Rockets and Rhetoric: The U.S. Space and Rocket Center and the Principles of Rhetorical Study

Kyle Thede

Spring 2014

Abstract

For my Honors thesis, I intend to follow the rhetoric track of the Communication Arts major, and specifically research the rhetorical decisions that go into the arrangement and presentations of the informational exhibits at the U.S. Space & Rocket Center, as well as the rhetorical results of those decisions. I already have a good deal of work experience at this museum, and will gain further internship experience this semester, which I hope will be useful in providing context for this research. I'm interested to see how different aspects of the historical accounts presented are handled, emphasized, or omitted, and how the exhibits' organization and interaction with the public influence the way the museum is perceived by its visitors.

Few public institutions display their supposed purpose as clearly and succinctly as museums. The very name of nearly any given museum serves to provide a clear picture in the mind of any potential visitor as to what waits inside and the subject, discipline or event that is being commemorated, celebrated, or simply remembered. Once through the doors, the best museums provide this sort of reflection in a dynamic, engaging manner, one which sustains the visitors' interests in the displays before them in a way that hopefully inspires, excites, or otherwise moves them. However, when such a phenomenon takes place, it is not simply a passive experience for either the visitor or the museum, nor is it due to the museum's value as simple popular entertainment. When a museum moves its visitors to some new feeling or action, persuasion has taken place, an event which can be described and understood through the study of the rhetorical techniques utilized by the establishment.

In a way, it only makes sense that museums are such prime spots for the application of rhetorical strategies. The most prolific museums, especially in the United States, offer informative exhibits on traditions, places, events, and subjects that have proven to be significant to the development of the nation's culture, including great works of art, successful and well-liked politicians, military victories and defeats, the development of the natural world, and countless other wide-ranging topics. Certainly, museums dedicated to the preservation and display of such information become a valued part of the community's consciousness and memory, and eventually identity. Carrying so much cultural weight on their metaphorical shoulders, it's no wonder that museums utilize rhetorical techniques, persuasive or otherwise, in their execution of such a role.

In a sense, a museum visit is no simple act of entertainment or distraction, nor is it a one-way street. It is more comparable to a conversation between the presented material and the visitor to whom it is presented, with an exchange of ideas, attitudes and perspectives which can be interpreted differently by any particular viewer, who naturally will have some prior knowledge of or interest in the museum's topic, or at the very least, curiosity. The museum, conversely, possesses a wide variety of rhetorical tools at its disposal, its very existence indicating the establishment's intent to construct, direct, correct, oppose, or otherwise alter that knowledge. These tools in and of themselves have, of course, been the subject of study for rhetoricians since the inception of the discipline, although often far less attention is paid to their application within the context of a public museum.

Indeed, a certain brand of museum is very rarely, if ever, included in discussions of museums' use of rhetoric: the technological museum. Including such famous institutions as Chicago's Museum of Science and Industry and Washington D.C.'s National Air and Space Museum, the more scientifically-oriented subject matter of this category of museums can obscure the rhetorical action taking place in their organization and presentation, leading to a dearth of research examining the exact phenomena at work in their persuasion and influence of their audiences. By necessity, these museums' displays and exhibits also focus on subjects and materials from the past, lending them status as historical institutions as well as technological and rhetorical ones. This three-way intersection of disciplines offers a fertile ground for further research, and as one of the United States' most well-known and beloved museums of this sort, the U.S. Space & Rocket Center in Huntsville, AL provides the ideal focus for that research.

Taking into account the traditions of rhetorical study, the principles guiding the construction of historical narrative, and the progressive natures of science and technology, the examination of the Space & Rocket Center opens up several interesting questions. What narratives does the museum emphasize or deemphasize, and what organizational decisions can be attributed to this emphasis? Due to the highly politicized nature of early space exploration, is there an agenda of that kind to be detected in the museum's displays as well? Are the same rhetorical strategies at play in this museum as would be observed in a different sort of museum, such as an art museum or a natural history museum, for example? Does the presence of technological material and artifacts indicate that the historical narratives being presented are intended to be projected into the future as well?

Before any specific description or analysis of the Space & Rocket Center's rhetorical strategies can begin in earnest, it is important to remember that museums are, by their very nature, a form of visual media (Meltzoff, 1970). Although oral histories and certain kinesthetic displays can certainly be counted among the exhibits of many prolific museums, the most prominent presentations are primarily, if not exclusively visual. The Space & Rocket Center is certainly no exception to this principle, as one of its most highly publicized displays is the Saturn V launch vehicle utilized during NASA's *Apollo* moon landing program. As the largest rocket ever built at nearly 400 feet tall, the Saturn V lying on its side in the museum's Davidson Center presents all visitors with a striking visual image of sheer size, while the full-scale replica of the same vehicle standing upright outside the facility presents any interstate drivers passing by with an equally arresting exhibition. Certainly there exists a great deal of theoretical background

concerning the use of visuals within a broadly rhetorical context on which to build further research.

Visual elements such as the Saturn V and others like it present in a museum's collection of exhibits are of particular interest to the rhetorician, due to the increasing significance afforded to such elements within the context of cultural definition. In his 2004 article "Visual Rhetoric and the New Public Discourse," Bruce McComiskey makes the case that the prominence of certain visual elements within a particular culture are evidence of a particular social agenda being enacted. Given the high concentration of visual elements – including displays centered around historical artifacts, signs, posters, and sequenced blown-up photographs – within museums, the examination of the sort of information and narratives being emphasized or deemphasized takes on a much more noteworthy role.

Concerning narratives specifically, it can also be put forward that in order to convey these narratives to a given visitor, the museum engages in what can be described as performance art, highlighting aesthetic experiences over the importance of establishing an authoritative cultural perspective. Moreover, museums concerned primarily with scientific principles, such as the Space & Rocket Center, may go about promoting this experience in a way that is distinctly different from a museum concerned with art, for example. Indeed, "as museums became taxonomically divided… the legislating mode of curatorial practice shifted to *interpreting* – objects were used to demonstrate ideas and themes rather than as displays of their individual characteristics" (Casey, 80).

This approach to museum displays – the interpretation of their objects as thematic and performantive – is particularly applicable to an outdoor exhibit at the Space &

Rocket Center referred to as "Rocket Park". This exhibit, as its name may suggest, is a collection of rockets dating from the earliest days of the United States' space program, including the Atlas, Juno, Jupiter, and Redstone rockets, among others. The demonstrative nature of these artifacts lies in the fact that each rocket on display in Rocket Park is a converted intercontinental ballistic missile, and not a specially designed space-travel vehicle. Placed alongside a captured German V-1 "buzz bomb" from World War II, the connection between these rockets and the concepts of militarism and international tension is on display in a way that requires no explicit declaration of its presence on the exhibit's part.

Of course, when presented in such a representational, performantive – and therefore occasionally confrontational – manner, the exhibits in a museum can serve to provoke a diverse spectrum of reactions from its viewers. Serving as an establishment "where individual expectations and institutional, academic intentions interact," there certainly exists the potential within a museum environment for the visitor to become conflicted over the disconnection between the narrative presented in the displays and the narrative with which they have become familiar through other means (Crane, 47). The most prominent exhibit within the Space & Rocket Center which provides illustration of this phenomenon is also located within the Davidson Center which houses the Saturn V. Positioned at the base of the giant rocket is a much smaller rocket, the black-and-white German V-2 ballistic missile. This comparatively tiny artifact is the most visible indicator of a narrative which is not conspicuously addressed in detail by the Center: the debt owed to Nazi weapons technology by the early American space program. Although Werner von Braun, the leader of the German rocket scientists, is celebrated in several exhibits

throughout the museum – which interestingly offer the Center's sole indulgence in purely biographical material – the fact that some of his most significant work was in the service of the Third Reich is not specifically addressed on as large of a scale as many other historical narratives relating to the space program.

It is here that it becomes important to specifically address the significant qualification that the Space & Rocket Center is a museum whose historical narrative is centered almost entirely on science and technology. In his 2014 article "Common Sense and the Rhetoric of Technology," Joshua Welsh makes the case that much of the rhetoric surrounding technological developments have been for the purpose of making those developments appear as natural parts of everyday life. Furthermore, the apparent "invisibility" of technology is not due to any inherent quality of the devices themselves. In fact, taken out of their original context and placed within a museum setting, the technological artifacts within the Space & Rocket Center *shed* invisibility, with their most extraordinary qualities, including the Saturn V's aforementioned size, the charred remains of an *Apollo* command ship's heat shield, and the almost comically cramped cockpit of a *Mercury* capsule, offered a great degree of conspicuousness to the public eye.

In light of this, it should be noted that the extraordinary nature of these artifacts and others like them are so due in large part to their mere presence in the museum. Their visibility in the public eye, as well as their physical proximity to the visitors of the Space & Rocket Center, affords them a high degree of "presence," in the sense to which rhetorical philosopher Chaïm Perelman referred. Within the context of a museum, technologically devoted or otherwise, this ability of the exhibits to act on the sensibilities

of their visitors so profoundly is due in large part to this concept outlined by Perelman (Gross, 2005). Their presence certainly offers a strong foundation on which to build the narratives which are an equally crucial element of the museums' persuasive ability.

It can certainly be seen that the visual nature inherent to a museum environment is one of the most indispensable elements to the establishment's rhetorical effectiveness. The extraordinary nature of the artifacts, coupled with the performantive nature of their exhibition creates a profoundly layered example of public rhetoric. This occurrence of a museums' collection becoming greater than the sum of its parts, so to speak, is the result of a concept known as "syntactic indeterminacy," which is the same principle guiding the effectiveness of montage sequences in movies. The presence, combination and arrangement of certain elements and artifacts, as well as the absence of others, serves to suggest a certain feeling or sentiment in the mind of the visitors who come to be educated, entertained, or some blend of the two.

In addition to the museum's visual presentation of itself, an equally significant element impacting the effectiveness of its rhetoric is the dialogue it sets up with its viewership, taking into account such factors as the visitors' demography and the accessibility of its persuasive goal. Museums are no longer capable, if they ever were in the first place, of preserving and exhibiting information free of social context or independently of their environment. This means that the establishment must take into account not only the raw demography of its viewership, but the "psychographic, environmental, and personal and cultural history" (Chang, 171). Applying this line of thought to the Space & Rocket Center, it becomes clear through a survey of the surrounding area that it is a museum which certainly fits within the culture of the

Huntsville area, serving as a celebration of the city's rich involvement with the American space program in the years of its genesis. Additionally, the nearby presence of U.S. Army installations such as Redstone Arsenal can account for the presence of the militaristically themed exhibits at the Center, including displays of near-future soldiers' equipment, drones, guided missiles, and other related artifacts, whose connections to the space exploration-related exhibits are tenuously vague at best.

Keeping in mind this appreciation for the surrounding city's connection with both space exploration and advancements in military hardware, the Space & Rocket Center, like any other museum, retains a certain number of responsibilities to the demography to which it is most readily available. The historical aspects of the exhibitions must meet high scholarly standards in their documentation, publication and execution, as well as meet the educational needs of the surrounding community in a way which is accessible to a variety of learning strategies and approaches (Schlereth, 13). With particular regards to the latter obligation, as stated earlier, while visual displays are crucial to the museum's rhetorical power, there exists a wide assortment of other educational elements at play within the Center. An exhibit located in the Davidson Center simulates the sound and vibrations of a Saturn V engine test run, while a display intended for children offers the opportunity to wear "moon gloves" and conduct experiments over a simulated lunar terrain.

The importance of engaging the public with such synthesized and insightful methods of communication becomes much more apparent when the significance of museums – as well as monuments, public works of art, and other commemorative locations – when it comes to the establishment of a collective public memory. The

combinations of abstract and realistic elements, as well as elements which are specific to the culture, from which the museum emerges, all bear profound rhetorical meaningfulness when taken as a whole (Gallagher, 107). The Space & Rocket Center certainly occupies a significant place within the broader social culture of the Huntsville area, representing the city's concentration of scientific, technological, engineering and mathematical industries, historical connections to a program associated with a great deal of national pride – the moon landing – as well as its continued relationship with the U.S. armed forces.

Of course, the museum's function as an institution of public memory and cultural identity can be at odds with its role as an establishment of historical scholarship, especially if the exhibits on display present a controversial or provocative narrative to the public. This conflict can exist particularly prominently within the context of technological museums, as was found in Victoria Harden's 1999 study "Museum Exhibit Standards: Do Historians Really Want Them?" in which a task force of historians was unable to come to a conclusion regarding the way in which the Smithsonian's National Air and Space Museum should handle an exhibit about the dropping of the first atomic bomb in World War II. A similar conflict could be discerned within the Space & Rocket Center through the museum's unwillingness to emphasize or call attention to the significant role played by the German ballistic missile research to which much of the museum's technology owes its existence. To highlight such a narrative would throw the Center's simultaneous celebration of Von Braun as a heroic and visionary figure into an unsettling light, as it would confront the viewer with a figure whose influence reaches further – into much more negatively viewed territory – than the American space program.

Of course, this tension between scholarly pursuits and public accessibility is one that leaves plenty of room for politics to enter the picture. Museums remain "political creatures" even in the present day, their narratives and exhibitions reflecting social hierarchies and shifting senses of national identity (Lakshmi, 103). The Space & Rocket Center certainly provides examples of this, with a large display near the Saturn V exhibit commemorating President John F. Kennedy's famous address to Congress regarding the moon landing deadline of the 1960s. While the Cold War political gamesmanship which birthed the space race in the first place is addressed in smaller displays requiring careful reading and specific attention on the part of the viewer, Kennedy's iconic words are boldly displayed on huge colorful signs, clearly visible for every visitor in the hall, strengthening the sense that the moon landing, and by extension the accomplishments of the space program as a whole, was a uniquely American endeavor, one made possible by such national ideals as perseverance, industry and the willingness to rise to a challenge.

Despite the distinction between technological museums and others with different focuses, there remains the shared key characteristic that museums draw their rhetorical power primarily from a collection of artifacts used to present a particular historical narrative. Artifacts, of course, are perhaps the most essential element in a museum setting, seeing as they are the objects around which the entire institution is established. As explored above, in the Space & Rocket Center's particular case, several of the artifacts are extraordinary by their very nature, but others have gained meaning and identity through their association with other significant people, events, or artifacts. It would then follow that by virtue of being presented within the same museum as other extraordinary objects, these artifacts continue to gather meaning and rhetorical power

throughout their display (Alberti, n.pag). A prominent example of such rhetoric taking place can be found in the Davidson Center near the V-2. Close by are two small black space capsules, one of which is a mockup of a *Mercury* vehicle, the other being a simulator used to train crew members during the *Gemini* program. Neither of these capsules is or ever was a working spacecraft, but their presentation in the Saturn V hall lends them historic significance.

From the entrance to the far end, in roughly chronological order, the Davidson Center's Saturn V hall traces the developmental history of the United States' manned space program, with the first visible object upon arrival in the hall being the captured V-2. From there the visitors' eyes are drawn to the *Mercury* and *Gemini* capsules, and then to the display signs outlining the early days of the space race. Of course, while following these signs, the visitor is walking along the length of the huge Saturn V lying on its side in the center of the hall, providing a visual representation of the final goal of the programs about which the viewer is reading. The *Mercury* and *Gemini* capsules, both of which were workaday, ordinary pieces of equipment, even within the context of the space program, now provide a helpful visual timeline of the evolution of the United States' rocket building ability and space program development.

The observation that the arrangement of the artifacts within a museum is enough on its own to place a specific narrative in the mind of the viewer supports the idea examined by Barbara Biesecker in her 2006 article "Of Historicity, Rhetoric: The Archive as Scene of Invention," in which she posits that an archival space, such as a museum's display hall, is an inherently rhetorical location, due to the invocation of the rhetorical canon of invention. While the canon of arrangement – that is, the organization of the rhetor's

argument – is by necessity also utilized, it is interesting to note that within the context of a museum, the argument itself is borne of the arrangement, as some of the individual elements being organized carry no narrative power without the support of their neighboring artifacts.

One such example is the mobile quarantine unit on display in the Davidson Center near the *Apollo 16* command module. While the command module itself is one of the aforementioned extraordinary artifacts, owing to the cramped quarters in the viewers' visibility, the heavy damage sustained by the heat shield, and the spectacle of its parachutes hanging from the ceiling directly over the top of the capsule, the mobile quarantine unit is no more extraordinary on first glance than a mobile home or a trailer. However, its proximity to a recovered *Apollo* capsule, as well as several large photographs and blown-up newspaper clippings of the recovery efforts at the end of a mission places the unit within the context of an individual mission, and the trailer becomes a telling artifact offering insight into such concepts as NASA's caution in the earliest days of space exploration and the strain under which the early astronauts operated. The arrangement and the invention of these concepts are inextricably bound together.

The presentation of narratives as specific as those concerned with a single space mission, as well as those concerned with such large concepts as the overall development of the manned space program and even the geopolitical gamesmanship which governed the technological race between the United States and the Soviet Union in the 1960s, is perhaps the most valuable asset available to museums in general, and certainly within the Space & Rocket Center specifically (Stapp, 9). One of the institution's most prolific and

successful endeavors towards public education and the establishment of a collective memory around the American space program is the thirty-two year old Space Camp program, aimed at elementary and middle school children and pre-teens with the purpose of encouraging interest in science, technology, engineering and mathematics through the context of space history and the ongoing space programs. While participants in the Camp undertake many projects, activities and design challenges of their own, a fundamental cornerstone of the program remains a strong understanding of and appreciation for the history presented within the museum.

To that end, each week-long camp program includes several history lessons, each centered on particular exhibits or displays which helps increase the Camp counselor's rhetorical power. The V-2 and Rocket Park are the typical starting points of such lessons, as they most clearly illustrate the post-World War II international climate which gave birth to the space race between the United States and the Soviet Union. These lessons also focus on the scientific history of mankind's understanding of space and how to explore it, briefly covering such influential figures as Konstantin Tsiolkovsky, Robert Goddard, Hermann Oberth, and Werner von Braun. The V-2 serves as an illustration of the culmination of Von Braun's research and early work, while Rocket Park serves to illustrate the impact which the subsequent Cold War had upon the way America approached the idea of space travel.

The *Mercury* capsule in the Davidson Center is one of the next exhibits visited during the Space Camp history lessons, as it provides an illustration of one of the earliest American triumphs in space exploration; the flights of the original seven astronauts as part of the *Mercury* program. However, other exhibits on the museum grounds can be

used to cover the successes which preceded even the *Mercury* flights. The main museum building, separate from the Davidson Center, houses a mockup of a rocket's nose cone which has been specifically modified to accommodate a small monkey, which was the United States' first living creature in space. The importance afforded this small chapter of American space exploration is further reinforced by the presence of the grave of one of these space-traveling monkeys near the entrance of the Center. The combination of the gravestone outside and the full-scale display of the monkey's flight on the inside provide the story with a historical resonance and immediacy. In a similar way, the mockup of the *Mercury* spacecraft within the Davidson Center affords the visitors the ability to climb inside and sit in an actual-sized space capsule cockpit. Not only does this provide a more engaging experience than a simple visual presentation of the capsule's size would, it also serves to illustrate both the relative technological limitations that had to be overcome in the early days of the space program – as the capsule is uncomfortably small and cramped – and the high qualifications which the early astronauts had to meet, since the cockpit is completely covered with innumerable buttons, switches, and instruments. At this point in the lessons, such important figures as Alan Shepard, Gus Grissom and John Glenn are introduced to the campers, as well as President Kennedy's famous goal.

As explained above, the *Gemini* simulator is within close proximity of the *Mercury* mockup in the Davidson Center, allowing for an easy transition to this next chapter of the history lessons. While this simulator does not offer the opportunity to sit inside, it is positioned in such a way as to offer a view of how much more cramped it is than even the *Mercury* vehicle. More importantly, the *Gemini* capsule is surrounded by several smaller artifacts, including pieces of the space suits worn by the crew members,

and equipment utilized during their spacewalks and other experiments conducted during the program. This all serves to illustrate the main point of the *Gemini* program, according to the Space & Rocket Center; that is, it provided much of the technology and experience necessary for the subsequent *Apollo* moon landing program. Events such as Ed White's first spacewalk, Neil Armstrong's docking with an unmanned probe and Frank Borman's marathon two-week flight with Jim Lovell aboard *Gemini 7* are all covered, with the cramped cockpit on display providing a highly visible reminder of the hardships encountered at every step of this process.

The *Gemini* exhibit leads to a series of large photographs and display stands concerning the *Apollo* program, as well as a smaller-scale model of the huge Saturn V rocket in the center of the hall. This series of signs and photos are all organized under an even larger sign bearing President Kennedy's famous declaration of the United States' intent to go to the moon before the end of the 1960s. While it is the least visual and least interactive aspect of the Davidson Center's displays, this series illustrates the importance of the program's many preparatory missions before the first moon landing itself was carried out. The model of the Saturn V provides an excellent means by which to explain the operations of the *Apollo* spacecraft, a much more complex vehicle than either the *Mercury* or *Gemini* capsules already visited. It is also worth noting that this is the part of the history lesson where the *Apollo 1* disaster is addressed. While it serves as the most vivid illustration of the dangers inherent to the early days of spaceflight, the story of the deadly fire on the launch pad that claimed the lives of three astronauts is not afforded a large display beyond a couple of photographs visible only to up-close visitors. Within the lesson itself, the episode is intended as a warning tale against rushing through important

safety precautions and the importance of careful testing before putting human lives on the line.

However, the later *Apollo* missions are illustrated with much higher visibility and with a much more celebratory tone, for obvious reasons. The aforementioned *Apollo 16* command module on display, along with an unused lunar module and lunar rover and the mobile quarantine unit, is positioned at the far end of the Saturn V hall, creating a sense that the journey to the first moon landings was one involving many steps, lots of hard work, trial and sacrifice, but that it was a triumph in the end all the same. In addition to the location of the exhibit, the exhibit itself provides a clear illustration of the logistics involved in the lunar missions, allowing up-close viewing of the command module's crew quarters, the deployment of a lunar rover, and even a map of all six successful lunar landings which is laid out on the floor. The absence of *Apollo 13* on the map is the most immediately visible illustration of that mission's failure to land on the moon, although the story of its successful recovery is explained during the lesson itself.

Moving back towards the entrance of the Davidson Center on the other side of the hall, the end of the *Apollo* program is followed by the subsequent *Skylab* program, with a full-scale replica of the United States' first space station on display for the visitors to enter and explore. The contrast between the roomy station and the cramped capsules seen thus far is a particularly striking distinction, one which provides one of the most telling indicators of the amount of progress made in less than twenty years of space technology. The existence of the *Skylab* program at all provokes questions concerning NASA's focus shifting from exploration of the moon to more broadly applicable scientific endeavors in low-earth orbit. These questions then provide the ideal transition to the lesson plans

regarding the Space Shuttle program of the 1980s and beyond, although no Shuttle-related artifacts or displays are present within the Davidson Center itself.

This integration of historical narratives and the display of a collection of artifacts is evidence of the natural ability of such collections to provoke questions and historical inquiries (DeVorkin, 597). Specifically, the up-close visibility of simulators, rovers, capsules and rocket engines provide a vital learning experience for aspiring aerospace engineers, while the arrangement of these artifacts provides such an experience for those visitors who may be more historically-minded. While the narrative can be recounted and explained without the aid of the museum's collection, their presence offers several advantages. The artifacts provide clearly visible proof that the events described are factual and actually took place. Although the artifacts on display occasionally did not perform the events themselves – such as the *Gemini* simulator, unused lunar module, and even the Saturn V itself – they are representative of the objects which did, and artifacts such as the *Apollo 16* capsule and the crew's space suits still provide striking examples of the real article. The act of physical encountering an object such as these which made history can create a sense of celebratory transcendence which would not be possible through any means apart from a museum. The triumph in the stories of these articles and their survival, as well as the hard work that contributed to their success provides a sense of inspiration, illumination and stimulation for the visitors as well, and the presence of the articles themselves can only serve to heighten such a sense.

Certainly, this sort of portrayal of historical events within a museum context has a profound impact on the way in which the events are regarded by the local and national public at large. In his article "The Birth of the Museum: History, Theory, Politics,"

Thomas Prasch makes reference to the importance of the displays of history in museums when it comes to the construction of a common social history. Collective memories of the past are shaped by the way differing discourses and sociopolitical pressures shift over time, and the history museum provides one of the most clearly visible examples of this phenomenon. The Space & Rocket Center's focus on the concepts of teamwork, perseverance, safety, and the importance of science, technology, engineering and mathematics certainly shapes the way in which the American space program is regarded by the visiting populace. The obvious emphasis on American achievement, often at the expense of German and Soviet achievement, is framed within a narrative which emphasizes these qualities.

Drawing from this variety of theoretical background and on-site observations of the Space & Rocket Center's collections, arrangements and presentations, clear conclusions concerning the intersection between the institution of the modern American history museum, rhetorical theory and technological progress begin to emerge. Most recognizable is the sweep of the narrative trends which are emphasized and the ideals which they reflect. Certainly the museum's status as a center celebrating the application of scientific, technological, engineering and mathematical concepts means that the most clearly conveyed narrative is the progress of technology, communicated through such striking visual means as the juxtaposition of vehicles and hardware from different points in the history of the American space program, as well as the emphasis on articles' most striking, extraordinarily provoking visual qualities. The human element is addressed within these narratives as well, but most often in terms of the qualities and traits which facilitated the process, such as willpower, intelligence, attention to detail, teamwork and

confidence, as opposed to any sort of in-depth biographical detail. These are narratives which are streamlined, synthesized and highly accessible to the public audience – especially an American audience, due to the attribution of the aforementioned qualities to a perception of national character.

While the arrangements and presentation of artifacts has an impact on the way *any* museum's stories are told, the nature of the Space & Rocket Center as a scientific and engineering museum also means that the displays and exhibits have the ability to affect public perception of technological progress in a profound way. By stripping the artifacts of their original context and reconstructing the context of a historical narrative around them, the most extraordinary qualities of the artifacts are emphasized and celebrated in a way which would not have been possible outside of the context of a museum. The public perception of the scientific achievements on display within the objects shifts from mere acknowledgment to active curiosity and celebratory admiration. While museums with any subject matter can inspire such appreciation in the moment, the ever-increasing prevalence of technological advancements in everyday life means that the Space & Rocket Center achieves something more lasting and profound in its handling of technology

In this way, this inherent quality of technology – that it advances and grows in sophistication – is the same quality which affords institutions such as the Space & Rocket Center their unique position as museums which not only present interpretation of the past, but also offer a vision for the future. While certain displays at the Center visually and explicitly present planned future developments – such as the mockup of the Sierra Nevada *Dreamchaser* space-plane in the Davidson Center – the museum's commentary

on the future can also be extrapolated from its celebration of the past, with its combination of scientific achievement, strength of national character and sweeping story of a human triumph that transcends cultural barriers. These qualities are presented as universal, independent of the shifting nature of NASA's current plans for the future or various private agencies' efforts at spaceflight, and so the museum ends up offering an optimistic and inspiring outlook at the future of space exploration. Museums focusing on other, non-scientific disciplines cannot offer such perspectives.

It can certainly be seen that the U.S. Space & Rocket Center provides a useful environment for the study of not only scientific and technological advancement, but for the rhetorical invention and arrangement of historical narratives, artifacts and perspectives. Its combination of a forward-looking outlook on its subject matter, sweeping storytelling and wide-ranging collection of extraordinary objects ensures that the institution's conversation with its audience of visitors will continue for a long time to come.

Revised Annotated Bibliography

Section 1

The topic of my research has been the rhetoric of museum displays and the influence which they have over visitors. I intend to apply this research to the specific case of the U.S. Space & Rocket Center in Huntsville. My sources were largely drawn from academic journals found through JSTOR, although full-length books and book reviews were also consulted.

Section 2

Alberti, Samuel J.M.M. "Objects and the Museum." *Isis* 96.4 (2005): Internet. February 9, 2014. http://www.jstor.org/stable/10.1086/498593

This article demonstrates how the stories behind individual objects in a museum can be used to construct narratives much larger in scope, which is a considerable rhetorical phenomenon that can be analyzed in depth.

Biesecker, Barbara A. "Of Historicity, Rhetoric: The Archive of Scene as Invention." *Rhetoric & Public Affairs* 9.1 (2006): 124-131. Print. February 9, 2014.

This article explores the relationship between an historical archive and the rhetorical canon of invention.

Casey, Valerie. "Staging Meaning: Performance in the Modern Museum." *The Drama Review* 49.3 (2005): 78-95. Print. February 9, 2014. http://blog.umd.edu/tpg/files/2012/08/Biesecker-RPA1.pdf

The performantive nature of the staging and arrangement of museum displays carries an inherent rhetorical power that can be further explored.

Chang, EunJung. "Interactive Experiences and Contextual Learning in Museums." *Studies in Art Education* 47.2 (2006): 170-186. Print. February 9, 2014. http://www.jstor.org/stable/3497107

This article's focus is on the visitors themselves, and how their demography can affect the meaningfulness of the museums' rhetorical attempts.

Crane, Susan A. "Memory, Distortion and History in the Museum." *History and Theory* 36.4 (1997): 44-63. Print. February 9, 2014. http://www.jstor.org/stable/2505574

This article notes a disconnect between the historical narratives presented in museums and the narratives present in the visitors' memories, which can be reconciled through the skillful application of rhetoric.

DeVorkin, David A. “Space Artifacts: Are They Historical Evidence?” *Critical Issues in the History of Spaceflight*. Ed. Steven J. Dick and Roger D. Launius. Washington, D.C.: NASA History Division, 2006. 573-600. Print. February 9, 2014. http://history.nasa.gov/SP-2006-4702/chapters/chapter17.pdf

Since the preservation and presentation of historical artifacts are one of the most important aspects of museum arrangement and design, this article’s information regarding such collections’ practicality and necessity is an important cornerstone of my research.

Gallagher, Victoria J. and Margaret R. LaWare. “Sparring with Public Memory.” *Places of Public Memory*. Ed. Greg Dickinson, Carole Blair, and Brian L. Ott. Tuscaloosa, AL: University Alabama Press, 2010. 87-108. Print. February 9, 2014. http://www4.ncsu.edu/~vgallagh/JoeLouisMonument.pdf

This article explores a particular monument, discussing and analyzing the rhetorical strategies it utilizes to reflect and promote specific public memories with respect to the conflict it memorializes.

Gross, Alan G. “Presence as Argument in the Public Sphere.” *Rhetoric Society Quarterly* 35.2 (2005): 5-21. Print. March 12, 2014. http://search.ebscohost.com.elib.uah.edu/login.aspx?direct=true&db=ufh&AN=17089741&site=ehost-live

This article posits a connection between Chaïm Perelman’s rhetorical concept of presence and the possible application of such a concept in a history museum.

Harden, Victoria A. “Museum Exhibit Standards: Do Historians Really Want Them?” *The Public Historian* 21.3 (1999): 91-109. Print. February 9, 2014. http://www.jstor.org/stable/3378963

The conflict between museum curators and historians indicates that there is a rhetorical power inherent to museums’ presentations and displays, which prompts further research into what exact techniques are at play.

Lakshmi, Rama. “Musings on Museums.” *India International Centre Quarterly* 37.1 (2010): 102-117. Print. February 9, 2014. http://www.jstor.org/stable/23006459

This article explores how a museum’s collection, architecture, and admission policies can demonstrate or reflect a socio-political hierarchy.

McComiskey, Bruce. “Visual Rhetoric and the New Public Discourse.” *JAC* 24.1 (2004): 187-206. Print. February 9, 2014. http://www.jstor.org/stable/40793884

This article’s discussion of how visual aspects presented within a culture are indicative of a social agenda is certainly applicable to a study of the ability of museum displays to affect the public at large.

Meltzoff, Stanley. “On the Rhetoric of Vision.” *Leonardo* 3.1 (1970): 27-38. Print. February 9, 2014. http://www.jstor.org/stable/1572049

This article provides useful generalities regarding the rhetorical organization inherent to all visual media, which certainly includes museum displays for the purposes of my research.

Prasch, Thomas. “The Birth of the Museum: History, Theory, Politics.” Victorian Studies 40.3 (1997): 509-511. Print. February 9, 2014. http://www.jstor.org/stable/3829306

Tracing the history of how museums have developed over time, this article provides fundamental information regarding their efficiency and the reasons for their existence in the first place.

Ragsdale, J.D., Frances Brandau-Brown, Terry Thibodeaux, Richard Bello and Brian Chapman. “The Museum as Visual Persuasion: A Theoretical Analysis and Illustrative Typology.” International Communication Association 2006 Annual Meeting. Print. March 12, 2014. http://search.ebscohost.com.elib.uah.edu/login.aspx?direct=true&db=ufh&AN=27204712&site=ehost-live

This article argues that the architecture of museums, along with their status as cultural icons and cultural memories affords them persuasive power.

Schlereth, Thomas J. “The History behind, within & Outside the History Museum.” *Roundtable Reports* 5.3 (1980): 12-16. Print. February 9, 2014. http://www.jstor.org/stable/40479653

This article provides a look at the influence history museums can have when shaping historical narratives in the public eye.

Stapp, Carol B. “The Articulation of Museum Educational Policy in America and Britain.” Visual Arts Research 18.2(36) (1992): 1-19. Print. February 9, 2014. http://www.jstor.org/stable/20715777

This article explores the importance which modern museums afford the communication of a specific educational narrative and message.

Welsh, Joshua. “Common Sense and the Rhetoric of Technology.” *Poroi: An Interdisciplinary Journal of Rhetorical Analysis & Invention* 10.1 (2014): 1-31. Print. April 9, 2014. http://search.ebscohost.com.elib.uah.edu/login.aspx?direct=true&db=ufh&AN=95095909&site=ehost-live

This article explores the changes between classical rhetoric and modern rhetoric that have been affected by the advancement of science and technology, as well as common sense.