complexities than those of Tyson and Obama. I'll suggest why down below.

Finally, I located Obama's *endoxic* identity in his role as the President and man struggling with the complications of being the first black President and attempting to maintain his racial identity. Whereas Tyson chooses to ignore race in discussions of the frontier, Obama forefronts race talk as an expression of his double-conscious identity. I argued that Obama's pragmatism, foregrounded by his admiration for Niebuhr, meant that he was inclined to deploy the frontier myth in his role as president. This is particularly evident in his State of the Union addresses. These major addresses do not leave room for Obama to explore the nuance of the New Frontier, and like Musk, he often connects the frontier to capitalism.

In some other topical addresses, however, he is able to delve into the complexities of the frontier and express the tension inherent in the American project. His *endoxic* identity means that he is particularly well suited to explore that tension. I further suggested that of all three of the case studies I selected, Obama is best situated to explore the concept of rhetorical hope; his rhetoric is *explicitly* hopeful, but I argue that there is another level to his expression of rhetorical hope. Obama's pragmatic acceptance of the

realities of going to Mars – the retirement of the shuttle, the rise of SpaceX, and the necessity of using the scientific/technological frontier as a source of inspiration – are overtly dealt with in some of the topical addresses and statements I examined. Therefore, I concluded that Obama best exemplifies a democratic ideal of social knowledge, and best positions his audience through rhetorical hope to perform a positively oriented action. Farrell writes that:

Social knowledge is thus the assumption of a wider consciousness. And the corollary of such an assumption, commitment, should extend as far as consciousness itself. Both John Dewey and – more recently – his student, Richard McKeon, have defined the great community as a consequence of acting as the members of such a community. Social knowledge is thus an instrument of both this action and its optimal consequence.⁸

Certainly, the frontier as an epistemological view implies the assumption of a wider consciousness. The frontier forces us to look for the next thing, and in the context of science, it implies a constant curiosity, ever searching for the next question.⁹ The concern is the unidirectional nature of that consciousness and curiosity when directed by the frontier mindset. In other words, how do we avoid the limits self-imposed by Tyson and Musk’s rhetoric while maintaining the potentially inspirational nature of the Martian frontier as a hopeful, unifying principle? Goodnight’s main concern was that the personal and technical spheres were invaded the public and limiting the conditions of civic deliberation and argument.¹⁰ A democratic ideal of social knowledge is therefore best

⁸ Farrell, “Knowledge, Consensus, and Rhetorical Theory,” 13–14.

⁹ See: Ceccarelli, *On the Frontier of Science*, 49, 116.

¹⁰ Goodnight, “The Personal, Technical, and Public Spheres of Argument,” 217.

positioned to defend the public sphere against intrusion, and best able to exist in the space of tension that Obama personifies.

A Rhetorical Hope for the New Age

I want to offer now some thoughts regarding hope based on the themes this project has identified. I suggest that the primary themes tangential to hope and the frontier are identity, tension, and pragmatism. Each rhetor is forced to reckon with one or more of them in a variety of ways.

Identity

Identity has always been a central question of the frontier. Who is allowed to go? If someone is already there, can they stay?¹¹ What happens to those on the wrong side of the savagery/civilization dialectic identified by Janice Hocker Rushing?¹² As identities fluctuate more and more, and as we see those fluctuations more clearly, the future of identity on the frontier becomes a central question. Two of the cases had to deal with the history of the black man on the frontier, and each chose a different rhetorical strategy for doing so. Neil deGrasse Tyson tends to avoid the question of identity, while Obama puts it front and center. Obama's rhetoric of unity attempts to include *all* identities in the frontier, and thereby open the public sphere to all identities. For Musk, the identity he constructs is more overtly "mythical." His is the heroic identity, bravely using his funds to pave the way for us. Tyson's identity is also that of the scientific priest. He and Musk

¹¹ See: Jason Edward Black, "Native Authenticity, Rhetorical Circulation, and Neocolonial Decay: The Case of Chief Seattle's Controversial Speech," *Rhetoric and Public Affairs* 15, no. 4 (2012): 635–45.

¹² Rushing, "The Rhetoric of the American Western Myth," 16–17.

use their *endoxic* identities to suggest that some cannot travel the frontier. David Zarefsky reminds us that the power of the public sphere “concerns people generally, in their capacity as citizens. No special expertise or training is required in order to participate, nor is deference paid to those who have such expertise.”¹³ What the question of identity *does* suggest here is that outside the public sphere, participation in deliberation can indeed be limited by expertise. Ultimately, Zarefsky suggests, “the standard for evaluation is the ‘social knowledge’ of the public.”¹⁴ The final concern of the argumentative spheres, of course, is the disappearance of social knowledge and public deliberation.¹⁵ E. Johanna Hartelius concurs, saying that rhetorics of expertise – here, rhetorics of identity – “offer a useful heuristic; [they] speak to the negotiation of power in particular cultural spheres.”¹⁶ I suggest the dangers in the priestly and heroic identities – especially when the construction of those identities relies, in part, on ignoring either history or social context – is that those identities are particularly well suited to entering into the public sphere based on the *subsuming* of other knowledge bases and rhetorical forms, rather than recognizing their various potentials. Furthermore, the fluctuating nature of identity foregrounds the second theme of this project.

¹³ Zarefsky, “Goodnight’s ‘Speculative Inquiry’ in Its Intellectual Context,” 213.

¹⁴ Zarefsky, 213.

¹⁵ Goodnight, “The Personal, Technical, and Public Spheres of Argument,” 225.

¹⁶ Hartelius, *Rhetoric of Expertise*, 30.

Tension

I identified a number of different tensions in this project. First, as I stated above, there are constant tensions based on which identities are foregrounded, ignored, or concealed. Secondly, there are a number of political tensions at play. Robert Asen notes one particular function of public sphere scholarship is the investigation of the “legitimizing discourses of public spheres, especially the circulation of market talk, which sustain structures and practices of inequality and exclusion.”¹⁷ Another of the dangers of Tyson’s ignorance of non-scientific knowledge concerns the potential use of those myths – especially when related to the frontier – to conceal these structures. Furthermore, while making a trip to Mars cost the same as a house, there are millions of Americans who would still be precluded from that economic investment. The stated reasoning behind Musk and SpaceX’s goal of settling Mars is the maintenance of the human race in the face of potential extinction via climate change or some other extra-terrestrial disaster. If we take them at their word and assume this apocalyptic event is statistically likely, what are we to do with those who cannot afford to be relocated to Mars, or another future colony? This is in direct opposition to making the Martian frontier available to all, a democratic mindset if ever there was one. Obama uses his *endoxic* identity to try and negotiate this tension between capitalism and the inspirational potential of the frontier, occasionally succeeding and all-too-frequently failing. This again speaks to the complexities inherent in the upheaval of the twenty-first century. Third and finally, I suggest there are epistemological tensions at play that each rhetor tries to negotiate rhetorically. Again, based on his *endoxic* identity as a scientist, Tyson

¹⁷ Asen, “Critical Engagement through Public Sphere Scholarship,” 142.

privileges his own epistemology. Musk's construction of a practical frontier indicates that questions of epistemology are ignored completely, and Obama again finds himself stuck between the two. The savagery/civilization dialectic becomes knowledge/practicality in this case.

Pragmatism

The focus of Musk and Obama on pragmatism indicate the ways that the frontier is used to sidestep the epistemological tension I identified above in favor of action. Recall that for Musk, the Martian frontier is material in ways that Tyson ignores, and Obama problematizes through his *endoxic* role. However, Obama's *endoxic* identity forces him to grapple with the pragmatism of politics, which Musk can ignore in favor of a focus on his own technology and the pragmatic marriage of the military-industrial complex with his company. Robert Danisch suggests one of the roots of Obama's pragmatism is his understanding of communal organizing because it seeks "to bring more and more people into the collective decision-making procedures of governance through forms of social inquiry and other kinds of participation in civic life."¹⁸ Musk's version of pragmatism, on the other hand, privileges old structures of frontier justice. He who has the fastest gun – or the biggest rocket – wins. Pragmatism, therefore, must be grounded in my version of rhetorical hope with an emphasis on the democratic ideals underlying communal action to avoid the traps into which Musk falls.

¹⁸ Danisch, "The Roots and Form of Obama's Rhetorical Pragmatism," 157.

Hope in the New Frontier

I want to now offer some final thoughts about rhetorical hope with these three themes. I set out to come to an understanding of the constitutive parts of rhetorical hope, but as the project progressed, it became clear that hope, unsurprisingly, was less clear cut than I had originally assumed it to be. First, the issue of Elon Musk. I had expected to find that his rhetoric would be more hopeful than it was; as the analysis progressed, I realized that the structures of capitalism as he used them were difficult to redeem. Musk's rhetoric was still hopeful, but it was locating the *topoi* of hope in an understanding of capitalism that left too many people out of the consensus I argue is necessary for an effective rhetoric of hope. Tyson's conception of hope was too epistemologically limited and placed too much stock in science. Taken together, both Musk and Tyson put too much stock in *limits* without acknowledging them. While rhetorical hope as I understand does *end* in some material goal and is thus defined by a limit, I suggest that the way those limits are constructed needs to place more faith in social knowledge and the democratic project. While the idea of social knowledge is reliant on consensus, consensus does not equal a single mind, merely a focus on a particular goal. Farrell writes that his analysis "sought to restore some inferential connection among problems, persons, interests, and action within a practical deliberative context" and not totalize knowledge under one banner.¹⁹ Kendall Phillips writes that of democratic dissent that its "most profound contribution is the expansion of a space for thought."²⁰ Musk and Tyson do not leave

¹⁹ Farrell, "Social Knowledge II," 333.

²⁰ Kendall R. Phillips, "The Event of Dissension: Reconsidering the Possibilities of Dissent," *Quarterly Journal of Speech* 101, no. 1 (February 2015): 70, <https://doi.org/10.1080/00335630.2015.994899>.

room for dissent while Obama does in places. The frontier, as ever, is a place of constant tension between ideals.

I suggested in the opening chapter of the project that rhetorical hope should be understood as rhetoric actuating an audience to an end the rhetor considers to be positive, whether in a moral or political sense. Each of these case studies consider Mars to be a hopeful locus of potential unity for their audiences, but the warrants and rhetorical structures Tyson and Musk use mean that the hope they articulated was, at its core, limiting. I suggest that a mediator who acknowledges tension in the public sphere – whether that tension is in identity, politics, or an epistemological assumption – is essential for a democratic articulation of hope. Bruno Latour argues that “we might have lacked respect for mediators” when it comes to the interplay of science, religion, and politics, that it is the “extraordinarily daring, complex, and intricate confidence in chains of nested transformations” that allow humanity to move forward, that “knowledge [alone] is not an accurate way to characterize scientific activity.”²¹ I suggest that Musk and Tyson place too much faith in knowledge alone, while Obama’s acknowledgment of tension provides a space for new thought.

Future Frontiers (of Research)

The themes I identified above, as well as this understanding of rhetorical hope as it relates to democracy, open up some potential future lines of research. First, I think it would be productive to more closely examine the connections between classical rhetorical concepts and modern understandings of technology. Damien Smith Pfister and

²¹ Latour, *On the Modern Cult of the Factish Gods*, 122–23.

Carly S. Woods have already identified what they term the “unnaturalistic enthymeme,” or how visual arguments “make arguments about their own unrealism.”²² This particular concept could be applied to my discussion of Tyson’s inheritance of visual metaphors from Sagan, given the heavy use of CGI in *Cosmos* and other programs similar to it. There are also continuing questions about the ever-evolving connections between capitalism and the government when it comes to privatized space travel. I think understanding SpaceX’s relationships with other private space companies, especially Jeff Bezos’ Blue Origins, would push McChesney’s notion of political economy and communication in new directions. The question of identity also remains important. I suggested that some aspects of the frontier continue to limit the allowed identities. That being said, I also suggested that the twenty-first century has seen identities increasing fluctuate. To that end, the 2017 class of astronauts for NASA is the most diverse class yet. Out of twelve candidates, five were women, and five are persons of color.²³ Given that astronauts are also frequently constructed as heroes,²⁴ extending the definition of who is now allowed to be heroic may prove productive. On a broader level, throughout this project I continued to see indications that science was being used as in an ideographic sense. The frontier of science could make up one aspect of that, but that particular study would be extended beyond the confines of the frontier. I also believe

²² Damien Smith Pfister and Carly S. Woods, “The Unnaturalistic Enthymeme: Figuration, Interpretation, and Critique After Digital Mediation,” *Argumentation & Advocacy* 52, no. 4 (Spring 2016): 241.

²³ Karen Northon, “NASA Announces its 2017 Astronaut Candidates,” Text, NASA, June 7, 2017, <http://www.nasa.gov/press-release/nasa-s-newest-astronaut-recruits-to-conduct-research-off-the-earth-for-the-earth-and>.

²⁴ See especially: Stuckey, *Slipping the Surly Bonds*.

there is more work to be done on hopeful rhetorics and the use of science as inspiration. For all the problems I identified with Tyson's rhetoric, people have been and continue to be inspired by him and his attitudes toward science.

Bringing it in for a Landing: Final Thoughts

The Moon landings were a watershed moment for the American people. Political underpinnings aside, there can be no doubt that the moment united the country. Fast forward sixty years, and a young Senator from Illinois managed, for however brief a time, to unite the country under a similarly hopeful banner. Hopeful, inspirational rhetoric remains undertheorized. Our tendency as rhetorical critics is to focus on what divides. This is a worthy goal, and differences should not be ignored so long as they continue to be used to marginalize, whether that be difference in class or race.

This project identified ways in which the difference between savagery and civilization, between science and religion, between identity and expectation are all deployed as rhetorical tactics in the service of a presumably greater goal. I believe, however, that this project's purpose identified ways in which we can use difference as a source for hope. Like the Moon landings, the Martian frontier has the *potential* to unite us around a common ideal. Given the tendency for international cooperation in space, I suggest that this moment, perhaps more than the Moon landings, even has the potential to unite us as a species. Martin Medhurst calls for rhetoric to become increasingly international,²⁵ and future examinations of the Martian frontier may see a renewed focus on an international rhetorical hope constructed around Mars. It cannot and should not be

²⁵ Martin J. Medhurst, "The Contemporary Study of Public Address: Renewal, Recovery, and Reconfiguration," *Rhetoric & Public Affairs* 4, no. 3 (Fall 2001): 508.

forgotten that we are not there yet, either physically or metaphorically, and this project's darker pages recognize that. It is a constant battle to hope. Rebecca Solnit writes that "by living out our hope and resistance in public together with strangers of all kinds, we [can overcome] this catechism of fear."²⁶ The continuing problematic of capitalism and marginalized identity is fundamentally one of fear, but as the late Stephen Hawking said:

Remember to look up at the stars and not down at your feet. Try to make sense of what you see and wonder about what makes the universe exist. Be curious. And however difficult life may seem, there is always something you can do and succeed at. It matters that you don't just give up.

This project proposed ways in which we can acknowledge what is at our feet, what is behind us, and ways in which we as a species can be curious in ways that let us create, together, from the wreck of hope, the thing it contemplates.

²⁶ Solnit, *Hope in the Dark*, 15.

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