# Illuminating Illusion:

## Electric Light and the Recreation of the Sublime at Niagara Falls



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# Abstract

This thesis is an examination of the different conceptions of the sublime in relation to Niagara Falls. Viewing the Falls as representative of numerous key ideas about American nature in general, I argue that its artificial illumination in the early twentieth century made possible the realization of aesthetic ideals of natural purity first formulated in the eighteenth century, despite industrialization's profound alterations to the landscape across the nineteenth century. I support this claim by focusing on the long intellectual and cultural history underpinning electric light's ability to recreate sensations of the sublime for onlookers, an experience which was intimately associated with both Niagara Falls and American nature at large. I argue that the application of electric light to Niagara, by both visually editing the landscape and generating feelings of the sublime, satisfied visitors' desires for a natural aesthetic ideal and obscured the effects of human influence.

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# Introduction

When the first full-scale illumination of Niagara Falls took place in September of 1907, thousands of spectators looked on in awe at the famed natural wonder as it glistened under beams of electric light. Observers summarized the sight as one of a "magnificence that defies description," while one reporter noted that the spectacle's capacity to amaze was evidenced by the fact that it "was witnessed in dead silence."[1] The addition of artificial light was more than a novel accentuation of Niagara. It was an aesthetic revision of the cataract that allowed onlookers to see the Falls in a way that had not been possible for decades. As one newspaper account put it, "for the first time since a factory was erected" on the banks of the Niagara River—and, indeed, by 1907 there were many—"the garish outlines of the bleak brick buildings were gone, and in their place…were the falls in their old glory."[2] The mention of Niagara's "old glory" in the article is extremely revealing. From the time of its discovery by Europeans in the seventeenth century, Niagara had been characterized as a wonder of nature. This reputation grew throughout the eighteenth century, taking on cultural significance as an emblem of America's unique natural landscape after the establishment of the United States. Throughout the second half of the nineteenth century, however, visitors to Niagara had lamented the intrusion of the man-made into the natural scenery. Factories, hotels, and tourist amenities had crowded within sight of the Falls, despoiling what had once appeared as the inviolate realm of nature. The illumination, however, removed these synthetic aspects of the scene. By simultaneously throwing the cascade into bright relief and relegating the

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[1] "Vast Crowd Beholds Beauty of Niagara Falls Under Light," *The Daily Cataract-Journal*, 3 September, 1907; Peace: The Illumination of Niagara Falls," Niagara Falls Historical Society, 1915: 7.
[2] "Peace: The Illumination of Niagara Falls," Niagara Falls Historical Society, 1915: 6.

undesirable features to darkness, the lights allowed spectators to imagine Niagara in a state of natural purity. The fact that a medium of such blatant artificiality was championed as a means of returning the Falls to their original state of nature is the central focus of this dissertation.

I will argue that this illusion of unaffected nature was made possible by reinvigorating an experience that had long been associated with Niagara, but had become increasingly difficult to obtain as artifice steadily amassed around the Falls – the experience of the sublime. The concept of the sublime is one that has been typically associated with European philosophers of the eighteenth century. Though the term was first popularized by the classical Greek writer Longinus in reference to the effects of great oratory, the sublime rose to centrality in the eighteenth century as a means of reconciling ideas of God with Enlightenment revelations regarding the workings of the natural world.[3] The most famous investigation of the sublime to confront such ideas was Edmund Burke's *Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful*, published in 1756. Burke starkly differentiated between the beautiful and the sublime, associating feelings of tenderness with the former and terror with the latter. While the sublime overwhelmed the observer with sensations of fear and humility, Burke considered it a healthy shock which forced the observer into mental action. When Immanuel Kant examined the sublime in his *Observations on the Beautiful and Sublime* (1764) and *Critique of Judgement* (1790), meanwhile, he expanded upon Burke's theory. Kant, noting that the sublime included feelings of pleasure as well as pain, did not consider it to be beauty's opposite; he

[3] For more on the evolution of post-Enlightenment perceptions of nature and their relation to the sublime, see Marjorie Hope Nicolson, *Mountain Gloom and Mountain Glory: The Development of the Aesthetics of the Infinite* (New York: W. W. Norton & Company Inc., 1959).

associated the beautiful with quality and the sublime with quantity. For Kant, the sublime was a "negative pleasure" which stemmed from the observer's ability to overcome in thought that which overwhelmed his senses.[4] These concepts of the sublime became central to European thought after scientific revelations of the Enlightenment had forced a revaluation of the natural world. Once the realization of a vast and complex universe had shattered the concept of one ordered for the purpose of man by God, the essence of the Deity was transferred to the physical world, its presence contained within the infinitude of its creations. The sublime then became an avenue for better understanding God.[5] This idea was adopted and adapted by American intellectuals during the emergence of Romanticism in the early nineteenth century, investing the country's abundance of wild nature with intellectual and spiritual significance as the source of an enlightened culture.[6]

When the term is used in the context of this study in reference to objects of nature, it refers mainly to Kant's conception of negative pleasure. Those Americans who cited the sublime in their descriptions of Niagara in the early days of the United States experienced terror and awe, but implied that there was insight to be gleaned from the experience, usually in a spiritual sense.[7] The passage through fear, awe, and humiliation led to personal revelations for the observer, bringing them deeper intellectual and moral understanding. Philip Shaw describes the sublime experience as

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[4] David E. Nye, *American Technological Sublime* (Cambridge: The MIT Press, 1994), 3-7.
[5] Ernest Tuveson, "Space, Deity, and the 'Natural Sublime,'" *Modern Language Quarterly* 1, no. 12 (1951).
[6] Roderick Frazier Nash, *Wilderness and the American Mind* (New Haven: Yale University Press, 1967), 57.
[7] William Cronon, "The Trouble with Wilderness; or, Getting Back to the Wrong Nature," in William Cronon, ed., *Uncommon Ground: Rethinking the Human Place in Nature* (New York: Hudson Hills Press, 1996), 73; Cronon notes that the sublime took on moral implications during the eighteenth century, citing the belief that one was more likely to encounter the presence of God in the sublime landscapes "where one could not help feeling insignificant and being reminded of one's own mortality."

the "moment when the ability to apprehend, to know, and to express a thought or sensation is defeated. Yet through this very defeat, the mind gets a feeling for what lies beyond thought and language."[8] In short, the encounter with the sublime offered an opportunity for intellectual and spiritual growth through one's ability to move closer to understanding that which at first seems unknowable. When this concept took hold in Europe during the eighteenth century, it primarily referred to objects found in nature. Both Kant and Burke, for example, pointed to large waterfalls, volcanoes, mountains, storms, and floods as catalysts of the sublime. An indirect result of the focus on natural objects was an enhanced reverence toward nature in general, a trend that became extremely evident when the concept was applied to the American context.[9] Later scholars, such as Leo Marx and David E. Nye, however, have pointed to the ability of man-made objects to generate feelings of the sublime as well. This places the sublime into two distinct categories—the natural and technological. While the technological sublime is similar to the natural sublime in that it overwhelms the observer with awe and wonder, the two diverge in terms of the feelings they produce and their lasting effects. The technological sublime tends toward more positive emotions, as opposed to the natural sublime's association with negative emotions, and ultimately leads to the celebration of human accomplishments rather than a reverence toward nature.[10] This study will examine the presence of both types of sublimity at Niagara Falls.

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[8] Philip Shaw, *The Sublime* (London: Routledge, 2004), 3.
[9] Barbara Novak, *Nature and Culture: American Landscape and Painting 1825-1875* (London: Thames and Hudson Ltd, 1980), 7-8.
[10] The concept of the sublime has a history of development far too extensive to be detailed within the limits of this study. For information of the idea's historical evolution, see Philip Shaw, *The Sublime* (London: Routledge, 2004) and James Kirwan, *Sublimity* (London: Routledge, 2005); for more on the technological sublime, see Leo Marx, *The Machine in the Garden* (Oxford: Oxford University Press, 1964) and David E. Nye, *American Technological Sublime* (Cambridge: The MIT Press, 1999).

This study is also firmly situated within a broader area of scholarship which concerns itself with American nature. I draw heavily on foundational studies such as Perry Miller's *Errand into the Wilderness* (1956) and Roderick Frazier Nash's *Wilderness and the American Mind* (1967), both of which detail the history of the evolving perception of nature in America. This project, however, is more closely related to recent scholarship which falls under the category of ecocriticism – a broad discipline which examines culture and literature as it relates to the natural world. While this field is relatively new (it truly coalesced in the early 1990s), it has quickly grown and risen to scholarly prominence, evidenced by the fact that an entire issue of *New Literary History* was dedicated to the subject in 1999.[11] Concerned as this study is with the values placed on Niagara Falls as an object of nature, it is situated among those works of ecocriticism which deal with the cultural forces that influence human perception of the natural environment. Studies such as Robert Pogue Harrison's *Forests: The Shadow of Civilization* (1992) and John R. Knott's *Imaging the Forest: Narratives of Michigan and the Upper Midwest* (2012) look both at how the various values placed on natural environments (forests in particular) are expressed through literature and how such expressions subsequently influence future perceptions of nature. Similarly, Yi-Fu Tuan, in his book *Topophilia: A Study of Environmental Perception, Attitudes, and Values* (1974), examines the attractions humans feel toward particular natural landscapes and how they are mediated by cultural forces. This dissertation builds on the general concept that these works and others put forward—that the human perception of, and the values given to, nature are profoundly influenced by cultural conditions.

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[11] *New Literary History* 30, no. 3, Ecocriticism (1999).

My work is more specifically related to the ideas raised by Lawrence Buell in his books *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (1995) and *Writing for an Endangered World: Literature, Culture, and Environment in the U.S. and Beyond* (2001). While citing, as the previously-mentioned scholars do, the influence of cultural forces (in this case literature) on Americans' understanding of their natural environment, Buell also highlights the distinction between civilization and nature as a human-constructed dichotomy. Despite the interconnectedness of human and non-human environments, Buell explains that various forms of literature often perpetuate the illusion of the two existing in separate realms.[12] He also points out that "aesthetics can become a decisive force for or against environmental change," explaining that the values placed on the natural environment via literature and art have a profound impact on the ways in which humans respond to its alteration.[13] While my focus and approach differ from those of Buell, these ideas hold particular relevance to my study. As will be seen throughout this thesis, the tensions which surrounded Niagara over the course of American history were illustrative of the concepts which Buell has examined. The debate over the intrusion of the artificial into Niagara's scenery was predicated on a perceived division of nature and civilization—the two spaces were understood to be mutually exclusive. Likewise, the sanctity of nature, of which Niagara was representative, was a product of cultural influences, weighted with values bestowed by writers and artists.

While relying on scholarship regarding the sublime and ecocriticism as a foundation, this thesis will connect two areas of study that are too often considered

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[12] Lawrence Buell, *Writing for an Endangered World: Literature, Culture, and Environment in the U.S. and* Beyond (Cambridge, Massachusetts: The Belknap Press of Harvard University Press, 2001), 6.
[13] Lawrence Buell, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture (*Cambridge, Massachusetts: The Belknap Press of Harvard University Press, 1995), 3.

separately: environmental and technological history. I accomplish this by building on existing scholarship in two important ways. First, I argue that the application of electric light to Niagara provided an aesthetic ideal through the simulation of the natural sublime while obscuring the effects of industrialization. This is significant because I consider the illumination of Niagara not as an instance of the technological sublime impressing viewers as an awe-inspiring human achievement, but as an effect which mimicked the natural sublime, thus blurring the distinction between natural and human works. Second, I base my study on a unique combination of sources. Representations of responses to Niagara spanned both textual and visual sources, forms which were relevant to the notion of the sublime in their ability to convey the grandeur of the Falls as well as human reactions to them. Therefore my research necessarily spans these various forms of communication. By examining the industrial developments which took place at Niagara throughout the nineteenth century in tandem with intellectual trends regarding the sublime and various representations of the Falls, this study seeks to provide a deeper understanding of the influence of technology on the human perception of American nature.

Over the years, environmental historians have generated invaluable studies regarding the meaning of nature in U.S. culture, but they are often aimed at providing a new framework for understanding the natural landscape for a modern, environmentally–conscious audience. Both Nash's *Wilderness and the American Mind* and William Cronon's "The Trouble with Wilderness; or, Getting Back to the Wrong Nature" (1996), despite belonging to two different moments of American ecological writing, come to similar conclusions regarding the importance of nature in American culture. While Nash's work is more expansive and historiographical in approach,

providing an overview of American perceptions of nature from the period of colonization up to the moment of the book's creation, and Cronon's essay is framed as a critique of considerations of nature generated by the nation's culture, both argue for the abolition of nature as a concept in binary opposition to civilization. Each scholar advocates viewing nature and humanity as interrelated for the sake of advancing modern conservation efforts rather than focusing on the significance of a particular moment in history.[14] Similarly, works of technological history often neglect the influence of new technologies on perceptions of the natural environment. Ernest Freeberg's *The Age of Edison: Electric Light and the Invention of Modern America* (2013), for example, provides a sweeping overview of the profound social and cultural impact of electric light's emergence in the nineteenth century, but does little to cover its influence over the ways in which Americans understood their natural environment.[15] David E. Nye is more successful in addressing this area in both *Electrifying America: Social Meanings of a New Technology, 1880-1940* (1990) and *American Technological Sublime* (1994), but leaves room for further exploration of electric light's influence over human perception of nature. Nye discusses the ability of electric light to transform environments in *Electrifying America*, but he is predominantly concerned with its effect on human-made settings such as cities and towns. He does, however, address the illumination of Niagara, dedicating six pages to the event, noting that it allowed for an editing of the landscape and provided a superficial cure for the scenery's industrial

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[14] Roderick Frazier Nash, *Wilderness and the American Mind* (New Haven: Yale University Press, 1967), 6-7; William Cronon, "The Trouble with Wilderness; or, Getting Back to the Wrong Nature," in William Cronon, ed., *Uncommon Ground: Rethinking the Human Place in Nature* (New York: Hudson Hills Press, 1996), 69-90.

[15] Ernest Freeberg, *The Age of Edison: Electric Light and the Invention of Modern America* (New York: Penguin Books, 2013).

blight.[16] While similar to both of Nye's works, my project argues that in spite of the emergence of the technological sublime, the spectacle of illumination signified the persistence – even if also the evolution – of enduring notions of natural sublimity in American culture, amid the transformations of industrialization. Nye's books, however, and *American Technological Sublime* in particular, are more concerned with technology's ability to provide a unifying experience for a pluralistic society through the sublime rather than the technological sublime's influence over Americans' perception of their natural environment.

There have been various studies of Niagara Falls, but few give adequate attention to the impact of technology on its association with the natural sublime. For example, in his book *The New Niagara: Tourism, Technology, and the Landscape of Niagara Falls 1776-1917* (1996), William Irwin focuses on the drastic industrial and commercial developments which took place at the Falls over the course of a century and a half, but operates under the assumption that the technological sublime had completely supplanted the natural sublime at Niagara by the end of the nineteenth century.[17] Similarly, John F. Sears, despite committing the opening chapter of his book *Sacred Places: American Tourist Attractions in the Nineteenth Century* (1989) to the centrality of the natural sublime to the establishment of Niagara as a quasi-religious tourist destination, he leaves his readers guessing with regard to what role the natural sublime played in later generations' understanding of the Falls. After detailing the danger that tourist developments posed to Niagara's sublime reputation, he ends the chapter with an oddly ambiguous claim, simply stating it would take the

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[16] David E. Nye, *Electrifying America: Social Meanings of a New Technology, 1880-1940* (Cambridge: The MIT Press, 1990), 57-62.
[17] Willam Irwin, *The New Niagara: Tourism, Technology, and the Landscape of Niagara Falls 1776-1917* (University Park: The Pennsylvania State University Press, 1996), xv.

"establishment of Yosemite and Yellowstone" to "remedy the problems of Niagara" and give the sacred space "a new structural and visual form."[18] As the title of her book implies, Elizabeth McKinsey's *Niagara Falls: Icon of the American Sublime* (1985), is concerned with Niagara Falls as the clearest manifestation of the natural sublime in America—a judgement with which this study concurs. However, McKinsey proposes, as Irwin did in his study that followed, that the natural sublime lost all significance at Niagara by the end of the nineteenth century. In doing so she leaves room to interrogate the introduction of artificial illumination as a reinvigoration of the natural sublime. By employing these works as an intellectual and historical foundation, this study will reaffirm existing scholarly assertions regarding the cultural significance of sublimity, while offering a new perspective on the influence of technology on the American perception of nature.

As noted, the concept of the sublime had gained wide-spread popularity among European intellectuals during the eighteenth century. Such ideas were employed in the American colonies from the time of their settlement as Europeans attempted to rationalize the environment of the New World, its more astounding aspects in particular. They firmly took hold and gained nationalistic and cultural significance, however, after the colonies gained their independence. Lacking an established history or collective culture on which to base a national identity, the young country turned to its unique natural landscape as a means of distinguishing itself from the nations of Europe.[19] The sublime provided a means of imbuing the American landscape with greater significance. The philosophy of the natural sublime,

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[18] John F. Sears, *Sacred Places: American Tourist Attractions in the Nineteenth Century* (Amherst: University of Massachusetts Press, 1989), 30.
[19] Nash, *Wilderness and the American Mind*, 67.

popularized by Burke and Kant, allowed Americans to forge a new national identity which placed nature—in particular sites such as Niagara—at its center.[20] The embrace of this identity quickly elevated Niagara Falls to the status of a national icon. As a waterfall of a size unparalleled by any on the European continent, Niagara was the foremost example of the American landscape's ability to provide the sublime experience. Its association with the sublime caused the Falls to be valued as an object of nature, significant because of its perceived distance from civilization and otherness in comparison to the human world.

As America turned toward industrialization during the nineteenth century Niagara's sublime reputation came under threat. The image of the Falls as a source of the sublime relied on their perceived distance from the influence of civilization. As human works encroached on the scene, Niagara's power seemed to wane. By the mid-nineteenth century, tourist attractions crowded to the very brink of the cataract, and vast bridges spanned the gorge, drawing the attention of visitors themselves and so competing with the spectacle of the Falls. At the same time, factories, lining the banks of the river, drew power from its current and placed what had once seemed to be boundless energy into harness. Factors such as these created tension between tourist expectations and the physical realities of the scene, as concepts of the sublime were adapted to account for the presence of technology and artifice. Out of this tension rose a conflict between preservationist impulses based on Niagara's sublime reputation and utilitarian ambition predicated on economic gain. To many the two visions of the Falls seemed mutually exclusive. The continued encroachment of artifice into Niagara's scenery meant the total destruction of its natural appearance,

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[20] Nye, *American Technological Sublime*, 3; Nash, *Wilderness and the American Mind* 67-69.

while the prohibition of development would squander a seemingly limitless amount of economic potential. While the debate over Niagara's ultimate value resulted in concrete solutions, such as the creation of the State Reservation at Niagara in 1885, little was done to reconcile the differences between the two perspectives. The illumination of Niagara, however, seemed to offer a balance. By viewing the Falls at night under the influence of electric lights, visitors could witness a novel vision of Niagara that evoked feelings of the natural sublime in what appeared to be the absence of human influence. At the same time, the electricity which powered the lights and made the spectacle possible was generated by the current of the Falls themselves. The illumination of Niagara achieved a brief equilibrium between preservationist and utilitarian values of the Falls, generating the appearance of unaffected nature while celebrating the achievements of modern industry.

The first chapter of this study focuses on the establishment of Niagara Falls' reputation as an embodiment of the natural sublime. Starting with the earliest European first-hand account of the Falls, I examine how descriptions of Niagara became inseparable from the rhetoric of the sublime and served to instruct readers on how they should react to such natural wonders. By studying written descriptions of Niagara from the seventeenth and eighteenth centuries, one gains a sense of both what rhetorical devices were used in conveying the sublime experience and how the repeated use of such rhetoric influenced the American public's perception of the famous cataract. I then move on to explore the use of the sublime in the creation of a unique national identity following the formation of the United States. I analyze both print and visual media to reveal how the sublime was used to imbue America's natural environment with greater nationalistic significance. Such sources are central to

understanding the sublime's adaptation toward cultural ends. By mediating the sublime, the artist or writer was able to attach specific, nationalistic interpretations to an otherwise personal and abstract experience. As the nation's premier example of grand nature, Niagara Falls inherited all of the importance given to the natural environment in general during this period. As a result, Niagara became a synecdoche for all of American nature, and, as such, forced an association between wilderness, an image of outsized grandeur, and a profound distance from civilization and the influence of humankind.

The second chapter explores the conflict that arose when the vision of Niagara as a natural wonder was threatened by the encroachment of industrial works and tourist attractions. I begin by detailing the industrial development that took place in the area starting in the early nineteenth century. Such development includes the proliferation of private landownership around the Falls as well as the construction of mills, factories, and bridges which physically altered the landscape. I then move on to examine the growth of the tourist industry and the subsequent commodification of Niagara that took place. By analyzing travel writings, newspaper articles, as well as photographs and artistic renderings from this period, it is possible to get a sense of the extent to which these developments altered the appearance of Niagara, making the influence of civilization more apparent while making the Falls' natural character less affective. I then move on to the first preservation movement, which began in the 1870s and resulted in the creation of the State Reservation at Niagara in 1885. The preservation movement is the ideal subject for this study, as it embodies both sides of the ideological debate over Niagara's value. Those who pushed for the Reservation did so for the express purpose of recreating the natural environment around the

Falls, while those who opposed it sought to continue their use toward commercial ends. By examining the speeches and writings of politicians, intellectuals, activists, and industrialists, one can gain a better understanding of how the various judgements of Niagara's value were made. The chapter ends with the examination of the rise of hydroelectric power at the Falls and the second preservation movement that was started to counteract its effects. This chapter is an attempt to see which valuation of Niagara, if either, won out.

The third and final chapter focuses on the full-scale illuminations of Niagara Falls, first in 1907 and again in 1925 as a permanent feature. I begin by looking at the development of electric illumination as a profession and an art form, specifically in the context of World's Fairs and Expositions. It was during these events that massive lighting spectacles were created. By analyzing professional plans, photographic records, and descriptions made by visitors, one can see how particular techniques were employed which allowed for the artistic manipulation of the Fairs' environment and the creation of novel effects. It is also evident that such illuminations generated sensations of the sublime within onlookers. I then move on to discuss how these techniques were applied to the illumination of Niagara Falls in 1907. It was a conscious effort on the part of the director of the illumination, Walter D'Arcy Ryan, not to outdo the grandeur of the Falls with his lights, but to accentuate them while maintaining their natural appearance. I then examine the dedication of the illumination as a permanent feature of the Falls in 1925, and the improved equipment and techniques that were used in that instance. By examining descriptions of the events, one can see that the artificial illumination of Niagara brought about both a re-

emergence of sublime rhetoric as well as an idealized natural appearance that was otherwise lacking from the scenery.

A study of the artificial illumination of Niagara offers significant insight into how Americans of the nineteenth and early-twentieth centuries perceived their relationship with the natural environment. As a world-famous natural wonder in close proximity to the country's industrial centers, Niagara serves as the ideal case study for the interrogation of America's attempts to reconcile ideas of nature and progress in general. It presents the intersection of the nation's aesthetic ideals, economic ambitions, environmental concerns, and cultural identity. Through close examination of the developments at Niagara, it is possible to understand how Americans tried to achieve a balance between the maintenance of their natural environment and the growth of economic and industrial production. This study is not limited to a more detailed understanding of the changes that occurred within Niagara's landscape. By tracking the evocations and adaptations of the sublime in reference to the varying conditions of the Falls, it is possible to see how this unique complex of ideas and sentiments not only generated an appreciation for nature, but produced an idealized vision of a pristine Niagara that was completely divorced from its physical realities. This study thus challenges the recurrent presumption in much of American Studies scholarship that nature and technology have existed in binary opposition, and that the opposition has driven cultural change. Instead, shifts in the perception and presentation of Niagara Falls reveal the intermingling of aesthetics of both nature and technology in responses to one of the most famous features of the American landscape.

# Chapter One
# "Niagara! Monarch of earth's wonders": The Natural Sublime and Niagara Falls

In his travel guide published in 1840, Oliver G. Steele described Niagara Falls as a natural spectacle defined by "grandeur and sublimity," one which produced "an effect on the observer, often quite overpowering."[1] This was the sublime conceptualized by European intellectuals such as Kant and Burke, in which the observer confronted a terrifying and overpowering force only to gain inspiration through their ability to rationalize the experience. In Steele's case, the feelings of the sublime were manifest in the inability of his senses to firmly comprehend the scene of awe-inspiring nature upon which he looked, giving "place to the imagination" and causing his mind to be "instinctively elevated and filled with majestic dread."[2] Such an account is typical of mid-nineteenth-century perceptions of Niagara Falls. Those who travelled to Niagara during this period arrived with expectations of sublimity fueled by descriptions such as Steele's. They anticipated that they would gaze upon the Falls with reverence, taking inspiration from the emotional and spiritual elevation that resulted from the scenic beauty and natural power on display. It was a period in the United States when spectacular embodiments of raw nature, such as Niagara, were admired by the public and celebrated for their associations with the sublime.

It took time, however, for Americans to reach this point of respect for their natural environment. From the period of colonization until the early nineteenth century there existed within American culture a deep-rooted distaste for wilderness,

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[1] Oliver G. Steele, *Steele's Book of Niagara Falls. Seventh Edition, Carefully Revised and Improved* (Buffalo: Oliver G. Steele, 1840), 32.
[2] Ibid, 33.

what Roderick Frazier Nash has called a "tradition of repugnance."[3] Wild nature was understood as a force opposed to civilization during this period, something that needed to be overcome if any sort of dignified society was to exist in the New World. This tradition of repugnance came about in the face of two major aspects of life on the newly settled American continent: wilderness presented a threat to colonists on both the physical and moral levels. First and foremost, untamed nature "constituted a formidable threat to [the colonist's] very survival…Safety and comfort, even necessities like food and shelter, depended on overcoming the wild environment."[4] Confronted with the day-to-day danger posed by wilderness, the average colonist was unable to view nature with the appreciation that accompanies a relative distance from it. One needs only to examine any of the first-hand accounts of life in the early colonies to get a sense of the constant hardship the settlers endured. John Smith's *Generall Historie of Virginia* (1624), for example, gives a vivid depiction of the physical trials that he and his fellow colonists experienced:

> As for corne provision and contribution from the Salvages [savages], we had nothing but mortall wounds, with clubs and arrows; as for Hogs, Hens, Goats, Sheepe, Horse, or what lived, our commanders, officers and Salvages daily consumed them, some small proportions sometimes we tasted, till all was devoured; then swords, armes, pieces, or any thing, wee traded with the Salvages, whose cruell fingers were so oft imbrewed in our blouds…and those [who remained] were preserved for the most part, by roots, herbes, acorns, walnuts, berries, now and then a little fish…Nay, so great was our famine, that a Salvage we slew and buried, the poorer sort tooke him up againe and eat him…And one amongst the rest did kill his wife, powdered her, and had eaten part of her before it was knowne;[5]

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[3] Roderick Frazier Nash, *Wilderness and the American Mind* (New Haven: Yale University Press, 1967), 24.
[4] Ibid.
[5] John Smith, *The Generall Historie of Virginia by Captain John Smith, 1624; the Fourth Booke* (Wisconsin Historical Society Digital Library and Archives, 2003), 295.

For the Virginia colony, life was defined by a constant struggle against the wilderness which manifested itself in mortal dangers such as famine, violent natives, and elemental conditions. The situation was so dire that all the comforts of social order were lost; violence prevailed, material wealth became worthless, and fundamental morals were abandoned. While this case is extreme, it is indicative of the American colonists' general perception of the natural environment in which they found themselves. It was a hostile world which threatened their existence at every turn.[6]

Secondly, wilderness was viewed symbolically by American settlers, especially by the Puritans. For those who understood that their mission in the New World was to establish an ordered society based on scripture and blessed by God, the seemingly chaotic nature which surrounded them represented the antithesis of their goal. As William Cronon explains, on an etymological level, many of wilderness' "strongest associations then were biblical, for it is used over and over again in the King James Version to refer to places on the margins of civilization where it is all too easy to lose oneself in moral confusion and despair."[7] If their society was meant to be the embodiment of holiness and moral virtue, then the wilderness, its opposite, was the harbinger of evil and corruption. Not only did it threaten to break the individual physically, but had the potential to morally bankrupt settlers to the point that all semblance of civilization was corroded, as could be seen in the record of Smith and the Jamestown colony. This moral reading of nature was consistently perpetuated by Puritan leaders as well, making it a common presupposition in the New World. The

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[6] Kathleen Donegan, *Seasons of Misery: Catastrophe and Colonial Settlement in Early America* (Philadelphia: University of Pennsylvania Press, 2014), 3. Such hostilities faced by settlers from their natural environment are meticulously detailed in Donegan's book, though they are examined as a source of a distinct colonial identity.

[7] William Cronon, "The Trouble with Wilderness; or, Getting Back to the Wrong Nature," in William Cronon, ed., *Uncommon Ground: Rethinking the Human Place in Nature* (New York: Hudson Hills Press, 1996), 70.

notion is clearly present in Cotton Mather's description of his fellow settlers and the spiritual dangers which were present in the wilderness:

> The New-Englanders, are a People of God settled in those, which were once the Devils Territories; and it may easily be supposed that the Devil was Exceedingly disturbed, when he perceived such a people here accomplishing the Promise of old made unto our Blessed Jesus That He should have the Utmost parts of the Earth for His Profession…The Devil thus Irritated, immediately try'd all sorts of Methods to overturn this poor Plantation: and so much of the Church as was Fled into this Wilderness, immediately found, The Serpent cast out of his Mouth, a Flood for the carrying of it away.[8]

Mather clearly juxtaposed civilization and wilderness in this passage. The development of their spiritual society was understood to be the work of God, thus making the wilderness the domain of the Devil. Every hardship generated by the natural environment was seen to be the active efforts of evil to sabotage their divine mission. It was imperative then, in this sense, that wilderness was conquered in order to fulfill humanity's covenant with God.

It was not until the late eighteenth century that these hardened perceptions began to give way and the tradition of repugnance was reversed. As the colonies achieved their independence and the newly-established nation continued its march westward across the continent, subduing the wilderness as it went, a distance between civilization and unprocessed nature, the lack of which had made environmental appreciation impossible in early America, was generated. The nation's intellectuals, residing in the growing eastern cities, were able to consider the natural environment apart from the pioneer bias and develop a new tradition regarding nature, one in which it was valued rather than scorned. As Nash explains, "in the sixteenth and seventeenth centuries Europeans laid the intellectual foundations for a favorable

[8] Cotton Mather and Reiner Smolinski, ed., "The Wonders of the Invisible World. Observations as Well Historical as Theological, upon the Nature, the number, and the Operations of the Devils (1693)" (1693), *Electronic Texts in American Studies*, xi-xii.

attitude" toward nature, developing theories of the sublime which considered wilderness, its grand manifestations in particular, not as the chaotic realm of evil, but as the ordered work of the deity and a source of intellectual and moral enlightenment.[9] American thinkers of the eighteenth century seized this philosophy and put it to use as a means of developing their own emergent national identity. With more untarnished nature than Europe, the theories of the sublime provided the young United States with cultural credibility—it could strengthen its character through its close proximity to the wilderness.

This chapter explores the evolving perception of Niagara Falls in America from the seventeenth century to the mid-nineteenth century in relation to the long emergence and codification of theories of the sublime. I begin with the "didactic sublime," examining written descriptions of the sublime experience which serve to instruct the reader in the proper reaction to the awe-inspiring Niagara. I primarily focus on one of the earliest first-hand European descriptions of the Falls—Father Louis Hennepin's account published in his book, *A New Discovery of a Vast Country in America*, in 1697. This description not only brought Niagara to the attention of a wide audience in Europe, but laid the groundwork for its association with sublimity that would later become inseparable from its popular image. I then move on to examine the American embrace of sublime aesthetics in the process of solidifying a national identity at the end of the eighteenth century, which I call the "nationalist sublime." It was during this period in American history that a shift within the national consciousness was ushered in, as the country's intellectuals softened the popular disdain toward nature through the application of Romantic ideals to the formation of

[9] Nash, *Wilderness and the American Mind*, 44.

a distinct national character. Finally, in what is classified as the "painted sublime" and the "poetic sublime," I examine how Niagara Falls was characterized as a source of sublimity by artists and writers who continued the effort to form the national identity imagined by earlier intellectuals. These artists used America's unique natural landscapes, Niagara in particular, as the embodiment of cultural values, encouraging the positive perception of it while making it an integral aspect of the national identity. I argue that the development of an American appreciation for nature elevated Niagara Falls to the status of a natural icon characterized by its ability to deeply affect those who looked upon it. As the most famous natural landmark of the New World, Niagara inherited all of the values which American thinkers had invested into their natural environment as a whole. This brought the American public to celebrate Niagara Falls as an object of nature, one which drew its value from its ability to serve as a source of the sublime experience as well as its perceived distance from human influence.

**The Didactic Sublime: Instructing the Personal Response to Niagara**

While the vast majority of Americans would find no value in wild, untamed nature until the early nineteenth century, Niagara Falls stood out as a distinct New World landmark from the moment of its recognition by Europeans in the early seventeenth century. Word of Niagara reached Europe as early as 1604 with the publication of Samuel De Champlain's account of his exploration of Lake Ontario in which he relayed rumors of a "fall about a league wide" not far from the site of his

expedition.[10] A detailed impression of the Falls, however, would not emerge until 1697 when Father Louis Hennepin, a French Recollect missionary, published his book, *A New Discovery of a Vast Country in America*. He had made mention of Niagara in his previous book, *A Description of Louisiana* (1683), but the account remains much more limited in scope and detail than that which appears in *A New Discovery*.[11] Hennepin's account is significant for several reasons. Not only was it the first recorded observation of Niagara from a European who had seen the Falls in person, but it was widely circulated and quoted throughout the Old World, helping to establish Niagara's reputation as a deeply affective natural wonder.[12]

Hennepin's description provided two major contributions to the formation of Niagara's popular identity. Firstly, he strongly emphasized the singularity of the Falls. He begins his account with a grand statement regarding Niagara's individuality: "Betwixt the Lake Ontario and Erie, there is a vast and prodigious Cadence of Water which falls down after a surprizing [sic] and astonishing manner, insomuch that the Universe does not afford its Parallel."[13] Immediately, Hennepin establishes the Falls as a natural object without comparison. Despite that claim, however, he goes on to hold up the image of Niagara to the famous landscapes of Europe. "'Tis true," he explains, "Italy and Suedeland boast of some such Things; but we may well say they are but sorry Patterns, when compar'd to this of which we now speak."[14] In this description Hennepin establishes Niagara as the pinnacle of waterfalls and invites his

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[10] Excerpt from Samuel De Champlain's *Voyages* (1604), in Charles Mason Dow, *Anthology and Bibliography of Niagara Falls* (The State of New York, 1921), 18.
[11] While Hennepin's *Description* is a valuable resource in itself, its lack of detail regarding Niagara in comparison to *A New Discovery* renders it less relevant to this study. The account found in *A New Discovery* stands as an elaboration upon that published in *Description*. For this reason, *A New Discovery* will serve as the focus of this section.
[12] Elizabeth McKinsey, *Niagara Falls: Icon of the American Sublime* (Cambridge University Press, 1985), 8.
[13] Father Louis Hennepin, *A Discovery of a Vast Country in America* (A.C. McClurg & Co., 1903), 54.
[14] Ibid.

readers to imagine it relative to the examples with which they may already be familiar. Not only does he reinforce his claim that Niagara cannot be equaled, but establishes a contrast between the natural wonders of the Old and New Worlds. While the European continent contained impressive waterfalls, Hennepin contended, they were poor substitutes for the power and magnitude of Niagara. Such claims not only relegated the natural wonders of the Old and New Worlds to separate planes of consideration, but placed a distinct value on each, suggesting a superiority of the New over the Old. This is a concept which would become crucial to American thinkers following the establishment of the United States who sought to raise their country out of the shadows of European nations.

More significant, perhaps, than the contribution that Hennepin's *Discovery* made toward establishing Niagara's reputation as a one-of-a-kind natural wonder was the language and emotions that it associated with the Falls. Despite his intention to provide his European audience with a factual description, Hennepin nonetheless colored his account with flagrant exaggerations and sensational language, providing more insight into Niagara's affective power than its physical realities. The chapters regarding the Falls are characterized by scientific inaccuracies and overstatements. On multiple occasions he asserts that Niagara stands "above Six hundred foot" in height, while, in reality, it is no more than 170 feet tall.[15] Additionally, he misleads his readers with regard to the level of noise emitted by the Falls and the volume of water that plunges over the cataract. He claims that the roar of the water, "more terrible than that of Thunder," can "be heard above fifteen Leagues off," while expressing surprise that the Great Lakes "should empty themselves one into another, and then all centre

[15] Ibid.

and discharge themselves at this Great Fall, and yet not drown a good part of *America*."[16] These embellishments, while providing readers with a misrepresentation of Niagara's physical proportions, serve to communicate a specific conception of the Falls based on Hennepin's own emotional experience. As Elizabeth McKinsey points out, Hennepin sacrificed scientific accuracy for sensational description because "he wanted to convey the Idea of the cataract" as well as "the Admiration he felt" toward it. Particular facts, however, "would belittle [Niagara] by defining it" rather than "communicate the wonder" which Hennepin experienced and wanted his readers to imagine.[17] By exaggerating the physical aspects of the Falls, Hennepin communicates what he believes the viewer *should feel* when looking upon them—what those physical attributes *seem to be* when viewed in person in light of Niagara's grandeur. Hennepin's account, in this sense, becomes a didactic account of the sublime experience, intended to instruct his readers on the proper reaction one should have to such an impressive natural wonder. While Hennepin's travels to Niagara pre-date the classification of the sublime as an aesthetic category, he was writing at a moment when the idea was emerging. Writers such as John Dennis and Joseph Addison, while lacking the specific terminology of the sublime, had described experiencing "exalted emotions" while crossing the Alps in the late seventeenth century, signifying a more general shift in the European perception of the natural landscape and establishing what many scholars consider to be the foundation of the theory of the natural sublime.[18]

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[16] Ibid, 55 & 317.
[17] McKinsey, *Niagara Falls: Icon of the American Sublime*, 10.
[18] Linda L. Revie, *The Niagara Companion: Explorers, Artists, and Writers at the Falls, from Discovery through the Twentieth Century* (Ontario: Wilfrid Laurier University Press, 2003), 23. Revie refers to these writers as existing in the period of the "pre-sublime," the historical moment prior to the formal

Hennepin further conveys this idea through the use of particular language, as well as the attachment of certain emotional responses to his Niagara experience. He exclusively refers to the Falls through language that emphasizes its power and dynamism:

> Into this Gulph it is, that these several Cascades empty themselves, with a violence equal to the height from whence they fall, and the quantity of Waters, which they discharge. Hence arise those deafning Sounds, that dreadful roaring and bellowing of the Waters which drown the loudest Thunder, as also perpetual Mists that hang over the Gulph, and rise above the tallest Pines…[19]

Hennepin's impression of Niagara's natural force comes through clearly in the use of adjectives such as "violent," "deafening," and "dreadful." He expands this vocabulary over the course of the account, adding descriptors such as "horrible," "incredible," "impetuous," "frightful," and "terrible." The constant association of Niagara with words of strength, wonder, and terror gives the reader no choice but the visualize the Falls as such—a grand manifestation of overwhelming natural force. He goes further in suggesting the type of emotional response the reader should have toward seeing Niagara, emphasizing a sense of fear and astonishment. He insists that the sight of the Falls is so impressive—the drop so high, the volume of water so great, the power so immense—that it "would make one tremble to look steadily upon the Water, rolling along with Rapidity not to be imagin'd."[20] Likewise, this very intensity, "which one cannot look upon without Horror," makes Niagara "the most Beautiful, and at the same time most Frightful Cascade in the World."[21]

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conceptualization of sublime theory when variations in the natural landscape such as mountains, formerly viewed as repulsive irregularities resulting from man's sin, began to be viewed in a positive light as the effects of the earth's natural processes. She argues that Hennepin's description of Niagara was influenced by the pre-sublime.

[19] Hennepin, *A Discovery of a Vast Country in America*, 322-323.

[20] Ibid, 55.

[21] Ibid, 318 & 321-322.

Not only did such a sensational description give European readers a strong presupposed image of Niagara as a completely unique natural wonder, but it set a precedent for associating the sublime with the Falls. While Hennepin did not refer to the sublime in particular, his reaction to seeing Niagara carries all of the necessary characteristics. His reliance on language that emphasized Niagara's superior strength, which humbles the mortal viewer, and his articulation of an immediate emotional response of terror and astonishment which eventually gives way to admiration are cornerstones of sublime rhetoric. By using such language, the author gives greater significance to the emotional experience—he/she is not simply amazed, but entirely overtaken by the feelings generated by the natural object. The effects of this rhetorical style are further heightened by the writer's use of a common trope of the sublime: the failure of language to properly describe the experience. As Hennepin put it:

> I wish'd an hundred times that somebody had been with us, who could have describ'd the Wonders of this prodigious frightful Fall, so as to give the Reader a just and natural Idea of it, such as might satisfy him, and create in him an Admiration of this Prodigy of Nature as great as it deserves.[22]

Statements such as this serve to communicate the sense of wonder brought on by the first-hand experience of the cataract. The viewer is so overwhelmed by the emotion generated by the sight of the Falls, their senses so vigorously engaged, that they cannot adequately transfer the feelings into writing. However, it is "through this very defeat" of articulation, as Philip Shaw has explained, that "the mind gets a feeling for that which lies beyond thought and language."[23] By admitting failure, the author gives a stronger sense of the sublime experience by circumventing the affective limitations

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[22] Ibid, 318-319.
[23] Philip Shaw, *The Sublime* (Routledge Taylor & Francis Group, 2006), 3.

of specific description and allowing the readers to imagine their personal response to the embodiment of natural grandeur. By declaring his rhetorical defeat, Hennepin invites his readers to form a mental image of the Falls which is shaped by, but not confined to, the description he put forward. While Hennepin cannot be solely credited with bringing the rhetoric of the sublime to America, he certainly laid the groundwork for its association with Niagara Falls. The Europeans who would later travel to the New World, most likely familiar with Hennepin's account in some way (his works were extremely popular and were translated into nearly every European language), would carry with them a mental image of Niagara shaped by the expectations of amazement instilled by the text.[24]

The lasting influence of Hennepin's account can be seen in descriptions of Niagara by those who visited the Falls in the early eighteenth century. Such records continue the use of Hennepin's rhetoric, drawing Niagara into closer association with the sublime and further building its reputation as an affective natural wonder. These range from passing mentions within broader travel writings to more detailed, focused descriptions, but all rely on similar language to characterize the Falls. In *The Four Kings of Canada*, published in London in 1710, the unnamed author refers to Niagara as a "great Deluge of Water tumbling furiously over the greatest and most dreadful Heap in the World."[25] Again, language emphasizing the Falls' power and ability to induce feelings of terror are put in the foreground of the description. This rhetoric is even more evident in Frank Hayward Severance's *Adventures of M. Bonnefons* (1753), in which the author emphasizes intensity of the sensory experience found at Niagara:

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[24] Father Louis Hennepin, *A Description of Louisiana* (John G. Shea, 1880), 9.
[25] *The Four Kings of Canada* (John Baker at the Black Boy in Pater-Noster-Row, 1710), 41.

> I was about an hour in getting down [to the base of the Falls], not without commending myself to Providence, for I perceived the rashness of my undertaking, but I had to finish as much from pride as from curiosity. Finally, I came to the bottom, at about twenty toises from the foot of the fall, when even at that distance, did not prevent me from being drenched by the rain-like spray which the fall made…It was then that I was very much more drenched and felt the trembling of the rocks caused by the fall of the water, which made me hesitate I ought to go on or retreat…It was not until two hours afterwards that the deafness left me and I was able to give an account of what I had seen.[26]

Not only does Severance stress the fear generated by the danger of the Falls, which caused him to consider a retreat and place himself at the mercy of God, but expresses an assault on all of his senses brought on by the spray, the force of the falling water which literally shakes the earth, and the deafening noise. This is a dramatic description of the Falls which clearly takes its cue from Hennepin's account in its focus on the grandeur of Niagara and the emotional response it provokes. While informed by Hennepin's description themselves, these authors further instructed a new set of readers in what they understood to be the proper response to Niagara's affective powers. The perpetuation of Hennepin's rhetoric popularized the image of Niagara Falls as a greatly impressive natural wonder characterized by its sublimity. As will be seen, this reputation became more deeply embedded in American culture following independence.

## The Nationalist Sublime: Enlisting the Sublime in the Formation of National Identity

Once the United States achieved its independence from Britain in the late eighteenth century, there was a push amongst the nation's intellectuals to form a cultural identity of their own. As Roderick Frazier Nash explains, the "creation of a

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[26] Excerpt from Frank Hayward Severance's *Adventures of M. Bonnefons* (1753), found in Charles Mason Dow, *Anthology and Bibliography of Niagara Falls* (The State of New York, 1921), 40-41.

distinctive culture was thought to be the mark of true nationhood. Americans sought something uniquely 'American,' yet valuable enough to transform the embarrassed provincials into proud and confident citizens."[27] In light of the absence of historic ruins and an established artistic or literary tradition, such as those of which Europe boasted, America turned to its unique landscape as a starting point on the path toward the national identity it hoped to create. The reasons for this were twofold. First of all, the New World's environment had become the subject of European attack in the years prior to independence. This caused early American intellectuals to rally around their natural landscape and invest it with national significance in the process of rebuffing European slights. Second, the theory of the sublime, which took hold among American intellectuals during the late-eighteenth and early-nineteenth century, was softening the national disdain for wilderness and framing it as an asset rather than an obstacle for civilization. This ushered in a reassessment of nature's value—shifting from a resource to be processed for human use to a source of emotional and intellectual inspiration—and allowed Americans to recognize their environment, its spectacular manifestations especially, as an asset which distinguished their country from those of Europe. To be certain, this change was not representative of a shift in sentiment within the general population. The embrace of sublime theory was a trend within America's intellectual elite—those who had the necessary time and education to engage in philosophical exercise. While it would take until the 1820s for the resulting positive perceptions of the natural environment to receive popular

[27] Nash, *Wilderness and the American Mind*, 67.

adoption, the work of the intellectual class laid the groundwork for a larger shift within the American consciousness regarding nature.[28]

Starting in the mid-eighteenth century, European intellectuals, particularly those in France, criticized the American colonies on the basis that their natural conditions and resources were inferior to those of the Old World. The most well-known of these critiques were published in the Comte de Buffon's *Historie Naturelle* (1749) and Denis Diderot's *Encyclopedie* (1751), which were disseminated throughout Europe and garnered wide readership.[29] The crux of their argument rested on the notion that the American continent itself was younger than Europe, and therefore was geologically underdeveloped. As Ralph N. Miller explains, this notion made European intellectuals certain that "the New World still showed the effect of tremendous struggles of elemental forces in nature," while "the Old World had relaxed in the adjustment of these forces." This led to tenuous conclusions regarding America's natural processes. Because "America was more recently formed," they believed, "its mountains were higher than those of Europe and the rest of the world; the precipitation they caused was greater; the vegetation was therefore more prolific; the conditions of life for animals and human beings were unfavorable and inhibited their development."[30] According to this theory, America would never be able to progress to a state of civilization comparable to that of Europe. In short, America "could only be regarded as in too early a stage of growth for the mature development of 'modern' animals, men, and institutions."[31]

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[28] David E. Nye, *American Technological Sublime* (The MIT Press, 1994), 17-18.
[29] For more information on this process, see Ralph N. Miller, "American Nationalism as a Theory of Nature," *The William and Mary Quarterly* 12, no. 1 (1955): 74-95.
[30] Miller, "American Nationalism as a Theory of Nature," 76.
[31] Ibid.

In the process of making a case for their country's place among the nations of Europe, American intellectuals immediately refuted these popular assumptions upon achieving their independence. The most famous of these rebuttals is found in Thomas Jefferson's *Notes on the State of Virginia* (1785). In it, Jefferson cites the discovery of mammoth remains as proof that America had the conditions necessary to produce wildlife on par with that of Europe, and frames his retort as a direct response to Buffon:

> But to whatever animal we ascribe these remains, it is certain such a one has existed in America, and that is has been the largest of all terrestrial beings. It should have sufficed to have rescued the earth it inhabited, and the atmosphere is breathed, from the imputation of impotence in the conception and nourishment of animal life on a large scale: to have stifled, in its birth, the opinion of a writer [Buffon], the most learned too of all others in the science of animal history, that in the new world…nature is less active, less energetic on one side of the globe than she is on the other.[32]

Here Jefferson dismisses claims of America's natural inferiority as preposterous. To him, the discovery of such a large prehistoric animal should dispel any idea of America's natural processes operating at a lower level than those of Europe, and with it the notion that the creation of a proper civilization is impossible. By putting such an argument forward, Jefferson placed nationalistic significance on American nature, relying on it as evidence of his nation's cultural credibility. In doing so, he fused America's national identity with the natural landscape, deeming it a defining characteristic of the fledgling country.

In formulating his defense, Jefferson did not limit himself to a scientific argument, but enlisted the sublime to give it emotional, philosophical, and religious weight. To the Enlightenment mind, sublimity meant more than a strong emotional

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[32] Thomas Jefferson, *Notes on the State of Virginia* (New York: Library of America, Literary Classics of the United States, 1984), 169.

reaction to an impressive aesthetic experience; it suggested a communion with God, the result of which was intellectual uplift and moral insight for the observer. If a case could be made that the American landscape was more conducive to such experiences, more credence would be given to the claim that the society which was built upon it was strong enough to exist on a global stage. A nation close to God would be seen as a nation defined by morality, justice, and intelligence. As Nash explains, if "wilderness was the medium through which God spoke most clearly, then America had a distinct advantage over Europe, where centuries of civilization had deposited a layer of artificiality over His works."[33] Citizens of the United States, with greater exposure to God's unaltered work, would be more in tune with moral and spiritual truths. American intellectuals seized this advantage and used it to strengthen their defense of the nation's culture. In embracing this concept, Jefferson makes specific mention of the geological formation known as the Natural Bridge and relies on sublime rhetoric much as Hennepin did in his description of Niagara in order to emphasize the significance of the natural wonder. He explains that upon climbing to the top of the Bridge,

> you involuntarily fall on your hands and feet, creep to the parapet and peep over it. Looking down from this height about a minute, gave me a violent head ach [sic]. If the view from the from the top be painful and intolerable, that from below is delightful in an equal extreme. It is impossible for the emotions arising from the sublime, to be felt beyond what they are here: so beautiful an arch, so elevated, so light, and springing as it were up to heaven, the rapture of the spectator is really indescribable![34]

Jefferson's account of his experience includes all of the characteristics of the sublime which have been examined in the previous section of this chapter. He describes a scene mixed with terror and beauty, forcing the spectator to consider his own

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[33] Nash, *Wilderness and the American Mind*, 69.
[34] Jefferson, *Notes on the State of Virginia*, 148.

insignificance as well as the presence of God. Additionally, he utilizes the same rhetorical trope employed by Hennepin as he resigns to labeling the experience "indescribable." This application of sublime connotations adds further distinction to the landscape which Jefferson had designated as an integral characteristic of the nation's identity. Not only is American nature physically and socially beneficial, according to Jefferson, but it is intellectually and spiritually elevating as well, more richly defining the national character. The rhetoric of the sublime, in this sense, becomes the most meaningful articulation of this national identity.

This argument was not limited to a written discourse. As American intellectuals picked up the pen to do their part in creating a national identity, so American artists picked up the brush to do the same. Much as Jefferson had, early American artists turned to the natural environment as the unifying characteristic that could bind their nation together. In John James Barralet's engraving, *Science Unveiling the Beauties of Nature to the Genius of America* (Figure 1 in Image Appendix), created in 1814, one can see the visual representation of the case put forth by Jefferson. To the left is America, seated, made recognizable by her liberty cap, spear and shield, and surrounded by a bounty of plants and animals unique to the New World. The suggestion of an opulence of American natural resources in this scene is clearly evident. And again, the sublime is incorporated to lend greater significance to the theme. Standing before America is "a four-breasted beauty representing the abundance of Nature," who is "unveiled by Science, whose wings indicate her sublime, deific powers."[35] The incorporation of science into this piece comes as no surprise, as it was integral to the post-Enlightenment conception of the sublime with

[35] McKinsey, *Niagara Falls: Icon of the American Sublime*, 99.

which this study has been concerned. The sublime experience was understood to be a confrontation with that which lies beyond the limits of human sensory understanding, namely the Deity or God, spurred on by evidence of the divine found in the natural world. Such an experience "could be further validated by the disclosures of science, which revealed God's purposes and aided in the reading of His natural text."[36] Science, in short, allows the human observer to render divine meaning from the natural world through the application of reason. By including science is this depiction, Barralet suggests a union between the American people, God, and Nature in which the nation benefits from its natural resources not just in a utilitarian sense, but in an intellectual, moral, and spiritual sense as well.

Additionally, and most importantly with regard to this study, Barralet chose Niagara Falls as the backdrop for the scene. As McKinsey suggests, he did not simply include Niagara as a "recognizably New World landmark" or "a sublime object to lend grandeur to his general theme," but as "an important natural monument in and of itself."[37] In this sense, the Falls can be understood as the premier embodiment of American nature, the summary visualization of its various parts. Its broad expanse encompasses the foregrounded scene, serving as a veritable cornucopia to contain the nation's natural bounty. By incorporating the Falls in such a manner, Barralet not only brings Niagara directly into the ongoing conversation of America's identity, but elevates it to an iconic status. If the nation's character was intimately tied to its natural environment, as the works of Barralet and Jefferson would lead one to believe, then Niagara, as the exemplar of American nature, becomes symbolic of this union.

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[36] Barbara Novak, *Nature and Culture: American Landscape and Painting 1825-1875* (Thames and Hudson, 1980), 47.
[37] McKinsey, *Niagara Falls: Icon of the American Sublime*, 99.

**The Painted Sublime: Visualizing Niagara's Sublimity through Landscape Art**

By the early nineteenth century, the association of national identity with the natural landscape became increasingly entrenched in the American consciousness. This was due, in no little part, to the work of American artists and writers who actively worked to form the rich culture that Jefferson and others had argued was possible. While it was one thing to claim that the new republic had the potential to produce great art and institutions, artists and thinkers who were able to create distinctly American works were required to make such a culture a reality. Building on the foundation which earlier intellectuals had set in place, American artists turned to the natural landscape as their subject, confident that "wilderness would inspire a great culture."[38] Their work elevated the nation's perception of nature as a whole and, more specifically, further established Niagara Falls as a natural icon characterized by beauty, grandeur, power, and the sublime.

Perhaps no group of artists did more to construct a nature-centric culture in America than the Hudson River School—a loose affiliation of landscape painters established in the 1820s. These artists understood their role as active in and crucial to the process of creating an American society that stood independently of and surpassed those of Europe. Based on their belief that the arts were "key to social reform and cultural rejuvenation," and acted as "a barometer of moral character" while "defining and disseminating core values," the Hudson River School viewed their work as an effort to instill ideals of beauty, spirituality, and virtue in their countrymen.[39] Not only did these painters, like Jefferson and his contemporaries, see

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[38] Nash, *Wilderness and the American Mind*, 69-70.
[39] James F. Cooper, *Knights of the Brush: The Hudson River School and the Moral Landscape* (New York: Hudson Hills Press, 2000), 23 & 42.

America's topography as its defining characteristic, they subscribed to the Romantic notion that "art must be a vision of God" as communicated "through nature."[40] In this sense, the relationship between art and American nature went beyond a mere representation of the landscape to reveal the spiritual and moral truths understood to be visible in the unaltered works of the Creator. Therefore the Hudson River School saw it as crucial that American artists and intellectuals contemplate the nation's natural scenery in their contributions to the construction of culture. The painting *Kindred Spirits* (Figure 2) by Asher Brown Durand, member of the Hudson River School, quite clearly embodies this philosophy. The piece shows Thomas Cole, widely recognized as the founder of the Hudson River School, and William Cullen Bryant, prominent American poet of the day, standing before a backdrop of the Catskills and taking inspiration from the scene. This painting represents the concept that all American artists, not just the painters of the Hudson River School, needed to engage with the landscape and take inspiration from the sublime in order to "find common cultural ground" to serve as the basis of a thriving society.[41]

In seeking out America's most scenic landscapes to put such a philosophy into practice, the members of the Hudson River School were inevitably drawn to Niagara Falls. As McKinsey explains, Niagara "proved to be a magnet for virtually every American landscape painter" associated with the Hudson River School because of its dramatic views, raw natural power, and sublime connotations.[42] In painting Niagara, these artists not only endowed it with national significance as they would

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[40] John K. Howat, "The Hudson River School," *The Metropolitan Museum of Art Bulletin* 30, no. 6 (1972): 276.
[41] Cooper, *Knights of the Brush*, 23.
[42] McKinsey, *Niagara Falls: Icon of the American Sublime*, 231.

with various American landscapes, but produced idealized images of the Falls that emphasized its sublime effects. An examination of these works reveals a wide variety of depictions, each painted from a different perspective and focusing on a different element of the Falls. Thomas Cole's *Horseshoe Falls from the Canada Side* (Figure 3), for example, emphasizes the overwhelming size of Niagara, the breadth of which takes up the majority of the canvas. Additionally, Cole attempts to evoke feelings of the sublime in the viewer by depicting a sense of human insignificance in the face of the Falls. The figure in the foreground of the painting can be seen precariously peering over the edge into the abyss below, made seemingly bottomless by the mist which obscures it. The figure is made minuscule and seemingly under threat of being consumed by Niagara's vast expanse. Jasper Francis Cropsey's *Niagara Falls from the Foot of Goat Island* (Figure 4) produces a similar effect, but approaches the Falls from a different angle. From the perspective of the water's edge below the cataract, the painting draws the viewer's attention to the power inherent in the Falls. The large rocks, crashing water, and churning current are put in the foreground of the picture, forcing the viewer to imagine the overwhelming force of the cascade. Furthermore, by obscuring the horizon in rising mist, Cropsey "suggests that the river flows back into the picture space indefinitely, inviting the viewer to follow it imaginatively into limitless space."[43] In confronting them with immense natural power and causing them to contemplate infinity, Cropsey effectively simulates the sublime experience for his audience.

Perhaps the most well-known of the Hudson River School's representations of Niagara is Frederic Edwin Church's *Niagara Falls* (Figure 5). Widely accepted as a

[43] Ibid, 240.

masterpiece, Church's painting is of a size and quality unrivaled by his peers.[44] In it Church emphasizes both the immensity and power of the Falls. The majority of the canvas is occupied by the enormous expanse of the Horseshoe Fall. The viewer is immediately confronted with the turbulent water in the foreground, rushing toward the brink of the cataract and carrying debris with it. Then, tracing the rim of the Fall, the viewer's gaze comes to the water plunging over the precipice on the far side into gulf below, again, as in Cole's painting, made to seem endless by the obscuring mists. As explained in *American Paradise: The World of the Hudson River School*, the depiction of Niagara is made all the more affective by Church's use of perspective. With no dry land in sight, "the viewer is propelled giddily out over the rushing upper rapids…to come full face with the spectacle of water in relentless, terrifying action as it hurtles into the gulf at freight-train speed."[45] The result is a dynamic painting which draws the viewer in, forcing one to consider the Falls as an active force rather than an idyllic scene. Like Hennepin, Church's primary goal seems to be to replicate, through the medium of his work, the emotional response which Niagara produces in onlookers. To this end, Church attempted to recreate the feeling of the sublime—awe, wonder, and fear— that had become synonymous with the Falls. Not only was this achieved, but the effect was heightened by the extreme realism of the painting. The image, with its realistic depiction of light and water, appears more as a photograph than a painting. Such an uncanny resemblance to reality strengthened the affective power of

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[44] For more on *Niagara Falls'* wide acclaim and critical reception, see McKinsey's *Niagara Falls: Icon of the American Sublime*, 243-247 and John K. Howat (ed.) *American Paradise: The World of the Hudson River Schoo*l, 42-43 and 243-246.

[45] John K. Howat (ed.), A*merican Paradise: The World of the Hudson River School* (New York: The Metropolitan Museum of Art, 1988), 244.

the piece by providing the audience with a more life-like imagining of the sublime experience.

The representations of Niagara produced by Church and the rest of the Hudson River School both solidified the Falls' reputation as a natural icon characterized by its sublimity and raised its profile as a nationalistic symbol. As the public increasingly accepted the work of the Hudson River School as the visual representation of American identity, the subjects they painted were elevated to the status of national emblems. Niagara was now popularly understood to contain the nationalistic ideals that American intellectuals had been reading in the natural landscape in general. Niagara had already been associated with concepts of the sublime, but the Hudson River School now provided the visualization of those concepts and combined them with the nationalistic and spiritual connotations that they saw in all of nature. And with the wide audience to which the Hudson River School displayed their works, this image of Niagara reached more of the public than ever. This is especially true of Chruch's painting. Upon its initial exhibition in 1857, "thousands of people flocked to see it" while "critics pronounced it the greatest oil painting, as well as the greatest representation and evocation of American's most renowned natural wonder."[46] Such acclaim further popularized the association of Niagara with the aesthetics of the sublime. Even those who were already familiar with the Falls could not avoid considering it in the terms put forward by the Hudson River School.

[46] Ibid, 243.

**The Poetic Sublime: Erecting Niagara as Sublime Monument through Verse**

At the same time that the Hudson River School was constructing an American culture with paint, writers were doing the same with literature. Just as Church, Cropsey, and Cole had made the natural landscape the embodiment of social ideals, so, too, did early American writers such as Alexander Wilson. In his attempt to produce an American epic poem[47], Wilson published *The Foresters* in 1838—a chronicle of his travels from Pennsylvania to Niagara Falls in 1804. While Wilson's poem did not succeed in reaching the status of the Greek classics to which it aspired, it is illustrative of the national and intellectual significance that he and other American writers of the period read in their surrounding natural environment. Like the Hudson River School, Wilson viewed his work as a conscious attempt to foster a unique American art which communicated the ideals most easily understood through the medium of nature. He opens his poem by establishing a cultural divide between the Old and New Worlds, by questioning why America should be resigned to living in Europe's literary shadow:

> To Europe's shores renowned in deathless song,
> Must all the honors of the bard belong?
> And rural Poetry's enchanting strain
> Be only heard beyond th' Atlantic main?[48]

He then continues by lamenting the fact that America's nature—so distinct and superior to that of Europe—has not been appreciated by his fellow writers:

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[47] John P. McWilliams, Jr., *The American Epic: Transforming a Genre, 1770-1860* (Cambridge: Cambridge University Press, 1989), 15. McWilliams categorizes the emergence of American epic-writing as distinct contribution to nation-building effort that followed the Revolution. "By its mere existence," he explains, "an American epic would refute…[the] galling claim that humanity and all its arts must degenerate in the western wilds. An American epic would be incontestable proof of cultural maturity; it would justify the sons' rebellion against the fathers, clarify the superiority of the New World to the Old, and show the autonomy of a formerly colonial literature."

[48] Alexander Wilson, *The Foresters: A Poem, Descriptive of a Pedestrian Journey to the Falls of Niagara, in the Autumn of 1804* (West Chester, Pennsylvania: Joseph Painter, 1838), 6.

> Yet Nature's charms that bloom so lovely here,
> Unhailed arrive, unheeded disappear;
> While bare bleak heathes and brooks of half a mile
> Can rouse the thousand bards of Britian's Isle.
> There scarce a stream creeps down its narrow bed,
> There scarce a hillock lifts its little head,
> Or humble hamlet peeps their glades among
> But lives and murmers in immortal song.
> Our western world, with all its matchless floods,
> Our vast transparent lakes and boundless woods,
> Stamped with the traits of majesty sublime,
> Unhonored weep the silent lapse of time,
> Spread their wild grandeur to the unconscious sky,
> In sweetest seasons pass unheeded by;
> While scarce one Muse returns the songs they gave,
> Or seeks to snatch their glories from the grave.[49]

To Wilson, it is inexcusable that nature has been neglected as a source of inspiration by his contemporaries. If British writers could find the muse within their landscape, then American poets should be doubly inspired by their environment, which is unique not just in its immensity, but its rawness, "stamped with the traits of majesty sublime." In Wilson's mind, America's nature serves as a distinction between the new republic and the older nations of Europe, distinguishing the country through unique topography and the art which results from a communion with it.

Apart from advocating for the nationalistic significance of American nature, Wilson's ode also perpetuated Niagara Falls' reputation of sublimity. After ambling through the forests and mountains of Pennsylvania and New York, the poem culminates in his party's arrival at the Falls and their celebration of its grandeur. With the concept of nature being essential to America's national identity as his central thesis, setting the poem's climax at Niagara implies that the Falls are the most affective manifestation of that nature. To emphasize this assertion, Wilson continues the tradition started by Hennepin in his reliance on the rhetoric of the sublime in his

[49] Ibid.

description of the Falls. He incorporates all of the familiar touchstones of the sublime experience, including amazement and an overwhelming of the senses:

> With uproar hideous, first the Falls appear,
> The stunning tumult thundering on the ear.
> Above, below, where'er the astonished eye
> Turns to behold, new opening wonders lie,
> Till to a steep's high brow unconscious brought,
> Lost to all other care of sense or thought,
> There the broad river like a lake outspread,
> The islands, rapids, falls, in grandeur dread,
> The heaps of boiling foam, th' ascending spray,
> The gulf profound, where dazzling rainbows play,
> This great, o'erwhelming work of awful Time,
> In all its dread magnificence sublime,
> Rose on our view, amid a crashing roar
> That bade us kneel, and Time's great God adore.[50]

The narrator and his companions are stunned not only by the sight of the Falls, but the multiplicity of the sensory experience, seemingly unaware of their actions as they move through the barrage of stimuli. Furthermore, while in this trance, they are made to consider their mortality and feel insignificant by a more powerful force—"awful Time"—to which they submit. As Ernest Tuveson has pointed out, "infinity," or the relentless flow of time embodied here by Niagara's ceaseless waters, was considered "the chief attribute of the Deity" in the post-Enlightenment mind.[51] It is not, then, Niagara itself that bade Wilson and his party kneel, but the considerations of the divine with which the Falls confronted them.

Wilson also expresses the fear brought on by one's close interaction with Niagara as he details his party's descent to the base of the Falls:

> Along the dreadful verge we cautious steered,
> Till the tall ladder's tottering top appeared;
> A tree's projecting root its weight sustains,

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[50] Ibid, 74-75.
[51] Ernest Tuveson, "Space, Deity, and the 'Natural Sublime,'" *Modern Language Quarterly* 1, no. 12 (1951): 22.

> The dread abyss wheels round our giddy brains;
> Leech, like a bird, with the whole gulf in view,
> Down its slight slippery bars regardless flew;
> The bard came after, not devoid of fear,
> And Duncan, gay and laughing, closed the rear;
> Tye cumb'rous weight its bending sides assails,
> It yields! it cracks! its whole foundation fails!
> Fear, swift as light, the rock's grim pavement stains
> With mangled limbs, and blood, and spattered brains;
> But firm above the roots remained, though rude,
> And safe below on Chaos' shores we stood.
>
> Genius of song! Great Source of light and day!
> How shall the Muse this dreadful place portray![52]

Here, the narrator recounts the entire process of the sublime experience. In facing down the immense gulf of the Falls, he becomes overwhelmed (this time by fear) and is forced to confront an abstract and powerful force which exceeds his understanding (death). For a brief moment he loses touch with his rational self and surrenders to emotion and the influence of a higher power before once again grounding his thoughts upon reaching safety. Once safe, he is able to contemplate his experience and attempt to make sense of it. This is the process of spiritual and intellectual inspiration that the sublime experience was thought to have. Witnessing a life-threatening force from position of relative safety, as Wilson did, allows the spectator to understand a superior power through the application of reason. As Philip Shaw explains, "the meeting with the sublime strengthens our powers of conception" through our ability to rationalize a force greater than ourselves, which allows us to "become, as it were, equal to the powers we survey."[53] In this regard, Wilson suggests that Niagara has the ability to provide its onlookers with spiritual enlightenment. Its sublimity is a means of further understanding God. By stressing Niagara's ability to

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[52] Wilson, *The Foresters*, 77.
[53] Shaw, *The Sublime*, 6.

provide such an experience, Wilson further builds on its reputation as a place of exceptional nature.

Wilson makes Niagara's divine connotations more explicit by comparing his feelings of first seeing it to a religious experience. He is not merely impressed with it, but experiences emotional and spiritual uplift when he looks upon the scene:

> Arabian pilgrims Mecca's walls behold;
> Those holy walls, whose sacred roof contains
> Mahomet's tomb—their prophet's blest remains,
> Past sufferings vanish, every sigh's suppress,
> A flood of rapture rises in each breast,
> All hears confess an awful joy serene,
> And humbly bow before the glorious scene.
> Such were our raptures, such the holy awe,
> That swelled our hearts at all we heard and saw;[54]

Here Niagara is fully realized as a natural monument—the site of a literal pilgrimage that deeply moves the visitor. It is a shrine which allows the visitor to commune with nature and, through the sublime experience attained there, transcend his/her mortal moorings to become closer to the deity. While Wilson does not provide specific insight into where the sublimity resulting from the communion with this "Mecca" will lead, he sets the precedent for his readers regarding what sort of personal experience they can expect from their own visit to the Falls if they were to undertake the pilgrimage themselves.

Despite his insistence on the importance of America's spectacular displays of wild nature, however, Wilson also brings attention, though unintentionally, to an underlying conflict within the national consciousness between an idealized wilderness and its required subjugation for the sake of the nation's continued development. Over the course of his pedestrian journey, Wilson repeatedly comes into contact with

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[54] Wilson, *The Foresters*, 75.

those citizens who have carved a place for civilization out of the chaos of the frontier. Upon passing through modest farmland, Wilson provides a description of the pastoral ideal which he understands to be the embodiment of his nation's promise:

> And all around that meets the eye or ear,
> Proclaims the power that spreads influence here,
> Hail, Rural Industry! man's sturdiest friend,
> To thee each virtue must with reverence bend,
> To thee what heart denies spontaneous praise,
> From gloomy woods such glorious scenes to raise!
> Great giver of God's gifts to man below!
> Through whose rough hand all human blessings flow,
> ……
> Still, near thy hut, upon thy flowery green,
> May Temperance, Hope, and Cheerfulness be seen,
> Health, Plenty, Innocence, thy temples crown,
> And Peace, each night embosom thee in down,
> And still, where'er thy humble roofs arise,
> In northern climes, or under burning skies,
> May guardian Liberty thy fields enclose,
> Befriend thy friends and baffle thy foes[55]

Here Wilson celebrates not nature in its purest form, but its transformed state—the product of American industriousness which allows humanity to benefit from its natural environment. The reader is given a picture of nature and civilization coexisting with one another in a peaceful and mutually beneficial balance. As opposed to the sublime experience at Niagara, Wilson details the specific results of this pastoral equilibrium. By working the land, by transforming the "gloomy woods" into "glorious scenes," the farmer is able to realize nature's full potential, to attain the gifts which God intended for the benefit of humankind. Additionally, other virtues and blessings such as "Temperance," "Hope," "Plenty," "Innocence," and "Peace" are gained in the process. And, of course, "Liberty" protects and maintains all of

[55] Ibid, 41.

these. From this perspective, nature seems to be truly appreciable in a nationalistic sense only when it is altered and utilized by humanity. Such an understanding of the natural environment presents a deeply problematic dichotomy, with wilderness and its symbolic significance on the one hand and the pastoral and its utilitarian necessity on the other. This conflict is one which has persisted throughout American history (and remains unresolved in the present day), but also has also had a direct impact on the fate of Niagara Falls, as will be detailed in the proceeding chapter.

About twenty years after Wilson's visit to Niagara, major infrastructural developments within the nation would bring the Falls to even greater prominence within the American mind. When the Erie Canal opened in 1825, it made the journey to Niagara much less arduous than Wilson's, providing easy access to the Falls for more Americans than ever. As waves of tourists traveled to the Falls, they brought with them the expectations which had been fostered by the work of the nation's intellectuals, writers, and artists. Examining their recorded descriptions of Niagara reveals impressions deeply influenced by the concepts of the sublime. Such descriptions can be found in publications such as the *Table Rock Album*—a compilation of selections made from various guest books in which visitors to the Falls could record their thoughts. It is certainly true that not all of Niagara's tourists were impressed by its natural grandeur. One visitor, for example, who signed his name as Cyrus, takes a sarcastic and dismissive tone regarding his fellow tourists: "Here fools from all lands take of gazing their fill, / In wonder that water will run

down a hill."[56] But the vast majority of those who wrote down their impressions, however, expressed deep admiration for what they saw. Some even took it upon themselves to chastise those who shared Cryus' lack of appreciation:

> Frivolity and lightness appear to me altogether out of place—totally uncongenial to this scene of awful grandeur. While the voice of the great Creator of the universe is proclaiming his matchless power, while Niagara is giving testimony to his omnipotence, let us, not, then, provoke the anger and just punishment of Him at whose bidding these mighty waters flow—at whose command they will cease their roaring, and at whose will we also move and live. Man—weak, finite man, may laugh and trifle; but the day of retribution will surely come. Let it not be said that we have seen Niagara in vain.[57]

To these visitors, who, indeed, make up the bulk of the *Album*, Niagara was a place that demanded respect—the site of awesome nature which should be revered as would the deity itself.

Those who did express such admiration for the Falls used the rhetoric of the sublime to articulate their feelings. Some resigned to the inability to put the effect into words, admitting that "it is utterly impossible for any man to give expression to the overwhelming feeling he experiences on beholding this display of the Great Creator's works."[58] Others, however, attempted to detail their experiences, celebrating the Falls as an amalgamation of nature, divinity, and nation. As one visitor explained:

> The effect produced upon the mind by gazing on this mighty avalanche of waters is the reverse of those exhilarating emotions which we experience in studying the quiet beauties of a sparkling cascade, which charms the ear and soothes the heart with its light tones of music. Our feeling partake of grandeur and sublimity, as we behold these maddened waters take their tremendous plunge into the abyss below. Let proud man look on in silence,

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[56] *Table Rock Album and Sketches of the Falls and Scenery Adjacent* (Buffalo: Steam Press of Jewett, Thomas & Co., 1850), 80.
[57] Ibid, 57.
[58] Ibid, 19.

> and feel his own nothingness. Old Ocean herself might stand rebuked in the presence of this untamed giant of Eternity.[59]

For this observer the Falls draw their impressive quality from the raw, natural force they display. The immensity and dynamism of the scene leaves him stunned, forced to contemplate his mortal insignificance as well as the infinite power of the creator. Another focuses on the grandeur of the scene:

> Niagara—Here Nature holds its sway,
> While man, with both delight and awe, doth
> Gaze and wonder at its magnificence.
> Niagara—each hour, each hour—each day, each day,
> The rich, the poor, the gentle pass your way;
> The tradesman from his toil released,
> Seeks beauties that our God decreed[60]

The author of this verse emphasizes the power of nature and the permanence of Niagara as well, causing him to consider both eternity and God. In addition, he touches on the democratizing effect of the Falls. Niagara, as an object of nature and a product of the deity, was available for all members of society, rich or poor. In theory, anyone had the ability to look upon Niagara in all of its grandeur and have the emotional experience of the sublime. This sentiment reflects a national ideal which is fundamental to American society. In this sense, the author is reiterating the concepts put forward by the likes of the Hudson River School and Alexander Wilson: America's natural landscape is the embodiment of the nation's political, social, spiritual, and emotional ideals.

By the mid-nineteenth century, Niagara Falls rose to the stature of a natural icon—a distinct New World landmark—celebrated for its perceived distance from

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[59] Ibid, 69-70.
[60] Ibid, 17.

the artificiality of civilization. This positive valuation of Niagara resulted from an evolution of the American perception of nature which unfolded over centuries. In communicating the strong emotional response he had to seeing the Falls in the late 1600s, Father Louis Hennepin not only recognized Niagara as a unique natural landmark, but laid the foundation for its association with what would later be identified as the sublime. Niagara's standing was further elevated by the embrace of Romanticism by American intellectuals during the late-eighteenth century in their quest to form a national identity. This philosophical development allowed for an appreciation of nature in general, and invested the whole of America's natural landscape with spiritual, intellectual, and nationalistic significance. The idealized view of nature that spawned from this Romantic embrace was then perpetuated by artists and writers who incorporated it into their work and solidified the positive perception of nature within the national consciousness, evidence of which can be seen in reassertions of the sublime found in sources such as the *Table Rock Album*. This caused Niagara Falls, already known around the world, to be considered the premier example of America's idealized nature. The positive perception of the Falls hinged on it maintaining the appearance of being unaffected by human influence. The more the presence of civilization was felt, the less affective the Niagara experience became. This set Niagara up for a crisis of identity in the second half of the nineteenth century when the effects of industrialization and commercialization could no longer be ignored.

# Chapter Two
# "The Monument of America's Shame and Greed": Utilization and Preservation at Niagara Falls

In his book *The Romance of Modern Engineering*, published in 1904, Archibald Williams begins by expressing the wonder and humility that so many had come to expect from the confrontation with Niagara Falls' sublime presence. "What right have we, frail creatures of the day," he asks, "to speak of lordship of creation face to face with this watery avalanche that has thundered down for centuries, nay thousands of years? What can human art avail against the violence of those ceaseless, seething torrents, stunning our ears with sound, dazzling our eyes to wateriness by their motion?"[1] He goes on to insist that the answer has been supplied by America's engineers in the form of hydroelectric power — the utilization of water currents as a means of generating electricity. Such ingenuity has allowed humankind to subdue grand natural forces such as Niagara, he explains, and utilize them for the betterment of civilization. "Much as we regret" the intrusions of the mechanical into natural scenery, he continues, "we know they are inevitable" in the course of civilization's progress.[2] While Williams was advocating for a very specific utilization of Niagara, his reasoning is illustrative of a larger debate regarding the fate of the Falls which took place over the course of the nineteenth century. The cultural significance which Niagara had taken on as a source of the natural sublime during the late-eighteenth and early-nineteenth centuries, the origins of which were detailed in the previous chapter, was clung to by some Americans, yet neglected by others as the nation turned its focus toward industrial progress.

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[1] Archibald Williams, *The Romance of Modern Engineering* (J. B. Lippincott Company, 1904), 11-12.
[2] Ibid, 13.

The period from the mid-nineteenth to early-twentieth century presented a conflict between the traditional conception of the Falls as an example of sublime nature and emerging utilitarian views which saw in Niagara the potential for economic gain. Throughout the latter half of the nineteenth century, Niagara's natural aesthetic was threatened by various forms of commercial exploitation, causing those who valued the Falls as a wonder of nature to rally around their protection. A constant back-and-forth ensued, as business interests steadily encroached on Niagara's scenery and preservationists attempted to push them back. The early 1800s saw the rapid rise of industry and tourism at Niagara, transforming the once-secluded waterfall into the home of busy factories and artificial attractions. By the 1880s, those who sought to preserve the cataract's sublimity responded with the successful creation of a State Reservation, the sole purpose of which was to maintain Niagara's natural scenery. Soon after, the rise of hydroelectric technology, to which Williams made reference, revived similar concerns, this time over whether or not water diversion would eliminate the Falls altogether. This sparked a push for federal legislation that would limit the activities of power companies in order to ensure that there would, indeed, still be a Niagara to inspire awe in future generations. It was a period of polarized opinions regarding Niagara—a time in which Americans either viewed the waterfall as a unique cultural symbol or the means to transform the nation into a truly modern civilization.

This chapter examines what became of Niagara's reputation of natural sublimity over the course of this century of conflict. By focusing on the debate over the Falls' ultimate value—economic versus sentimental—it is possible to see a shift in the sublime rhetoric used in reference to Niagara. The degradation of Niagara's

natural appearance corresponded with both a displacement of the natural sublime by the technological and the trivialization of sublime rhetoric through the process of marketing the Falls to tourists. I begin by examining the rise of industrial and commercial exploitation that resulted from the privatization of land ownership in the area surrounding the Falls and its impact on visitors' ability to obtain the sublime experience. I then move on to the subsequent preservation effort which pushed for State control of Niagara in an effort to recreate its natural appearance. Finally, I examine the rise of hydroelectric power and the second preservation movement that resulted from it. These various struggles reveal a divide within American culture between those who subscribed to the traditional view of nature, as described in the previous chapter, and those who supported its use for the advancement of civilization. To passionate adherents of each side of the issue, it appeared that one version of Niagara could not exist without the total eclipse of the other.

## Early Industrial and Commercial Exploitation

Efforts to utilize the inherent power of Niagara began as early as the mid-eighteenth century with the construction of mills by French settlers which drew the current from the Niagara River to power their waterwheels.[3] The beginning of large-scale industrial development, however, came in 1805, when the State of New York opened up the formerly reserved lands along the Niagara River to private ownership. The State auctioned off plots of land along a mile-long stretch of the river up to the point of the Falls themselves, initiating a tradition of liberal industrial development at

[3] Edward Dean Adams, *Niagara Power: History of the Niagara Falls Power Company, 1886-1918* (Niagara Falls Power Company, 1927), 41. The earliest known instance of the Niagara River being diverted for use of its power is a saw mill constructed by Chabert Joncaire, Jr. in 1757-1758 just above the Falls.

Niagara that would last throughout the century.[4] Soon after, the banks of the river above the cataract were dotted with newly-established commercial endeavors. By 1831 as many as six mills were drawing water from Niagara's rapids, including a nail factory, a paper mill, two grist mills, a saw mill, and a woolen factory.[5]

A leading figure in the process of bringing industry to the Falls was Augustus Porter. Later described as "a pathfinder and pioneer" of the development of water power at Niagara and the establishment of the village of the same name, Porter and his family arguably had more influence over the "utilization" of the cataract than anyone else.[6] Having served as a New York Assemblyman from 1802 to 1803, Porter moved to Niagara after purchasing multiple plots of land from the State. A seasoned businessman, he quickly realized the commercial potential of such real-estate and invested in the construction of several of the aforementioned mills. By 1814 he had secured the rights to two additional plots, those closest to the brink of the cataract (labeled 42 and 43 in Figure 6). This was quickly followed by the purchase of Goat Island in 1816, the large mass of land in the midst of the rapids just above the Falls. He soon built a bridge which connected the Island to the American side of the river, with the intention of aiding future development.[7] Porter's land purchases, and, indeed, those which inevitably followed, signaled a turning point in Niagara's aesthetic history. The image of a remote Niagara nestled in the wilderness, the likes of which Alexander Wilson recalled in *The Foresters*, had been ruptured by the rapid clearing of trees and construction of mills. Modern civilization, it would seem, had

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[4] William Irwin, *The New Niagara: Tourism, Technology, and the Landscape of Niagara Falls 1776-1917* (The Pennsylvania State University Press, 1996), 10.
[5] Adams, *Niagara Power*, 45.
[6] Edward T. Williams, *Official Record of The Niagara Falls Memorial Commission in Succession to the William B. Rankine Memorial Commission* (Niagara Falls Memorial Commission, 1920[?]), 18.
[7] Adams, *Niagara Power*, 42-45.

finally reached Niagara Falls, and its presence would only grow more noticeable as the century continued.

The effects of Porter's industrial ambitions, however, were not limited to the sight of mills and the resulting infrastructure which hugged the rapids. Porter, and others like him, embodied the Whig ideal of national improvement – a political paradigm that existed concurrently (and at odds) with the nationalistic embrace of nature and saw value in the environment based on its ability to improve conditions for future generations through the development of its resources.[8] Enticed by the cataract's sublime reputation of eternal flow (Porter viewed this as a means of production rather than spiritual inspiration), he sought to develop a way of harnessing the "unlimited water power" he understood to be latent within the Falls of Niagara.[9] In 1825, and again in 1847, Porter issued a public invitation to "Eastern Capitalists and Manufacturers" to invest in the utilization of the Niagara River for the sake of generating power. In exchange for their capital and a share of the project for himself, Porter offered these entrepreneurs access to his land on the American side of the river as well as Goat Island. While his efforts failed to secure the desired financial backing, Porter's invitation was the first public attempt to initiate a large-scale project for the sake of generating power from Niagara's waters and opened the door for future initiatives that would successfully put the Falls in harness later in the century.[10]

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[8] Ian Tyrrell, Crisis of the Wasteful Nation: Empire and Conservation in Theodore Roosevelt's America (Chicago: University of Chicago Press, 2015), 7.
[9] Augustus Porter, *To Capitalists and Manufacturers: With a View to the More Convenient and Extensive Use of the Unlimited Water Power at the Falls of Niagara* (Augustus Porter, 1847), 1.
[10] Adams, *Niagara Power*, 47-49.

While commercial projects proliferated above the Falls during this period, their presence was soon felt below the cataract as well. By the 1830s, there was growing economic pressure for the construction of a railway bridge over the Niagara Gorge. As William Irwin explains, "the rapid settlement of the Great Lakes region and the West, and the failure of Niagara to be included in water trade…combined to spur the desire for an east-west market connection at the site."[11] This desire resulted in the formation of the Canadian-based Niagara Falls Suspension Bridge Company and the American-based Niagara Falls International Bridge Company which secured a joint charter from New York State and Canada for the construction of a bridge. The companies then hired Charles Ellet Jr. in 1847 to head the project that would open a trade route over Niagara. The proposed bridge posed one of the greatest engineering challenges of the day, needing to span 800 feet across the gorge, longer than any railway bridge in existence. Furthermore, Ellet's plan was to construct a suspension bridge, a relatively new technology which many doubted was capable of supporting the weight of a fully-loaded train. While Ellet successfully completed what was meant to be a temporary bridge in 1848, it was only intended for the transportation of construction supplies and was never opened to rail traffic. He later resigned his commission over financial disputes with the bridge companies before the permanent bridge was completed. Though Ellet failed to meet his goal, the initial bridge remained open to carriages and pedestrians after his resignation, nonetheless drawing the admiration of visitors.[12]

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[11] Irwin, *The New Niagara*, 33.
[12] Ibid, 34-36 and Elizabeth McKinsey, *Niagara Falls: Icon of the American Sublime* (Cambridge University Press, 1985), 253.

The project was then handed off to John A. Roebling, an accomplished engineer who would later solidify his fame with the construction of the Brooklyn Bridge. Like Ellet, Roebling also proposed a suspension bridge, and sought to achieve what his predecessor had failed to in opening a path for trains between the American and Canadian side of the gorge. Starting construction in 1852, Roebling aimed to transcend the bridge's strictly utilitarian function to strike a chord of harmony between civilization and nature. In this regard he planned to construct a suspension bridge, at this point the pinnacle of human ingenuity, which was sleek and simple in its design, yet "unique and striking in its effect" and "quite in keeping with the surrounding scenery."[13] When it was completed in 1855, the bridge, spanning over 800 feet and "more than doubling the world's next longest railway bridge," seemed to miss Roebling's intended aesthetic balance and, at times, overshadow the Falls themselves.[14]

Rather than subtly exist within the natural scenery of the Falls, the bridge overwhelmed the grandeur of Niagara, standing on its own as a marvel of human engineering. Its construction signaled the emergence of the technological sublime at Niagara, inducing awe in visitors through its sheer size and complexity of design.[15] When it opened, a letter to the editor of *The New York Times* proclaimed that the Suspension Bridge presented "one of the most imposing sights the eye ever rested on," and that its successful completion signaled that "Art" had "achieved a victory of

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[13] John A. Roebling, *Report…to the Presidents and Directors of the Niagara Falls International and Suspension Bridge Companies* (Buffalo, New York, 1852), 12.
[14] Irwin, *The New Niagara*, 40.
[15] David E. Nye, *American Technological Sublime* (The MIT Press, 1994), 77. Nye describes bridges during this period as embodying a specific subcategory of the technological sublime, "the geometrical sublime," which was "static and appeared to dominate nature through elegant design and sheer bulk."

Nature."[16] The same article paid shallow lip service to Niagara's reputation of natural glory by conceding that bridge's "grandeur can only be surpassed by the majestic cataract," but then went on to paint a transcendent image of the engineering marvel which allowed the visitor to rise above the furious waters and overcome the gulf which had "been ordained by the Creator as the boundary of, and a barrier between, two great countries."[17] To the writer, the bridge and the waterfall were completely divorced from one another. In his mind, this product of human effort was able to surpass the work of God. The bridge immediately became an attraction in and of itself, at times captivating the minds of visitors more than the Falls. John Disturnell, in his travel guide to North America, made sure to give the bridge a prominent position in his description of Niagara Falls, calling it "the greatest artificial curiosity in America."[18] He was far from the only to regard Roebling's bridge with such esteem. Nearly every travel guide published after 1855 included the bridge as a must-see feature of the Niagara experience, dubbing it "an object of curious interest" in and of itself which added "still another to the attractions which fill the minds of all observers with admiration."[19] Similarly, popular depictions of the bridge reflect this displacement of Niagara's natural grandeur. Elizabeth McKinsey has pointed out that artistic renderings of the Falls from this period show an unusual uniformity in terms of perspective. "Almost without exception," she explains, artists chose a viewpoint from "below the bridge looking upriver, placing the bridge squarely in the center of the picture left to right" (see Figure 7). This angle causes the Falls to appear "framed

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[16] "The Great Work at Niagara Falls," *The New York Times*, 21 March, 1855.
[17] Ibid.
[18] John Disturnell, *A Trip Through the Lakes of North America; Embracing a Full Description of the St. Lawrence River, From its Source to its Mouth: Commerce of the Lakes, Etc. Forming Altogether a Complete Guide for the Pleasure Traveler and Emigrant* (J. Disturnell, 1857), 213.
[19] *The Falls of Niagara: Being a Complete Guide to all the Points of Interest Around and in the Immediate Neighbourhood of the Great Cataract* (T. Nelson and Sons, 1870), 29.

beneath the span, diminished by the perspective and distance and thoroughly controlled by the bridge."[20] Such visualizations communicate the emergence of the technological sublime at Niagara, the presence of which coincided with a decline in the natural sublime. While some visitors indeed differed in their opinions of the bridge, its presence nonetheless had an impact on Niagara's ability to elicit a sublime reaction. Through the act of overcoming the natural wonder—by literally transcending the boundary of nature—the bridge threatened to displace the natural sublime as an aesthetic, just as it competed with and challenged the supposed dominance of nature, represented by the Falls themselves.

Industrial developments were not the only factor which contributed to Niagara's changing appearance. As mentioned in the previous chapter, the opening of the Erie Canal in 1825 had a tremendous impact on Niagara Falls. Most significantly, it allowed for a regularized influx of tourists to the site. Rather than a stagecoach journey over primitive roads that could take as long as three weeks, travelers could reach the cataract via comfortable packet boat in just a few days. The canal would take tourists as far as Buffalo, less than twenty miles from the Falls, where they could hire transport to the cataract itself. Furthermore, the introduction of railroads opened Niagara to even greater numbers of visitors. In addition to easing the trip from Buffalo to the Falls (there were two steam-powered daily trains connecting the two locations by the 1840s), railways allowed Americans throughout the country to reach Niagara in a relatively short amount of time. As has been pointed out by scholars such as John F. Sears and William Irwin, these developments in transportation, coupled with the country's rapidly expanding middle class, resulted in the

[20] McKinsey, *Niagara Falls*, 254.

proliferation of tourism in the mid-nineteenth century. Niagara Falls, as America's most famous natural landmark, served as the primary destination for the majority of these travelers. Between 1838 and 1847 the number of visitors to the Falls increased from 20,000 to 45,000 a year; the number would jump to 80,000 just three years later.[21]

In order to both accommodate and take advantage of this burgeoning industry, private landowners continued the process begun by Porter of commodifying the Falls, cordoning off the various unique aspects of Niagara's scenery, charging entrance fees for each, and constructing artificial attractions surrounding the cataract. By 1840, these tourist facilities became "shamelessly conspicuous" as "Chinese pagodas, menageries, camera obscura, museums, watchtowers, tea gardens, wooden edifices, and curiosity shops" crowded either side of the Falls.[22] Walkways were built to guide visitors to the best views of the cataract while gates and ticket booths were erected to ensure that the maximum profit could be extracted. This greatly restricted the visitors' freedom of movement and observation, resulting in a rigid system of consumption in which tourists moved from point to point, viewing the Falls from what they were told was the best vantage point. Rather than slowly exploring the Falls as earlier visitors had, taking inspiration from the sublime as it came to them, tourists were subjected to a more controlled experience. "Once all of the sights were set apart," John F. Sears explains, the process of "doing the Falls" was a "matter of covering all the bases. Tourists were told they

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[21] Irwin, *The New Niagara*, 13, 17-18 and John F. Sears, *Sacred Places: American Tourist Attractions in the Nineteenth Century* (University of Massachusetts Press, 1989), 3.
[22] Irwin, *The New Niagara*, 18.

hadn't really seen the Falls unless they had visited all of the major attractions."[23] Indeed, the many guidebooks dedicated to the Falls, which proliferated during this period, encouraged this process by promoting the division of attractions in their format. The books were divided into easily-referenced sections, providing a checklist of sights for tourists to run through. One book, for example, provided readers with a complete narrative guide for their visit which, if followed, would lead them to every one of Niagara's attractions.[24] Despite this rampant commodification, promoters of tourism still relied on Niagara's reputation of sublimity to sell the Falls. Nearly every publication reiterated the description of Niagara as a place beyond human imagination, asking, as J. De Tivoli did in 1846, "where is the pencil or the pen, however bold or masterly, which assumes to give an adequate idea of this scene of solemn grandeur and sublimity?"[25] While admitting the inability to fully communicate Niagara's wonder, the guides assured their readers that "to be admired [Niagara] needs only to be seen; and the deep impression that is stamped upon the mind of every spectator that stands before the stupendous scene…will never be erased from the tablets of memory."[26] Through descriptions such as these, the publishers of guidebooks enticed visitors to Niagara with the promise of a vision of nature unlike anything they had seen before, despite the ever-encroaching artifice which framed the Falls. In reality, however, the very setting which the tourist industry created made the sublime experience nearly impossible to obtain. Niagara's sublimity was becoming a marketing scheme, steadily divorced from the experience visitors would find at the

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[23] Sears, *Sacred Places*, 22-23.
[24] Thomas Tugby, *Tugby's Guide to Niagara Falls being a Complete Guide to all the Points of Interest around and in the Immediate Neighbourhood* (Thomas Tugby, 1885).
[25] J. De Tivoli, *A Guide to the Falls of Niagara* (Burgess, Stringer and Co., 1846), 4.
[26] *Niagara, Its Falls and Scenery: Genesee Falls, Trenton Falls, Montmorenci Falls, River Ottawa, River Saguenay. The City of Quebec, and Route Down the St. Lawrence* (Alex, Harthill and Company, 1860), 8.

Falls. Rather than the personal, internal, and overwhelming interaction with Niagara which the natural sublime implied, this commercially-motivated rhetoric offered a tamed version of the sublime that diluted its original significance.

As Niagara increasingly became defined as a tourist destination, taking on the appearance of a carnival more than a natural wonder, a series of constructed spectacles began to draw the tourist gaze away from the Falls themselves and toward human mastery over them. Such spectacles took the form of bold stunts, as daredevils challenged Niagara's reputation as a source of mortal danger. One of the earliest examples of these thrill seekers is Sam Patch, who, in 1829, shocked spectators and gained national renown by jumping 85 feet from a platform into the abyss below the Falls.[27] Others would follow with more spectacular and death-defying performances. One of the most famous was Charles Blondin, the French aerialist, who crossed the Niagara Gorge by tightrope in 1859. Crowds as large as 25,000 gathered at the Falls to witness what was described as the "most wonderful of all human feats," gazing on in awe as Blondin crossed the chasm, anticipating the slightest misstep which "would cast him at once into the perdition beneath."[28] Blondin continued his bold act in a series of performances between 1859 and 1861 with increasingly absurd stunts, which included walking the rope blindfolded, carrying a man on his shoulders, setting up a camera and photographing the crowd, and even cooking an omelet on a portable cook stove.[29]

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[27] Irwin, *The New Niagara*, 23.
[28] Number of spectators found in George Linnaeus Banks, *Blondin: His Life and Performances* (Routledge, Warne, and Routledge, 1862), 36; quotes from "An Exciting Scene. M. Blondin's Feat at Niagara Falls," *The New York Times*, 4 July, 1859.
[29] Banks, Blondin, 37; "Blondin Carries a Man Across Niagara River on His Shoulders," *The New York Times,* 22 August, 1859; "Blondin Crosses the Niagara River with a Cook-Stove, and Cooks an Omelet," *The New York Times,* 26 August, 1859.

Blondin's act was followed by a number of stunts at Niagara over the course of the century, but none has become as iconic as the barrel ride over the Falls. The feat was first accomplished in October, 1901 by a woman named Annie Edson Taylor. With seemingly little preparation, she sealed herself into a barrel of her own design, weighted at the bottom with an anvil in order to keep herself upright in the water, and had it towed to the center of the rapids above the Falls. As was the case with Blondin's stunt, thousands of onlookers crowded the shores to watch the spectacle. They waited in anticipation as Taylor's barrel plunged over the Falls, disappeared in the churning waters below, resurfaced, and was eventually towed to shore. As one observer put it, when Taylor emerged from the barrel and waved to the crowd, "the roar of the cheer that was sent back was a rival of the noise of the tumbling waters that had failed to rob her of her life."[30] Acts such as Taylor's and Blondin's were more than public spectacles carried out for the sake of fame and fortune. Niagara had been selected as the stage for these stunts not only because it was an iconic landmark, but because it had the reputation of embodying an inhuman power — a natural force of near mythical stature which had exceeded mortal limitations for eternity. In successfully performing these stunts, these daredevils essentially proved the same point as Roebling's bridge – that humanity could overcome the limitations imposed it by nature. By prevailing over Niagara's threat of annihilation, which had, indeed, claimed many lives throughout history, Blondin and Taylor placed humanity in the foreground and relegated the Falls to the role of a backdrop. The thousands who watched on celebrated the spectacle of human ability, neglecting the grandeur of nature.

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[30] Orrin E. Dunlap, "Annie Edson Taylor Article," Niagara Falls Public Library, Niagara Falls, New York, 1901-1902.

The growth of both industry and tourism at Niagara certainly had an effect on those who travelled there for the purported sublime experience which had become inseparable from its popular image. Within the numerous travel accounts published during this period, visitors detail the constant distraction which interrupted their personal communion with Niagara. For some, it was the visual component of civilization's rapidly-expanding presence at Niagara that led to disappointment. There was a jarring incongruity to the sight of factories and tourist facilities surrounding one of the world's foremost natural wonders. An English visitor to the Falls in the 1850s, Isabella Lucy Bird, was struck by the "enormous many-windowed fabric, said to be the largest paper-mill in the United States," which belonged to a "collection of mills" that "disfigure[d] this romantic spot." Her hopes for a more natural setting on the Canadian side were similarly dashed when she encountered "a great fungus growth of museums, curiosity-shops, taverns, and pagodas with shining tin cupolas" which shattered the state of "mental abstraction" she believed was necessary to "contemplate Niagara." [31] For Bird, the presence of the human-made was impossible to ignore and made the sublime experience, which she had anticipated, unattainable.

Similarly, the tourist experience, apart from its visual manifestation, made the visit not one of quiet meditation, but one of rapid consumption and stimulation. Bird lamented what she understood as the "supposed necessity" of seeing every one of the Falls' attractions. As she put it, one is forced to

> see the Falls from the front, from above, and from below; he must go behind them, and be drenched by them; he must descend spiral staircases at the risk of his limbs, and cross ferries at that of his life; he must visit Bloody Run, the Burning Springs, and Indian curiosity-shops, which have nothing to do with them at all; and when the poor wretch is thoroughly bewildered and wearied by 'doing Niagara,' he is allowed to steal quietly off to what he really came to

[31] Isabella Lucy Bird, *The Englishwoman in America* (John Murray, 1856), 216.

> see—the mighty Horse-shoe Fall, with all its accompaniments of majesty, sublimity and terror.[32]

Another visitor scorned the "cool rascality" of those who privatized the Falls and took advantage of the incoming tourists. "It is impossible to go there without being filled with admiration," he explained, "not necessarily for the falls, but for the masterly way in which the natives have managed to fence in every bit of natural scenery, every point from which a view is to be had, and charge the visitor well for going to it."[33] Likewise, Henry James, during his visit to Niagara in 1871, was confronted with "the horribly vulgar shops and booths and catchpenny artifices" which had "pushed and elbowed to within the very spray of the Falls, and [plied] their importunities in shrill competition with its thunder." Despite hurrying to the Falls to escape the commotion of the town, he admitted that "you don't escape from it; it is constantly at your elbow, just to the right or the left of the line of contemplation."[34] The lamentations over one's inability to focus on the grandeur of the Falls expressed by these writers echoed a common sentiment of the period. The atmosphere generated at Niagara by its rapid commodification was entirely at odds with the personal contemplation of nature that the sublime experience demanded. The old Niagara—the idealized Niagara defined by natural grandeur and solemn communion—had been displaced by industrial interests and unrestrained commercial exploitation. Through its association with the natural sublime, Niagara had become a cultural icon in the years prior to its development. Now that the characteristics which

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[32] Ibid, 220.
[33] "Taking the Stranger in at Niagara," *Brotherhood of Locomotive Engineers Monthly Journal* 18 (1884): 74.
[34] Henry James, *The Art of Travel: Scenes and Journeys in America, England, France and Italy from the Travel Writings of Henry James* (Doubleday & Company, Inc., 1958), 88.

made the Falls such a potent source of the sublime experience were threatened, the country risked losing one its most distinguishing features.

**The First Preservation Movement: Bringing Nature back to Niagara**

By the end of the nineteenth century, the privatization of land around Niagara which Bird, James, and countless others had decried had become so injurious to the sight of the Falls and the visitors' experience that a call to "save Niagara" was raised. This was a movement fueled by both aesthetic and economic concerns. While the bold juxtaposition of the natural and artificial was particularly jarring at Niagara, the decline in long-stay visitors (a segment of the market that many Niagara-based businesses depended on) also generated demands for action. Wealthier tourists who, in the past, would spend extended amounts of time at Niagara, staying the area's hotels and dining in its restaurants, had lost patience with the raucous atmosphere surrounding the Falls and "began bypassing Niagara for more pristine or peaceful holiday resorts."[35] In an attempt to reverse this trend, those invested in this particular portion of Niagara's economy joined forces with cultured reformers to address the issues facing the Falls. The obvious solution to the problem of "unsightly structures for manufacturers…around the very brink of the falls" and the "incessant hounding of travelers" by hucksters and ticket-takers was the abolishment of private land ownership in the area immediately around the Falls.[36] While such a goal would not be easily achieved, it was the only option to prevent the continued exploitation of Niagara.

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[35] Irwin, *The New Niagara*, 64.
[36] "The Attempt to Save Niagara," *The New York Times*, 5 April, 1885.

Beginning in the 1870s, high-profile advocates for Niagara's preservation began campaigning for the governmental acquisition of Niagara Falls. These preservationists included Frederick Law Olmsted, the landscape architect in charge of designing Central Park, Thomas V. Welch, and Frederick Edwin Church, the artist who spoke widely about the need for intervention at Niagara after the composition of his famed painting of the Falls.[37] While these men had been making efforts to secure allies for their cause, it was not until 1878 that the movement took any substantial steps forward. It was this year in which Lord Dufferin, the Governor-General of Canada, after being successfully lobbied by the group, became the first politician to openly advocate for the establishment of a public reservation at the Falls. While addressing the Ontario Society of Artists in September of 1878, Lord Dufferin referred to Niagara as "one of the most wondrous, beautiful and stupendous scenes which the forces of nature have ever constructed," though one which had been "miserably marred and defeated…by the various squatting interests that [had] taken possession of every point of vantage" and disrupted the "imagination" and "poetic faculties" of the visitor gazing on the Falls. He then went on to propose a joint effort between the governments of New York State and Ontario to preserve the scenery of Niagara in the "picturesque and unvulgarized condition in which it was originally laid out by the hand of nature."[38] Lord Dufferin's remarks are illustrative of the general philosophy behind the preservation movement. The goal was not to simply remove the artificial aspects of Niagara's environment, but to reclaim a sense of natural purity

[37] Tyrrell, *Crisis of the Wasteful Nation*, 147 & 152. Tyrrell places those who advocated for Niagara's scenic preservation within a broader group of American "elites" who pushed for preservation of particular landscapes across the country during this period. They were motivated by a desire "to stop the erosion of American heritage and the nation's natural patrimony" to which they felt entitled by their social standing in the face of increasing immigration and industrialization.

[38] Lord Dufferin's address found in Charles M. Dow, *The State Reservation at Niagara: A History* (J. B. Lyon Company, 1914), 13-14.

at the scene — to regain the state of nature at the Falls that made the sublime experience possible.

Responding to Dufferin's call for international cooperation, the Governor of New York, Lucius Robinson, urged the State Legislature to commission a survey to report on the conditions of Niagara and make recommendations for the formation of a State Reservation. He largely echoed Lord Dufferin's sentiment in his appeal, explaining that "the sublime exhibition of natural power [at Niagara]…is the property of the whole world," but was being rapidly degraded by the proliferation of private interests. The governments of New York and Ontario should, he continued, take "control of a sufficient area to be kept sacred to the free use of those coming there from all parts of the world."[39] The State Legislature quickly approved Governor Robinson's request and, in 1879, tasked both Olmsted and James T. Gardner, a prominent American surveyor, with carrying out the initiative. Their findings, submitted to the State in what is informally referred to as the Gardner *Report*, supported the popular claim that the privatization of land around the Falls both damaged their appearance and hindered public access. The report's most significant point, however, was its judgement on the qualities from which Niagara drew its social and cultural importance. The commissioners noted that Niagara was being sold to the public purely as a spectacle — the largest waterfall in the world. "Were nothing more desirable," they explained, "the interruptions with which the visitor is now annoyed would be of little consequence." In other words, if Niagara's only value was as a large waterfall at which to marvel, none of the surrounding artifice would detract from the

[39] "Message of Governor Lucius Robinson," found in James T. Gardner, *Special Report of New York State Survey on the Preservation of the Scenery of Niagara Falls, and Fourth Annual Report on the Triangulation of the State for the Year 1879* (Charles Van Benthuysen & Sons, 1880), 41.

experience. However, the true value of Niagara, they insisted, "lies in its power of appeal to the higher emotional and imaginative faculties," which comes from the grandeur of the Falls *in combination* with its natural scenery. Such a setting, at that point conspicuously absent at Niagara, would allow the visitor to quietly contemplate the Falls and take in the "qualities and conditions too subtle to be known through…passing observation."[40] Drawing on the larger idea of the natural sublime as spiritually and intellectually elevating, as promoted by such works as those of Barralet and the Hudson River School, the commissioners insisted that Niagara needed to exist within a natural setting in order to truly be appreciated. It was not about seeing Niagara, but experiencing Niagara in its original state, unmarred and unrivalled by human works, in order to gain intellectual, emotional, and spiritual insight.

As a solution, they laid out specific boundaries for the proposed reservation which they felt would provide enough space free from artifice for visitors to experience Niagara in the proper conditions. This entailed the purchase of land within the immediate vicinity of the Falls, including Goat Island, and the bank of the river below the cataract extending to the Suspension Bridge (see the map included as Figure 11). Once the land was purchased, the reservation would exclude the tourist trappings which so many visitors had complained about as well as the industrial works which the commissioners believed blighted the scenery. While the plans did not oppose the existence of mills and factories along the Niagara River, or their use of its water as a means of power, it required them to be relegated to the land above the Falls, beyond the boundaries of the reservation. According to the commissioners,

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[40] Ibid, 9-10.

in order to reclaim Niagara's natural aesthetic the "buildings now standing upon this strip of land" needed to be removed, while "the immediate bank of the river [should] be formed so as to have a natural aspect" with "loosely piled local rocks." Additionally, "trees and bushes" were "proposed to be planted of such kinds and in such dispositions as are natural to the locality" in order to "obscure the buildings of the village" and the distant industrial works.[41] The goal was to recreate as accurately as possible Niagara's original appearance. As Olmsted put it, "the State should by no means undertake to provide a place of general pleasuring or any merely ornamental grounds, but simply to remove unnecessary artificial objects; make those necessary as little conspicuous as possible, and restore natural landscape conditions."[42] The commissioners wanted to move away from the understanding of Niagara as a tourist spectacle and return to its appreciation as a natural wonder. According to their belief, this would create an environment which was conducive to public betterment.

The commission's findings received wide support from both the public and the nation's political leaders. In a public memorial addressed to the governor of New York and the Governor-General of Canada signed by prominent figures such as the Vice President, the Chief Justice of the Supreme Court, and the Secretary of War, the proposed reservation was hailed as the best defense against the forces which threatened to "destroy [Niagara's] sublimity." The letter cited the "great natural beauty and grandeur" of the Falls as "among the most valuable gifts which Providence has bestowed" on humanity. "The contemplation of them," it continued, "elevates and informs the human understanding," aides in "the order of society," and

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[41] Ibid, 11-12.
[42] Ibid, 12.

draws "together all races, and thus contribute[s] to the union and peace of nations."[43] Niagara's sublimity, in this evocation of it, comes to stand for the cultural values placed on America's natural scenery as discussed in the previous chapter. The public's close relation with it both empowered and educated the citizenry, providing them with a point of national identity around which to rally. Furthermore, it gave America a source of respect on the global stage — an object of universal beauty which all other nations could appreciate. Any complacence in destruction of such a natural wonder was understood as forsaking these values.

Despite the wide consensus over the opinions expressed in the Gardner *Report*, it encountered political opposition from Alonzo B. Cornell, the Governor of New York who succeeded Robinson. Governor Cornell was openly against the preservation effort, subscribing to the same utilitarian understanding of the Falls as other members of the government. He bemoaned what he understood to be an undue financial burden on tax payers, as well as the squandering of the Falls' economic potential, shattering any hope of legislation being passed while he was in office.[44] The legal effort was put on hold until Governor Cornell was replaced by Grover Cleveland in 1882. In the meantime, those prominent members of the public who had been campaigning on Niagara's behalf took to formally organizing themselves. By January of 1883, they had formed the Niagara Falls Association, an official body whose express purpose was to lobby the government and educate the public. At its height, the Association had more than 300 members, including Olmsted, Gardner, and other influential citizens such as J. P. Morgan and Theodore

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[43] Public Memorial quoted in Dow, *The State Reservation at Niagara*, 18-19.
[44] Thomas V. Welch, *How Niagara was Made Free: The Passage of the Niagara Reservation Act in 1885* (Buffalo Historical Society Publications, 1903), 5-7.

Vanderbilt.[45] The group saw the realization of their goals in April of 1883 when a reservation bill was passed through the legislature and signed by Governor Cleveland. This bill appointed surveyors to appraise the 412 acres of land within the boundaries of the proposed reservation, 300 of which were under water, and report to the State legislature with the cost of its acquisition. In an interesting tactic, many of the private landowners, who had been blamed for despoiling the natural scenery in the first place, attempted to use Niagara's sublimity as a means of driving up the value of their property. The surveyors recalled landowners citing "the magnificence of the clouds of spray rising from [the Falls'] base," "the splendor of the rainbows" which formed therein, "the grandeur and beauty of the natural scenery visible from the islands," and the "sound of the waters [which] has been likened to the 'voice of God'" as reasons for increased property value. The appraisers disregarded this rationale, however, stating that such aspects did not belong to the landowners, but were "the gift of God to the human race," confessing "no human authority or control."[46] All in all, the surveyors appraised the land needed for the reservation at a total of $1,433,429.50. After a short period of debate within the State legislature, the funds were allocated and the land purchased.

The State Reservation at Niagara Falls was officially opened to the public on 15 July, 1885. During the dedication ceremony, James C. Carter gave an address which celebrated the salvation of Niagara's sublime effect and the divine significance found therein. He considered the occasion to be the making of a "solemn public acknowledgment—to declare that the awful symbol of Infinite Power, in whose dead presence we stand" is "not a property, but a shrine—a temple erected by the hand of

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[45] Irwin, *The New Niagara*, 74.
[46] Dow, *The State Reservation at Niagara*, 29.

the Almighty for all the children of men."[47] In the use of such language, Carter echoed the sublime rhetoric which had been used to describe Niagara since its discovery by Europeans. He, and the other supporters of the Reservation, believed that by banishing the industrial and commercial forces from the immediate vicinity of the Falls nature would regain control of Niagara, thus preserving its sublimity for future generations. It quickly became apparent, however, that it would not be enough to simply remove the artificial aspects of the scenery and allow nature to run its course. The damage already done to the scenery was too extensive. As a result, Olmsted submitted a plan for the improvement of Niagara's landscape in 1887. His proposal conformed to a very particular vision of nature, one which reflected the opinions he expressed in the Gardner *Report*. While he, too, supported "the preservation of [Niagara's] natural sublimity and beauty throughout all coming time," he felt that this was best achieved not by focusing on the Falls themselves as a spectacle, but by placing them within their natural context.[48] With this in mind, Olmsted proposed reforming the natural scenery in areas that had been previously altered in a way that was "harmonious with that of the undisturbed parts," removing all unnecessary artificial aspects while making those necessary as inconspicuous as possible, planting only local vegetation, and banning all "exhibitions in or over the waters of the Reservation" which would distract visitors from the experience of the scenery. While Olmsted's plans come as no surprise considering the ideas he expressed in the Gardner *Report*, he also discussed the need to manage nature itself. He warned against the "incongruities, discordancies, disunities and consequent

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[47] Address of James C. Carter found in Dow, *The State Reservation at Niagara*, 38.
[48] "The Attack on the Niagara Reservation," *Garden and Forest; a Journal of Horticulture, Landscape Art and Forestry* 2 (1889): 241.

weaknesses," such as broken tree limbs and eroded riverbanks, that would occur if the Reservation's managers simply "let Nature alone."[49] These effects, he believed, would be just as distracting for visitors as the artificial aspects he sought to abolish. Clearly, the vision which Olmsted had in mind was one of an idealized landscape—one that might appear to be wholly natural, but actually conformed to specific human designs.

**The Rise of Hydroelectric Power and the Second Preservation Movement**

The creation of the State Reservation was an attempt to rescue Niagara's reputation of sublimity from the commercial forces which had either displaced or diluted it. It was an effort which relied on the traditional rhetoric of the sublime to assert Niagara's importance, a public acknowledgement that the Falls' true value was rooted in their ability as a wonder of nature to deeply affect visitors. While the establishment of the Reservation successfully addressed the immediate aesthetic threats to Niagara, it quickly became apparent that the Falls' natural appearance was still in danger. The boundaries of the Reservation had eliminated any visual evidence of the industries utilizing the power of the rapids, but did nothing to confront their effect on water flowing over the cataract. Starting in 1886, almost immediately after the opening of the Reservation, the New York State government granted charters to seven different hydroelectric companies to draw power from the current of the Niagara River just outside of the boundaries of the park. The Canadian government acted accordingly, granting similar charters and even allowing an American-financed

[49] Frederick Law Olmsted, *General Plan for the Improvement of the Niagara Reservation* (Gazette Book and Job Office, 1887).

company to build on Park land in 1902.[50] The embrace of these industrial developments was part of a larger enthusiasm for technological progress taking hold across the world, and in the United States in particular. The rapid emergence of inventions which radically altered every aspect of life during the nineteenth century gave birth to a utopian vision — the "popular conception of history as a steadily progressive record" in which technological development eventually brought about an idealized civilization characterized by "reduced labor and enriched leisure, health and longevity, abundance, peace, and human brotherhood."[51] Electricity was, perhaps, at the forefront of such utopian visions. Much like the Roebling's grand suspension bridge, the successful utilization of electricity was a source of the technological sublime—a wonder of human achievement and an indication of humanity's mastery of the natural world. It was a hitherto mysterious natural force which now, successfully harnessed and practically applied, revolutionized travel, communication, industry, domestic life, and urban spaces, appearing to bring civilization significantly closer to reaching its full potential. Hydroelectric power furthered electricity's utopian potential by offering humanity liberation from its dependence on coal and natural gas. Generating electricity from water presented a cleaner and seemingly inexhaustible source of power that could propel civilization forward.[52]

As has been previously noted, Niagara had been the object of the utilitarian gaze almost as soon as its existence was realized by Europeans. From the opening of the first French mills in the eighteenth century, there were those who saw the Falls as

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[50] Gail Evans, "Storm Over Niagara: A Catalyst in Reshaping Government in the United States and Canada During the Progressive Era," *Natural Resources Journal* 32, no. 1 (1992): 38.
[51] John F. Kasson, *Civilizing the Machine: Technology and Republican Values in America, 1776-1900* (Grossman Publishers, 1976), 185.
[52] J. A. Koonz*, Industrial Niagara Falls* (The Gazette Press, 1902), 5.

a source of profit. The emergence of hydroelectric technology provided a brand new means of putting the Falls to use, allowing for the capture of Niagara's latent energy to an extent never before imagined. The most ambition scheme of utilization came from a New York State engineer, Thomas Evershed, in 1886. His proposal aimed to generate 200,000 horsepower by harnessing the energy of the entire drop of the Falls. To achieve such a feat, a massive runoff tunnel would need be constructed, taking in water from the rapids above the reservation, running underneath the town of Niagara Falls, and emptying back into the River below the Falls near the Suspension Bridge. The plan was quickly adopted by a local corporation, the Niagara River Hydraulic Tunnel, Power & Sewer Company (later renamed the Niagara Falls Power Company), which secured a charter from New York State in the same year to divert water from the River just outside of the reservation. The project, however, quickly experienced difficulties. Not only was the company struggling to find investors, but the plan's ambitions outpaced the state of technology. While Evershed had envisioned the use of 200,000 horsepower, there were few machines could handle more than 100 horsepower. The project stalled until 1889, when a company subsidiary called the Cataract Construction Corporation was formed by a group of wealthy backers. This allowed the Niagara Falls Power Company to begin construction on a shortened version of the tunnel while securing 1,580 acres of land above the reservation which it leased to various factories in order to supply them with around-the-clock electricity.[53] The execution of the Niagara Falls Power Company's plan initiated a flurry of hydroelectric development at the Falls. By 1904, five different companies were blasting with dynamite and employing armies of cranes to excavate tunnels and

[53] Irwin, *The New Niagara*, 103-106.

trenches, turning the area around the Niagara Reservation into an industrial epicenter.[54]

While the various industrialists involved in the harnessing of the Falls differed from preservationists on their understanding of Niagara's ultimate value, they still subscribed to its sublime characterization. Indeed, it was the same characteristics of sublimity that had promoted the image of Niagara as an emblem of inviolate nature—its unequalled power, inexhaustible volume of water, and eternal flow—which made it such an enticing target for industrial development. The meaning of the sublime in this case, however, was reversed. Rather than implying nature's supremacy over human beings, as the sublime did for the preservationists, it was seen as an invitation for industrialists that promised untold benefits for civilization if only nature could be dominated by technology. Throughout the many pro-utilitarian literature published during the period, language reminiscent of sublime rhetoric is used to describe Niagara's hydroelectric uses. One commentator evoked considerations of eternity typically reserved for the flow of the river itself when he explained that "night and day, year in and year out, the mighty turbines and mammoth generators [of the power companies] whirl in sympathetic motion, making 250 revolutions per minute."[55] Similarly, others emphasized the seemingly limitless volume of water flowing over the cataract. "Efforts have been made to observe the effect of the present maximum draught of water from the falls," one explained, "but the most careful measurements and observations are reported to have failed in indicating,

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[54] Evans, "Storm Over Niagara," 40.
[55] Orrin E. Dunlap, "The Wonderful Story of the Chaining of Niagara," *World's Works* 2 (July, 1901): 1053.

much less measuring, any effect when the power is turned on and off."[56] "Here," another stated, "nature has provided a natural powerhouse of practically unlimited capacity."[57] Those in support of hydroelectric power likewise celebrated Niagara's immense force, grounding in firm figures that which had seemed beyond the limits of reason to adherents of sublime philosophy. The "estimated 275,000 cubic feet [of water] per second" that plunged over the Falls was, as one writer put it, "a daily force equivalent to that stored up in all the coal mined each day in the world."[58] Another compared the amount of energy to human labor, explaining that "if every able-bodied man in Greater New York were working together turning a crank, they would not equal the power to be developed" at Niagara. Furthermore, "they could only work eight hours a day, while the great current [of the Falls] flows forever."[59] Rather than promoting the supremacy of nature, Niagara's sublime reputation was put to use to illustrate its industrial potential and emphasize the significance of the engineering accomplishment. The same characteristics that had made Niagara seem mysterious and beyond the reach of civilization now promised significant technological advancement.

The rapid utilization of Niagara's water quickly alarmed those who had pushed for the formation of the State Reservation, generating doubt regarding New York State's commitment to preserving the natural wonder. This spurred members of the reservation commission, those in charge of administrating the park, into action. The result was a bitter tug-of-war between preservationists and various corporations. The commission's immediate effort was to stem the tide of charters being granted by

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[56] "Electrically Utilized Power at Niagara Falls," *Science* 17, no. 423 (February, 1903): 237.
[57] Koonz, *Industrial Niagara Falls*, 5.
[58] Lyman Abbott, "Niagara Falls in Harness," *The Outlook* 52 (November, 1895): 788.
[59] Dunlap, "The Wonderful Story of the Chaining of Niagara," 1054.

the State legislature to private interests for the use of Niagara's water. In 1892, the commission urged the legislature to reject all bills that allowed the commercial use of water above the Falls. While this effort was defeated, the commission successfully convinced the legislature to allow no new diversion in 1894. In the same year, however, those corporations with existing charters thwarted efforts of the commission to lobby for a state constitutional amendment that would ban all water diversions from above the Falls. The lack of progress on the state level prompted the commissioners to rethink their strategy. Beginning in 1894, the commission opened up their struggle on two fronts, continuing to pressure the State legislature while simultaneously lobbying the federal government. The president of the reservation commission, in 1894, had urged the U.S. Secretary of State to secure international protection for the Falls, taking authority away from New York. Shortly after, in 1896, the commission pushed the State Senate to pass a resolution that would eliminate water diversion from the Great Lakes and Niagara River above the Falls. To the dismay of preservationists, both efforts failed.[60]

The commission would not make significant progress until 1900, when its president worked with United States Senator Thomas C. Platt to introduce a resolution to the United States Senate which would create an international body to investigate the effect of diversions on United States-Canadian water boundaries. While the resolution failed to get approval from the House Committee on Foreign Relations, it was brought before Congress again in 1902 and confirmed by President Roosevelt's signing of the Rivers and Harbors Act. The Act created the International Waterways Commission, comprised of three Americans and three Canadians, which

[60] Evans, "Storm Over Niagara," 40-41.

was charged with investigating the pressing water problems facing both countries.[61] Their report, submitted to the President in March of 1906, affirmed the fears that preservationists had over the effect of water diversion. The ultimate concern was that hydroelectric use would proliferate to such an extent that the Falls would cease to exist entirely, a concern stoked by staunch advocates of utilitarianism such as Lord Kelvin who imagined a day "when the whole water from Lake Erie will find its way to the lower level of Lake Ontario through machinery, doing more good for the world than that great benefit which we now possess in the contemplation of the splendid scene now presented by the waterfalls of Niagara."[62] The International Waterways Commission refuted the importance of Niagara's use value, stating that it was "the great volume of water in the falls themselves and the rapids which makes the place unique." It was the aesthetic value of the falls that made them important, not their economic potential. "The tremendous display of power in wild turbulence fascinates the mind," they explained, "and gives to the question of Niagara's preservation a national interest."[63] Though placing importance on a different characteristic of the Falls, the water itself rather than the surrounding scenery, the report of the International Waterways Commission followed in the footsteps of the Gardner *Report* in valuing Niagara as a natural wonder. It was the intellectual stimulation that resulted from the confrontation with such distinct curiosities of nature that gave Niagara its true meaning, they argued, not the pecuniary profit that could be extracted from it.

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[61] Ibid, 41.
[62] Lord Kelvin's remarks found in Koonz, *Industrial Niagara*, 7.
[63] *Preservation of Niagara Falls. Message from the President of the United States, Transmitting the Report of the American Members of the International Waterways Commission, with Letter from the Secretary of State and the Secretary of War Including Memoranda Regarding the Preservation of Niagara Falls*, Senate, 59th Congress, 1st Session, Washington: United States Government, 1906, from Library of Congress, 3.

While the International Waterways Commission was conducting their survey, momentum began to build behind a grassroots preservation movement. Starting in 1905, J. Horace McFarland, president of the American Civic Association, began rallying public support for Niagara's protection. In a widely-read article published in the *Ladies' Home Journal* titled "Shall We Make a Coal-Pile of Niagara?," McFarland warned that "both of these great reservations [the American and Canadian] said to have been dedicated to the public use 'forever,' will soon be merely graveyards of a betrayed trust, from which we may see that which was once awe-inspiring canalled and turbined and wired into profit-producing work for a few of the betrayers!"[64] Supported by an image of a dry cataract included with the article, McFarland insisted that the complete destruction of the Falls was the only possible outcome of unhindered water diversion. The only solution, he contended, was the direct lobbying of the government by the public. He called on his readers to form "a direct appeal, by mail, to President Roosevelt, and to Earl Grey, the Governor-General of Canada" which called for an end to the exploitation of the Falls by private interests.[65] The result was thousands of letters which flooded Roosevelt's office representing "a cross-section of American society," including women's clubs, religious organizations, municipal leagues, small business owners, and landscape designers.[66] Those who wrote defended the image of Niagara rooted in its sublimity. To them it was a "God-given inheritance" that had greater significance than cheap power, and needed to be

[64] J. Horace McFarland, "Shall We Make a Coal-Pile of Niagara?," *Ladies' Home Journal* 22 (September, 1905), 19.
[65] Ibid.
[66] Evans, "Storm Over Niagara," 43.

protected in order for it to "remain in its eternity, volume and majesty to inspire not only this nation but those of all parts of the globe."[67]

These members of the public were responding to the fear that Niagara as they knew it—the sublime natural wonder—would be left unrecognizable if the work of industrialists went unchecked. Such concerns were perpetuated, not only by articles such as McFarland's, but by visualizations of what the fully-harnessed Niagara would look like. A 1906 issue of *Puck* published a cartoon titled "Save Niagara Falls — From This" (Figure 16), which depicted the drained cataract, its water piped off to the sides, surrounded by a carnival-like atmosphere reminiscent of the pre-reservation era in which tourists reveled in artificial recreations of bygone Niagara attractions. Thrill-seekers plunge in barrels down a slide, children ride a carousel named "The Whirlpool," families are escorted in a taxi which has replaced the famed *Maid of the Mist*, while a man paints "see America First. It's going fast" on the cataract's exposed face. This depiction appealed to the public not only through the visualization of Niagara's destruction, but by reminding them of the first battle of preservation which they had only just won. Similarly, *Life* put out a prediction of what Niagara would look like in 1950 (Figure 15). The illustration depicts a future in which the scenery is choked by smoke-belching factories and the walls of the cataract are covered in advertisements, while the Falls have been reduced to a mere trickle. Other illustrations implied that the destruction of Niagara would quickly lead to the desecration of all of America's natural wonders. A cartoon titled "Why Stop With Niagara?" (Figure 14) showed Niagara choked by electrical wires and converted into a quarry along with Yosemite, Yellowstone, and Kentucky's Mammoth Cave turned

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[67] Letter from Martha M. Buell to Secretary Taft found in "The Voice of the People," *The Chautauquan* 47 (June-August, 1907), 292.

into billboards, power stations, and train stops respectively. These images represent the conflict of American values which was central to the second preservation movement, with technological development and economic gain on the one hand and grand nature, with all of its perceived benefits, on the other. The victory of the former was framed as a moral failure on the part of the nation; the spiritual and intellectual benefits found in sublime nature would be forsaken for material gain.

When the report of the Commission came out, it further validated these concerns by applying concrete numbers to the threat facing Niagara. Despite the claims frequently offered by the hydroelectric companies that "the magnificence of the Falls [would not be] appreciably affected," the commission insisted otherwise.[68] They calculated that, at the time of their report, a total of 60,900 cubic feet of water per second had been granted for diversion, meaning "27 per cent of the average discharge…of the Niagara River will cease to pass over the falls when [all of the] works are completed and in full operation." The effect of this on the appearance of the Falls wou

Figure 9 – "Why Stop with Niagara?" Found in *Life* 45 (April, 1905), 460.

water] taken on the American side should affect the American Fall alone, it would practically leave it dry." It was their opinion that "the commercial advantages of a large increase in development of power will not compensate for the great loss to the world of the inspiration, aesthetic education, and opportunity for recreation and elevating pleasure which the mighty cataract affords."[69] Such opinions gave credence to the preservationists' fears over Niagara's impending doom, validated their aesthetic opinions, and further fueled their efforts.

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[68] Abbott, "Niagara Falls in Harness," 789.
[69] *The Preservation of Niagara. Message from the President*, 9-10.

Forced into action by the sheer volume of public appeal that he received, President Roosevelt addressed Congress in December of 1905, urging them to pass legislation for the protection of Niagara. In his address, he echoed the reasoning of the preservationists, suggesting the moral imperative of protecting the Falls and implying a higher value inherent in the country's natural wonders:

> There are certain mighty natural features of our land which should be preserved in perpetuity for our children and our children's children…It is greatly wished to be that the State of New York should copy as regards Niagara what the State of California has done as regards the Yosemite. Nothing should be allowed to interfere with the preservation of Niagara Falls in all their beauty and majesty. If the State cannot see to this, then it is earnestly to be wished that she should be willing to turn it over to the National Government, which should in such case (if possible, in conjunction with the Canadian Government) assume the burden and responsibility of preserving unharmed Niagara Falls.[70]

In Roosevelt's mind, and, indeed, those in support of preserving the Falls, there was value in maintaining Niagara in its natural state. Remaining complacent in its destruction would be to deprive the world of the aesthetic, intellectual, and spiritual gifts which previous generations had enjoyed. The President's call did not fall on deaf ears. In April of 1906, Ohio Representative Theodore Burton, Chairman of the House Rivers and Harbors Committee, introduced a bill for the control and regulation of water diversion at Niagara Falls. In its original form, the bill limited all diversions from the Niagara River and Great Lakes above the Falls. It also barred any increased importation of electricity from Canada generated at Niagara, with the intention of limiting the effects of that country's diversions and blocking American companies from simply relocating across the border. The Burton bill was widely supported by the public, answering all of the preservationists' demands, but

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[70] Theodore Roosevelt, "Fifth Annual Message," December 5, 1905. Online by Gerhard Peters and John T. Woolley, *The American Presidency Project*. http://www.presidency.ucsb.edu/ws/?pid=29546

experienced political opposition over the course of its passage. Pressure from hydroelectric companies led to changes in the bill, greatly limiting its effect. In its final form, the bill forced future companies to obtain permits from the Secretary of War, but allowed for greater rates of diversion from those currently in operation. It also raised the limit of electricity allowed to be imported from Canada, essentially nullifying the potential effect of that measure. The amended bill soon passed and was signed by the President on June 29, 1906.[71] The Burton Bill, originally set to expire after three years, was renewed several times. It finally lapsed in March of 1913, but not before being superseded by a treaty with Great Britain in 1910. The treaty set clear limits on the amount on the amount of water both New York and Canada could draw from the river for the purpose of generating power to the extent that its flow would not be "appreciably affected."[72] This agreement established the tenuous balance between utilization and preservation that came to define Niagara in the coming decades. Water diversion would continue at the Falls with constant resistance from the Reservation, which attempted to maintain Niagara's natural appearance as the country carried on down the path of industrial development.

The commercial developments which took place at Niagara Falls over the course of the nineteenth century had a profound impact on the way in which Americans interpreted the image of America's most famous natural landmark. Scholars such as Elizabeth McKinsey have pointed out that the sublime connotations of the Falls experienced a decline in cultural resonance during the period.[73] The visual

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[71] Evans, "Storm Over Niagara," 45-47.
[72] Text of treaty found in Dow, *The State Reservation at Niagara*, 131.
[73] McKinsey, *Niagara Falls: Icon of the American Sublime*, 266-267.

encroachment of human works into the scenery and the use of sublime rhetoric as a means of drawing in tourists and promoting industrial projects had made the sublime experience both harder to obtain and less meaningful to the public at large. While McKinsey may be correct in her judgement that Niagara's sublimity seemed less significant to Americans by the end of the nineteenth century, I contend that there remained cultural loyalty to the image of the Falls as a spectacle of pure nature to which the sublime experience had given rise. This conflict initiated dual trajectories of the sublime, as it became a degraded concept on the one hand, with industrialists inverting its meaning to fit their agenda, while preservationists maintained its original definition and significance. Some Americans, to be sure, celebrated civilization's subjugation of Niagara, but others continued to find value in its ability to provide the experience of natural sublimity. This is evident through the constant efforts of those who, at the end of the century, pushed to preserve Niagara's natural appearance in the face of forces which threatened to permanently disfigure it. These preservationists were responding to the potential loss of a cultural artifact which had originally gained its importance from its association with the sublime. Their efforts, while successful in some regards, did not completely reverse the effects of tourism or industrial developments. The Falls continued to draw thousands of tourists after the establishment of the Reservation while hydroelectric companies carried on with their diversions. A tenuous middle ground had been reached which allowed for the preservation of the traditional image of Niagara as the realm of nature and the continuation of technological development, but the two paradigms remained at odds with one another. The differences between natural aesthetics and the advancement of civilization still needed to be reconciled.

# Chapter Three
# "An Ideal Reached and Perfection Attained": Reimagining the Sublime through Illumination

On the evening of 9 June, 1925, a man who identified himself as H.B.A. looked out from among a crowd of thousands toward an incandescent Niagara Falls, its rushing water standing in bright relief against the dark night, as a massive lighting installation was officially dedicated as a permanent feature of the natural wonder. He likened this event to the ceremonies of old in which the "dark-skinned tribes met on the brink of the mighty cataract" to pay homage to nature with hope that the pervasive force would serve their needs in the form of good weather and strong harvests. Now, however, it was "their fair-skinned successors" who gathered to celebrate Niagara through a ceremony unlike anything the foregone tribes could have imagined. It was "man's achievement in the realm of power" — humankind's ability to produce and control light through artificial means — which allowed Niagara to be "revealed in all its beauty" when it should be resigned to darkness, and left spectators "in awe of the wondrous spectacle." According to H.B.A., the application of electric light to the Falls not only helped Niagara to realize its full aesthetic potential, but gave modern Americans the opportunity to commune with nature just as the Native Americans had once paid tribute to "the Great Father."[1]

When electric light came onto the scene in the late nineteenth century, its impact was immense and far-reaching. It signaled the beginning of a revolution in domestic life, entertainment, industry, and public space which promised to improve the conditions of human existence dramatically. Electricity, a force which had always

[1] H.B.A., "Old Ceremony in New Form," *The Niagara Falls Gazette* (Niagara Falls, New York), 13 June, 1925.

been considered "mysterious and dangerous," now "obeyed human command" and provided "liberation from one of the fundamental and primordial limits imposed by Nature on the human will."[2] Darkness could now be overcome with the simple flip of switch without smoke, heat, or wavering light, allowing humans to exist independently of natural light cycles and the dangers of fire. Additionally, it birthed a new form of visual spectacle through both its novelty and the striking effects it could produce. As H.B.A. witnessed at Niagara, "dramatic lighting made possible the revisualization of landscapes, filling them with new meanings and possibilities."[3] The effects produced by artificial light could be transferred to any object or landscape, allowing those who operated the lights to manipulate their appearance and aesthetic significance before the eyes of spectators. In the case of the Falls, illumination reemphasized the natural quality of the tumbling waters through the creation of a sublime spectacle.

Unlike the earlier experiences of the sublime at Niagara, generated first by the Falls' impressiveness as a wonder of nature and then by the human creations which eclipsed them, the spectacle formed by the lights on the Falls was a combination of the natural and technological sublimes. The lighting display could, for obvious reasons, be classified under the technological sublime as it produced a man-made spectacle, but such classification is complicated by the fact that the spectators were reacting to the lights' effect on a natural wonder rather than the technology itself. Observers of the illumination did not celebrate the triumph of civilization over nature, as is the ultimate result of the technological sublime, but were awed by a

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[2] Ernest Freeberg, *The Age of Edison: Electric Light and the Invention of Modern America* (New York: Penguin Books, 2014), 10-12.
[3] David E. Nye, *American Technological Sublime* (Massachusetts: The MIT Press, 1999), 145.

vision of Niagara that was reminiscent of its former reputation of natural sublimity. I argue that this conflation of the two sublimes resulted in an illusion of unharmed nature at Niagara, in which technology was perceived to enhance the natural environment rather than degrade it.

This chapter examines how the application of artificial light generated a seemingly enhanced vision of nature by reimagining the presence of the sublime at Niagara Falls. I start by analyzing the emergence of electric light as a form of public spectacle beginning in the late nineteenth century, specifically in the context of World's Fairs and Expositions — the setting for the most ambitious displays of artificial illumination. Additionally, I will explore how this burgeoning form of spectacle created a new category of sublime experience, one which differed from the natural and technological sublimes that came before it. Electric light had the ability to create awe-inspiring displays which elicited sublime reactions from observers, but, as the effects produced were not rooted in a physical object, could be projected onto any landscape, imbuing it with aesthetic significance. This caused the boundaries between natural and synthetic landscapes to blur, allowing the characteristics of one to be mistaken for those of the other, and vice versa. Finally, I will examine the process of applying these effects to Niagara Falls — first in 1907 and again in 1925 as a permanent feature. I argue that the illuminated Falls induced a sublime experience within observers reminiscent of the natural sublime that had long been associated with Niagara. This simulated natural sublime divorced the Falls from the realities of their physical surroundings, and lessened the perceived effects of industrialization and the intrusion of technology into the natural environment.

**The Consolidation of Illumination as Spectacle and Profession**

In addition to the many utilitarian functions that electric light brought with it when it entered the public sphere at the end of the nineteenth century, it held an inherent appeal due to its novelty. This new technology, with its seemingly limitless potential and hitherto unknown visual effects, drew in the gaze and arrested the minds of the public. No one took advantage of this fact quicker than American advertisers and shop owners. Nearly as soon as the technology allowed, electric light was applied to signage and window displays with the sole purpose of attracting more customers. One needs only to examine the work of Laurent Godinez, a prominent lighting consultant of the time, to understand the success of this marketing strategy. Godinez was so assured of illumination's appeal that he created an experiment on the streets of Jersey City in which he filled a store window with an elaborate lighting display and nothing else, and then observed the public's response. So great was the ensuing rush of pedestrians to view the window that "it nearly caused a riot and it became necessary to add something to the exhibit to satisfy the curiosity of the public."[4] To Godinez, this was evidence enough of electric light's ability to draw in the human mind and focus its attention on a specified object. He was not alone in his conclusion, as many others were busy electrifying their own advertisements and flooding city streets with glowing endorsements of particular brands and products. While there had been no shortage of creative advertising methods throughout America's history, it soon became clear that "the surest way to 'burn' a brand name into the public mind was to electrify it."[5]

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[4] F. Laurent Godinez, *Display Window Lighting and the City Beautiful* (New York: WM. T. Comstock Company, 1914), 50.
[5] Freeberg, *The Age of Edison*, 246.

The public followed the enticement of this peculiar new technology to the various World's Fairs and Expositions which hit a peak in popularity from the late-nineteenth to early-twentieth century. Having explicitly been designed as showcases for the latest advances in art, culture, industry, and technology, these fairs provided an obvious outlet through which to display electric light. Leaders in the field such as Thomas Edison and George Westinghouse had the opportunity to use this stage to show off their latest inventions, simultaneously familiarizing the public with the technology and promoting their own brands. As David Nye explains in reference to the World's Columbian Exposition of 1893, illuminating devices were displayed to such an extent that "some visitors saw more electric light in a single night…than they had previously seen in their entire lives."[6] It was soon not enough, however, to simply present electric light as an object of technology at which to marvel. The potential of artificial illuminants was best established not through their exhibition as physical commodities, but through the demonstration of their capabilities. As a result, fairs soon incorporated artificial illumination as an integral component of the festivities, allowing organizers to add a new element of attraction to their events while celebrating one of civilization's crowning scientific achievements. Consequently, this led to an arms race of illumination between competing expositions, as each successive fair sought to outdo that which preceded it in terms of the sheer volume of electric light within the grounds and the manner in which it was displayed. Knowing that the American public would travel considerable distances to see "the greatest" electric spectacle ever undertaken, proprietors of the fairs attempted to deliver by adding more wattage and more candlepower to the grounds.

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[6] David E. Nye, *Electrifying America: Social Meanings of a New Technology, 1880-1940* (Cambridge, Massachusetts: The MIT Press, 1991), 147.

As a result, the demand for more sophisticated electric light installations grew, and those with knowledge of the technology and its implementation responded by professionalizing their industry. The technicians who specialized in artificial lighting, falling under the title of "illuminating engineers," combined their expertise to ensure that this new technology was applied appropriately. To them, the essence of electrical illumination was a balance of both the technical and artful, with neither aspect outweighing the other in terms of importance. A trend toward this paradigm began at the end of the nineteenth century, but was solidified as official operating practice for an organized trade when the Illuminating Engineering Society of North America (IES) was established in 1906. This allowed illuminating engineers across the country to work within a framework of industry standards to achieve a balance between engineering and aesthetics. In the minds of the IES, the greatest threats to the profession were those who would sacrifice taste for the sake of commerce. The reputation of their craft had already been damaged by those who took advantage of electric light's novelty, shamelessly hocking their wares without concern for proper installation and application. While illuminating engineers easily admitted that it was "natural and desirable that the light emitted by [their] modern illuminants should be utilized economically," they also stressed that it "must be accomplished with due regard for the effect and appearance of such utilization."[7] It was not enough to simply place a light fixture in a room or string bulbs on a building; one had to fully consider the equipment used, the effects it produced, and the subject to be lighted. The engineer and the architect needed to work "together in dealing with problems

[7] F. Laurent Godinez, *The Lighting Book: A Manual for the Layman Setting Forth the Practical and Esthetic Sides of Good Lighting for the Home* (New York: McBride, Nast & Company, 1913), 64-65.

involving both the scientific and artistic side of illumination" to ensure that quality lighting was always the final product of every transaction.[8]

Already established as showcases of electrical illumination, World's Fairs and Expositions served as the testing grounds on which this philosophy of artificial lighting — a harmony of the scientific and aesthetic — was first developed and later perfected. Rather than simply trying to impress visitors with an overwhelming volume of electric light, illuminating engineers sought to create artfully lighted landscapes in which the public could be immersed. As one observer of the Pan-American Exposition of 1901 put it, "the time had long passed when a great exposition could merely be a glorified market, a place for the showing of wares, of processes and products…expositions ceased primarily to be exaggerated marts; they began to be resplendent spectacles."[9] No longer were those in the lighting industry using fairs to display their newest technologies in a commercial sense, but rather applying them in contribution to the scene; placing less emphasis on a physical product than the artistic effect it could produce. It was within these spectacles that illuminating engineers could employ the newest techniques of their trade to produce lighting displays which embodied the principles of their profession. It was not long before expositions contained intricate lighting systems involving searchlights, indirect lighting, multi-colored projectors and illuminated fountains — each an individual part of an incandescent whole.

The transition toward this doctrine of lighting began in earnest at the 1893 World's Columbian Exposition in Chicago, setting the precedent for a new era of

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[8] L. B. Marks, "Inaugural Address of President L. B. Marks" (inaugural address of the President of the Illuminating Engineering Society, February, 1906), 5.
[9] Eugene Richard White, "Aspects of the Pan-American Exposition," *The Atlantic Monthly*, July 1901, 85-86.

electrical displays. While it would be another thirteen years before the IES was founded, this spectacle generated the philosophy that would become their creed. Not only did the Exposition contain more lighting than any other fair that had come before it, but it also had more electric light on its 690 acres of grounds than the entire city of Chicago. Fountains were illuminated with various colors and every building was lined with "steady stars" of incandescent light which lifted them "out of the darkness" and "accentuate[d] every prominent feature of the architecture or landscape."[10] The result was a luminous environment so brilliant that the fair was dubbed the White City. The feature most illustrative of the illuminating engineer's burgeoning aesthetic philosophy, however, was necessarily the most subtle. Below the many statues found throughout the Exposition were sunken spaces in which concealed lights accentuated the figures. As one observer explained of the statue of Diana (Figures 17 and 18), the lights revealed "her splendid figure as in the very eye of a calcium projector," while the absence of other lights in close proximity produced "the effect of a golden goddess swinging in mid-air, disdaining all support of earth and claiming kinship with the spirits of the sky."[11] Effects such as this not only signaled the start of a conscious effort among illuminating engineers to turn attention away from the novelty of the illuminant itself, but demonstrate the potential theatricality of electric light. Through methods of emphasizing and obscuring elements of a scene, artificial light could be used to create illusions of isolation, motion, and depth to transform the appearance of any given landscape according to the engineer's will.

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[10] William E. Cameron, *The World's Fair, Being a Pictorial History of The Columbian Exposition* (Grand Rapids, Michigan: P. D. Farrell & Co., 1893), 320.
[11] Ibid.

This practice was continued and expanded upon at Buffalo's Pan-American Exposition of 1901. In addition to having electricity as its main attraction, this fair was the first to name it as its official organizing theme. A celebration of electricity seemed especially appropriate for a fair in Buffalo due to its close proximity to Niagara Falls, which had only recently been successfully harnessed for hydroelectric power.[12] As the name suggests, the Pan-American Exposition was originally intended to display trade resources shared between the United States and Latin America. The plan fell through, however, due to an apparent lack of "cooperation" on the part of the Latin American countries, giving way to the scheme of electrical beautification for which, as one observer put it, "the visitor will perhaps be thankful."[13] In all, the grounds included 250,000 eight-candle-power incandescent lights, large searchlights, fountains illuminated with color, and a 400-foot Electric Tower covered with 40,000 lights as the centerpiece. The use of many small incandescent lights, as opposed to the more powerful arc lights seen in Chicago, "produced an even diffusion of light, transforming the exhibition grounds into a work of art with no shadows except by design."[14] Additionally, this incandescent atmosphere allowed illuminating engineers to do away with the traditional outlining of the fair's structures, which had been common practice among illuminating engineers up until that point. There was "no more picking out of the outline of a building in a row of lights," but rather the use of indirect lighting to recreate "the architecture in a softer beauty."[15] One can get a clear sense of the difference in effect of the two techniques by comparing Figures 19 and 20. The outlining technique, seen in Figure 19, obscures most of the architecture's

[12] For more detail on hydroelectric power at Niagara Falls, consult Chapter 2.
[13] White, "Aspects of the Pan-American Exposition," 86.
[14] Nye, *Electrifying America*, 43.
[15] White, "Aspects of the Pan-American Exposition," 88.

detail in shadow, whereas the lighting in Figure 20 highlights the details of the minor buildings and even adds new characteristics to the major structures as the bulbs which cover their surfaces create designs of their own. These new methods further removed electric light as an object from the landscape of the fair. The light itself began to be incorporated more organically, enhancing the architecture rather than supplanting it and preserving a sense of three-dimensionality within the grounds. Techniques such as these served to further refine the art of electrical illumination, placing a greater emphasis on the engineer's ability to produce an entirely new landscape rather than simply shedding light on a preexisting one.

The Louisiana Purchase Centennial Exposition in St. Louis, which followed just three years later, continued the progression of this illuminating technique. Again, a multitude of incandescent bulbs were used throughout the grounds as they had been in Buffalo, and again visitors witnessed electric light's "universalizing" effect which provided "a brilliant canopy, connecting the many exhibits, statues, fountains, and pools in one design that was at once refined, ethereal and stunning."[16] Several innovations were included as well. Rather than having the incandescent lights turn up at once as they had in Chicago and Buffalo, light in St. Louis surged out of the highest point of the fair and swept across the grounds, setting off a dramatic cascade of illumination that lasted for a total of five seconds.[17] While this grand show awed the crowds and lent a sense of dynamism to the spectacle, more subtle lighting techniques added a greater sense of depth to the experience. One particular guidebook, for example, made sure to highlight the beauty of the fair's fountains illuminated by colored lights. The streams of water were lit by three sets of lights on

[16] Nye, *Electrifying America*, 35.
[17] Ibid, 46-47.

different lines which were controlled by a rheostat, turning "on the electricity by degrees" and producing "a gradual transformation from one color to the other." The beauty of the display was further "heightened by concealing the lamps so that the globes [were] not seen, and only the glow of the lamps permeate[d] the water."[18] The hidden lamps forced all of the observer's attention to the illuminated object which inherited the aesthetic qualities of the light. Such techniques generated an illusion in which artificially manipulated light and shadow were perceived as organic components of the grounds rather than distinct, synthetic appendages.

While illuminating engineers used these expositions as a means of solidifying a new paradigm through which their industry could work, their efforts also had an unintended impact. Spectacular illuminations, while intriguing observers with their novelty, also established a new medium through which visitors could attain a sublime experience. While certainly related, this new "electrical sublime" differed greatly from the technological sublime which scholars such as David Nye and Leo Marx have noted took hold in America slightly earlier. As Nye succinctly put it, electric light "took the technological sublime in a new direction, displacing attention from the particular machines or man-made structures to a set of visual effects."[19] Whereas sources of the technological sublime, such as Roebling's Suspension Bridge, impressed onlookers with the magnitude of human accomplishment which they embodied, there was no tangible manifestation of the electrical sublime. This shift presented unlimited potential for spectators to encounter the sublime within new objects. Where the natural "sublime made the individual humble in the face of

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[18] *World's Fair Authentic Guide; Complete Reference Book to St. Louis and the Louisiana Purchase Exposition* (St. Louis: The Official Guide Company, 1904), 44.
[19] Nye, *American Technological Sublime*, 145.

nature" and, conversely, the "technological sublime exalted the conquest of nature" by human achievement, the "electrical sublime represented a third kind of experience, as it dissolved the distinction between natural and artificial sites" and allowed sublimity to be transferred to any landscape.[20] A catalyst of the sublime now existed within a fluid medium — one which could be projected onto any object, be it natural or artificial, imbuing it with extreme aesthetic significance.

Evidence of this new sublime lies in the reactions had by those who witnessed the large-scale spectacles of illumination put on at the expositions. Their descriptions include a sense of wonder based on a confrontation with both seemingly immeasurable vastness and overwhelming force. According to Nye, this is because "spectacular illuminations combined the mathematical and dynamic sublime," subdivisions of Kant's conception of the sublime which refer to objects of extreme magnitude and irresistible power, respectively.[21] One visitor to the Pan-American Exposition summed up this combination in his account of the lights being turned on for the first time:

> The buildings huddle mysteriously together about the gray Tower, and here and there a band strikes up. Dim like an exhalation is the picture now, and a pervasive hush is over the scene. The splash of fountains is, of a sudden, loud. The statues whisper together. The people are silent. There glows, before one knows it, a premonitory redness along up through the lines of pillars which range themselves in solemn file in the great court. Each pillar is blushing a low red. The red is angry now, sharper, and there! daylight is almost here again. Each building has glimmered into light. Electricity has mounted her splendent throne. But it is not daylight; it is something almost better, - refined daylight; less frank, less brutal, less modern. Suddenly from everywhere there has come a light which is more than a glow, but less than a glare. In a second or so, the Exposition has grown from a city of shadows to a vision of light. And such a vision, and such a light![22]

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[20] Ibid, 152.
[21] Ibid, 151.
[22] White, "Aspects of the Pan-American Exposition," 88.

Here the mathematical and dynamic sublimes combine to create an effect very similar to that of the natural sublime. The extreme magnitude (mathematical sublime) is manifest not only in the sheer size of the lighting system, but the aesthetic variety that it provides for the spectator. His focus bounces from feature to feature — from pillars to buildings to the Tower — while the light itself undergoes a dynamic progression from low to high intensity. With so many features illuminated at once — and so many different illuminating effects generated at the same time — the viewer is given a seemingly infinite variety of aspects to be dazzled by. Simultaneously, he confronts an overwhelming sense of power (dynamic sublime) embodied in electricity itself. The medium, with the ability to fuel such an immense spectacle, represents a force much greater than human. A sense of this force comes through in the viewer's description of electricity as a seemingly self-determined power. Electricity, personified in this description, has the ability to illuminate the grounds better than the sun, and does so from the seat of her "splendent throne." The author, at first overwhelmed by the sheer size of the spectacle and then humbled by the mysterious force which makes it possible, comes away from the experience with a reverence toward the power of electricity, much like the observer of the natural sublime ultimately gains a sense of humility toward nature.

Further evidence of the sublime reaction to illumination can be found in the spectators' inability to either fully comprehend or properly articulate that which they witnessed. Each failure in cognitive processing conveys a sense of awe or bewilderment brought on by the spectacle. For one visitor to the exposition in St. Louis, the caliber of beauty he witnessed was too overwhelming to fully comprehend: "Many a rational individual, on witnessing for the first time the evening illumination,"

he explained, "has exclaimed: 'If heaven could be any more beautiful than this, I should like to go there right away.' Truly the human mind is not capable of conceiving a sight more entrancingly lovely."[23] Confronted with an entirely new spectacle, observers of the illumination fell back to the use of sublime rhetoric in an attempt to describe an entirely novel experience. Similarly, other fairgoers experienced spectacles which appeared so fantastical that they could not be described in earthly terms. One visitor to Chicago proclaimed the fair's illumination to be "the stuff that dreams are made of, — weird, gorgeous, fascinating, inconceivable, indescribable!"[24] These observers were so awe-struck by the illuminations that they were unable to properly recreate a sense of the experience in words. Their only hope of conveying the wonder of what they saw was to imbue it with an otherworldliness — an oneiric quality. The overwhelming of the senses described in these accounts is the same sort of reaction experienced by those who encountered the natural or technological sublimes. The observer is awe-struck, humbled, excited and briefly removed from physical reality in the face of the sublime sight.

## The Electric Beautification of Niagara Falls

It was not long after the fair at St. Louis that first attempt at establishing a permanent lighting installation at Niagara Falls was made. The displays put on at the three major expositions prior had proven that spectacles of artificial light could be carried out on a large scale while maintaining aesthetic discretion. When efforts to bring light to the Falls began in 1907, the same skills and concepts which had been developed at the fairs served as the basis upon which planners formed their blueprint.

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[23] *World's Fair at St. Louis: Louisiana Purchase Exposition, 1904* (St. Louis: 1904), 7.
[24] Cameron, *The World's Fair, Being a Pictorial History of The Columbian Exposition*, 322.

Only the methods capable of generating a spectacle on the scale of the Pan-American or Louisiana Purchase Expositions could be applied to a natural wonder such as Niagara with the hope of doing it justice. With the grand scale of the project in mind, organizers hired Walter D'Arcy Ryan, a rapidly-rising talent in the industry, to carry out the task. Having quickly gained a reputation as "a magician of illumination" and later "looked upon by most veterans of electrical illumination work as the pioneer illuminating engineer in America," Ryan was the top choice to take charge of the lighting of the nation's most iconic natural monument.[25] His cutting-edge techniques, which had already secured him a position as the head of General Electric's Illuminating Engineering Laboratory in Schenectady, New York, and his keen eye for artful lighting made him the first name in the illuminating profession following the death of former industry leader Luther Stieringer in 1903. He would go on to coordinate prestigious illuminations such as that of the Singer Building in 1908, New York's Hudson-Fuller Celebration in 1909, San Francisco's Panama-Pacific Exposition in 1915 and Chicago's Century of Progress Exposition in 1933.[26] But it was the initial lighting of Niagara that would garner him the recognition needed to secure his status as America's most capable illuminating engineer.

The 1907 effort was spearheaded by Mayor A. C. Douglass in conjunction with the Niagara Falls Board of Trade with the hope that the new feature would reinvigorate the flow of tourists to the city, much as the fairs had attracted record numbers with their illuminated grounds. Fronting an initial payment of $5,000 from his own pocket, Douglass hired Ryan to install an illuminating system that could light

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[25] "Man Who Will Direct Lighting of Falls, Is Magician of Illumination," *The Niagara Falls Gazette* (Niagara Falls, New York), 23 February, 1923.
[26] Nye, *Electrifying America*, 57.

the Falls for a trial period of thirty days. If this trial was well-received, plans would be drafted to make the lights a permanent fixture. Ryan soon started work on an arrangement of three separate batteries of projectors, capable of producing a total of 1,000,000 candlepower, set up at strategic points "for the purpose of securing a wide sweep over both cataracts [the American and Horseshoe Falls], with a rising and plunging light."[27] Battery number one, the largest of the three, was placed midway between the American and Horseshoe Falls and consisted of eleven thirty-inch projectors and ten eighteen-inch projects. Batteries two and three, made up of four thirty-inch projectors and eleven eighteen-inch projectors, respectively, were installed at varying distances from the American Falls — number two being 3,500 feet away and number three being 1,500 feet away.[28]

Much as he would in the cases of his later illuminations, Ryan made a conscious effort to produce spectacular lighting that fit the scale and tone of his subject. Niagara Falls, having been sanctified as an emblem of American nature through the establishment of the State Reservation just twenty-two years earlier, posed a particular challenge in this regard. Freighted with preexisting notions of national identity, cultural symbolism, and intellectual significance (the likes of which were detailed in the first chapter), the Falls faced a potential threat from the addition of synthetic embellishments. Indeed, "when the idea of illuminating the Falls was first brought forward, a storm of sentimental disapproval arose on the score that such an act would be a desecration of nature."[29] It was a distinct possibility that artificial illumination could radically alter the appearance of the Falls, effectively undermining

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[27] W. D'A. Ryan, "Illumination of Niagara Falls," *General Electric Review* 10, no. 3 (1908): 117.
[28] Ibid, 116-117.
[29] Raymond T. Vredenburgh, "Spectacular Lighting," *The Illuminating Engineer* 2, no. 12 (1907): 857.

all of the values which the establishment of the Reservation affirmed. This was a concern which Ryan was acutely aware of and did not take lightly. He plainly admitted in his later recounting of the process that "the universal censure which would naturally follow failure or unharmonious effects approaching desecration was a serious consideration" in his planning and ultimate execution of the lighting display.[30]

By all accounts, Ryan was successful in avoiding this major pitfall of the illumination. "Rather than taking anything from the grandeur of the tumbling waters," one observer wrote, "the penetrating shifting rays of light thrown by the immense electric searchlights had given the Falls a new glory."[31] Just as the nighttime illumination of the expositions had allowed the statues and architecture to maintain their original features while providing them with a novel accentuation, the lights on Niagara gave the physical attributes of the Falls a new emphasis without obliterating their natural appearance. This is evident through descriptions of the illumination that acknowledged the uniqueness of the light's effects, but qualified them through comparison to natural phenomena. The white light thrown onto the Falls "greatly resemble[d] that of sunlight, and instead of being concentrated into a thin ray," as one might expect a projected light to be, it diffused "throughout the mist of the Falls in a perfectly natural manner."[32] While the light was artificial, it did not appear any less natural than that of the sun. The only difference was the time at which it was striking the Falls. Similarly, the colored lights projected on the Falls, which one might assume to be obviously synthetic, were not perceived as such. They gave "wonderful tints to the Falls themselves and to the vapor above them, but no more wonderful

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[30] Ryan, "Illumination of Niagara Falls," 116.
[31] "Niagara At Night A Continuous Show," *The World*, 9 September, 1907.
[32] Raymond Francis Yates, "Bringing Niagara Falls Out of the Night by Incandescent Lights." *The Electrical Experimenter*, October, 1916, 403.

than the sun put into rainbows."[33] Likewise, "the mist and water, bathed in all the colors of the rainbow," surpassed "anything in spectacular effect save the great Northern Lights."[34] As Ryan had intended, the artificial illumination produced spectacular effects which seemed plausible within the natural environment. The Falls were viewed under what appeared to be the influence of natural light, but that light could now be directed according to human will.

It was not enough for the light itself to dissuade viewers of its synthetic origins, the scene as a whole needed to maintain its natural aesthetic in order for the project not to be judged as a debasement of nature. With this in mind, Ryan sought to produce an illumination "on a scale in keeping with the *surroundings*" (emphasis mine) and not just the Falls themselves.[35] For this to be achieved, no component of his lighting system could appear out of place — a necessity which was further heightened by the previous efforts of the first preservation movement to rid the area of commercial blight. This led Ryan and the organizers of the Niagara State Reservation to agree that structures such as generator housings would need to be "ornate in character, presumably of stone, of impressive and majestic architecture, which would add beauty, dignity and repose to the surroundings and be ornamental in effect" should the display be made permanent.[36] This way the means of generating the illumination would not appear at odds with the natural character of Niagara's environment. While still obviously a human-made structure, the architecture would conform to a particular aesthetic — one which emphasized a dignified characterization of nature over industry's vulgarity. Still, Ryan went to great lengths to

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[33] "Peace: The Illumination of Niagara Falls," Niagara Falls Historical Society, 1915: 7.
[34] "To Illuminate Niagara Falls," *The World*, 14 July, 1907.
[35] Ibid.
[36] "Peace: The Illumination of Niagara Falls," 3.

assure the public that no aspect of the spectacle would sully Nature's handiwork. When rumors began circulating that the illumination was merely a stepping stone to the crass commercial exploitation of Niagara, he drew a firm line by explicitly stating that his lights "will not be used for advertising purposes…there will be no degradation of that sort" projected onto the Falls.[37] He went further by insisting that "he had never lost sight of Niagara as it is" (i.e. a wonder of nature). He did not wish to transform the Falls into something new, "he simply sought to continue nature's great show after dark."[38] To both Ryan and the public there was a boundary of aesthetic decency that could not be breached. While the synthetic was applied to Niagara Falls, its presence could not be overtly known. The lights could not be applied to the detriment of Niagara's natural appearance.

Once Ryan's lights were turned on for the first time, the public agreed that not only had the Falls and their surroundings maintained their natural characteristics, but they had been improved upon. Far from exacerbating the presence of industrial and commercial structures within the scenery, the illumination allowed spectators a rare opportunity to view the Falls in their absence. As one account put it:

> In the daytime great piles of ugly, dirty factory buildings flank the American falls, while almost immediately behind it is a miniature Coney Island. It is a distinct shock to see such incongruous structures in the same view that embraces the cataract, and the greatest feature of the sight at night [under illumination] is the utter absence of these unpleasing details, the complete annihilation of the jarring elements of the picture…All one sees is the work of nature. The new powerhouses of the Canadian company, the hotels, the factories, are all gone.[39]

As was the case at the expositions, the illumination made possible an editing of Niagara's landscape. The artificial lights, paradoxically, made the Falls appear *more*

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[37] "Niagara Falls Illuminated," *New York Times*, 8 September, 1907.
[38] "Light Flood on Niagara," *Los Angeles Herald*, 5 October, 1907.
[39] "Lighting Up Niagara," *New-York Daily Tribune*, 8 September, 1907.

natural by hiding the industrial aspects of its surroundings. The residue of human progress, he "jarring elements," the likes of which had fueled the effort to establish the State Reservation over twenty years earlier, were quite literally banished to the shadows. The night provided a black backdrop while the light juxtaposed the Falls, allowing them to stand out in brilliant contrast, isolated from the tainted surroundings (see Figure 21). "I am seeing Niagara for the first time," another spectator stated despite his previous visits, "Always before I have seen the sordid, the ugly, and it has taken all the majesty of the cataract itself to drive away the thoughts of disgust at the despoilers of nature. But tonight we can see Niagara as the first man who came upon it in the days of its primeval solitude and splendor saw it."[40] The contradiction of this description is revealing. Certainly, Niagara in its primeval solitude, visibly untouched by the hand of human progress, did not, and could not, appear as it did under artificial light, but the effect was so convincing that the observer was able to imagine a vision of Niagara as such — completely absent of human influence. Far from simply hiding the industrial works from view, the lights created an illusion of pure, unaltered nature. Despite being actively influenced by a completely synthetic force, the Falls maintained a wholly natural appearance.

The trial ran every night for its pre-determined thirty days and received an overwhelmingly positive response. According to some accounts, as many as 10,000 spectators gathered on the Canadian side of the river and suspension bridge to view the Falls bathed in both white and colored light.[41] Despite the public enthusiasm his display spawned, however, Ryan was not entirely satisfied with his project. He

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[40] Ibid.
[41] "Niagara At Night A Continuous Show," *The World*, 9 September, 1907.

lamented the fact that, due to the total amount of candlepower generated by the batteries, while seemingly immense to the layman, "it was not possible…to properly illuminate both Falls simultaneously."[42] Because this illumination was a trial run, Ryan was limited to using half the amount of light he would have in the case of a permanent installation. He felt that a system with an additional 1,000,000 candlepower, at an estimated cost of $100,000, would be adequate to light the Falls in its entirety should the city decide to make the illumination a permanent feature.[43]

Despite its success, the display was not immediately made permanent. Once the thirty days had passed, steps were taken to form a coordinated effort between the New York State government and the Province of Ontario to raise the necessary funds on the basis that both bodies would equally benefit from the feature. This effort, however, failed to come to fruition. In 1912 State Senator Robert H. Gittins, a native of Niagara Falls, passed through the New York State Legislature a bill that appropriated $50,000 for the purpose of installing a permanent illuminating system contingent upon the Province of Ontario matching the amount. "Since the provincial authorities did not vote the amount," however, "the bill did not become law" and the project was stalled.[44] The effort was again picked up by New York State in hopes of opening the illumination in 1915 to coincide with the celebration of one hundred years of peace on the United States-Canada border. The State planned to purchase a more powerful system of searchlights which had been developed in the time since the 1907 illumination. Unfortunately, "owing to the war in Europe the matter of the sale was deferred" until the Russian government finally purchased the lights for double

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[42] Ryan, "Illumination of Niagara Falls," 117.
[43] Ibid, 118.
[44] Marjorie F. Williams, *History of the Illumination of Niagara Falls*, (Niagara Falls: Niagara Falls Convention and Visitors' Bureau, 1958), 6.

the price which New York had offered.[45] The Falls were again left at the mercy of the setting sun.

## Perfecting the Illusion

While Ryan awaited the fate of his Niagara project, he had the opportunity to further hone his lighting skills at other venues. The various projects that Ryan was involved in after 1907 earned him a great deal of praise, but it was San Francisco's Panama-Pacific Exposition of 1915 that was the most sensational. For many of those invested in the field of lighting, the Exposition signaled the apex of artificial illumination — the point at which the industry's potential as a form of artistic expression was fully realized. The lighting scheme which Ryan developed for the event took full advantage of the technological improvements which had been achieved in the eleven years since the St. Louis Exposition. While previous fairs had initiated the move toward indirect lighting, Ryan committed fully to banishing any presence of the technical process from sight. Instead, he enveloped visitors in an illuminated landscape which was inseparable from the rest of the fair. To achieve this, light could not be presented as a unique addition to the event. Unlike the fairs which had come before it, there was no anticipated moment in which darkness had settled and the lights were ceremoniously switched on, rather the lights were timed to gradually illuminate with the setting of the sun so that the fair was continuously lighted.[46] As a result, visitors did not see the lights as an addition to the grounds, but experienced them continuously as an organic aspect of their environment. No longer a novelty which simply allowed an exposition to remain open after dusk, lights did

[45] Ibid.
[46] Nye, *Electrifying America*, 63.

not need to be showcased as such. The visitor could now experience an immersive lighting display without the distraction of its physical source.

Ryan intensified this effect by a complete commitment to indirect lighting. Whereas the "buildings of previous expositions had in the main been used as a background on which to display lamps," those in San Francisco had light projected upon them in order to emphasize, rather than detract from, their detail.[47] Ryan used large floodlights, concealed at the base of each building, to bathe the architecture in an even glow, while red "luminous shadows" were projected on the corners to preserve a sense of three-dimensionality. "By separating the light from the objects to be lighted," Ryan "refocused attention on the buildings" rather than distracting attendees with glaring bulbs.[48] Ryan himself stated that "for the first time at an international exposition, the illuminating sources, as such, whether arc, incandescent or gas lamps, lost their identity," allowing the grounds to receive the full attention of the crowds.[49] No longer was the physical embodiment of light an element of the wonder; this was a spectacle based wholly on light working in tandem with its subject to aide it rather than displace it (see Figure 22). Spectators were enthralled with Ryan's ability to direct light in such a way. While the light sources themselves could not be seen, "their light directed against the monumental sculptures, towers and minarets, imbue[d] the objects with radiancy. All of the principal architectural and sculptural works of the exposition [stood] out at night like giant transparencies, and

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[47] Walter D'Arcy Ryan, "Illumination of the Panama-Pacific International Exposition," *Transactions of Illuminating Engineering Society* 11, (1916): 631-632
[48] Nye, *Electrifying America*, 63.
[49] Ryan, "Illumination of the Panama-Pacific International Exposition," 632.

even their minor details [were] clearly outlined."[50] This method served to intensify the effects of the spectacle. More so than ever before, the fair's lights produced a full sensory experience which allowed the visitors to exist within a reimagined environment.

Ryan's method also confronted viewers with a much more affective electrical sublime than those experienced at the previous expositions. Visitors witnessed the presence of extreme power and magnitude which was heightened by the "all-pervasive" nature of the illumination. The ubiquitous glow was "seemingly without source" and appeared to be more "a quality of the Exposition atmosphere than an effect of the lights."[51] The illumination's omnipresence and the ambiguity of its source allowed visitors to surrender completely to its effects without being brought back to reality by the presence of mechanical systems. The attendee could now exist within the very spectacle they observed. One fairgoer described the lighting as "truly religious in its effect," allowing the mind to turn "away from the ordinary world into the realm of the mystic and the supernatural" — a response reminiscent of the idea that intellectual engagement with the natural sublime was a means of transcending the material world and better understanding the Deity. Another visitor was so awe-struck by the sight that she found it "impossible to put the effect upon paper. No one could do it; no one has," she explained, "It is too much. Here is my description: The illumination makes of the Exposition a City of my Dreams!"[52] Again, the visitor, overwhelmed by sensory stimulation and sheer scale of the spectacle, relies on terms

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[50] Hamilton M. Wright, "The Panama-Pacific International Exposition at Night; How the Illuminating Engineer Uses Light Decoratively," *Scientific American*, April 1915, 379.
[51] Ben Macomber, *The Jewel City* (San Francisco: John H. Williams, 1915), 134.
[52] Elizabeth Deitrick, *Best Bits of the Panama-Pacific Exposition and San Francisco* (San Francisco: Galen Publishing Co., 1915), 64.

of the fantastical in an attempt to properly describe what she observed. Such reactions are not only proof of the electrical sublime, but evidence of Ryan's ability to heighten its effect through his methods.

Despite his growing acclaim and award-winning display in San Francisco, it would be another ten years until Ryan had the chance to bring his lights back to Niagara Falls. By 17 July, 1924, the Niagara Falls Chamber of Commerce had taken the matter of a permanent illumination into its own hands. They met with representatives of General Electric and quickly announced a plan to illuminate both the American and Canadian Falls simultaneously on a nightly basis. Where the previous effort had stalled in the attempt to foster international cooperation, the Chamber's committee was able to meet with their counterparts from Ontario and reach an agreement just seven days after their initial plan was announced. According to this joint resolution, both cities of Niagara Falls would contribute $39,000 toward the installation and upkeep of a permanent lighting apparatus. Following this agreement, the Niagara Falls Illumination Board, a committee comprised of American and Canadian members meant to ensure the management, operation and maintenance of Niagara's lights, was formed on 24 February, 1925. Ryan was again hired for the project and quickly set to work on an improved installation. Following a brief trial period in May, the lights were officially dedicated on 8 January of that year during the Progress and Power Show — a small exposition created especially for the inauguration of the illuminating system.[53] Unlike previous attempts to establish a permanent illumination feature at the Falls, this new effort was characterized by

[53] Ibid, 7.

speed and efficiency, wasting little time between the plan's initial proposal and the switching on of the lights.

With Ryan again at the helm, the new effort was essentially a continuation of the 1907 illumination, with the exception of a few technical and strategic differences. The most obvious of these were the lights themselves. Technological developments which had taken place since the 1907 illumination gave Ryan the opportunity to employ searchlights which were "an improvement of those employed at the Panama Pacific exposition in 1915, and…vastly superior to those used to light the Falls" eighteen years earlier.[54] These improved lights far surpassed Ryan's original estimates of what would be needed to adequately illuminate both falls simultaneously. Rather than the modest 2,000,000 candlepower which he had called for in 1907, the new batteries generated an astounding 1,300,000,000 candlepower — strong enough, the Illumination Board hoped, "to cast reflections for a distance of seventy-five miles."[55] Additionally, the batteries were moved to specially-made wooden platforms erected on top of the overflow building of the Ontario Power Company located on the Canadian side of the river. This not only provided Ryan with an elevated angle from which to aim the lights, but further obscured them from the view of the spectators, allowing him replicate the methods used in San Francisco to intensify the illusion of the spectacle.[56]

The lighting installation was further improved by the addition of solar screens and more advanced colored plates to the searchlights. These modifications provided the operator of the lights with greater control over the intensity of white and colored

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[54] "Her Own Power Makes Setting For Nature's Most Precious Gem, When Giant Searchlights Focus Niagara," *Niagara Falls Gazette*, 23 May, 1925.
[55] Williams, *History of the Illumination of Niagara Falls*, 7.
[56] Ibid, 8.

light, as well as the ability to replicate natural phenomena such as the aurora borealis and "triple moonlight" — effects which Ryan had perfected during the Panama-Pacific Exposition.[57] The effect which Ryan was most proud of, however, was his ability to create a simulation of a solar eclipse on the Falls. In January of 1925, a total eclipse of the sun was visible over Niagara Falls for the first time in more than three centuries. Enticed by the unique opportunity, Ryan traveled to the Falls, nearly completely frozen at that time of the year, "with a corps of experts…to measure the intensity and observe with special instruments the changing character of the light over Niagara and the effect of the eclipse and accompanying phenomena on the scenic values of the ice and water of the cataract."[58] By analyzing the data he and his team had gathered, Ryan sought to create a synthetic replication of the phenomenon. By the time the opening ceremony for the lights commenced just five months later, it was "possible to reproduce at will the appearance of the Falls under the influence of a total solar eclipse; as the tumbling foamy green gradually [changed] to a dull leaden hue" under Ryan's direction.[59] These effects added even more variety to the spectacle and further blurred the distinction between natural and artificial wonders. Not only could the synthetic light make the Falls appear "more natural" by isolating them from their industrial surroundings, but they could now recreate the effects of natural phenomena, giving the illusion of nature another layer of complexity.

As was the case during the 1907 illumination, Ryan's lighting effects were not intended to be the focus of the display, rather they were meant to accentuate and celebrate the natural wonder. By obscuring light sources and ensuring his illumination

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[57] See Ryan, "Illumination of the Panama-Pacific International Exposition," 638; "Her Own Power Makes Setting for Nature's Most Precious Gem," *Niagara Falls Gazette*, 1925.
[58] "View Over Niagara Brings Many Visitors," *The New York Times*, 24 January, 1925
[59] "Niagara's Cataracts Illuminated," *Niagara Falls Gazette*, 25 May, 1925.

did not overpower the Falls, Ryan was able to once again maintain the image of Niagara as an object of nature despite the influence of artificial light. Spectators saw the same effects as those who witnessed the previous illumination — an edited and ornamented landscape that not only retained its organic aesthetic, but appeared *more* natural than it did in daylight. This synthetically-produced image of nature was legitimized by the fact that Niagara's own power, harnessed via hydroelectric turbines, generated the very light which illuminated it. This gave the public the sense that it was not the work of humankind that was thrust upon nature, but human ingenuity being utilized to assist Niagara in realizing its full potential. As one observer put it, "if by the current that they themselves produce, the Falls can be brilliantly illuminated during the night hours, [an] ideal is reached and perfection attained."[60] Perfection here is a Niagara which improves itself. It was not artificial technology being used to alter the environment, but rather "a fraction of [Niagara's] magnificent energy" being "reflected back to enhance the beauty of its source."[61] Because the synthetic medium through which the Falls were seen was first generated by their latent power before being turned back upon them, the display was viewed more as an organic extension of the waterfall than an artificial appendage.

In producing an illusion of untarnished nature, the illumination made possible a return of a sense of sublimity to the Falls which had not been present for decades. The lights had recreated the conditions of the natural sublime – presenting spectators with an image of Niagara which emphasized its power and beauty, while removing it from the artificial surroundings which had diluted its affective capabilities. Some

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[60] Edward T. Williams, "Niagara to Illuminate Itself," *National Magazine* 43, (1916): 470.
[61] "Her Own Power Makes Setting for Nature's Most Precious Gem," *Niagara Falls Gazette*, 23 May, 1925.

observers picked up on this recovery and clearly noted it, describing the display as "the most sublime spectacle [they] ever expect to see on this old earth."[62] Others did not express the sublime in such exact terms, but hinted at it nonetheless. A sense of it comes through the common indicators previously discussed, such as the inability of the observer to put the visual phenomenon into words: "In fact the effects created by this…display…were beyond description being so different from anything ever before witnessed."[63] Accounts also note the overwhelming grandeur of the exhibit, in the presence of which "spectators were held spell-bound," so much so that they were "unmindful of the cold night" which enveloped them.[64] The sight of the illuminated Falls was so enthralling that it elevated observers to a level of contemplation not unlike that which proponents of the natural sublime sought through their communion with nature. Observers were able to forsake their tether to physical reality in order to embrace a brief moment of metaphysical meditation. The key to understanding this sublime experience lies in the fact that it was the image of Falls that the viewers were reacting to, not the solely the effects of the lights. Viewers still celebrated the sight of the "majestic cataract," "strikingly awe-inspiring and beautiful," despite the synthetic effects which played upon it.[65] This is because the effects generated electric light, capable, as we have seen, of eliciting a sense of the sublime, had been projected onto Niagara, causing viewers to attribute the sensation they received to the natural grandeur of the object before them rather than the synthetic medium through which it was viewed. It was Niagara, the emblem of

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[62] "The 'New Niagara,'" *Niagara Falls Gazette*, 16 July, 1925.
[63] "Magnificent Display," *Buffalo Courier*, 9 June, 1925.
[64] "Thousands Throng Canadian Border to Witness Illumination of Falls," *Niagara Falls Gazette*, 26 May, 1925.
[65] Ibid.

nature, which was considered the source of the sublime, the lights just emphasized its inherent majesty.

The addition of artificial light to Niagara Falls had a profound impact upon the way in which Americans understood the premier emblem of their nation's natural wealth. The application of the new technology essentially provided onlookers with a simulation of what had hoped to be achieved through the creation of the State Reservation. The illuminated Falls appeared to be in a pure state, removed from its artificial surroundings, and once again was able to provide the experience that had come to define it in the eighteenth and early-nineteenth centuries – that of the sublime. This was possible because of the fluidity of the electrical sublime. Existing within a set of visual effects, the electrical sublime could be transferred to any object, generating the illusion that the illuminated subject was the source of the sublime experience. This effect was heightened as illuminating engineers perfected their craft. By more subtly incorporating light into the scene and obscuring its source, the engineers drew attention away from the mechanical process of illumination and toward the object which was lighted. This technique allowed the experience of the sublime to go uninterrupted by the realization of how the effects were produced. The result of this at Niagara was the return of an older understanding of the natural wonder that was now independent of the physical realities of its surroundings. Whereas the encroaching artifice around the Falls in the second half of the nineteenth century had made the experience of the sublime nearly impossible to obtain, the illumination made such conditions irrelevant. Niagara Falls, icon of the

natural sublime, could now be seen on a nightly basis, suspended in beams of artificial light.

# Conclusion

The illumination of Niagara Falls played a crucial role in Americans' understanding of nature at a time of change, when the effects of the nation's rapid industrial and economic growth were noticeably altering the physical environment. By viewing Niagara as representative of American nature in general, one can get a sense of the cultural impact of environmental change by tracking the modulation of the sublime in association with the Falls throughout history. Niagara had risen to prominence as a cultural monument as intellectuals employed radical and romantic ideas of the natural sublime in the formation of a national identity following the American Revolution. Through the promotion of these ideas, Niagara was defined by its ability to inspire awe as the premier manifestation of American nature's grandeur and overwhelming power. The Falls' sublimity was then tamed and commercialized as it was popularized through didactic presentations and the emergence of wide-spread tourism in the mid-nineteenth century, though it was still characterized by nature's supposed separation from civilization and apparent superiority over human ability. Such notions of Niagara's sublimity, however, came into conflict with the nation's economic ambitions during the second half of the nineteenth century. The conditions of the sublime were degraded as factories and tourist amenities visibly intruded into Niagara's scenery, replacing impressions of inviolate nature with those of fragility and endangerment. Electric light, however, offered a solution. The introduction of artificial illumination in 1907 and 1925 revived Niagara's sublime connotations through a complex mediation of nature. The lights, capable of mimicking the experience of the natural sublime, generated an aesthetic ideal of Niagara based on the older conceptions of nature. Although it was a synthetic

medium which made the view possible, the Falls appeared removed from the surrounding artifice, returned to their state of natural grandeur, while inheriting the sublime effects of the lights. Such an appearance satisfied a wide-spread desire to view Niagara in its former natural context, despite the increasing evidence of human influence found throughout its surroundings.

These findings relate to larger questions regarding the role that technology plays in mediating human perceptions of the natural environment. Through the exploration of artificial illumination's application to Niagara Falls we get a sense for what lies beyond technology's physical impact on nature. Non-tactile technologies, such as synthetic light, have the ability to provide manifestations of culturally-generated aesthetic ideals of the natural world which exist independently of the physical conditions of the environment. The satisfaction of such visual desires in turn influences the way in which humans understand the conditions of the natural world, as well as the extent of their impact on it. The realization of such a relationship between synthetic mediation and environmental understanding offers the opportunity to expand discussions in the fields of ecocriticism, environmental history, and technological history. Rather than taking the common approach of viewing the technological sublime as solely oriented "toward the future," as the source of new visions of human mastery over nature, it can also be seen as a means of perpetuating older perceptions as well.[1] The technological sublime, in this sense, becomes a means of obscuring the perceived impact of human activity on the environment by satisfying desires for the appearance of natural purity, grandeur, or beauty.

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[1] Nye, *American Technological Sublime*, 153.

Viewing Niagara Falls in such a way places it in dialogue with the work of scholars such as Lawrence Buell. Buell has both highlighted the division of nature and civilization as a human construct and pointed out the influence of cultural output on human perceptions of the natural environment.[2] It is clear that Niagara, and the conflicts which surrounded it, embodied these ideas. The Falls, as characterized by the concepts of the natural sublime, were defined by their perceived otherness in comparison to the human world. The illumination perpetuated this divide by generating an aesthetic ideal which was rooted in the notions of the sublime, simultaneously reaffirming the distinction between nature and civilization and satisfying culturally-influenced conceptions of nature. While these findings compliment Buell's assertions, they also raise more questions. What, for instance, are the lasting effects of the technological perpetuation of the nature-culture divide on human perception of the natural environment? Does this divide continue to influence the way in which Americans see and interact with the natural world around them? Furthermore, in what other instances has technology been incorporated into seemingly natural spaces in order to reach culturally-generated aesthetic ideals? This thesis stands as a first step toward answering such questions. By recognizing electric light's ability to produce an idealized vision of Niagara Falls, one gets a sense, more broadly, of the role played by technology in shaping the American understanding of nature during periods of dramatic environmental change.

[2] Buell, *Writing for an Endangered World*, 6; Buell, *The Environmental Imagination*, 3.

# Image Appendix



Figure 1 — John James Barralet. *Science unveiling the beauties of nature to the genius of America, 1814*. 1814. The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Print Collection, The New York Public Library.

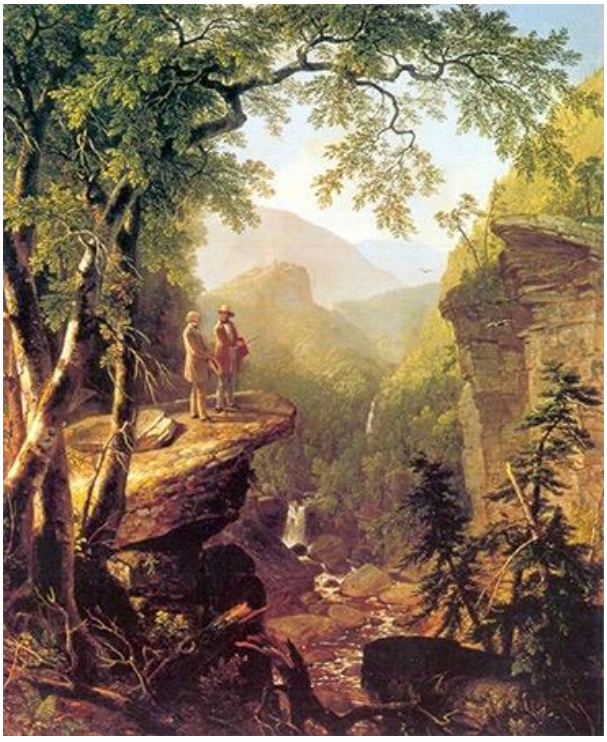


Figure 2 — Asher B. Durand. *Kindred Spirits*. 1849. Crystal Bridges Museum of American Art, Bentonville, AR.



Figure 3—Thomas Cole. *Horseshoe Falls from the Canada Side*. c. 1829-30. Collection Cranbrook Academy of Art Museum. From: Elizabeth McKinsey, *Niagara Falls: Icon of the American Sublime*. Cambridge: Cambridge University Press, 1985.



Figure 4—Jasper Francis Cropsey. *Niagara Falls from the Foot of Goat Island*. 1857. Museum of Fine Arts, Boston, M. and M. Karolik Collection.



Figure 5—Frederic Edwin Church. *Niagara Falls*. 1857. National Gallery of Art, Corcoran Collection.

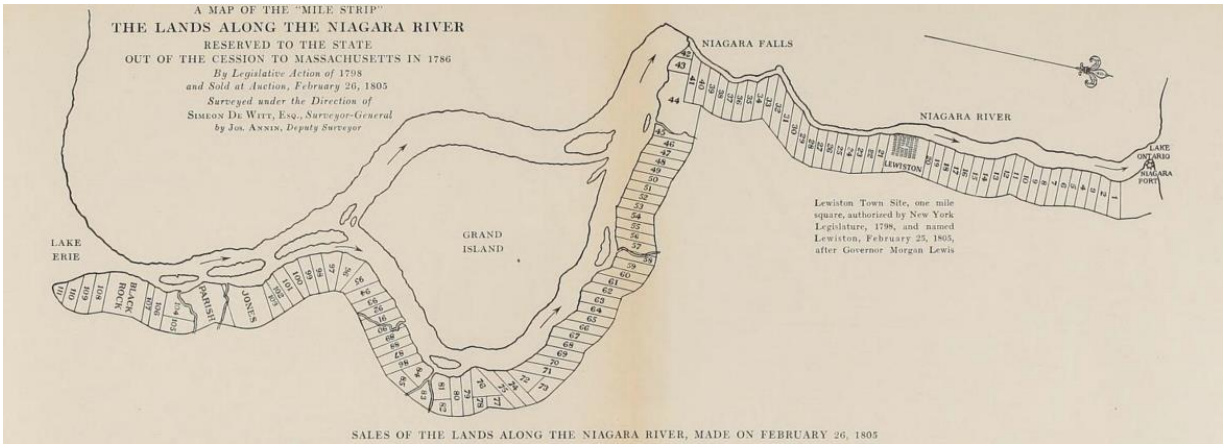



Figure 6 – "A Map of the 'Mile Strip'; The Lands Along the Niagara River." Adams, *Niagara Power: History of the Niagara Falls Power Company, 1886-1918,* (Niagara Falls Power Company, 1927), 59.




Figure 7 – Currier & Ives. *The Rail Road Suspension Bridge: Near Niagara* Falls. c1856. Popular Graphic Arts, Library of Congress, Washington, D.C.

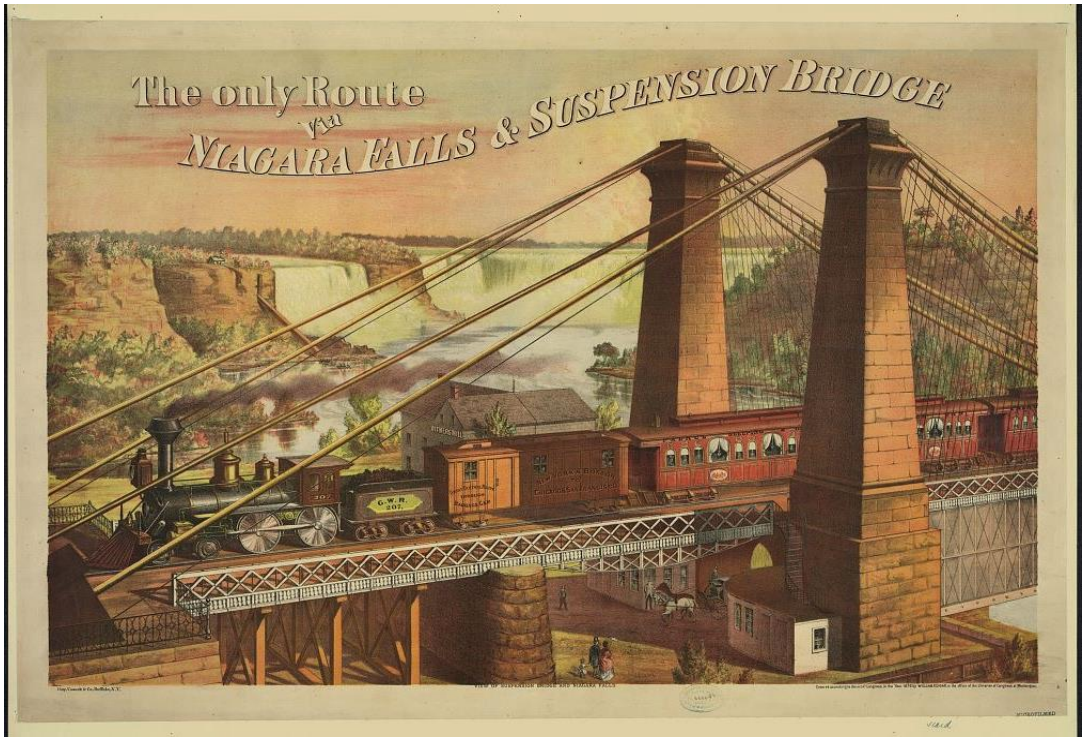



Figure 8 – Clay, Cosack & C. *The Only Route via Niagara Falls & Suspension Bridge*. c1876. Popular Graphic Arts, Library of Congress, Washington, D.C.



Figure 9 – Orrin E. Dunlap. *Blondin Reading a Paper on a Rope over Rapids*. 1860. Photos & Writing from the Orrin E. Dunlap Collection, New York Heritage Digital Collections, New York.




Figure 10 – M. H. Zahner. *Annie Edson Taylor Queen of the Mist after her Trip Over the Horseshoe Fa*ll. 1901. Daredevils of Niagara – Photos & Writing from the Orrin E. Dunlap Collection, New York Heritage Digital Collections, New York.




Figure 11 – "Map of Niagara Falls Showing the Proposed Reservation." Found in James T. Gardner, *Special Report of New York State Survey on the Preservation of the Scenery of Niagara Falls, and Fourth Annual Report on the Triangulation of the State for the Year 1879* (Charles Van Benthuysen & Sons, 1880).




Figure 12 – "Disfigured Banks. Repulsive Scenery Around Visitor Approaching Goat Island Bridge to First View of Rapids." Found in James T. Gardner, *Special Report of New York State Survey on the Preservation of the Scenery of Niagara Falls, and Fourth Annual Report on the Triangulation of the State for the Year 1879* (Charles Van Benthuysen & Sons, 1880).

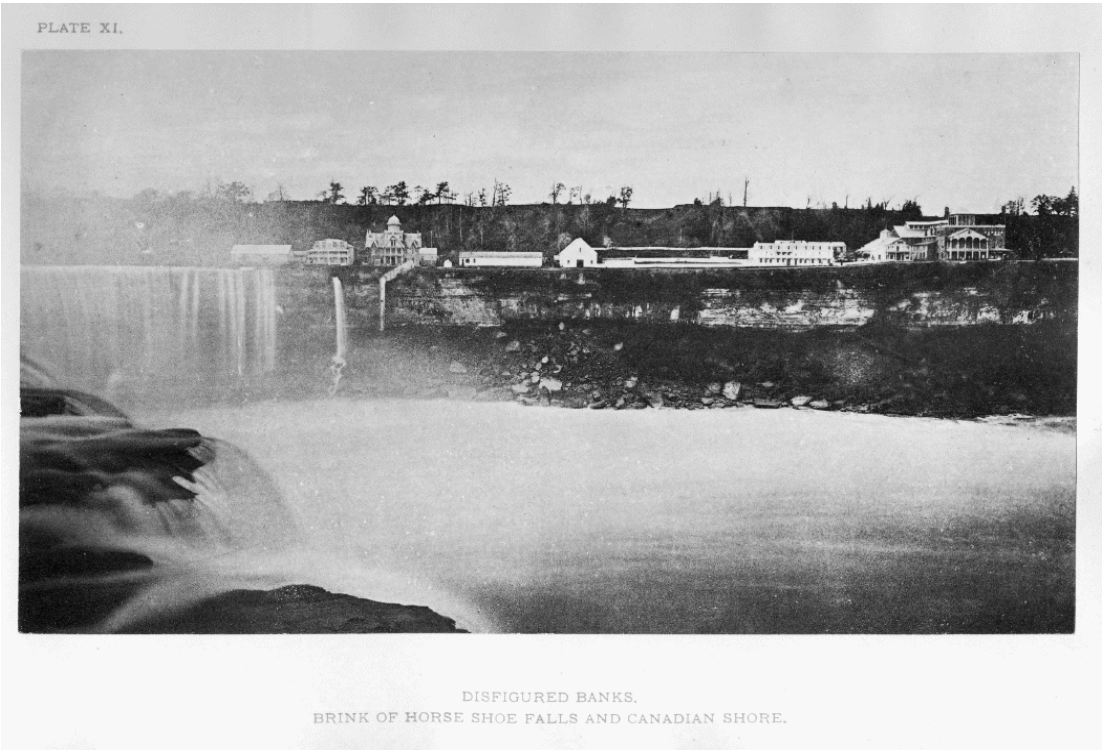



Figure 13 – "Disfigured Banks. Brink of Horse Shoe Fall and Canadian Shore." Found in James T. Gardner, *Special Report of New York State Survey on the Preservation of the Scenery of Niagara Falls, and Fourth Annual Report on the Triangulation of the State for the Year 1879* (Charles Van Benthuysen & Sons, 1880).

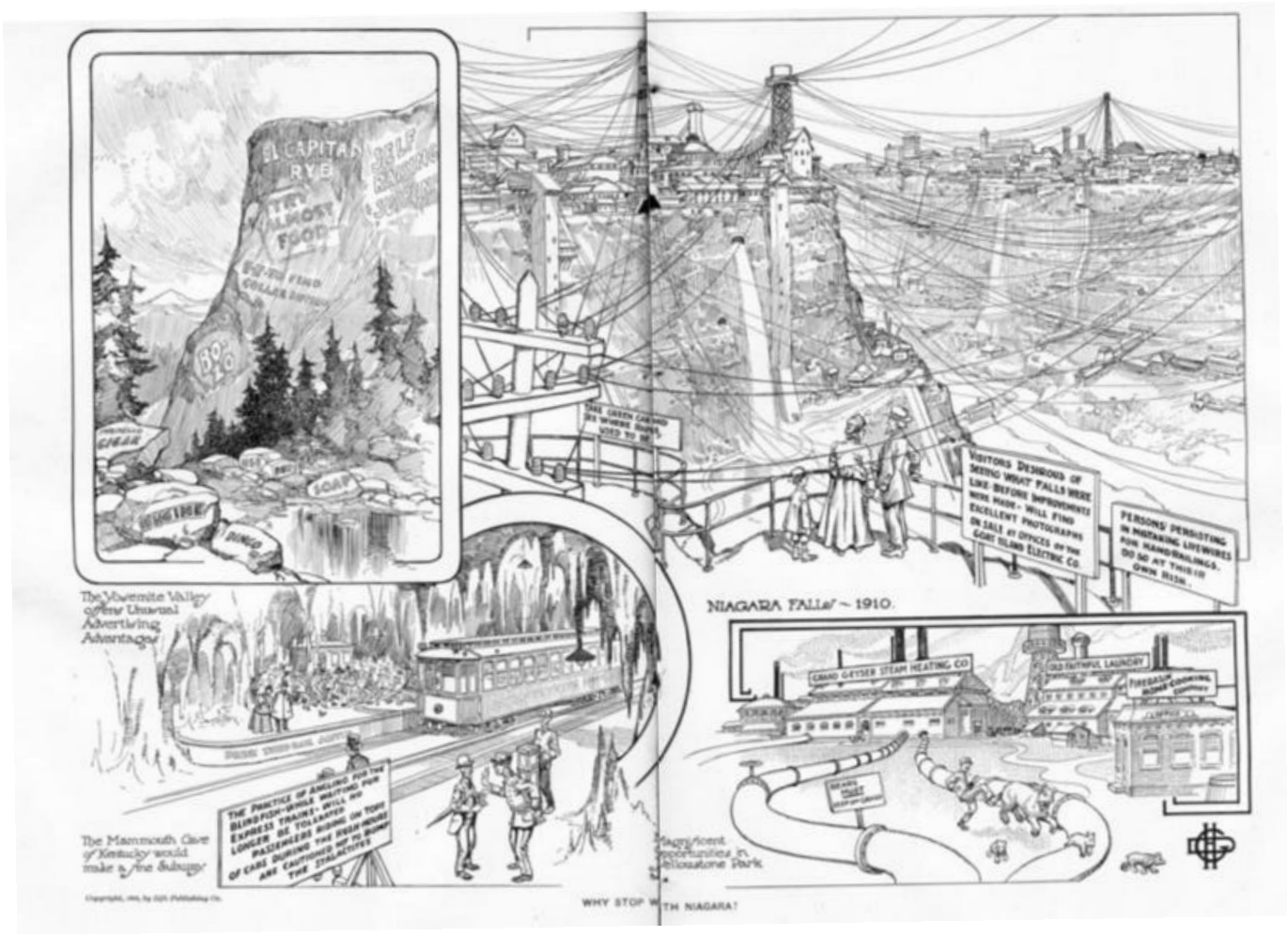



Figure 14 – "Why Stop with Niagara? *Life* 45 (April, 1905), 460.

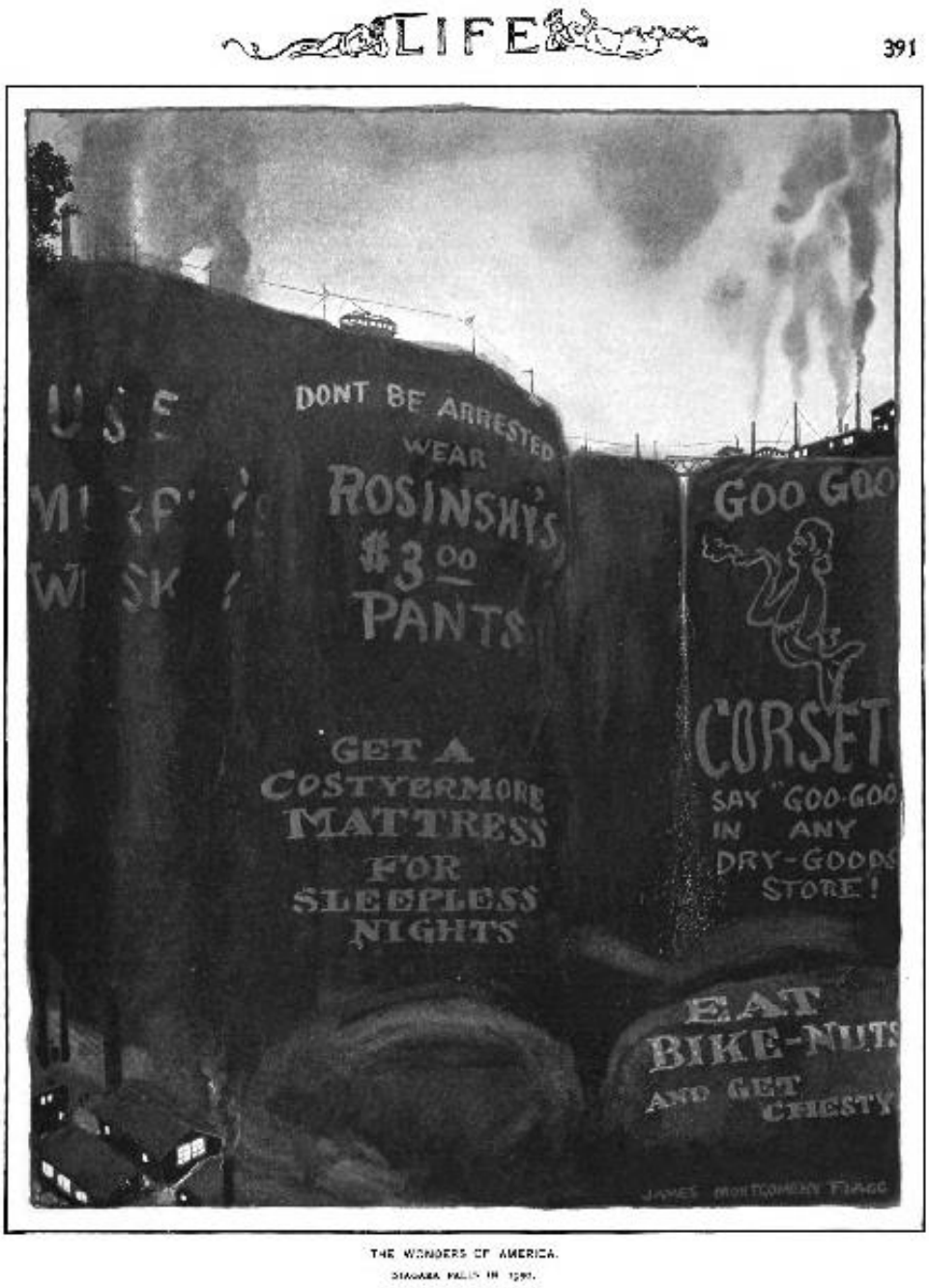



Figure 15 – "The Wonders of America. Niagara Falls in 1950."
Found in *Life* 45 (April, 1905), 391.

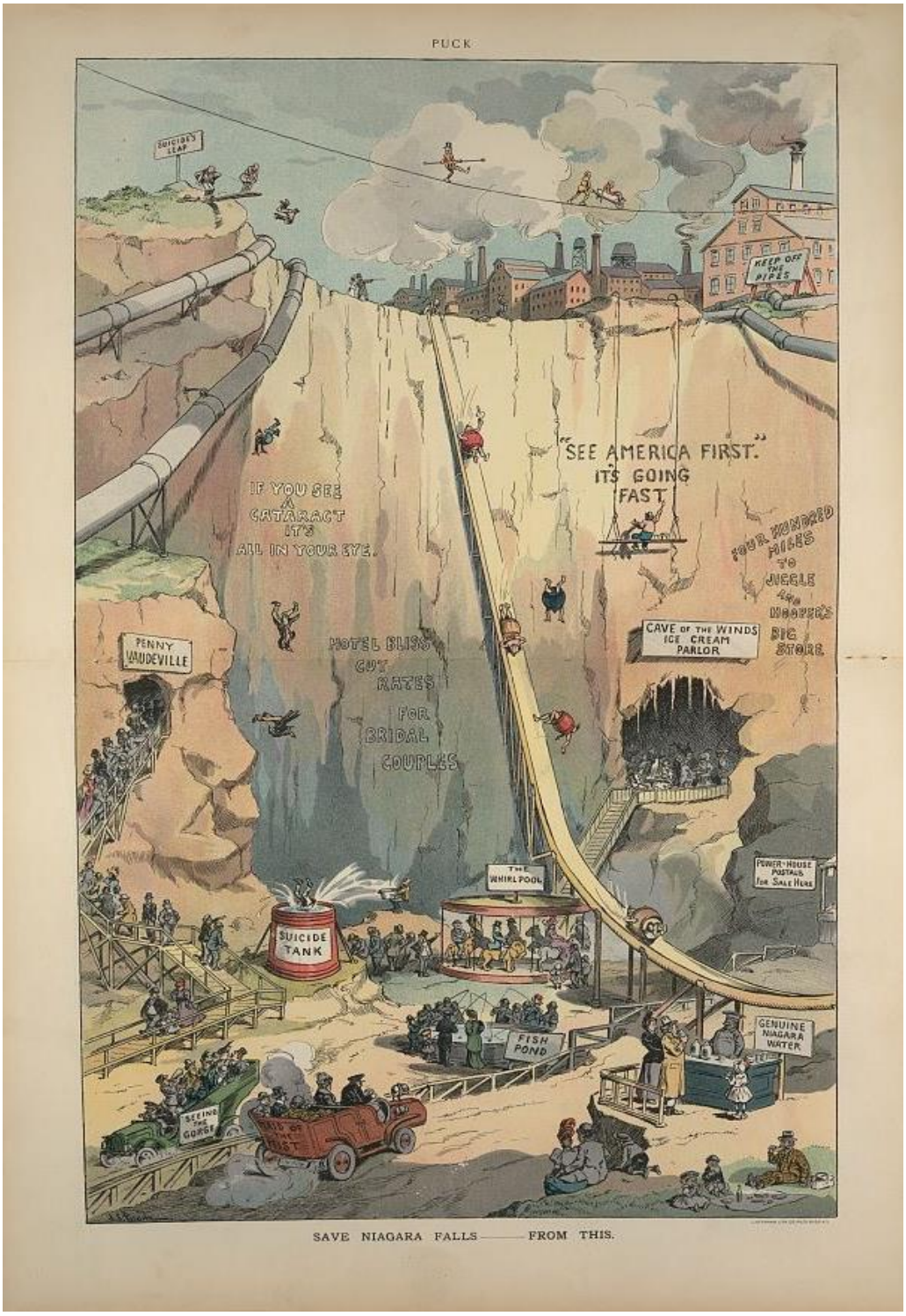



Figure 16 – J. S. Pughe. *Save Niagara – From This*. 1906. Miscellaneous Items in High Demand, Library of Congress, Washington, D.C.




Figure 17 – "Diana, Main Dome, Agricultural Building (St. Gaudens)." Illustration in Trumbull White and W.M. Igleheart, *The World's Columbian Exposition, Chicago, 1893* (John K. Hastings, 1893).



Figure 18 – "Night on the Grand Basin." Engraving from *The Dream City: A Portfolio of Photographic Views of the World's Columbian Exposition* (St. Louis: N. D. Thompson Publishing Co., 1893).



Figure 19 — *The Columbian Illuminations*. In *The Dream City; A Portfolio of Photographic Views of the World's Columbian Exposition* (St. Louis: N. D. Thompson Publishing Co., 1893).



Figure 20 — Simon, Oscar A. & Bro. [*Night view at the Pan-American Exposition, Buffalo, New York, 1901] / Ascar [i.e. Oscar] A. Simon & Bro., photographers*. 1901. Library of Congress.



Figure 21 — Dunlap, Orrin E. *American Falls Illuminated*. 1907. New York Heritage Collection, Niagara Falls Public Library, Niagara Falls.



Figure 22 — *Night Illumination along the Avenue of Palms east of the Tower of Jewels [graphic]*. 1915. San Francisco Historical Photograph Collection, San Francisco.

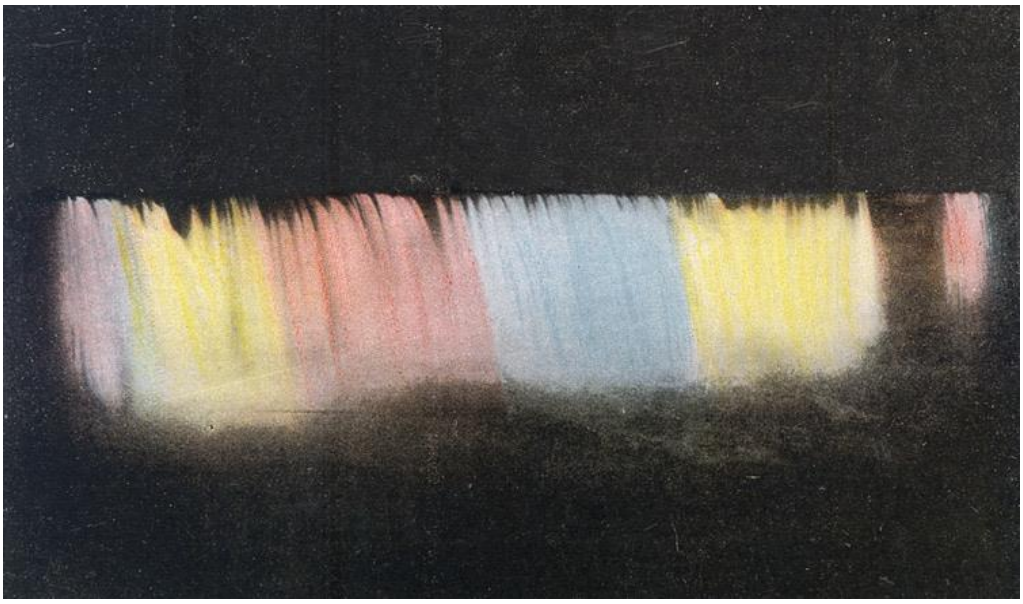


Figure 23 — Maple Leaf Bazar. *Illumination of the Falls from Canada*. 1926. Niagara Falls (Ont.) Public Library, Niagara Falls.

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