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**Ideology, advocacy, and space flight:
evolution of a cultural narrative**

Abstract

Starting from the premise that U.S. space flight has played a role in the American national narrative and that this narrative has played a role in the history of space flight, this paper explores the location and function of space flight in this narrative by examining the role of ideology and advocacy in the history of space flight. The ideas of frontier pioneering, continual progress, manifest destiny, free enterprise, and rugged individualism have been prominent in the American national narrative. In this narrative is constructed an ideology of "Americanism" – what it means to be American, and what America is meant to be. In exploring the history of space flight, it is useful to consider how space advocacy movements and initiatives have interpreted and deployed the values and beliefs sustained by this national narrative. This paper will attempt to shed some light on the role and function of ideology and advocacy in the history of space flight by examining the rhetoric of space flight advocacy.

Introduction

Starting from the premise that space flight has played a role in the American national narrative, and that this national narrative has played a role in the history of space flight, this paper examines the relationship between space flight and this national narrative by examining the role of ideology and advocacy in the history of space flight. The ideas of frontier pioneering, continual progress, manifest destiny, free enterprise, and rugged individualism have been prominent in the American national narrative, which has constructed and maintained an ideology of "Americanism" – what it means to be American, and what America is meant to be, and do. In exploring the history of U.S. space flight, it is useful to consider how U.S. space advocacy movements and initiatives have interpreted and deployed the values and beliefs sustained by this national narrative. This paper will attempt to shed some light on the role and function of ideology and advocacy in the history of space flight by examining the rhetoric of space flight advocacy.¹

Examining the history of space flight advocacy reveals an ideology of space flight that draws deeply on a durable American cultural narrative – a national mythology – of frontier pioneering, continual progress, manifest destiny, free enterprise, rugged individualism, and a right to life without limits. This ideology rests on a number of assumptions, or beliefs, about the role of the United States in the global community, American national character, and the "right" form of political economy. According to this ideology, the United States is and must remain "Number One" in the world community, playing the role of political, economic, scientific, technological, and moral leader. That

is, the U.S. is and must be exceptional. This ideology constructs Americans as independent, pioneering, resourceful, inventive – and exceptional. And it establishes that liberal democracy and free-market capitalism (or capitalist democracy) constitute the only viable form of political economy.² The rhetoric of space advocacy exalts those enduring American values of pioneering, progress, enterprise, freedom, and rugged individualism, and it advances the cause of capitalist democracy.

Delving into the language, or rhetoric, of space flight is a productive way of exploring the meanings and motives that are embedded in and conveyed by the ideology and advocacy of space flight – the cultural narrative of pioneering the space frontier. Rhetorical analysis can shed some light on “the processes of communication that underpin decision making in free societies,” says rhetorical critic Thomas Lessl (quoted in Newall, 2005). “Judgments on matters of public policy take their cues from rhetoric, and so an understanding of any society's rhetoric will tell us a lot about its ideas, beliefs, laws, customs and assumptions - especially how and why such social features came into being” (para. 4).

To begin this analysis, some definition of key concepts is warranted. Standard definitions of ideology, advocacy, and exploration are operational here. An ideology is a belief system (personal, political, social, cultural). Advocacy is the act of arguing in favor of a cause, idea, or policy.

Stephen Pyne (1988) has examined space exploration as a “cultural invention” (p. 18) that “reinforces and reinterprets...myths, beliefs, and archetypes basic to its originating civilization” (p. 37).³ Anthropologist Clifford Geertz’s (1973) definition of culture is operative in this analysis: culture is a “historically transmitted pattern of meanings embedded in symbols, a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate and develop their knowledge about and attitudes toward life” (p. 34). It is a context within which social action can be “intelligibly — that is, thickly — described” (p. 14).

Building on Geertz’s conception, communication theorist James Carey (1992) has characterized culture as a predominantly rhetorical construction, “a set of practices, a mode of human activity, a process whereby reality is created, maintained and transformed” (p. 65) primarily by means of communication. Social norms can be constructed, perpetuated, and resisted – and ideologies can be propagated – “through ritualized communication practices” (Strano, 2006, p. 31). When advocates speak of advancing scientific and technological progress by exploring and exploiting the space frontier, they are performing ritual incantations of a national myth, repeating a cultural narrative that affirms what America and Americans are like, and are meant to do. For the purposes of this analysis, communication is a ritual, culture is communication, and communication is culture.

Ideological bedrock

The concepts of “progress” and the “frontier” require more extensive explication, as they are bedrock elements of the ideology of space flight. The root of “progress” is the Latin

word meaning “to go forward.” J.B. Bury (1932) said progress is movement “in a desirable direction” – but he also noted that “it cannot be proved that the unknown destination towards which man is advancing is desirable” (p. 2). In their histories of the idea of progress, both Bury and Robert Nisbet (1980) called progress a dogma. Christopher Lasch (1991) contrasted the pre-modern, Christian idea of progress – “the promise of a secular utopia that would bring history to a happy ending” – with the modern idea – “the promise of steady improvement with no foreseeable ending” (p. 47). While Bury identified progress as an idea originating in the modern era, Nisbet traced its roots to ancient Greek and Roman philosophy, and he documented how it evolved to take on the qualities of destiny and “historical necessity” (p. 47). Nisbet (1980) declared progress the most important idea in modern Western history. This modern idea of necessary and inevitable forward movement is deeply embedded in the cultural narrative of U.S. space flight.

The idea of progress became the dominant idea in Western thinking in the period 1850-1900, according to Nisbet, serving as “the developmental context for other [key] ideas” (p. 179) such as freedom. Nisbet credited 19th century natural philosopher Herbert Spencer with melding the ideas of progress and freedom, in declarations of “the rights of life and personal liberty,” “the right to use the Earth,” “the right of property,” and “the right to ignore the state” (p. 229). Spencer’s classical liberal thinking is noticeable in the rhetoric of space advocacy.

From the 17th through the 20th century, as Walter McDougall (1985) wrote, the Western scientific worldview – itself a cultural narrative of sorts – “elevated technological progress...to the level of moral imperative” (p. 11). Science and technology became the means of American progress, and conquest and exploitation became the morally imperative method. Ultimately progress came to be thought of as the accumulation of material wealth. Robert Wright (2004) has said the idea of progress is “a Victorian ideal” (p. 3) of moral advancement that has evolved into an ideal of material improvement. This belief in progress performs the mythic function of providing moral justification for material accumulation. Along those same lines, Kirkpatrick Sale (1998) has asserted that the contemporary “myth” of progress advances “the propaganda of capitalism” (p. 108) – the idea of continual human improvement by means of resource exploitation and material accumulation.

Author Ishmael Reed (1998) has made the link between progress and space flight, in an essay called “Progress: a Faustian bargain”:

In order to justify its programs, NASA, in its brochures, describes the Earth as a dying planet, a fact which for them justifies colonizing the universe....

You can understand why, in many science fiction movies, the goal of the invaders is to destroy this planet, lest this progress be extended to their neighborhoods (p. 102).

Historically and presently, the rhetoric of space advocacy advances a conception of outer space as a place of wide-open spaces and limitless resources – a space frontier. The

metaphor of the frontier, with its associated images of pioneering, homesteading, claim-staking, and taming, has been persistent in American history. In the rhetoric of space flight advocacy, the idea of the frontier is a dominant metaphor. It is worth noting that the root of the word “frontier” is the Old French word for “front.” In the English language, that word “front” conveys a complex of meanings, ranging from the most common definition – the part of anything that faces forward – to the definition that probably comes closest to the meaning of “front” in “frontier”: an area of activity, conflict, or competition. A common military definition of “front” is also tied up in the meaning of “frontier”; that is, the area of contact between opposing combat forces. Other meanings of “front” that should be considered in assessing the meaning of the frontier metaphor are: a façade; a position of leadership or authority; and a person or thing that serves as a cover for secret, disreputable, or illegal activity. What meanings are advocates intending to convey, and what meanings are they in fact conveying, when they talk about the space frontier?

Historian Frederick Jackson Turner’s (1994, 1947, 1920) hundred-year-old essay, “The significance of the frontier in American history,” is perhaps the best-known articulation of the frontier metaphor. It is a powerful and evocative piece of writing, with the quality of a ritual incantation; and in making the case for space flight, advocates continue to cite, directly or indirectly, Turner’s frontier thesis and the related, potentially dangerous, idea of manifest destiny, seemingly oblivious to a changed cultural context and critiques of Turner’s thinking.

As Wright and Sale did with progress, Richard Slotkin (1990, 1985, 1973), in his trilogy of books about the history of the American West, has deemed the idea of the frontier a myth – a myth in which the United States is “a wide-open land of unlimited opportunity for the strong, ambitious self-reliant individual to thrust his way to the top” (1973, p. 5). Patricia Nelson Limerick (1994) has pointed out that space advocates cling to the frontier metaphor, conceiving “American history [as] a straight line, a vector of inevitability and manifest destiny linking the westward expansion of Anglo-Americans directly to the exploration and colonization of space.” Limerick has warned that in (ab)using this metaphor, “space advocates have built their plans for the future on the foundation of a deeply flawed understanding of the past, [and] the blinders worn to screen the past have proven to be just as effective at distorting the view of the future” (Limerick, 1994, p. 13).⁵

The cultural narrative of space flight

According to rhetorical critic Janice Hocker Rushing (1986), “Rhetorical narratives’ – those mythologies that cultures construct – “are discourses which explicitly or implicitly advocate moral choices” (p. 267). Rushing has said that the meanings of “definitional [American] cultural myths” – such as the myths of the Western frontier and the space frontier – are a source of identity and “moral vision” (p. 265). “From its beginnings,” Rush has noted, the United States “has drawn upon the frontier for its mythic identity” (p. 265) – or moral imperative, as McDougall called it. In this mythic universe, the cultural role of the explorer – the frontier conqueror, as it were – is, as Stephen Pyne (1988) has

said, to serve as “a moral missionary, telling others and his sustaining civilization who they are and how they ought to behave” (p. 37).

From the start, advocates constructed a narrative of space flight that made it a necessary, even biologically driven, enterprise. But, as Pyne (1988) has pointed out, space flight and other modes of exploration are not in our genes but in our culture. “Exploration cannot be extracted from the historical and cultural context within which it occurs” (Pyne, 2003, p. 13). It is “a specific invention of specific civilizations conducted at specific historical times” (p. 14). Advocates of U.S. space flight have created their own “mythology,” Pyne (2003) has said, “retrofitting the epic of Western expansionism” (p. 14) onto space exploration. And, as Limerick has observed, problems have ensued – because, as Pyne has noted, “discovery among the planets is qualitatively different from the discovery of continents and seas” (p. 18).

The history of rocket-men – space flight as a belief system

The U.S. and European rocket societies of the 1920s, ‘30s, and ‘40s were the world’s first space flight advocacy groups. German advocate Willy Ley (1958) documented the exploits of these groups, the titles of his books articulating the ideology of space flight: *Engineers’ Dreams* (1954), *Across the Space Frontier* (1952 – with Werner von Braun, Fred Whipple and others), *The Conquest of Space* (1949), and *Harnessing Space* (1963). Frank Winter (1983) called these early advocates – including Konstantin Tsiolkovsky, Robert Goddard, and Werner von Braun – “pioneers” (p. 7). According to William Burrows (1998), the Russian Tsiolkovsky advocated “controlling all of nature – the entire universe” (p. 42), toward enabling human colonization. U.S. rocket developer Goddard reportedly shared this belief. Tsiolkovsky was greatly influenced, according to Burrows, by the late 19th century Russian mystic philosopher Nikolai Fyodorov, who “believed that Earth is not humanity’s natural home” (p. 37) and that humanity was intended to live in the cosmos. Von Braun (1967) said the aim of the German rocketeers was “to open the planetary world to mankind” (p. 55).⁶ In 1930, U.S. science fiction writers and fans formed the American Interplanetary Society to advocate space flight, and in 1934 this group became the American Rocket Society.⁷ These early American advocates engaged in “relentless...publicizing...via newspapers, magazine articles, lectures, demonstrations, exhibits, radio talks, and films” (Winter, 1983, p. 14) to proselytize for space flight.

In July 1958, physicist Freeman Dyson (1979) made his contribution to the advocacy campaign for space flight, with “A Space Traveler’s Manifesto”:

From my childhood it has been my conviction that men would reach the planets in my lifetime.... [T]his conviction...rests on two beliefs, one scientific and one political: (1) There are more things in heaven and earth than are dreamed of in our present-day science. And we shall only find out what they are if we go out and look for them. (2) It is in the long run essential to the growth of any new and high civilization that small groups of people can escape from their neighbors and from their governments, to go and live as they please in the wilderness (p. 111).

From the 1950s to the 1970s: Sputnik to Apollo

As visions of space flight advanced toward reality, the rhetoric of space flight advocacy continued to promote conquest of the space frontier. Science fiction author Olaf Stapledon (1967) wrote in 1948, for the *Journal of the British Interplanetary Society*, that humankind should colonize other planets to exploit their resources for Earth's benefit and to "increase man's power over the environment.... The itch to leave a mark is quite wholesome, on condition that, even if it does not actually serve some higher aim, at least it does not positively hinder proper development" (p. 255). Pope Pius XII reportedly told the International Astronautical Federation in 1957, "God who has planted within the heart of man the insatiable desire for knowledge...did not intend to put a limit to man's endeavor" (Sanger, 1967, p. 216). Also in 1957, rocketeer Krafft Ehrlicke (1967) asserted that "the entire solar system, and as much of the universe as he can reach" are humankind's rightful domain: "by expanding through the universe, man fulfills his destiny as an element of life, endowed with the power of reason and the wisdom of...moral law" (p. 263). In 1964, space advocate Charles Sheldon (1967) wrote that "mankind is destined to step beyond his earthly bonds just as his ancestors once crawled out of the seas" (p. 74). By "colonizing new worlds...spread[ing] into new places," Sheldon wrote, "the race will survive" (p. 74).⁸

From 1975 to the present: pioneering the space frontier...

The rocket men of earlier decades and the geopolitics of the Cold War propelled the U.S. space program into being and kept it going through the Apollo era. In that era, space flight advocacy came from two sources, according to William Burrows (1998): political pragmatists, and that "hard core of implacable dreamers; the unabashed zealots who shared a religious conviction that it was their race's destiny to explore other worlds and then start colonies on them" (p. 332).⁹

From the end of the Apollo era to the present, the ideology of space flight, and the rhetoric of space flight advocacy, has been sustained in public discourse in large part by the so-called grassroots space advocacy groups, such as the National Space Institute and the L5 Society and their successor, the National Space Society; the Space Studies Institute; and the Space Frontier Foundation.¹¹ Werner von Braun founded the National Space Institute (NSI) in 1974 to help cultivate public support for the U.S. space program in the post-Apollo era (Godwin, 2005). The L5 Society was founded in 1975 by advocates Carolyn and Keith Henson to promote space colonization, as espoused by Princeton University physics professor Gerard K. O'Neill, who published his first paper on the subject, "The Colonization of Space," in the September 1974 issue of *Physics Today*.

Today's National Space Society (NSS) is the product of a merger of the L5 Society and the National Space Institute in 1987 (Godwin, 2005).¹² The NSS says its rationale for promoting space settlement is "survival of the human species." Among the values and beliefs articulated in the Society's "vision" for space exploration and development are "prosperity-unlimited resources," "growth-unlimited room for expansion," individual rights, unrestricted access to space, personal property rights, free-market economics, democratic values – and also enhancement of Earth's ecology and protection of new environments. (Some of these beliefs appear to be in conflict with others.)

Gerard K. O'Neill formed his own advocacy group, the Space Studies Institute (SSI), in 1977 to promote his colonization agenda. The SSI's stated mission is "opening the energy and material resources of space for human benefit...to make possible the productive use of the abundant resources in space."¹³

Meanwhile, Freeman Dyson (1979) updated his space flight rationale for the 1970s, writing: "There are three reasons why, quite apart from scientific considerations," human space flight is necessary: first, "garbage disposal; we need to transfer industrial processes into space so that the earth may remain a green and pleasant place"; second, "to escape material impoverishment"; and third, "our spiritual need for an open frontier. The ultimate purpose is to bring humanity...a real expansion of our spirit" (pp. 116-117).

In the 1980s, the era of NASA's Space Shuttle and Space Station programs, the space community, as Burrows (1998) has noted, heavily promoted human space flight: "At the heart of it all, as usual, [were] the core of dreamers...who steadfastly believed it was their race's manifest destiny to leave Earth for both adventure and survival" (p. 507). In 1988, some of those believers created the Space Frontier Foundation (SFF), to promote "opening the space frontier to human settlement as rapidly as possible."¹⁴ This group says its "purpose is to unleash the power of free enterprise and lead a united humanity permanently into the Solar System." Like the National Space Society, the SFF espouses a conflicting set of goals, including "protecting the Earth's fragile biosphere and creating a freer and more prosperous life for each generation by using the unlimited energy and material resources of space." Its stated strategy for achieving these goals is "to wage a war of ideas in the popular culture" and transform U.S. space flight "from a government program for the few to an open frontier for everyone."¹⁵

In a series of essays called "the Frontier Files," SFF founder and director Rick Tumlinson (1995a, 1995b) offers his version of the space frontier narrative:

We...see our civilization at a crossroads.... Down one path is a future of limits to growth, environmental degradation and ultimately extinction. Down the other path lie limitless growth, an environmentally pristine Earth and an open and free frontier in space (1995a).

Regarding the purpose of space flight, he asserts:

The one necessary and sufficient reason we are called to the Space Frontier is buried deep within us. It is a feeling.... A calling to go, to see, to do, to be 'there.' We believe Homo Sapiens is a frontier creature. It is what we do, it defines what we are (1995b).

In 1987, writer Marshall Savage (1992) founded the First Millennium Foundation and joined the chorus of advocates claiming humans are destined to colonize the universe:

Now is the watershed of Cosmic history. We stand at the threshold of the New Millennium. Behind us yawn the chasms of the primordial past...before us rise the broad sunlit uplands of a living cosmos.... The future of the universe hinges on what we do next. If we...stride into space as the torchbearers of Life, this universe will be aborning (p. 17).

Earth is slipping “into a pit of our own digging,” according to Savage, and in order to save itself, humankind must expand into the cosmos: “it is our policy to enliven this sterile universe” (p. 230). “If we...forsake our cosmic destiny, we will commit a crime of unutterable magnitude” (p. 18).¹⁶

The Mars Society, founded in 1998, advocates pioneering the space frontier by the human settlement of Mars. Mars Society founder Robert Zubrin has said he embraces “Turner’s belief that the frontier is a crucial part of the American character.... I would like to see our traditions carried forward” (Leahy, 2005). According to the Mars Society’s “founding declaration”:

Civilizations, like people, thrive on challenge and decay without it.... As the world moves towards unity, we must join together...facing outward to embrace a greater and nobler challenge.... Pioneering Mars will provide such a challenge.... A humans-to-Mars program would challenge young people everywhere to develop their minds to participate in the pioneering of a new world.... The settling of the Martian New World is an opportunity for a noble experiment in which humanity has another chance to shed old baggage and begin the world anew; carrying forward as much of the best of our heritage as possible and leaving the worst behind... [E]xploration and settlement of Mars is one of the greatest human endeavors possible in our time.... No nobler cause has ever been.¹⁷

Expounding upon the rhetoric of these grassroots groups, space advocates Glenn Reynolds and Rand Simberg have found mass-media outlets for their views. According to Reynolds (2002), who writes for several Web sites including his own, the United States should be colonizing the space frontier because “frontiers have a number of characteristics” that, in his opinion, promote traditional American values. Frontiers “foster a rather no-nonsense mindset. Abstract theorizing isn’t rewarded. Things that work are.... To frontierspeople, self-reliance is important...the frontier mindset isn’t very friendly to redistributionist policies” (paras. 6, 11), he has said. “Frontiers also encourage liberty” and discourage “bureaucratic governance” and “welfare” (para. 12). And they “give rise to a new culture, one that typically pays little attention to the interests of ‘gatekeepers’ who presume to decide what the rest of us should think. Frontiers generally elevate doers above talkers” (paras. 14, 15). In his online column for Fox News, Simberg (2004) has observed that “one of the major roadblocks to space development is the lack of off-planet property rights, and the socialist mindset engendered by the 1967 Outer Space Treaty” (para. 28).

Government space rhetoric

The frontier metaphor, the ideology of progress, and the belief in American exceptionalism have been prevalent in government space policy rhetoric as well as the rhetoric of advocacy groups. The National Commission on Space (1986), appointed by President Reagan to develop long-term goals for U.S. civilian space exploration, entitled its final report “Pioneering the Space Frontier” and described in it “a pioneering mission for 21st- century America: to lead the exploration and development of the space frontier.” Humankind is “destined to expand to other worlds,” the commission said in its report,

and “our purpose” is to establish “free societies on new worlds” (p. 2). Toward achieving those goals, “we must stimulate individual initiative and free enterprise in space” (p. 3).

The rhetoric of American exceptionalism remained apparent in space policy documents of the George F. W. Bush administration: “America’s space program is what civilization needs... America, with its tremendous resources, is uniquely qualified for leadership in space...our success will be guaranteed by the American spirit – that same spirit that tamed the North American continent and built enduring democracy” (National Space Council, n.p.). The “prime objective” of the U.S. space program is “to open the space frontier” (p. 17). NASA declared in its 90-day study of President G. W. Bush’s Space Exploration Initiative (1990), “The imperative to explore” is embedded in our history...traditions, and national character” (P. 1-1), and space is “the frontier” (p. 1-4) to be explored. “Space is the new frontier,” said another space study group of that time (Synthesis Group, 1991, pp. 9, 14), where the United States will find “a future of peace, strength, and prosperity” (p. iv).

In keeping with rhetorical tradition, the Clinton administration declared, “Space exploration has become an integral part of our national character, capturing the spirit of optimism and adventure that has defined this country from its beginnings” (Apollo 11 25th anniversary proclamation, 1994, n.p.). “Its lineage is part of an ancient heritage of the human race...deep in the human psyche and perhaps in our genes.”¹⁸

In the George W. Bush administration, White House Office of Science and Technology Policy Director John Marburger (2006) has said the point of the President’s so-called vision for space exploration “is to begin preparing now for a future in which the material trapped in the Sun’s vicinity is available for incorporation into our way of life.” NASA Administrator Michael Griffin has said that the aim of space exploration is “to make the expansion and development of the space frontier an integral part of what it is that human societies do.”¹⁹ Griffin has said that when human civilization reaches the point where more people are living off the Earth than on it, “we want their culture to be Western.” He has asserted that Western civilization is “the best we’ve seen so far in human history,” and that the values space-faring people should take with them into space should be Western values.²⁰ “We want to be the world’s preeminent space-faring nation for all future time,” he has said, “second to none.”²¹ Griffin has said that space exploration has something to do with “core beliefs” about what societies and civilizations should be doing “on the frontiers of their time.... North Americans are the way we are because of the challenges of the frontier.... I believe that Western thought, civilization, and ideals represent a superior set of values,” better than those of civilizations that came before. These values are “irretrievably linked to” expansion, he has said, and now this expansion will continue into the human frontier of space²²

Most recently, Griffin has said:

It is in the nature of humans to find, to define, to explore and to push back the frontier. And in our time, the frontier is space and will be for a very long time.... The nations that are preeminent in their time are those nations that dominate the frontiers of their time. The failed societies are the ones that pull back from the

frontier. I want our society, America, western society, to be preeminent in the world of the future and I want us not to be a failed society. And the way to do that, universally so, is to push the frontier (quoted in Harwood, 2006).

Conclusions

This brief historical review has shown how the rhetoric of space advocacy has sustained an ideology of American exceptionalism and reinforced long-standing beliefs in progress, growth and capitalist democracy. This rhetoric conveys an ideology of space flight that could be described, at its worst, as a sort of space fundamentalism: an exclusive belief system that rejects as unenlightened those who do not advocate the colonization, exploitation, and development of space.²³ The rhetorical strategy of space advocates has tended to rest on the assumption that the values of “believers” are (or should be) shared by others as well.

While the social, political, economic and cultural context for space exploration has changed radically since the 1960s, the rhetoric of space advocacy has not. In the 21st century, advocates continue to promote space flight as a biological imperative and a means of extending U.S. free enterprise, with its private property claims, resource exploitation, and commercial development, into the solar system and beyond.

Pyne (2003), among others, has addressed the problematic nature of these arguments: “The theses advanced to promote [solar system] settlement,” has noted, “are historical, culturally bound, and selectively anecdotal: that we need to pioneer to be what we are, that new colonies are a means of renewing civilization” (p. 15).

Space flight advocacy can be examined as a cultural ritual, performed by means of communication (rhetoric), for the purpose of maintaining the current social order, with its lopsided distribution of power and resources, and perpetuating the values of those in control of that order (materialism, consumerism, technological progress, private property rights, capitalist democracy). Communication research has shown how public discourses – those cultural narratives or national myths – “often function covertly to legitimize the power of elite social classes” (Rushing and Frenz, 1991, p. 385). And this review has shown how the rhetoric of space advocacy reflects an assumption that these values are worth extending into the solar system.

“Everything now suggests,” Nisbet (1980) wrote 25 years ago, “that Western faith in the dogma of progress is waning rapidly” (p. 9). This faith appears to have remained alive and well, however, in the ideology of space flight. Christopher Lasch (1991) wrote 15 years ago, “Almost everyone now agrees that [the idea of] progress – in its utopian form at least” (p. 41), no longer has the power “to explain events or inspire [people] to constructive action” (p. 21). But in the current cultural environment, perhaps it does – at least among space advocates. Progress is, indeed, modern American dogma, and a key element of pro-space dogma. But it does not resonate well – as Pyne and others have noted – in the current postmodern (or even post-postmodern) cultural environment, where public discourse is rife with critiques of science, technology, the aims of the military-industrial complex, and the corporate drive for profit.

Pyne (1988) observed almost 20 years ago that space exploration was “not yet fully in sync” with its cultural environment (p. 32). Modern (17th-20th century) Western (European-American) exploration functioned as “a means of knowing, of creating commercial empires, of outmaneuvering political economic, religious, and military competitors – it was war, diplomacy, proselytizing, scholarship, and trade by other means” (Pyne, 2003). But the postmodern exploration of space is different. Outer space is not simply an extension of Earth.²⁴ And the era of space exploration is not simply an extension of the modern era of transoceanic and transcontinental exploration. Its cultural context is different. The modern phenomenon of space flight has outlived the modern era, and its purpose is not clear in a postmodern or even post-postmodern world, characterized by uncertainty, subjectivity, deconstruction, and a rejection of so-called master narratives such as the story of frontier conquest. The moral imperative of the myth of pioneering the space frontier could be interpreted as a narrative that is in tune with its postmodern cultural environment in the sense that it conveys the values of the dominant social order – that is, what Herb Schiller (2006) has called “the transnational corporate business order” (p. 303) and its ideology of private property ownership, resource exploitation and profit building.

“With neither a rambunctious imperialism nor an eager Enlightenment” providing a context for it, “the case for space colonization is not compelling,” Stephen Pyne (2003) has concluded.

Poet Wendell Berry (1977) has addressed this dilemma:

The [space colonization] project is an ideal solution to the moral dilemma of all those in this society who cannot face the necessities of meaningful change. It is superbly attuned to the wishes of the corporation executives, bureaucrats, militarists, political operators, and scientific experts who are the chief beneficiaries of the forces that have produced our crisis....

If it should be implemented, it will be the rebirth of the idea of Progress with all its old lust for unrestrained expansion, its totalitarian concentrations of energy and wealth, its obliviousness to the concerns of character and community, its exclusive reliance on technical and economic criteria, its disinterest in consequence, its contempt for human value, its compulsive salesmanship (paras. 1-2).

The sales pitch for space colonization goes this way, according to Berry:

If we will just have the good sense to spend one hundred billion dollars on a space colony, we will thereby produce more money and more jobs, raise the standard of living, help the underdeveloped, increase freedom and opportunity, fulfill the deeper needs of the human spirit etc. etc.... Any one who has listened to the arguments of the Army Corps of Engineers, the strip miners, the Defense Department or any club of boosters will find all this dishearteningly familiar (para. 4).

Visions of the human colonization of space present a “moral law of the frontier” that is disturbing, Berry concludes: this law is that “humans are destructive in proportion to their

supposition of abundance; if they are faced with an infinite abundance, then they will become infinitely destructive” (para. 6).

Berry wrote his essay about the downside of space colonization three decades ago. But his views are not necessarily out of date. Environmentalists might argue today that the case Berry made against space colonization is even more relevant today than it was in the ‘70s.

In order to survive as a cultural institution, space flight needs an ideology. It needs to have some connection to widely held beliefs. It needs a role in a cultural narrative. But as Pyne (1988) has noted, “Locating exploration in the human gene or in the human spirit” and not in specific cultures is not viable. Continued reliance on this narrative “only absolves us from making those vital, deliberate choices” we inevitably have to make – about how we should proceed into space, and what values space exploration should embody. “These choices,” Pyne has said, “are not intuitive” (p. 54). As a cultural institution, space exploration “has to speak to deeper longings and fears and folk identities” (Pyne, 2003, p. 6). It “is not merely an expression of curiosity but involves the encounter with a world beyond our ken that challenges our sense of who we are. It is a moral act...more than adventuring, more than entertainment, more than inquisitiveness” (p. 13). It has to explain “who a people are and how they should behave” (p. 6). And in the current cultural environment, as Pyne (1988) has observed, space exploration “will have to base its claim to legitimacy on transnational or ecumenical values.” (p. 20).

Unlike the Western American frontier, as Janice Hocker Rushing (1986) has pointed out, space is too big to be conquered. The recent focus of space exploration on the search for evidence of extraterrestrial life is a product, she has said, of a widespread understanding that humankind exists in a universe, not only on planet Earth. The narrative of space exploration today might better reflect this understanding by telling a story of “a spiritual humbling of self” rather than “an imperialistic grabbing of territory” (p. 284).

While she has noted that “the WASP space cowboy version of spaceflight” (p. 207) has persisted from the Apollo era into the present, Constance Penley (1992) also has observed that NASA “is still the most popular point of reference for utopian ideas of collective progress” (pp. 207-208). In the popular imagination, “NASA continues to represent...persistence, cooperation, creativity and vision,” and these meanings embedded in the narrative of space flight “can still be mobilized to rejuvenate the near-moribund idea of a future toward which dedicated people...could work together for the common good” (p. 208).

This historical review of the rhetoric of space advocacy reveals competing American cultural narratives, then. The dominant narrative, advancing the values of the dominant culture, on which the narrative of U.S. space flight piggy-backs, is a story of American exceptionalism that justifies unilateral action and the globalization of American capitalist democracy and material progress. The story of space flight is embedded in this broader narrative. That story is also woven into a competing narrative, a vision of “utopian ideas of collective progress” and “a spiritual humbling of self.” This competing narrative may

be a site within which the ideology of space flight might rejuvenate itself – where the vision of a human future in space becomes a vision of humanity’s collective peaceful existence on Spaceship Earth and the need to work together to preserve life here and look for life out there.

Notes

1. In this paper, “space flight” generally refers to human space flight. Also, for the purposes of this paper, the terms “space flight” and “space exploration” are interchangeable, even though it could be argued that they can convey different meanings.
2. For an exposition of this idea, see: Francis Fukuyama (1992). *The end of history and the last man*. New York: Free Press.
3. In light of Pyne’s conception of space exploration, it becomes clear that space flight is sometimes, but not always, space exploration.
4. For Wright, the idea of progress invokes visions not of continual advancement but “impending doom” (p. 3).
5. The frontier metaphor is noticeably absent from other national cultural narratives of space flight. (Footnote: While the word “frontier” does appear from time to time in European space policy discourse, in those contexts it does not appear to mean the same thing as it does in American contexts. See, for example, ESA’s use of the tag line “expanding frontiers” (www.esa.int) and the European Commission’s reference to space as “a new European frontier” (European Commission, 2003, *Space: a new European frontier for an expanding union: an action plan for implementing the European space policy*. Luxembourg: European Communities.)
6. “There was much regret among us” at Peenemunde, von Braun wrote, “that the A-4 [a.k.a. the V-2], conceived as it was as a first step to interplanetary rocketry, had joined in the bloody business of war” (p. 54).
7. Successors to the American Rocket Society include the American Astronautical Society and the American Institute of Aeronautics and Astronautics, now representing professionals rather than amateurs and fans, and more prone to tend to matters of government policy and spending while less prone (though not averse) to proselytizing for space flight.
8. Sheldon’s rationale for space flight cited also national security, technological spinoffs, economic benefits, the advancement of science, and national prestige – values that continue to be cited by advocates of space flight, and especially in U.S. space policy, today.
9. Burrows has claimed that “one of the truly great and lasting human endeavors [is] the beginning of the [human] migration into space” (p. ix). In a similar vein, John Logsdon (2001) has asserted that “one of the most important developments of the twentieth century has been the movement of humanity into space” (p. xix).
10. The NSI was originally named the National Space Association but renamed NSI in 1975 (Godwin, 2005).
11. Aerospace industry groups such as the Aerospace Industries Association, American Institute of Aeronautics and Astronautics, American Astronautical Society, and Space Foundation play an important role in U.S. space flight

advocacy, but they do so more by pragmatic actions, such as influencing legislation and policy making, than by sustaining an ideology of space flight in public discourse.

12. The NSI changed its name to the National Space Society shortly before its 1987 merger with the L5 Society. Interestingly, the combined membership of NSS and L5 voted after the merger of their groups to continue to use the NSS name instead of renaming their combined group the Space Frontier Society (Godwin, 2005.)
13. Retrieved July 14, 2006, from <http://www.ssi.org/>, para. 1. SSI Director Lee Valentine has articulated a way of achieving this aim, in an article concisely entitled, “A Space Roadmap: Mine the Sky, Defend the Earth, Settle the Universe” (http://ssi.org/?page_id=2). For more information on the history of the SSI, see [Http://ssi.org/?page_id=5](http://ssi.org/?page_id=5).

14. Retrieved July 14, 2006, from <http://www.space-frontier.org/History/>, para. 1 (“History of the Space Frontier Foundation”). Among the SFF’s goals is to keep Gerard K. O’Neill’s space colonization manifesto, *The High Frontier*, “in print and available forever.”
15. Retrieved July 14, 2006, from <http://www.space-frontier.org/History/> (“History of the Space Frontier Foundation”), paras. 1, 6. The SFF liberally employs the rhetoric of war in urging people to “join the fight” for its agenda, locating itself on the space “front,” characterizing itself as evolving from “a guerrilla band to a professional fighting force,” and claiming it has “come down from the hills [to] invade the [U.S.] capital” (“History of the Space Frontier Foundation,” subheading “Taking the fight to the nation’s capital,” para. 2.)
16. Other books published about space colonization include: Isaac Asimov’s *Space colonies* (1995), Stewart Brand’s *Space colonies: a CoEvolution book* (1977), Franklyn Mansfield Branley’s *Space colony: frontier of the 21st century* (1981), Dennis B. Fradin’s *Space colonies* (1985), T.A. Heppenheimer’s *Colonies in space* (1980), and Robert Lockerby’s *Space colonies: the next frontier* (1980).
17. Mars Society founding declaration, 1988. Retrieved July 20, 2006, from [Http://www.marssociety.org/about/founding_declaration.asp](http://www.marssociety.org/about/founding_declaration.asp).
18. MRC Greenwood, head of the White House Office of Science and Technology Policy in the Clinton administration, made this remark at a NASA symposium (What is the value of space exploration?, 1994, p. 1.)
19. Griffin made these remarks at a conference sponsored by the Center for Strategic and International Studies, November 1, 2005, Washington, D.C. The author attended this event.
20. Griffin made these remarks at a meeting sponsored by Women in Aerospace in Washington, D.C., on May 2, 2005. The author attended this event.
21. Griffin made these remarks at a meeting sponsored by Women in Aerospace in Washington, D.C., on May 5, 2006. The author attended this event.
22. Griffin made these remarks at a meeting of the NASA Advisory Council’s science subcommittees in Washington, D.C., on July 6, 2006. The author attended this event.
23. In their rhetorical analysis of public statements on foreign policy by Presidents Ronald Reagan and George W. Bush, Coe and Domke (2006) found a common strategy “treading closely to claims regarding a divine vision for U.S. foreign policy, a theological sort of doctrine of Manifest Destiny, which runs the risk of doing what the doctrine of Manifest Destiny has done in the past” (p. 324.)
24. Retired Congressional Research Service space policy analyst Eilene Galloway, arguably the oldest living expert on space law and policy at age 100 in 2006, has often said that problems in space policy are due at least in part to the fact that there are too many people in the space community who think that outer space is just like Earth. (Personal communications, 2005-2006.)

References

- Berry, Wendell (1977). Mr. Gerard O'Neill's space colony project is offered in the Fall 1975 *CoEvolution Quarterly*.... In Brand, S., ed., *Space colonies: a CoEvolution book*. Sausalito, CA: Whole Earth Catalog.
- Burrows, William E. (1998). *This new ocean: the story of the first space age*. New York: Random House.
- Bury, J.B. (1932). *The idea of progress: an inquiry into its origin and growth*. New York: Dover Publications.
- Carey, J. (1992 version; 1988). *Communication as culture: essays on media and society*. New York: Routledge.
- Coe, Kevin & Domke, Richard (2006). Petitioners or prophets? Presidential discourse, god, and the ascendancy of religious conservatives. *Journal of Communication*, 56: 309-330.
- Crouch, Tom D. (1999). *Aiming for the stars: the dreamers and doers of the space age*. Washington, DC: Smithsonian Institution Press.
- Dyson, Freeman (1979). *Disturbing the universe*. New York; Harper & Row.
- Ehricke, Krafft (1967). The anthropology of space flight. In A.C. Clarke (ed.), *The coming of the Space Age* (pp. 261-267). New York: Meredith Press.
- Geertz, C. (1973). *The interpretation of cultures*. New York: Basic Books.
- Godwin, Richard (2005, Nov. 16). The history of the National Space Society. *Ad Astra*. Retrieved July 14, 2006, from http://www.space.com/adastra/adastra_nss_history_051116.html.
- Griffin, Michael D. (2005). Remarks, Center for Strategic and International Studies Workshop on Space Exploration and International Cooperation, November 1, 2005, Washington, DC.
- Harwood, William (2006, Aug. 15). Interview with NASA's chief: Griffin defends budget, shuttle plans. *Space Place*, CBS News. Retrieved August 16, 2006, from <http://www.spaceflightnow.com/shuttle/sts115/060815griffin/>
- Klerkx, Gregg (2004). *Lost in space: the fall of NASA and the dream of a new space age*. New York: Random House.
- Krige, John (1993, May). *Europe into space: The Auger years (1959-1967)*. ESA-HSR-8. Paris: European Space Agency.

Krige, John and Russo, Arturo (1984). Reflections on Europe in space. ESA HSR-11. Paris: European Space Agency.

Lasch, Christopher (1991). The true and only heaven: progress and its critics. New York: W.W. Norton.

Leahy, Bart (2006). Save our planet: space advocates see the bigger picture. Ad Astra. Retrieved 5/19/06 from http://space.com/adastra/adastra_save_earth_060518.html.

Ley, Willy (1958). Rockets, missiles and space travel (rev. ed.). New York: Viking.

Logsdon, John M. (ed.) (2001). Exploring the unknown: selected documents in the history of the U.S. civil space program. Volume V: exploring the cosmos. NASA SP-2001-4407. Washington, DC: History Office, Office of Policy and Plans, National Aeronautics and Space Administration.

Marburger, John (2006). Keynote address, 44th Robert H. Goddard Memorial Symposium, American Astronautical Society, Greenbelt, Maryland, March 15.

McCurdy, Howard E. (1997). Space and the American imagination. Washington, D.C.: Smithsonian Institution Press.

McDougall, Walter A. (1985). ...The heavens and the earth: a political history of the Space Age. New York: Basic Books.

National Aeronautics and Space Administration (2004). The Vision for Space Exploration. NP-2004-010334-HQ. Washington, DC: National Aeronautics and Space Administration.

National Apollo Anniversary Observance, A Proclamation by the President of the United States of America, July 19, 1994. Washington, DC: Office of the President.

National Commission on Space (1986). Pioneering the Space Frontier. New York, NY: Bantam Books.

National Space Council (1990). Report to the President. Washington, DC: Office of the President.

Newall, Paul (2005). Thomas Lessl: science and rhetoric [interview]. Galilean Library, <http://www.galilean-library.org/lessl.html>.

Nisbet, Robert (1980). History of the Idea of Progress. New York: Basic Books.

Penley, Constance (1992). Spaced out: remembering Christa McAuliffe. Camera Obscura, 29 (Jan.): 179-213.

- Pyne, Stephen J. (1988). A third great age of discovery. In Sagan, C. and Pyne, S.J., eds., *The scientific and historical rationales for solar system exploration*. Washington, D.C.: Space Policy Institute, George Washington University.
- Pyne, Stephen J. (2003). *Seeking newer worlds: the future of exploration*. Sarton Lecture, American Association for the Advancement of Science, February, Denver, CO.
- Reed, Ishmael (1998). Progress: a Faustian bargain. In Shreve, S. R. and Shreve, P. (eds.), *How we want to live: narratives on progress* (pp. 102-106). Boston: Beacon Press.
- Report of the Advisory Committee on the Future of the U.S. Space Program (1990, December). Washington, DC: U.S. Government Printing Office.
- Report of the 90-day study on the human exploration of the Moon and Mars (1989, November). Houston, TX: NASA Johnson Space Center.
- Reynolds, Glenn Harlan (2004, May 5). How to creat a lunar Klondike. Tech Central Daily. Retrieved February 22, 2006, from <http://www.tcsdaily.com/article.aspx?id=050504E>.
- Reynolds, Glenn Harlan (2002, May 6). France or a frontier? Foxnews.com. Retrieved June 6, 2006, from <http://www.foxnews.com/story/0,2933,52034,00.html>.
- Rushing, Janice Hocker (1986). Mythic evolution of “The New Frontier” in mediated rhetoric. *Critical Studies in Mass Communication*, 3(3): 265-296.
- Rushing, Janice Hocker and Frenz, Thomas S. (1991). Integrating ideology and archetype in rhetorical criticism. *Quarterly Journal of Speech*, 77(4): 385-406.
- Sale, Kirkpatrick (1998). Five facets of a myth. In Shreve, S. R. and Shreve, P. (eds.), *How we want to live: narratives on progress* (pp. 107-114). Boston: Beacon Press.
- Sanger, Eugen (1967). Beyond the solar system. In A.C. Clarke (ed.), *The coming of the Space Age* (pp. 215-220). New York: Meredith Press.
- Savage, Marshall T. (1992, 1994). *The Millenial Project: colonizing the galaxy in eight easy steps*. Boston, New York: Little Brown.
- Schiller, Herbert (2001, 2006). Not yet the post-imperialist era (pp. 295-310). In M. G. Durham and D. M. Kellner, eds., *Media and cultural studies: key works* (rev. ed.). Malden, MA: Blackwell.
- Sheldon, Charles (1967). National goals in space. In A.C. Clarke (ed.), *The coming of the Space Age* (pp. 71-93). New York: Meredith Press.

Shreve, Susan Richards and Shreve, Porter (1998). *How we want to live: narratives on progress*. Boston: Beacon Press.

Simberg, Rand (2004, Nov. 1). A space program vs. the moral equivalent of a space program. *Tech Central Daily*. Retrieved February 22, 2006, from <http://www.tcsdaily.com/article.aspx?id=110104F>.

Stapledon, Olaf (1967). *Interplanetary man*. In A.C. Clarke (ed.), *The coming of the Space Age* (pp. 221-229). New York: Meredith Press.

Strano, Michele M. (2006). Ritualized transmission of social norms through wedding photography. *Communication Theory*, 16(1), 31-46.

Synthesis Group (1991). *America at the threshold: America's Space Exploration Initiative*. Washington, DC: U.S. Government Printing Office.

Turner, Frederick Jackson (1994, 1947, 1920). *Rereading Frederick Jackson Turner: The significance of the frontier in American history and other essays*. (With commentary by JM Faragher.) New York: Henry Holt.

Von Braun, Werner (1967). *German rocketry*. In A. C. Clarke (ed.), *The coming of the space age* (p. 33-55). New York: Meredith Press.

What is the Value of Space Exploration? A Symposium. July 18-19, 1994. Washington, DC: National Aeronautics and Space Administration.

Winter, Frank (1983). *Prelude to the Space Age: the rocket societies, 1924-1940*. Washington, D.C.: Smithsonian Institution Press.

Wright, Ronald (2004). *A short history of progress*. New York: Carroll & Graf.