Citizen Coke: An Environmental and Political History of the Coca-Cola Company

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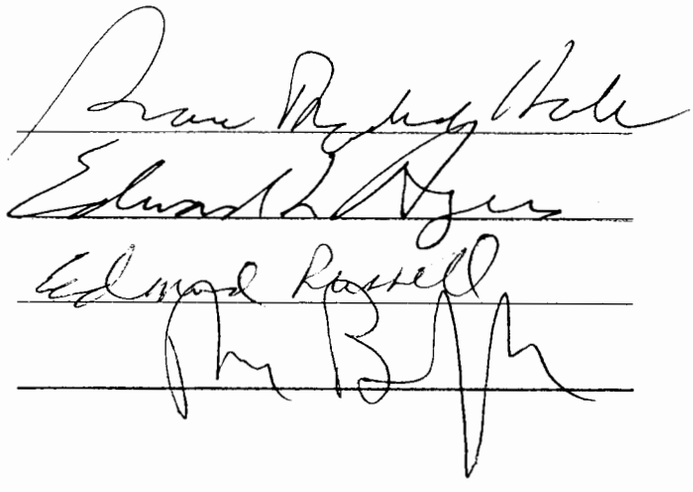

Abstract

Blending business, environmental, cultural, and political history, this manuscript on the commercial ascendancy of the Coca-Cola Company addresses a simple question: how did a patent medicine invented in an Atlanta pharmacy in 1886 acquire the natural resources it needed to become available in retail outlets all over the globe? Though often not treated by scholars as such, mass-marketing enterprises like Coca-Cola are ultimately extractive industries requiring prodigious amounts of natural resources to achieve the retail ubiquity that made them famous. Thus, reducing the cost of ingredients—including packaging—is a primary concern of these enterprises, one that structures corporate organization in ways historians have not fully explored. Restoring the connection between Coca-Cola and the ecosystems it inhabited, this study places natural resource acquisition at the heart of a narrative about the construction of a political economy that nurtured the growth of low-value consumer goods businesses in the twentieth century.

This study argues that vertical integration was not the hallmark of big business growth in the twentieth century. It contends that insulation from the risky and often unprofitable business of mining natural resources from provider communities around the world allowed many companies to gain the global market popularity that they did in the twentieth century. This is what made certain profitable companies more resilient than others as they transitioned from the Progressive Era to the globalized economy of the late-twentieth century. With cheap natural resources and limited front-end investments in production systems, Coca-Cola was able to place its products on retail shelves all across the globe, making it one of the most widely available and profitable consumer items in human history.

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Prologue: The Creation Myth of Citizen Coke

I drink Coca-Cola. Growing up in Atlanta, the homeland of this famous soft drink, it was hard not to become addicted to the beverage. This was the product that helped make my town what it was. Few southern cities could claim a business enterprise as big and powerful as the Coca-Cola Company. As former Atlanta mayor Andrew Young stated on the occasion of Coke's 100th birthday in 1986, "When we talk about Atlanta's boom and our billions of dollars of new investments, you really have to give Coca-Cola credit." The company helped nurture a "global, international perspective in this city when other cities appeared to be returning to the Dark Ages."[1]

I realized over time that I was a Coke man for the same reason Pittsburgh citizens were Steelers fans and Green Bay loyalists were cheeseheads: Coke was the industry that made my world possible. Coca-Cola, in my mind, was a builder, a creator, a provider. The Atlanta company was an ambassador to the world that we were proud to claim as our own because it was a force for good, a company recognized for its ability to generate economic rewards wherever it went. It was a public citizen whose success ultimately improved the lives of those around it. This was Citizen Coke.

The idea that Coca-Cola was a company committed to service was one that Coke promoted throughout its history. When Georgian pharmacist John Stith Pemberton first created the syrup that would come to be known as Coca-Cola in an Atlanta pharmacy in 1886, he advertised it as a "brain tonic" that "refreshes both Body and Brain" and "Cures Morphine and Opium Habits and Desire for Intoxicants." It was something that could alleviate pains, both physical and mental. Pemberton marketed to a Southern populace

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[1] "Mayor Makes a Bubbly Pitch for Coca-Cola Party Monday," *Atlanta Journal Constitution*, May 2, 1986, D/1.

that had just suffered through turbulent years of war and Reconstruction. It was one of many patent medicines introduced in the United States pitched as cost-efficient fixes for ailments plaguing an anxiety-ridden country.[2]

From the very beginning, then, the Coca-Cola Company sought to associate itself with public betterment, and throughout its history, the company would highlight those aspects of its corporate past that reflected this interest in public service. Coke's corporate literature and promotional materials consistently portrayed company presidents and leaders as selfless public servants who dedicated their lives to improving the world around them. The first president of the Coca-Cola Company, Asa G. Candler, who took over full ownership of the Coke enterprise in 1891 following Pemberton's death in 1887, has long been revered within the Coke family as someone who sacrificed personal wealth for the common good. A devout Methodist from Villa Rica, Georgia, who became an enterprising pharmaceutical wholesaler in Atlanta, Candler helped to turn Coca-Cola into a marketing giant by the turn of the twentieth century and saw the soft drink firm become a national success by the end of his presidency in 1917. But in company literature he is oft remembered for what he did outside the firm. Company publications, such as the *Coca-Cola Bottler*, describe him as someone notable for his "desire to do that which would reflect the most good without thought of self and without desire for personal gain." Upon his death the *Atlanta Journal* claimed, "Service, a beautiful and a noble term despite its worn usage, was the master motive of his well-nigh four score years." He was credited with executing monumental "golden deeds," such as offering temporary loans amounting to almost $50,000,000 to help Georgia cotton farmers during an agricultural

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[2] *Atlanta Journal Constitution*, June 20, 1886, 14.

depression in the 1910s and bailing out the Atlanta real estate market during the Panic of 1907. Candler was "Atlanta's first citizen," a man who used his wealth to improve the lives of others.[3]

Robert Winship Woodruff, the "Boss" of Coca-Cola who ran the company from 1923 up to his death in 1985, garners the same respect in company lore for being a man of the people. Robert Woodruff's father had created a banking syndicate that bought the Coca-Cola Company in 1919, and he appointed his son to run the enterprise in 1923. From the 1920s to the 1980s, Robert Woodruff remained the undisputed leader of Coke and helped the company become a global success. Throughout his life, he was commemorated as much for his incredible ability to create profits for company shareholders as he was for his commitment to bettering the world. Woodruff constantly professed his commitment to public service. When asked in 1950 what he would most like to be remembered for, Woodruff said, "I am proud to have been associated with the Coca-Cola Company when the product achieved worldwide distribution and when the soft drink industry became a substantial contributor to the economy of many countries."[4]

This image of selfless leadership was what the Coca-Cola Company sought to cultivate in company literature, and it was not entirely unfounded. Woodruff gave millions of dollars to charitable foundations all around the world, and his largess helped to build such formidable institutions in Atlanta as the Woodruff Arts Center and the Robert W. Woodruff library at Emory University. I had a personal connection to Woodruff's philanthropy, passing an imposing statute of the Boss every day on my way to class at Woodward Academy, formerly Georgia Military Academy (GMA), an

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[3] "Mr. Asa G. Candler, Sr." *The Coca-Cola Bottler* (April 1929), 15-21.
[4] "The Sun Never Sets on Coca-Cola," *Time*, May 15, 1950.

institution Woodruff had attended as a child and generously supported as an alum. Many other Atlanta residents have similar stories about Woodruff's charitable presence in their lives.

For many, the philanthropy of Coke's leaders was just a small part of what made Coca-Cola good for the world. The company and its fans argued that Coke's greatest contribution to the betterment of communities in which it operated was the way it helped to create local businesses around the globe. By relying on independent bottlers, local ingredient providers, and a host of private retailers, Coca-Cola helped to create jobs even in some of the poorest parts of the world. The national trade journal for the American soft drink industry, *Beverage World,* described the distributed rewards of Coca-Cola capitalism thus: "Many ancillary products and services that go into the final sale of a Coca-Cola product could provide the company with substantial business especially since it uses these products and services in enormous amounts," and "by entering these businesses as an aside, the Coca-Cola Company could well save money versus the going market price," but ultimately the firm "prefers not to do so under the business philosophy that business can best profit when it best serves." Coke was not "selling the world short," as the Boss once said, it was "selling the world long." It was helping other people become successful capitalists.[5]

What made Coke so appealing economically was that it seemed to ask very little for the rewards it generated. It appeared to defy the laws of nature, creating incredible value without demanding substantial material inputs. *Time* magazine captured this image of Coke in 1950: "Coca-Cola is not what the non-American thinks of as a typical US

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[5] "What Coke Has Wrought," *Coke's First Hundred Years* (Shepherdsville, KY: Keller International Publishing Corporation, 1986), 86; "The Sun Never Sets on Coca-Cola," *Time*, May 15, 1950.

business, like steel or automobiles. It is not a product of the vast natural resources of the land, but of the American genius for business organization. It rests on such intangibles as market analysis, sales training, advertising and financial decentralization." According to *Time*, Coke placed no demands on the provider communities that supported it. The company could grow without consequence for centuries to come, and the world would be a better place because of it.[6]

The illusion of self-sustainment helped Coca-Cola justify its global expansion into local communities around the world. The company was an invited guest in many international polities because it was seen as a costless enterprise that would stimulate local economies. Coke was in the "business of creating business," a company that could offer jobs without substantial investment. Few stopped to consider what the company asked of them, thinking only of what they could ask of the company.

But as Coke began to expand its commercial empire in the twentieth century, it became clear that the promise of money for nothing was more fiction than fact. Coca-Cola and other similar consumer goods companies were consumers as much as they were producers, and they required material inputs in order to survive. Over time, Coke placed heavy demands on ecologies around the world. It was an organic machine whose perpetual growth was contingent upon the extraction of abundant supplies of natural and social capital in the places where it operated. In short, there was a price to pay for Coke's global success, a price that became increasingly apparent by the twenty-first century.

Like many people across the world I have benefited from what Coke's profits have been able to provide, but I have only had a vague notion of how those profits were

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[6] "The Sun Never Sets on Coca-Cola," *Time*, May 15, 1950.

generated. This dissertation was an attempt to understand the demands Coke placed on provider communities that served its needs for the last 125 years, an attempt to examine Citizen Coke as a consumer rather than as a producer. It was as much a historical quest as a journey to understand what my consumer habits support.

Introduction

This dissertation seeks to answer a simple question: how did a southern patent medicine invented in an Atlanta pharmacy in 1886 acquire the natural resources it needed to become one of the most well-recognized brands of the twenty-first century?[1]

Coke's success has largely been attributed to its marketing might and sophisticated advertising campaigns. The company has been successful, many have argued, because it is a "want maker," a company that has been successful at persuading people to buy its nonessential products. Mark Pendergrast, the author of *For God, Country and Coca-Cola: The Unauthorized History of the Great American Soft Drink and the Company That Makes It*, argued that Coke's genius was its ability to link its product to patriotic events, American family life, and even religious symbols. In Pendergrast's telling, Coca-Cola's advertising and promotional campaigns transubstantiated the company's sugar beverage into "an old friend, a piece of everyday life, a talisman of America," and it was this iconic status that helped to explain its commercial success. Likewise, in *Secret Formula: How Brilliant Marketing and Relentless Salesmanship Made Coca-Cola the Best-Known Product in the World,* Atlanta journalist Frederick Allen argued that it was the "idea of Coca-Cola," a mystique created through Coke's aggressive promotional efforts, that made it so successful over the years.[2]

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[1] Alfred W. Crosby's *Ecological Imperialism: The Biological Expansion of Europe, 900-1900* (Cambridge: Cambridge University Press, 2004) inspired what might be called the meta-strategy that gave birth to this work. Crosby urged scholars to look at broad patterns in global history, to adjust the aperture of the investigative lens to capture fundamental transformations of our world that need explanation. As he put it, "Ask simple questions because the answers to complicated questions probably will be too complicated to test and, even worse, too fascinating to give up." Alfred Crosby, *Ecological Imperialism*, 6.

[2] The term "want maker" comes from journalist Eric Clark's *The Want Makers: The World of Advertising—How They Make You Buy* (New York: Viking, 1988); Mark Pendergrast, *For God, Country, and Coca-Cola: The Unauthorized History of the Great American Soft Drink and the Company That Makes It* (New York: Collier Books, 1993); Frederick Allen, *Secret Formula: How Brilliant Marketing and Relentless Salesmanship Made Coca-Cola the Best-Known Product in the World* (New York: HarperBusiness, 1994).

There is no doubt that this story is true, that the rosy-cheeked Santa Clauses and smiling GIs in Coke's advertisements helped create consumer loyalty for company beverages, but without an actual product to sell, Coca-Cola could never have achieved the profits it did on the sugar water it sold no matter how effective its promotional campaigns were. To be successful, Coca-Cola had to find a way to place a real, tangible beverage on retail shelves all around the world.

The company was ultimately an extractive industry requiring prodigious amounts of natural resources to sustain its profitability. Without cheap ingredients, Coke would never have been able to achieve the retail ubiquity that made it famous. Ultimately, the brilliant advertising campaigns and sophisticated sales tactics executed by Coke's consumer marketing team were what evolutionary biologists call proximate causes of corporate success, not ultimate explainers of commercial growth.

This study restores the connection between large corporations and the ecosystems they inhabit, and it places natural resource acquisition at the heart of a narrative about profitable corporate growth in the twentieth century. Not just a story about how one company became the most well-recognized brand in human history, this dissertation shows how large corporations worked with government institutions and extra-firm

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For other histories of the Coca-Cola Company produced by journalists unaffiliated with the company, see Thomas Oliver, *The Real Coke, The Real Story* (New York: Random House, 1986), Constance L. Hays, *The Real Thing: Truth and Power at the Coca-Cola Company* (New York: Random House, 2004), Michael Blanding, *The Coke Machine: The Dirty Truth Behind the World's Favorite Soft Drink* (New York: Avery, 2010), Mark Thomas, *Belching Out the Devil: Global Adventures with Coca-Cola* (New York: Nation Books, 2008); For histories written by authors connected in some form or fashion with the Coca-Cola enterprise, see Pat Watters, *Coca-Cola: An Illustrated History* (New York: Doubleday & Company, Inc., 1978), E. J. Kahn, Jr., *The Big Drink: The Story of Coca-Cola* (New York: Random House, 1960); Neville Isdell with David Beasley, *Inside Coca-Cola: A CEO's Life Story of Building the World's Most Popular Brand* (New York: St. Martin's Press, 2011).

partners to create the cheap commodity markets that were essential to the growth of many low-value consumer goods companies in the twentieth century.[3]

The chapter breakdown for my dissertation can be found on the back of a Coca-Cola container and includes the container itself. In six chapters, I examine the most important substances that make up Coke's secret formula: water, caffeine, coca leaves, sugar, packaging, and high-fructose corn syrup. I explore the private sector partnerships and supportive state polices that enabled Coke to externalize the majority of the costs associated with extracting natural resources from global providers, and I follow Coke across the world, focusing on the company's connections to extractive industries in the United States, Southeast Asia, Africa, South America, and the Caribbean.[4]

The objective is to explain how a company that required such vast quantities of material inputs could keep its front-end costs down so that it could sell its low-value product for huge profits. Coke became the single largest buyer of sugar in the United States by mid-twentieth century, the largest industrial consumer of processed caffeine in America, one of the biggest commercial buyers of aluminum cans and plastic bottles on the planet by the 2000s, and a company by 2012 required over 300 billion liters of water

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[3] This study seeks to integrate business and environmental history in ways suggested by scholars Christine Meisner Rosen and Christopher Sellers. For their discussion of the merger of the fields see, Christine Meisner Rosen and Christopher Sellers, "The Nature of the Firm: Towards an Ecocultural History of Business," *The Business History Review* 73, no. 4 (Winter, 1999): 577-600; Christine Meisner Rosen, "Industrial Ecology and the Greening of Business History," *Business and Economic History* 26, no. 1 (Fall, 1997): 123-137; Several excellent material-flow studies produced by environmental historians inspired my interest in this topic, namely Richard Tucker's *Insatiable Appetite: The United States and the Ecological Degradation of the Tropical World* (Berkeley: University of California Press, 2000), John Soluri's *Banana Cultures: Agriculture, Consumption, and Environmental Change in Honduras and the United States* (Austin: University of Texas Press, 2005), and William Cronon's *Nature's Metropolis: Chicago and the Great West* (New York: W. W. Norton, 1991). My work builds on Cronon's organizational methodology in *Nature's Metropolis*, a study that explored the connections between Chicago and the countryside suppliers that fueled urban growth. Replacing the corporation for the city and the globe for the Midwest, my work offers a model for a new interpretation of the rise of the modern corporation that focuses on the environmental demands that structured big business development in the twentieth century

[4] There are over twenty "natural flavors" in Coca-Cola, but I chose to deal with just one, coca leaves, considering its importance to the trademark brand.

to make its products. This is a company with a huge ecological appetite, but it is a company that acquired all these resources at low cost without owning the agribusinesses, processing plants, recycling centers, or much of the hydrological infrastructure that served its needs.

The thesis of this dissertation is that what made Coke great, its secret formula in many ways, was its slender organizational structure and its ability to forge partnerships with extra-firm institutions that helped the company to externalize much of the cost of extracting raw materials from provider communities around the world. Coke did not own sugar plantations in the Caribbean or decaffeination plants in the United States or coca farms in Peru. The company relied on a host of international suppliers to serve its needs. With limited front-end investments in production systems, the company was able to expand its profit margins through high sales of its cheap beverage in markets all across the globe.[5]

This strategy of externalization was a deliberate executive policy. Company vice president Ralph Hayes admitted in 1949 that there had been "exceptional circumstances" when "the Company has not hesitated to become a producer of caffeine or caramel or carbon dioxide or cooperage or sugar," but he argued that the company ultimately "contrived, and not by accident, to terminate all those operations." According to Hayes, Coke chose not to "foster a vertical combination by producing its own requirements," and the company's mantra was that this strategy of nonownership ultimately helped stimulate vibrant economic growth in local communities all around the world. The company's

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[5] Oliver E. Williamson's "Transaction Cost Economics: The Governance of Contractual Relations," *Journal of Law and Economics* 22, no. 2 (October 1979): 233-261 and Ronald Coase, "The Nature of the Firm," *Economica* 4, no. 16 (November 1937): 386-405 inform my understanding of transaction cost theory.

"policy is not to supplant its suppliers or compete with them but to patronize them," Hayes argued. As a result, "each sale of Coca-Cola acts as a kind of priming charge that stimulates a widening variety of other trade activities." As the company became an ambassador to new corners of the world in the post-World War II era, it would continually argue that it did more by doing less.[6]

But while Coke claimed that it added value to provider communities by adopting a policy of non-integration, there were real costs that it externalized by not owning or operating productive systems. Many of the industries that supported Coke's growth were risky operations, subject to the environmental and political vagaries that made international commodity trading often unprofitable. Coke's strategy of non-ownership of front-end enterprises was as much about saving money as it was about helping local communities flourish.

Each chapter of the dissertation focuses on strategies Coke employed to externalize costs associated with ingredient procurement and distribution. The first chapter uncovers the public-sector investments that helped Coca-Cola acquire the water it needed to become a global empire. National retail ubiquity for heavy, low-priced consumer items, such as Coca-Cola, required a decentralized distribution system that allowed producers to acquire weighty ingredients near the point of sale. The parent company relied on a host of independent bottlers to sell its products to consumers around the world, and it was these bottlers that ultimately placed the water in Coke's products. This system of distribution only worked, however, if small bottling franchisees with limited capital resources had access to cheap water supplies in remote corners of the

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[6] Speech by Ralph Hayes, 50th Anniversary Celebration of the Coca-Cola Bottling Company (Thomas), October 3, 1949, Box 137, Folder 7, Robert W. Woodruff (RWW) Papers, Manuscript, Archives, and Rare Book Library (MARBL), Emory University, Atlanta, Georgia (hereinafter RWW Papers, MARBL).

country. Thus, public investments in municipal water supply systems were crucial in sustaining businesses selling water-dense goods to consumers in the first half of the twentieth century. During the Progressive era, Coke benefited from the nationwide construction of municipal public waterworks infrastructure that allowed the company to externalize expenses related to hydrological resource extraction and transport.

Revisionist historians interested in challenging the myth of corporate autogenesis have largely overlooked municipal public waterworks expansion in the Progressive Era as a critical state intervention that reduced supply-side costs for mass-marketing firms. Scholars that have examined government-funded hydrological projects in the Progressive Era have focused largely on the federal projects run by the Bureau of Reclamation in the American West that contributed to the expansion of large-scale agri-business in the region. Though perhaps not as visible as the federally supported large-scale damming projects and irrigation projects of the West, smaller, municipally-financed water systems nonetheless proved critical for water-intensive industries that distributed inexpensive consumer goods all across the country in the early decades of the twentieth century.[7]

The water chapter also examines Coke's overseas expansion in the latter-half of the twentieth century. As Coke entered markets in regions of the world lacking critical water infrastructure, the company turned to state agencies in hopes of securing federal aid

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[7] For examples of scholarship on federal water projects in the West and their influence on the growth of American agribusiness, see Donald Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (Oxford: Oxford University Press, 1985); Marc Reisner, *Cadillac Desert: The American West and Its Disappearing Water* (New York: Viking, 1983). For excellent revisionist work deconstructing the "myth of the weak American state" in the Progressive Era, see William J. Novak, "The Myth of the 'Weak' American State," *The American Historical Review* 113, no. 3 (June 2008): 752-772; Martin J. Sklar, *The Corporate Reconstruction of American Capitalism, 1890-1916* (Cambridge: Cambridge University Press, 1988); Gabriel Kolko, *The Triumph of Conservatism: A Reinterpretation of American History, 1900-1916* (New York, 1963); James Weinstein, *The Corporate Ideal in the Liberal State, 1900-1918* (Boston: Beacon Press, 1968).

money to improve hydrological systems critical for overseas bottling operations. To receive these funds, Coca-Cola positioned itself as a leader in international water system development. The American beverage industry, Coke claimed, had both the will and the resources to engineer water systems that could improve the lives of people living in water-scarce regions of the world. With fiscal support from newly created foreign assistance agencies, such as the Overseas Private Investment Corporation (OPIC) and the United States Agency for International Development (USAID), Coca-Cola opened bottling plants in Africa, South America, and Southeast Asia, promising to hydrate populations suffering from inadequate water supplies. But while Coke positioned itself as the architect of elaborate infrastructural systems, the company's commitments rarely extended much beyond the gates of company-owned bottling plants. Rather than use foreign assistance funds to develop comprehensive public waterworks systems, the company often channeled resources toward addressing specific problems that aided the construction of Coke bottling enterprises. Thus, this chapter concludes with a discussion of the shortcomings of contemporary foreign assistance programs that ship American corporations abroad to perform tasks they are ill-suited to complete.

Chapter two compares the sugar procurement practices of the Coca-Cola Company with those of other major consumer goods businesses in the twentieth century. Building on the excellent work César J. Ayala and other scholars who have written about the "American sugar kingdom" during the Gilded Age and Progressive Era, this chapter discusses the profits and perils of transnational vertical integration in the sugar industry. While some companies decided to buy up sugar plantations in the Caribbean at the turn of the century in hopes of better controlling sources of supply, Coca-Cola and other

companies decided to remain outside the business. Throughout the twentieth century, the Coca-Cola Company chose not to own sugar plantations and turned to multiple providers, one of which was Hershey Chocolate Company, to supply its sweetener needs. This externalization strategy proved important for Coke, because when environmental and political conditions changed in a particular provider community such as Cuba, the company was able to switch to another sugar supplier to serve its needs at low cost. Hershey on the other hand, a company that did invest in sugar plantations in specific regions of the world, went bankrupt in the 1920s, in large part because of its capital investments in sugar plantations in Cuba that, because of shifting US price control policies and falling sugar prices, proved unprofitable and a drain on company capital. Thus, this chapter illustrates how Coke's supply-side flexibility allowed it to adapt to changing transnational environmental and political conditions in the twentieth century and insulate itself from risks associated with the often-unprofitable business of growing and processing sugar.

Chapter three explains how Coca-Cola attained a virtual monopoly over coca supplies produced in Peru without undergoing cost-intensive vertical or horizontal integration. Coca acquisition presented unique problems to the Coca-Cola Company. Whereas sugar could be purchased from hundreds of producers throughout the tropical world, there were only a handful of farms in Peru capable of producing the type of coca leaf (Trujillo) that satisfied Coca-Cola executives' flavor demands. Ownership of the sites of production might have been a viable option for the company, but the cultural taboo of being involved in an international narcotics trade would have jeopardized Coke's image as a company committed to innocent fun. Thus, Coke remained a third-

party buyer throughout the twentieth century, partnering with the Maywood Chemical Company of New Jersey to acquire the extract it needed from producers.

This chapter adds to the work of Latin American historian Paul Gootenberg who first investigated the declassified Drug Enforcement Agency (DEA) documents at the National Archives that detail Coke's relationship to the international coca trade. Gootenberg discovered that the Coca-Cola Company was heavily involved in shaping counternarcotics policy in the twentieth century. His work showed how Coke partnered with the Federal Bureau of Narcotics (FBN), the precursor to the DEA, in order to acquire special amendments to international treaties that granted them exclusive rights to import, via Maywood, large amounts of coca leaves into the United States. Gootenberg focused on how Coke affected diplomatic policy, but this chapter reverses the investigative question, asking how the state affected Coke's corporate structure. One of the main reasons companies chose to take on the responsibilities of owning and operating extractive industries in the twentieth century was so that they could ensure adequate supplies of resources that were not available in large quantities. The United States government negated this reason for integration in Coke's case by limiting buyer demand for resources that were in short supply. Thus, I show how Coke's partnership with government counternarcotics agencies was another example of the way the company used extra-firm institutions to protect sources of supply owned by independent businesses in provider communities around the world.[8]

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[8] Paul Gootenberg, *Andean Cocaine: The Making of a Global Drug* (Chapel Hill: University of North Carolina Press, 2008) 122; Paul Gootenberg, "Secret Ingredients: The Politics of Coca in US-Peruvian Relations, 1915-65" *Journal of Latin American Studies* 36, no. 2 (May 2004): 265; Paul Gootenberg, "Between Coca and Cocaine: A Century or More of U.S.-Peruvian Drug Paradoxes, 1860-1980," (The Woodrow Wilson Center, Washington, 2001); Paul Gootenberg. "Reluctance or Resistance?: Constructing Cocaine (Prohibitions) in Peru, 1910-50," in Paul Gootenberg, ed., *Cocaine: Global Histories* (New York:

The fourth chapter on caffeine explores Coke's third-party relationship to the international tea and coffee trading networks. Coke did not directly grow or process any of the commercial crops needed to produce caffeine for its beverages, nor did it become involved in managing the trade in these agricultural commodities. Rather the company purchased caffeine extracted from tea sweepings, cocoa paste, and decaffeinated coffee byproducts, the refuse of other industries. As a result, the beverage company remained insulated from the environmental and political vagaries that affected commodity prices in these agricultural markets. Coke's ability to maintain a 5-cent price for its low-valued product—a price it preserved until 1950—depended on its ability to turn waste into wealth.

As Susan Strasser illustrated in *Waste and Want: A Social History of Trash*, corporate "growth during the twentieth century has been fueled by waste." In her account, the planned obsolescence of consumer items fueled a buying culture geared toward the perpetual pursuit of the next best thing, which helped stimulate production and expand consumer markets. The culture of what Thorstein Veblen called "conspicuous consumption" privileged cleanliness and novelty over utility, and as a result many products ended up in trash bins because they were perceived as being outdated or dirty.[9]

Strasser and others have rightly stressed the importance of the "throwaway" culture in fueling demand for new consumer goods, but waste fueled economic growth in another way that has yet to be fully explored: it created cheap commodity markets for

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Routledge, 1999). Gootenberg discusses in detail Maywood's operations as they related to the Coca-Cola Company, but he largely sees the two acting as one. As he puts it, "in practice," Maywood and Coca-Cola "became indistinguishable." Gootenberg, "Secret Ingredients," 246

[9] Susan Strasser, *Waste and Want: A Social History of Trash* (New York: Metropolitan Books, 1999), 15; Thorstein Veblen, *The Theory of the Leisure Class* (New York: Modern Library, 1934). See also Giles Slade, "Repetitive Consumption," in *Made to Break: Technology and Obsolescence in America* (Cambridge: Harvard University Press, 2007): 9-28.

vital resources critical for the construction of modern consumer products. Manufacturers found the trash heaps of other industries filled with valuable items that could be repackaged for redistribution. Scavenging for the byproducts of commercial industries proved an effective way to reduce supply-side costs at the turn of the century. This chapter uses Coke's caffeine procurement strategies as a case study to examine this process of chemical raw material recycling.[10]

The chapter on packaging explains how municipal curbside recycling programs helped Coca-Cola acquire raw materials for beverage packaging at low cost. Many people today consider curbside recycling the quintessential model of eco-stewardship, yet this waste management revolution was not led by environmentally-conscious consumers but by big businesses seeking to expand their productive capacity without fixing fundamental flaws in their packaging technology. For the soft drink, brewing, and canning industries, the promise of recycling became a powerful weapon used to combat mandatory deposit bills and other source reduction measures in the 1970s and 1980s that would have made them pay for the pollution they generated. This chapter offers a new perspective on the rise of the modern environmental movement that exposes the powerful corporate influences that molded early resource reclamation initiatives.

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[10] Recently, scholars have begun to examine the ways in which modern corporations reused waste materials from associated industries in the late-nineteenth century and early twentieth century. None of these studies, however, deal with the modern industrial food system and the problems this presented in light of advances in medical science and new concerns about consumption and human health in the twentieth century. See Pierre Desrochers, "How Did the Invisible Hand Handle Industrial Waste? By-product Development before the Modern Environmental Era," *Enterprise and Society* 8, no. 2 (June 2007): 348-374; Desrochers, Pierre. "Industrial Ecology and the Rediscovery of Inter-Firm Recycling Linkages: Some Historical Perspective and Policy Implications." *Industrial and Corporate Change* 11, no. 5 (Nov. 2002):1031-57; Marina Fischer-Kowalski, "Society's Metabolism: The Intellectual History of Materials Flow Analysis, Part I: 1860-1970," *Journal of Industrial Ecology* 2, no. 1 (Winter 1998): 61-78; Hugh S. Gorman, "Efficiency, Environmental Quality, and Oil Fields Brines: The Success and Failure of Pollution Control by Self-Regulation," *Business History Review* 73, no. 4 (Winter 1999): 601-640; Brian William Clapp, *An Environmental History of Britain since the Industrial Revolution* (London: Longman, 1994); Charles Lipsett, *Industrial Wastes and Salvage: Conservation and Utilization* (New York: Atlas Publishing Company, 1963).

Few scholars, whether focusing on Progressive Era enterprises, agribusinesses of the 1930s, or high-tech industries of the Cold War, have treated the construction of public waste managements systems as an essential government intervention that aided big business growth in the latter-half of the twentieth century. Corporate giants that had first emerged in the Progressive Era produced large amounts of packaging refuse by mid-century, causing consumers to question the prudence of supporting an economy dependent on centralized distributors using one-way packaging. Developing public infrastructure that would help mega-firms mollify these fears was critical to the future solvency of some of the most profitable business enterprises the world had ever seen. This chapter shows the powerful corporate influences that shaped the modern environmental movement in the United States, and explores how American businesses enrolled municipal governments and the public at large in the construction of a national resource reclamation system that reduced supply-side costs associated with packaging mass-marketed goods.[11]

The sixth chapter is a foil to the packaging chapter and investigates a corporate pollutant the Coca-Cola Company has not yet found a way to manage: human fat deposits. Uncovering the intimate connections between commodity flows and

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[11] Several scholars have produced excellent works on the development of curbside recycling programs, though none have specifically engaged the literature on the "myth of the weak American state." See Frank Ackerman, *Why Do We Recycle: Markets, Values, and Public Policy* (Washington, DC: Island Press, 1997); Martin Melosi, *Garbage in the Cities: Refuse, Reform, and the Environment* (Pittsburgh: University of Pittsburgh Press, 2005); Martin Melosi, *The Sanitary City: Urban Infrastructure in America from Colonial Times to the Present* (Baltimore: Johns Hopkins University Press, 2000); Heather Rogers, *Gone Tomorrow: The Hidden Life of Garbage* (New York: New Press, 2005); Elizabeth Royte, *Garbage Land: On the Secret Trail of Trash* (New York: Little, Brown, 2005); Louis Blumberg and Robert Gottlieb, *War on Waste: Can America Win Its Battle With Garbage?* (Washington, DC: Island Press, 1989); Carl Zimring, *Cash for Your Trash: Scrap Recycling in America* (New Brunswick, N.J.: Rutgers University Press, 2005). For an international perspective on beverage container recycling and an excellent discussion of the socio-cultural construction of reverse vending machines (RVMs), see Finn Arne Jørgensen, *Making a Green Machine: The Infrastructure of Beverage Container Recycling* (New Brunswick, N.J.: Rutgers University Press, 2011).

biochemical pathways that contributed to Coke's global ascendancy, I claim that the corporation's greatest vulnerabilities lay in its unrestrained exploitation of the human body. For years, Coke capitalized on the sweet excesses of an unnatural market constructed by an invisible federal state, funneling voluminous amounts of caloric sweeteners generated from subsidized agricultural products into the bodies of its loyal customers. Unfortunately for Coke, caloric pollution, unlike other forms of corporate waste such as aluminum cans and plastic bottles, could not be shipped to government landfills or sent to public recycling plants. Human fat deposits that Coke helped generate remained in plain sight, creating a major liability for the company that to this day threatens the profitability of the soft drink industry.

The dissertation concludes inside the human body to emphasize the point that natural resource management does not end once a company's product leaves the bottling plant. Just as aluminum cans and plastic bottles presented a problem for the industry at mid-century, so too has caloric pollution generated serious problems for major food labels in our own time. The most successful companies have been those that have found a way to have others pay for the cost of managing the flow of natural resources at each point of exchange in commodity chains that extend from farmland to the gastrointestinal tract of the consumer.

This model for investigating the rise of low-value consumer good megafirms, one that focuses on the environmental and material metabolic demands that defined the organizational structure of the modern corporation, offers a new perspective on the story of global corporate growth in the twentieth century. Alfred Chandler, one of the most influential and important business historians of our time, argued throughout his career

that vertical integration represented the hallmark of modern corporate development. He believed companies improved their profitability and reduced risks by combining "processes of mass production with those of mass distribution within a single business firm." He acknowledged that many consumer goods companies never completed the process of forward integration, often leaving ownership of extractive industries to others, but he explained that this was largely because natural resources needed for these industries were in abundant supply due to competition between upstream producers, the product of a competitive free-market system. In other words, Chandler took for granted the cheap commodity markets that were so essential to the growth of many commercial industries.[12]

Chandler's theory that vertical integration was the essential ingredient that contributed to big business profitability in the twentieth century remains a relatively unchallenged claim. Historian Lou Galambos described the influence Chandler has had on business history scholarship in 1997 by saying, "Chandler's work (like that of Schumpeter) has been so completely absorbed that we will in future years spend less time praising, bashing, modifying, or explicating it." Galambos went on to identify the major challenges to Chandler's work, but did not mention any counternarratives that revised Chandler's vertical integration thesis. To this day, historians continue to argue that

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[12] Alfred Chandler, *The Visible Hand: The Managerial Revolution in American Business* (Cambridge: Belknap Press of Harvard University Press, 1977), 11, 285. For specific references to Coke in *The Visible Hand*, see 313, 390; See also Chandler's other major works that stress the importance of vertical integration including, Alfred Chandler "The Beginnings of 'Big Business' in American Industry," *Business History Review* 33, no. 1 (Spring 1959): 1-31, Alfred Chandler "Development, Diversification, and Decentralization," in *Postwar Economic Trends in the United States*, ed. Ralph E. Freedman (New York: Harper and Brothers, 1960), Alfred Chandler, *Strategy and Structure: Chapters in the History of the Industrial Enterprise* (Cambridge: MIT Press, 1962), and Alfred Chandler, *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge; Belknap Press of Harvard University, 1990). For an excellent survey of Chandler's work see Thomas McCraw, ed. *The Essential Alfred Chandler: Essays Toward A Historical Theory of Big Business* (Boston: Harvard Business School Press, 1988).

combining processes of production with processes of distribution within one single business firm proved the hallmark of successful big business development in the twentieth century.[13]

Despite the *Visible Hand's* accurate depiction of vertically-integrated corporate growth in the United States in the early 1900s, Chandler's work does not explain why many of the commercial titans of the Progressive Era were in decline by the beginning of the twenty-first century. Many of Chandler's big businesses were suffering badly at the end of the twentieth century, and one of the main reasons for their sickness was revenue-draining investment in large-scale production infrastructure. US Steel, International Harvester, and General Motors, some of Chandler's model corporations, all suffered financial woes for a variety of reasons, but their involvement in extracting and processing raw materials from the natural world certainly affected their profitability. They lacked the kind of supply-side flexibility that would allow them to abandon capital-intensive production operations. Integration had not insulated them from the vagaries of the market; it had in fact tethered them to the ground, thereby limiting their ability to adapt to shifting cultural, political, and environmental conditions in particular production locales in a globalized twentieth century economy.[14]

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[13] Louis Galambos, "Global Perspectives on Modern Business," *Business History Review* 71, no. 2 (Summer 1997): 287. A search conducted by William J. Hausman of the ISI Arts and Humanities and ISI Social Science citation indexes for 1996 and 1997 revealed that Chandler's works had been cited over 400 times in those years, or 6.4 times more than any other business historian at the time. Hausman confirmed what Galambos had claimed a few years earlier, arguing, "Even as many business historians attempt to define their work and their field as distinct, his work still holds a firm grip on the way business historians do their work." William J. Hausman, "U.S. Business History at the End of the Twentieth Century," in *Business History around the World*, ed. Franco Amatori and Geoffrey Jones (Cambridge: Cambridge University Press, 2003), 96-97; Philip Scranton provided perhaps the most direct challenge to Chandler's vertical-integration model in *Endless Novelty: Specialty Production and American Industrialization, 1865-1925* (Princeton: Princeton University Press, 1997). In this work, Scranton exposes the economic vitality of specialty and artisanal producers in the late-1800s and early twentieth century.

[14] For an excellent history of International Harvester see Barbara Marsh, *A Corporate Tragedy: The Agony of International Harvester Company* (New York: Doubleday, 1985), 239, 240, 278; On the decline of the

And the converse was true. Companies that found a way not to engage directly in ownership and operation of productive systems became some of the most profitable enterprises of our time. In 2012, Coca-Cola ranked 13th among the most profitable enterprises in America. Johnson and Johnson, a company that traded in low-value commodities and has a property, equipment, and plant investment to total asset ratio of just 14 percent was the 9th most profitable company in the country in 2012. Even Apple, the 7th most profitable company in the United States that year, outsourced much of its material production operations, siphoning off profits as a third-party seller of materials extracted, processed, and assembled by other business intermediaries.[15]

Seeking to explain this corporate trend, my study offers a revision to the Chandlerian account of big business growth in the twentieth century. While many scholars interested in the rise of the modern corporation conclude their investigative analysis in the 1920s, this dissertation follows one firm from its birth and maturation in the Gilded Age through the end of the twentieth century with the goal of explaining the organizational attributes that made certain firms more resilient than others as they transitioned into the globalized economy of the late-twentieth century. At times, vertical integration did in fact produce significant rewards for business, and in the following chapters, there are examples of companies that achieved incredible economies of scale,

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US Steel industry see Paul A. Tiffany, *The Decline of American Steel: How Management, Labor, and Government Went Wrong* (New York: Oxford University Press, 1988), Paul A. Tiffany, "The Roots of Decline: Business-Government Relations in the American Steel Industry, 1945-1960," *The Journal of Economic History* 44, no. 2 (June 1984): 407-419, and Kenneth Warren, *Big Steel: The First Century of the United States Steel Corporation, 1901-2001* (Pittsburgh: University of Pittsburgh Press, 2001); For General Motors, see Maryann Keller, *Rude Awakening: The Rise, Fall, and Struggle for Recovery of General Motors* (New York: William Morrow and Company, 1989).

[15] Certainly, Exxon, a company heavily invested in material resource extraction, still remains the most profitable enterprise in the country, but this is largely due to the current value of fossil fuels. Only time will tell whether the development of alternative fuel sources will make these enterprises obsolete or force them to dismantle expensive capital investments to compete with other energy producers.

especially in the short term, by combining processes of distribution and production. Nonetheless, I argue that externalizing technological systems closely associated with natural resource extraction and processing proved an essential business strategy for many profitable, low-value, consumer goods enterprises. This strategy allowed them to create the capital flows they needed to become the most profitable enterprises in human history.

Coke's strength did not come just from what it did, but from what it avoided doing. Coke operated above the fray, allowing others to make investments in the large agribusinesses, hydrological infrastructure, recycling plants, and chemical processing plants that generated the basic material inputs for its commercial empire; it let others build, finance, and operate the technological systems that generated the basic commodities needed for beverage production. The company remained largely insulated from the risky and often unprofitable business of mining raw materials from the natural world or controlling the waste that these industries generated. Coke contracted with multiple suppliers in a global economy, and when political and environmental conditions changed to make one commodity market more attractive than another, the company switched to alternative producers that could supply their needs at an optimal price.

This sleekness was achieved with the help of the state, and this dissertation builds on the work of scholars working at the nexus of business and political history who have shown how government institutions intervened in the market to help corporations achieve global success in the twentieth century. Scholars such as Brian Balogh, Gabriel Kolko, Thomas McCraw, Martin J. Sklar, and James Weinstein have all produced excellent works that chronicle the rise of what Lou Galambos and Richard Pratt have called the "corporate commonwealth" in the twentieth century. These works show how

corporations used the federal courts and "captured" government regulatory bodies, such as the Federal Trade Commission (FTC), the Interstate Commerce Commission (ICC), and even the Food and Drug Administration (FDA), to help legitimate monopolistic growth and create national markets suitable for the expansion of big business. Likewise, Richard John and Richard White have examined the substantial public-sector investments in infrastructure, such as the postal service and railroads, which fueled commercial growth in the twentieth century.[16]

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[16] Brian Balogh, *A Government out of Sight: The Mystery of National Authority in Nineteenth Century America* (Cambridge, U.K.: Cambridge University Press, 2009); Gabriel Kolko, *The Triumph of Conservatism: A Reinterpretation of American History, 1900-1916* (New York: Free Press of Glencoe, 1963); Thomas K. McCraw, *Prophets of Regulation: Charles Francis Adams, Louis D. Brandeis, James M. Landis, Alfred E. Kahn* (Cambridge, Mass.: Belknap Press of Harvard University, 1984); Martin J. Sklar, *The Corporate Reconstruction of American Capitalism, 1890-1916* (Cambridge, U.K.: Cambridge University Press 1988); James Weinstein, *The Corporate Ideal in the Liberal State, 1900-1918* (Boston: Beacon Press, 1968); Louis Galambos and Joseph A Pratt, *The Rise of the Corporate Commonwealth: U.S. Business and Public Policy in the Twentieth Century* (New York: Basic Books, 1988); Richard John, *Spreading the News: The American Postal System from Franklin to Morse* (Cambridge, Mass.: Harvard University Press, 1995); Richard White, *Railroaded: The Transcontinentals and the Making of Modern America* (New York: W. W. Norton and Co., 2010); Historians of the New Deal, the 1940s, and the Cold War have also contributed new works that help to debunk the "myth of the weak American state," showing the centrality of government in facilitating the birth of new industries in the mid-twentieth century and beyond. Bruce Schulman, Pete Daniel, and Jack Temple Kirby, for example, have illustrated how the Agricultural Adjustment Act (AAA) and other Depression-era farm aid programs helped channel federal revenue to large landowners in the South who used the new influx of capital to create mechanized agribusinesses that pushed small farmers off their land in the rural South. Michael Hogan's and James Sparrow's works on World War II and the Cold War, among others, have highlighted the expansion of the military-industrial complex in the 1940s and 1950s and shown how federal defense funds supported the growth of new high-tech industries. Christopher Howard, Jacob Hacker and others have likewise illustrated that even in the 1980s, the so-called era of deregulation, the Reagan administration helped to expand a "hidden welfare state" and developed neoliberal policies that channeled tax revenues towards specific industries. See William J. Novak, "The Myth of the 'Weak' American State," 752-772; Bruce J. Schulman, *From Cotton Belt to Sunbelt: Federal Policy, Economic Development, and the Transformation of the South, 1938-1980* (New York: Oxford University Press, 1991); Pete Daniel, *Breaking the Land: The Transformation of Cotton, Tobacco, and Rice Cultures since 1880* (Urbana: University of Illinois Press, 1985); Jack Temple Kirby, *Rural Worlds Lost: The American South, 1920-1960* (Baton Rouge: Louisiana State University, 1987); Michael Hogan, *A Cross of Iron: Harry S. Truman and the Origins of the National Security State, 1945-1954* (Cambridge, U.K.: Cambridge University Press, 1998); James T. Sparrow, *Warfare State: World War II Americans and the Age of Big Government* (New York: Oxford University Press, 2011); Christopher Howard, *The Hidden Welfare State: Tax Expenditures and Social Policy in the United States* (Princeton, N.J.: Princeton University Press, 1997); Jacob Hacker, *The Divided Welfare State: The Battle over Public and Private Benefits in the United States* (Cambridge, U.K.: Cambridge University Press, 2002).

This work adds to this literature and highlights the critical role the state played in creating and sustaining the global extractive industries and international commodity networks so essential to the growth of low-value consumer goods enterprises. Coke and other companies saved millions of dollars by capitalizing on public programs that reduced the price of basic commodities, such as sugar, caffeine, aluminum, and pure water, which they needed to produce their products. They attained a slender structure in part because of the expansion of government in the twentieth century.

The state intervened in the market in three major ways to reduce commodity prices for Coca-Cola and other American companies. First, government agencies often built, constructed, and operated some of the basic extractive and processing infrastructure that served these industries. In Coke's case, the company relied on municipal water systems to generate 85 percent of what it sold to the public: pure tap water. Coke bottlers connected their plants to city piping that channeled clean water from public water treatment facilities. Coke made record profits from the sale of repackaged public water, and it did so without having to invest in a large portion of the hydrological infrastructure that served its needs. City governments functioned as producers, constructing and managing the extractive infrastructure that satiated the beverage company's thirst.

Secondly, the state intervened on behalf of specific companies to limit buyer competition for natural resources that were in short supply in global markets. Coke proved particularly adept at using this strategy to keep commodity prices down for specific ingredients that were scarce because of environmental factors or trade embargos. For example, working with state institutions that regulate international trade, Coke gained special access to exotic ingredients, such as coca leaves produced in the Andean

mountain range of Peru. These leaves, cultivated by just a few producers in one region of the world, would have been expensive if a host of international buyers had been allowed access to this market, but the United States government, working in partnership with international counternarcotics agencies and the Peruvian government, granted Coca-Cola's chemical processing partners exclusive access to these products and prohibited other commercial buyers from trading in these commodities. Thus, the US government and its international state partners helped companies inexpensively acquire specific ingredients that were in short supply by restricting buyer access to company providers.

Lastly, the state often subsidized the production of basic commodities such as sugar and corn that were essential to Coke and other low-value food megafirms. Coke claimed in its promotional material that it was a self-reliant enterprise, that the company did not receive government kickbacks to achieve profitability. Company vice president Ralph Hayes expressed this sentiment in 1949, when he argued that Coke "worked itself up the hard way, without seeking, or depending upon, subsidies or bounties or tariff preferment." Speaking of direct federal payments to the company, Hayes was largely accurate, but he nonetheless failed to note that Coke had always proved adept at choosing subsidized suppliers that could offer critical ingredients at low cost precisely because of the state supports they received. Corporate welfare often came through company suppliers, and Coke made tremendous profits by capitalizing on changing agricultural policies that reduced front-end costs for raw materials, such as sugar and high-fructose corn syrup. The politics of commodity price controls was volatile throughout the twentieth century, and the best strategy for Coke and other low-value consumer goods companies was to commit to an organizational structure that allowed them to remain

responsive to changing policies. Owning and operating a subsidized agribusiness was not always a good idea because amendments to established support programs often produced new subsidy winners and losers. Because they did not have absolute control over the state, prudent businesses chose to retain a supply-side flexibility that allowed them to capitalize on the best commodity support programs available in the global market.[17]

This political history of public-private partnerships and the cheap commodity markets they created offers new insights into the environmental history of American corporate growth in the twentieth century. It shows how multinationals' sleek organizational structure exacerbated environmental and human-health problems in host communities. Recent commodity-flow studies produced by environmental historians, such as John Soluri's *Banana Cultures: Agriculture, Consumption, and Environmental Change in Honduras and the United States* and Richard Tucker's *Insatiable Appetite: The United States and the Ecological Degradation of the Tropical World*, have sought to expose the ecological costs of American business growth in international markets in the twentieth century. Both of these scholars accurately illustrate how vertically-integrated firms, such as United Fruit, Firestone, and the American Sugar Refining Company, channeled large amounts of capital towards the development of technological systems in the tropical world that allowed them to extract greater quantities of natural resources from the land. My study builds on the environmental histories of Soluri and Tucker and suggests that, for Coca-Cola and other low-value consumer goods firms, their lack of direct investment in extractive industries helps to explain the scale of their environmental effects in provider communities around the world. Because Coke remained merely a

[17] Speech by Ralph Hayes, 50th Anniversary Celebration of the Coca-Cola Bottling Company (Thomas), October 3, 1949, Box 137, Folder 7, RWW Papers, MARBL.

third-party buyer rather than an invested stakeholder in specific businesses associated with natural resource acquisition and management, it was far easier for the soft drink company to abandon suppliers facing environmental or financial constraints than to invest in sustainable development initiatives in host communities. Their slender corporate structure, in other words, was directly linked to their heavy ecological footprint.

A survey of Coke's corporate ascendancy reveals that there have been financial, environmental, and social costs associated with creating the cheap commodities that Coke put into its products, but these costs have never been included on corporate balance sheets. They have been borne by others, often Coke's consumers and small producers competing for Coke's big contracts.

To build sustainable businesses for the twenty-first century, we need to recognize the separation between Coke and the producers that support them. This is the first step towards identifying the full costs of doing business in our global economy. Finding ways to make companies pay for these full costs will make them more responsive to the environmental and social problems they have helped to create over the years. This is the secret formula for creating a sustainable economy in the years ahead.

Chapter 1: Water
Public Water for Sale: Coca-Cola and the Problems of Corporate Water Stewardship in the Twentieth Century

Introduction

In March of 2001, the Coca-Cola Company began work on a new soft drink dispenser that would attach to the kitchen faucet and allow consumers to mix their tap water with Coke's patented formula right in their own home. Company Chairman and CEO Douglas Daft noted that currently there was no market for the technology, but argued "one day, yes, this will be a reality."[1]

Many consumers might consider Coke's in-home fountain apparatus a radical innovation, but an examination of Coke's corporate history reveals that the company has been tapping into our taps for over a hundred years. Since its founding, Coca-Cola has mixed its sugary syrup with water resources that have come from publicly-financed municipal water systems. Rather than a radical departure from established business habits, the faucet fountain technology represents a final step in Coke's mission to completely externalize the cost of extracting and transporting water resources that make up roughly 85 percent by volume of what the company sells to its consumers.[2]

At its heart, the Coca-Cola Company is an extractive industry. It is a company that today requires an annual allowance of over 300 billion liters of fresh clean water from all over the world to produce its beverages, and this does not include the embedded

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[1] Sonia Shah, "Coke In Your Faucet?" *The Progressive* 65, no. 5 (August, 2001), 30.

[2] The formula for Coca-Cola called for "not less than one ounce of syrup to eight ounces of water." Bottling Contract between The Coca-Cola Bottling Company and Alexandria Coca-Cola Bottling Company, January 21, 1910, quoted in Memorandum from Emmet J. Bondurant, Re: Coca-Cola Formula--- Ratio of Syrup to Water, July 27, 1983, Bonduraunt, Mixson, and Elmore, LLP Case Files for *Coca-Cola Bottling Company of Elizabethtown, Inc. et. al. v. The Coca-Cola Company* 988 F. 2d 386 (1993), Atlanta, Georgia (access granted to author).

water needed to produce plastic bottles (with a production ratio of 7 liters per bottle) or to grow and process the agricultural products that go into its beverages (which represents roughly 76 percent of the company's total water demands).[3]

Considering the company's hydrological demands, Coca-Cola had to find a way to minimize the cost of extracting and transporting water. National retail ubiquity for Coca-Cola and other heavy, low-priced consumer items required a decentralized distribution system that allowed producers to acquire weighty ingredients near the point of sale. As historian Shane Hamilton explained in his book *Trucking Country: The Road to America's Wal-Mart Economy*, the emergence of a competitive long-haul trucking industry coupled with federal investments in highway infrastructure dramatically reduced freight costs by the 1960s, thus allowing many businesses to centralize their distribution systems, but before that time, making long-distance shipments of bulky products to non-urban areas of the country proved unprofitable. Companies relying on horse and buggies at the turn of the century to distribute their products simply could not expect to achieve large volume sales on a national scale unless they could acquire heavy ingredients near remote retail outlets around the country.[4]

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[3] In 2010, company bottlers used on average 2.26 liters of water to produce 1 liter of beverage product. Again this does not include embedded water. "Water Stewardship," The Coca-Cola Company 2010/2011 Corporate Responsibility and Sustainability Report, 20.

[4] Economists Jeffrey Osleeb and Robert Cromley explained Coke's hydrological dilemma in an article published in 1978. They explained that water was the heaviest ingredient in Coke's "low valued" product, and because inexpensive products could not "bear a high transportation cost," figuring out how to distribute Coke all across the country without shipping the water was a key element of the company's early success. Jeffrey P. Osleeb and Robert G. Cromley, "The Location of Plants of the Uniform Delivered Price Manufacturer: A Case Study of Coca-Cola LTD," *Economic Geography* 54, no. 1 (Jan. 1978): 40-52; In the 1910s, the company was so obsessed with saving money on transporting water that they began buying granulated sugar from refineries instead of a softer confectioner's sugar that contained "seven percent moisture," realizing, as Charles Candler explained, that it "was unwise to pay freight on water from refineries to our factories." Charles Howard Candler, *Asa Griggs Candler* (Atlanta: Emory University, 1950), 124. Shane Hamilton, *Trucking Country: The Road to America's Wal-Mart Economy* (Princeton: Princeton University Press, 2008).

To reduce front-end costs associated with product distribution, the Coca-Cola Company found creative ways early in its history to outsource hydrological resource extraction and distribution. Between 1886 and 1894, the Coca-Cola Company sold concentrated syrup exclusively to soda fountain proprietors in Atlanta and surrounding environs, and these vendors ultimately added the water to make the finished product sold to Coke customers. In 1886, Atlanta pharmacist John Pemberton established this sales strategy when he approached prominent soda fountain operator Willis Venable at Joe Jacobs's pharmacy with the proposition of selling his syrup to soda fountain customers. Venable and Jacobs agreed to market the product, and for the first few years, they were able to sell a few gallons of Coke, but it was not until March of 1888, when Atlanta pharmacist Asa Candler became involved in the Coca-Cola enterprise, that Pemberton's product began to bring in substantial returns. By the summer of 1890, just one year before Candler became the sole proprietor of the Coca-Cola formula and two years before he filed for official incorporation of The Coca-Cola Company, Candler saw syrup sales rise to 8,855 gallons, up from 25 gallons just four years earlier. Coke was selling like wildfire in Atlanta and other towns in the South, yet soda fountains remained the sole market for the soft drink. If the company wanted to make greater profits, it was going to have to find a way to reach customers far-removed from the South's city centers.[5]

Candler was not initially attracted to the idea of expanding distribution by bottling Coca-Cola. The capital investment needed to develop an extensive network of bottling enterprises in the late-nineteenth century seemed far too costly to consider, and soda fountain sales continued to increase throughout the decade. The bottling industry was

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[5] Frederick Allen, *Secret Formula*, 37; The Coca-Cola Company was incorporated on January 29, 1892; Mark Pendergrast, *For God, Country, and Coca-Cola*, 43.

also still very rudimentary in the late-nineteenth century, and Candler feared that irresponsible bottlers, "who care nothing about the reputation of what they put up," would ruin the good name of the company.[6]

Though Candler had his reservations, others in the Coca-Cola family saw bottling as a boon for the industry. The first of these enterprising Coke bottlers was Joseph August Biedenhern of Vicksburg, Mississippi, who began marketing Coke in 6-oz Hutchinson, pop-top bottles in 1894. "Uncle Joe," as he was affectionately known in the business, owned Biedenharn Candy Company and had begun selling Coca-Cola as a fountain drink in 1890. Happy with his fountain sales but eager to reach customers in the surrounding countryside, Biedenhern decided to contact Candler about bottling Coca-Cola in Mississippi, sending Candler a case of bottled Coke in 1894. Candler responded to Biedenhern rather glibly, stating that the bottled Coke was "fine," adding nothing more. Despite Candler's mild response, Biederhern continued to sell hundreds of bottles to his customers and made substantial profits from increased sales.[7]

Biederhern's experience was a prelude to the dramatic success two Chattanooga lawyers would enjoy upon gaining the right to bottle Coca-Cola nationally in 1899. That year, Benjamin F. Thomas and Joseph Brown Whitehead came to Candler with the proposition of developing a Coca-Cola bottling franchise that would reach markets well outside the South. Candler believed the bottling enterprise would be short lived and dismissively signed a fixed price contract with Whitehead and Thomas. The contract

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[6] Deposition of Veazey Rainwater, June 3, 1920, *The Coca-Cola Bottling Company v. The Coca-Cola Company*, Fulton County Superior Court, 1920, quoted in Frederick Allen, *Secret Formula*, 68.

[7] Charles Elliot, *A Biography of the 'Boss': Robert Winship Woodruff* (Robert W. Woodruff Estate, 1979), 111; In 1894, The Coca-Cola Company also began operating the first syrup manufacturing plant outside of Atlanta in Dallas, Texas. Public Relations Dept. of Coca-Cola, *Chronological History of the Coca-Cola Company* (Atlanta: The Coca-Cola Company, 1971); "Early History of Coca-Cola Bottling," *The Coca-Cola Bottler* (August 1944), 25; Franklin M. Garrett, "Coca-Cola in Bottles," *The Coca-Cola Bottler* (April 1959), 79; Franklin M. Garrett, "Coca-Cola in Bottles," *The Coca-Cola Bottler* (April 1959), 79.

gave them exclusive and perpetual rights to sell Coke in "bottles or other receptacles" anywhere in the United States except Biedenhern's Mississippi territory, Texas, and New England.[8]

Whitehead and Thomas knew that the key to their success was decentralization. In the winter of 1899, they began licensing their contractual rights to local bottlers across the country. In this way, Whitehead and Thomas sought to secure expansive growth of the bottling enterprise while effectively managing the capital risks associated with national growth.[9]

Whitehead and Thomas's decision to become licensors for local bottlers across the country rather than capital-backers for a consolidated bottling enterprise helped make Coke a "local" product in small towns all across the country, and the parent Company quickly recognized the benefits of Whitehead and Thomas's distribution network. As local community members, Coca-Cola bottlers earned the confidence of their customers by engaging in civic events and charitable campaigns. Initially skeptical about Coke bottlers, by 1911, Asa Candler recognized their true value: "I cannot refrain from expressing my cordial appreciation for the high character of men who represent the bottling department of this corporation throughout the country. Without exception they rank with the best and most respected business men of their communities." Candler and the other executives in the Atlanta office knew that these local businessmen were pushing their product to new heights. As Coke scholar Mark Pendergrast explained, "Without lifting a finger or investing a penny, Asa Candler and his Company saw their business mushroom and reach into untapped rural areas. Coca-Cola advertising, already extensive,

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[8] *The Coca-Cola Bottling Company v. The Coca-Cola Company,* 269 F. 796, 800 (D. Del.,1920); "Early History of Coca-Cola Bottling," *Coca-Cola Bottler* (August 1944), 25.
[9] *The Coca-Cola Bottling Company v. The Coca-Cola Company,* 269 F. 796 (D. Del.,1920).

gained added momentum as parent and local bottlers covered their territory with the Coca-Cola logo." The Coca-Cola Company bottling system expanded from just a few bottlers in 1899 to over 400 by 1910, evidence, the parent company frequently argued, that the Coke enterprise helped fuel industrial development in local communities around the country.[10]

Coke took credit for turning capital-poor local bottlers into millionaires, and in truth, many people did get rich by bottling Coke. J. J. Willard, a successful Coke distributer for many years, described the meager funds many bottlers had when they began their careers in the early 1900s. He argued that a bottling plant could be set up at the turn of the century with "capital of around $3,500," but noted that this put major strains on cash-poor owners. He talked about bottlers that would "not have any money for Sunday School" because of their capital commitments to Coke bottling and noted that there were many "plants where the owners found plenty to keep them awake at night." In Willard's account, several Coke bottling plants "ran out of working capital and ownership changed hands three and four times before becoming self-supporting," but he also noted that many bottling plants enjoyed almost immediate success. Willard told the story, for example, of one "plant owner who has given away sums of six figures to hospitals, colleges and orphans' homes" who "frequently did not have carfare and was given credit by the street car conductors in his home town" when starting his Coke bottling plant. Success did not always come easily, but by and large, Coke claimed that the bottling business was a rewarding enterprise.[11]

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[10] Charles Howard Candler, *Asa Griggs Candler* (Atlanta: Emory University, 1950), 143; Mark Pendergrast, *For God, Country, and Coca-Cola*, 79.
[11] J. J. Willard, "Some Early History of Coca-Cola Bottling," *The Coca-Cola Bottler* (August 1944), 27.

But if a local businessman wanted to become a millionaire Coke bottler, he had to sacrifice his own personal resources. The capital risks for creating a bottling plant rested heavily on the local bottler not the parent company. True, the Coca-Cola Company offered its distributors a popular marketing label that was becoming increasingly well recognized in the early decades of the twentieth century, but it did not offer much else in the way of infrastructural support. Coke provided syrup, a brand name, and advice, not pipes, power-engines, or pumps.

The main material investments that supported the growth of company bottlers in the first half of the twentieth century came not from the Coca-Cola Company or from local businessmen, but from the state. Small bottlers with limited capital resources depended on public water systems built, managed, and operated by municipal governments. They saved thousands of dollars that they would have had to spend on laying the piping and constructing waterworks that brought pure water to their facilities. The expansion of municipal water systems in the Progressive Era thus represented a critical government intervention in the market that facilitated the growth of the Coca-Cola Company in its infancy.

This chapter explores the government investments in the twentieth century that helped Coca-Cola bottlers acquire the water they needed to serve remote markets all across the globe. At home and abroad, Coca-Cola has relied on a host of independently owned bottlers who used taxpayer-supported municipal water supplies to reduce front-end production costs. Yet, despite its historic dependence on government infrastructure, the Coca-Cola Company has positioned itself in recent years as a company capable and willing to carry out the public duty of bringing fresh, clean water supplies to dehydrated

communities around the world. The final section of this chapter considers the problems with nominating Coke to be the primary architect of large-scale public waterworks project in arid regions of the world considering its century-long strategy of externalizing costs associated with hydrological infrastructure construction.

Tapping Public Pipes for Profit: Externalizing the Hydrological Costs of National Expansion, 1886-1950

Coca-Cola's growth at the turn of the century coincided with the national expansion of publicly funded, capital-intensive municipal water systems. As scientists, such as Joseph Lister, Robert Koch, and Louis Pasteur, began to uncover the mysteries of the bacteriological world in the post-Civil War era, municipal planners began to rethink water resource management strategies. The "sanitary idea," first made popular by English statesmen Edwin Chadwick in the 1840s, which stressed that environmental pollution bred disease, gave way to the germ theory by the 1880s, as engineers began to focus on combating the microscopic organisms that caused fatal diseases such as typhoid, cholera, and yellow fever. By the end of the 1890s, epidemiologist Theobald Smith's technique for determining water contamination by testing for coliform bacteria concentrations became a trusted practice of municipal water specialists in the United States. City governments all across the country began to recognize that sophisticated treatment techniques could significantly improve water supply quality. As a result, they began to accumulate large amounts of capital to finance new centralized hydrological

infrastructure projects featuring mechanized filters, complex cast iron pipe networks, and primitive chemical treatment systems.[12]

Though private corporations had helped fund the majority of municipal water systems up to the 1880s—with some 80 percent of waterworks under private ownership in 1830—by the Gilded Age, public ownership began to take hold. By the turn of the century, "rapidly increasing demand for water rose beyond the capacity of most private companies to meet it," and as a result, waterworks shifted from private to public management. Local governments incurred substantial amounts of debt in order to fund large-scale infrastructure projects designed to equip municipalities with state-of-the-art hydrological filtration and treatment systems. By 1924, just ten years after the US Public Health Service implemented the first federal drinking water regulations, public utilities owned over 70 percent of the nation's municipal waterworks and by World War II public ownership had increased to over 80 percent.[13]

In addition to waterworks, cities spent millions of dollars developing new sewer networks between 1880 and 1920, recognizing that effective wastewater management improved the quality of public water supplies. Governments replaced open sewers with underground networks, recognizing that sewerage overflows threatened the health of

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[12] Joel A. Tarr and Patrick Gurian, "The First Federal Drinking Water Quality Standards and Their Evolution: A History From 1914-1974," in *Improving Regulation: Cases in Environment, Health and Safety,* edited by Paul S. Fischbeck and R. Scott Farrow (Washington, DC: Resources for the Future, 2001), 46; For a discussion of municipal water supplies before the Gilded Age, see Maureen Ogle, "Water Supply, Waste Disposal, and the Culture of Privatism in the Mid-Nineteenth-Century American City," *Journal of Urban History* 25 (1999): 321-47; Michael Rawson, "The Nature of Water Reform and the Antebellum Crusade for Municipal Water in Boston," *Environmental History* 9, no. 3 (July 2004): 411-445; Robin L. Einhorn, *Property Rules: Political Economy in Chicago, 1833–1872* (Chicago: University of Chicago Press, 1991); Ted Steinberg, *Nature Incorporated: Industrialization and the Waters of New England* (New York: Cambridge University Press, 1991); Nelson Manfred Blake, *Water for the Cities; Technology and the Rise of the Networked City in Europe and America*, edited by Joel Tarr and Gabriel Dupuy (Philadelphia: Temple University Press, 1988).

[13] Martin V. Melosi, *Sanitary City: Urban Infrastructure in America from Colonial times to the Present* (Baltimore: Johns Hopkins University Press, 2000), 123, 120; Elizabeth Royte, *Bottlemania: How Water Went on Sale and Why We Bought It* (New York: Bloomsbury, 2008), 72.

densely populated urban neighborhoods. Influenced, as urban environmental historian Martin Melosi noted, by a Progressive political culture marked by a "resolute commitment to public systems" and a "belief that municipal ownership and management had proven itself by the quality of the service rendered and improvements made in the areas of water purification and treatment," city governments invested heavily to make sure that wastes were transported safely to locations far from the urban core. By 1920, 80 percent of the country's urban citizens utilized public sewers, up from 50 percent of urbanites in 1870.[14]

These public works projects were expensive undertakings. They often required building reservoirs, dams, and aqueducts that could bring fresh water from unpolluted sources outside city centers. Many municipalities also chose to invest in new filtration systems that used mechanical water jets to clean sand filters, and by the 1910s others began to experiment with chemical treatment of water supplies. For big cities the bill for constructing these systems could be enormous. The construction of the Catskill Watershed dams and New Croton Aqueduct to serve New York City between 1905 and 1914 cost the municipality roughly $220 million dollars. Smaller cities made proportionally large commitments to water system construction. In 1910, *American City* reported that the Kansas City government had issued $3,100,000 in bonds "for the purchase of water-works, thereby exhausting the city's debt-making power for a number of years to come." In Coke's hometown, the city government of Atlanta used municipal bonds to pay for the expansion of the city's water system in the early 1900s. Between 1901 and 1907, the city issued $950,000 in bonds to pay for waterworks and sewer

[14] Martin Melosi, *Sanitary City*, 153, 213; Tarr, "First Drinking Water," 52.

repairs and raised an additional $2,250,000 in 1910 alone to pay for further improvements. The Atlanta Board of Water Commissioners explained how this would help Coke and other city businesses, arguing that without these investments "almost all our manufacturing industries, hotels, railroads and other large consumers of water would have to close down."[15]

After cities built their municipal water systems, they continued to require funds for maintaining this infrastructure. As urban historian Martin Melosi explained, these water system improvements "were not one-time expenditures." Cities paid for the labor and replacement parts that ensured that there were no major interruptions of service, and by the 1910s, the cost of these material and human resources were substantial.[16] Especially during World War I, when wartime demands for raw materials increased, municipalities faced serious financial costs to keep water supply systems up and running. *American City* reported in 1918 that "important water-works construction materials, pipe, valves, hydrants, etc. have more than doubled in cost" because of the war. Labor costs too were on the rise, and cities found it hard to generate enough revenue to cover their expenses. As a result, they went deeper into debt to finance water system construction and repair. Per capita municipal debt increased from around $12 in 1902 to over $60 by the end of World War I in large part because of increased municipal commitments to hydrological improvements.[17]

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[15] Martin Melosi, *Sanitary City*, 140, 127; Ray F. Weirick, "The Park and Boulevard System of Kansas City, Mo.," *American City* 3 (November 1910), 212; John Ellis and Stuart Galishoff, "Atlanta's Water Supply, 1865-1918," *Maryland Historian* 8 (Spring 1977), 11-17; Atlanta Board of Water Commissioners, *Annual Report of 1914*, 18, quoted in John Ellis and Stuart Galishoff, "Atlanta's Water Supply," 5.

[16] Ibid., 244.

[17] "War Burdens of Water-Works in the United States," *American City* 19 (September 1918): 193; Joel Tarr, "The Evolution of Urban Infrastructure in the Nineteenth and Twentieth Centuries," in *Perspectives on Urban Infrastructure*, ed. Royce Hanson (Washington, D.C.: National Academy Press, 1984), 8, 18; Martin Melosi, *Sanitary City*, 460.

Coke bottlers reaped the benefits of municipal investments in public water supply expansion and improvement. They tapped into the public pipes laid by government engineers and maintained by municipal agencies, and as a result they were able to divert capital they would have had to spend on creating extractive hydrological networks to other purposes, such as promotional efforts and advertising campaigns. Multimillion-dollar financial commitments from city governments allowed a bottler to turn startup capital of just $3,500 into a profitable bottling firm. The state had done the majority of the work of bringing fresh, clean water to company bottling plants. Bottlers simply had to mix this public resource with company syrup and distribute it to consumers.

Not all soft drink bottlers in the early 1900s used public water supplies, but by the end of the 1910s, almost all company bottlers became users of municipal systems. Trade magazines constantly warned small bottlers to be careful when using cisterns or wells to supply their plants, noting that these water sources were often polluted. Over time, the majority of bottlers recognized that tapping into municipal pipes was the best way to ensure a quality product. While soft drink trade journals occasionally criticized lax management of public water facilities in the early decades of the 20th century, for the most part, the industry recognized that recent improvements in municipal systems made public water resources the preferred source of supply.[18]

By the late 1910s and early 1920s, bottlers praised innovative chlorination treatments employed by many city utilities across the country. These treatments

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[18] The trade coverage of municipal water supplies was not always glowing. *The National Bottlers' Gazette*, for example, exclaimed in 1922, "Bottlers in cities or towns—who use the general water supply—should be insistent and persistent with the authorities in control of the public water works system to have reliable chemical analyses made at least once a month for the better protection of all." W. W. Skinner, "Beverage and Beverage Flavor: Their Federal and State Control," *The National Bottler's Gazette*, July 22, 1922. (Water Album – 1922 – Skinner Says Public Water Supplies not Good Enough for Soft Drink Bottlers).

significantly reduced deaths caused by waterborne diseases. First used experimentally in 1888 to purify water supplies, chlorine swept the nation in the 1910s, with hundreds of municipalities across the country using the disinfectant by the 1930s. Commenting on the positive effects of chlorination, the *Southern Carbonator and Bottler* noted in 1922, "Bacteria are destroyed by the chlorination process now used in nearly all municipal water supplies . . . as most bottlers obtain their water from the municipal supply . . . there is little danger that it [their water] will be unsanitary." In the final analysis, the *Southern Carbonator* concluded, "most water supplies are satisfactory for making carbonated beverages."[19]

Bottlers recognized that municipalities' financial commitment to infrastructural development allowed them to avoid maintenance costs that would hamper industry expansion. In 1926, for example, the *Southern Carbonator* printed an article published by the State Hygienic Laboratory of Iowa City, Iowa, which highlighted the benefits bottlers received from municipal waterworks in the state: "The great advantage that the public supply has over private sources, even in the smallest town, is that the public supply receives more or less frequent attention." Noting the long-term burdens water-system improvements placed on municipal governments, the laboratory concluded, "In general, I would not advise you to put in private wells for your carbonating plant water supply, unless you are prepared to put in the wells as carefully and to watch over them as jealously, as should the people who are responsible for your public water."[20]

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[19] *The Southern Carbonator and Bottler* (May 1922), 54.

[20] *The Southern Carbonator and Bottler* (August 1926), 65; Martin Melosi, *Sanitary City*, 144; Even as chlorine became popular in many municipalities, only 1/3 of waterworks in the United States used the chemical in treatment processes as late as 1939. Melosi, 223.

Coke agreed with such assertions, heralding the new hygienic era in municipal water supply management and urging its bottlers to use city resources. As an indication of Coke's faith in municipal systems, by 1920, 90 percent of Coca-Cola bottlers used municipal water to supply their plants. Reflecting on the radical advancements of the Progressive Era, Coca-Cola chemist and company Vice President Dr. W. P. Heath praised the nation's public water systems in 1932, arguing, "Any water which is pure enough from a sanitary point of view to be used by cities and communities is pure enough for the beverage industry."[21] Heath concurred with the *National Carbonator and Bottler*'s statement made seven years later that "bottlers taking water from municipal supplies need not worry . . . as safety is more or less assured by the municipality." In a tacit acknowledgement of Coke's indebtedness to municipal reforms in public resource management, Heath gave his assurances to company bottlers that the country's municipal water resources were the ideal source of supply for the company's franchisees.[22]

While Coke's head chemist gave public water utilities a clean bill of health by the late 1920s, concerns about how new municipal treatment strategies affected beverage taste caused headaches for water quality specialists within the industry. Chlorine proved a particularly pesky problem. Though the disinfectant eliminated a host of pathogens from municipal water supplies, it had the effect of distorting the flavor of many soft drinks, and in some cases, was even known to alter or bleach the color of carbonated beverages.[23]

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[21] *National Carbonator and Bottler* (June 15, 1932), 19; Seven years later the *National Carbonator* supported Heath's assertion, reporting, "Bottlers taking water from municipal supplies need not worry . . . as safety is more or less assured by the municipality"

[22] *National Carbonator and Bottler* (April, 1939), 68.

[23] *The National Carbonator and Bottler* (February 15, 1937), 32.

In response to the growing concerns about chlorine's affect on soft drink taste and color, Coke's water quality team headed by Heath experimented with carbon filtration technology developed by the military during World War I (for gas masks), creating a workable dechlorination system for bottling plants to use all across the country. Though many municipal governments were beginning to use activated carbon filters in their treatment facilities as early as 1924, Heath pushed Coke bottlers to install the new technology in company plants through the late 1920s and into the 1930s. By 1939, Heath had overseen the installation of activated carbon filters at twenty-five bottling plants nationwide.[24]

For Heath, then, the problem with public water supplies by the 1930s was not that they were unsafe, but that they often contained "impurities" that thwarted company efforts to create a uniform product across vast geographic boundaries. Water supplied by cities in the Midwest tasted different from municipal water in the Northeast. As the *National Carbonator and Bottler* noted in 1937, "In some few sections of the United States, the water furnished by municipalities can be used directly in the preparation of beverages without any further preparation," but in a large number of other regions of the country "the supplies are so highly mineralized that products prepared from the untreated water are of inferior quality."[25] Coke encouraged bottlers to invest in chlorination systems and other antibacterial treatment systems, but the main concern at this time was to eliminate bicarbonates (which could affect the acidity of the company's finished product) and to reduce the concentration of minerals that might alter the taste of Coke.

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[24] "The Quest for Quality Never Ends," *The Coca-Cola Bottler* (April 1959), 165-166; Charles Elliot, *Robert Winship Woodruff*, 130; Martin Melosi, *Sanitary City*, 224.
[25] *The National Carbonator and Bottler* (November 15, 1937), 71.

This was the obsession of company chairman Robert Woodruff by the 1930s: to ensure that a Coke in Alabama tasted the same as it did in California. Coke, Woodruff believed, was in the business of satisfying people's taste buds, and its profitability came through its consistent delivery of a product that tasted the same no matter where it was sold. Summarizing Woodruff's mission, Coke president Paul Austin explained years later, "We sell only one thing, taste. We use water as a vehicle to carry that taste to the customer."[26]

Thus, the pursuit of taste, not healthfulness, was the primary motive driving bottlers to invest in capital outlays for demineralization and dechlorination equipment in the early twentieth century. To this end, the parent company created the Traveling Laboratories department in July of 1941, which consisted of water quality specialists and company chemists tasked with enforcing water quality standards at bottling operations all across the country. Members of the Traveling Laboratories worked out of mobile labs and advised local bottlers on how to decrease the alkalinity of their water supplies, eliminate unwanted organic materials suspended in source water, and improve the overall operation of their filtration and treatment equipment. Commenting on Woodruff's commitment to improving water resource management within the company, biographer and close friend Charles Elliot explained, "Woodruff employed an army of chemists and put them to work testing water samples from every bottling plant in the United States, and where the water was not up to standard, doing something about it. Recommendations were made up for each plant to follow in bringing its water to a standard quality." The parent company was merely in the business of diagnosing problems, not fixing them.

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[26] Letter from Paul Austin to Robert W. Woodruff, November 28, 1969, Box 16, Folder 1, RWW Papers, MARBL.

The financial responsibility for updating bottling plants fell heavily on independent bottlers.[27]

Yet, even as company bottlers invested in internal improvements, they continued to rely on municipal water systems for raw materials. Coca-Cola bottlers were convinced that public infrastructure would remain a reliable supply for years to come. The Great Depression had certainly affected municipal governments' ability to come up with local funds to finance capital-intensive public works projects, such as waterworks and sewer improvements. Cities increasingly turned to the federal government for infrastructural support during the 1930s, and the government responded with financial aid. During the Roosevelt Administration, the Public Works Authority (PWA) channeled millions of dollars towards municipal infrastructure projects, providing over 80 percent of the funding for municipal wastewater system improvements and offering $109 million dollars to local governments across the country for sewer construction in 1936. By the end of the New Deal, the PWA assisted in the construction of over 2,400 water projects, offering over $300 million of assistance to local communities. This federal aid boosted the total number of public waterworks from 9,850 in 1924 to 14,500 by 1940, an increase of over 67 percent.[28]

In light of the growth of public waterworks infrastructure and improvement of older networks, the Coca-Cola Company admitted that many of its bottling filtration and treatment systems were merely "insurance" in case of "seasonal variations or emergency conditions," and not all bottlers invested in the best equipment to purify public water

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[27] Charles Elliot, *Biography of the Boss*, 131.
[28] Martin Melosi, *Sanitary City*, 240, 218, 213.

supplies.[29] In 1957, when a FDA agent stopped by for an unannounced inspection of an Atlanta plant, C. R. Bender, a company official at the Atlanta branch explained "that only in very rare cases was the installation of water treating equipment based on a need to bring the water up to U.S. Public Health Service standards but rather because of some objectional [sic] chemical quality of the water which would affect the quality of the beverage. For this reason, it was pointed out, he might not find complete water treating systems in every bottling plant he inspected."[30]

The main reason why Coca-Cola bottlers stuck with municipal suppliers was that the cost of service was so cheap. In fact, throughout the first five decades of the twentieth century, bottlers rarely mentioned any concerns about the price of public water. A survey of industry trade journals from the late nineteenth century to the mid-1950s revealed not one article on the price of public water supplies or bickering about discriminatory rates.

Public water was so cheap that, at mid-century, the Central Coca-Cola Bottling Company of Richmond, Virginia, the tenth largest bottler in the United States, did not even include water as a separate expense in its company ledgers, coupling the price of water consumption under "Heat, Light, Power, and Water" charges. In 1951, the bottler reported utility receipts for heat, light, power, and water totaling just under $49,000 with total expenses for manufacturing and material acquisition approaching $2 million. Thus the cost of water—a raw ingredient that made up 85 percent of the bottler's finished

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[29] "The Quest for Quality Never Ends," *The Coca-Cola Bottler* (April 1959), 167.

[30] Memorandum from C. R. Bender dated July 22, 1957, Box 123, Folder 4, RWW Papers, MARBL. By 1950, the Coca-Cola Bottler commented on the soft drink industry's dependence on municipal water supplies explaining that the industry used "about six and a quarter billion gallons of water" from municipalities each year with approximately twelve bottling plants within the country using "as much as 50,000,000 gallons of water a year about as much as used by a town of 2500 inhabitants. "Processing Water for the Carbonated Beverage Industry," *The Coca-Cola Bottler* (January 1950), 42.

product— represented less than 2 percent of the bottling enterprise's operating expenses.[31]

As Central Coca-Cola Bottling Company's ledgers reveal, reliance on public water infrastructure allowed Coca-Cola bottlers to keep water extraction costs down. Perhaps the greatest savings came in transportation costs. The expansion of water services to smaller and smaller towns during the 1930s and 1940s meant that Coke could open new bottling franchises in remote corners of the country by the 1950s, thus decreasing the distance between bottling plants and consumer outlets. The head of Coca-Cola's bottler's service department, Bert Wells, knew that "continued improvements in municipal water supplies" in less populated areas of the country represented a boon for company growth, confessing in 1949 that in "practically every city and town in this country today, we take it for granted that the water is clean and wholesome." By 1950, there were roughly 1,050 Coca-Cola bottlers operating in the United States, up from just 400 in 1909, with bottlers controlling small, circumscribed territories, virtually all tapping into public pipes constructed and maintained by local governments.[32]

To save even more on transportation costs, the parent company in the 1950s went so far as to suggest reducing the water content of the syrups they shipped to domestic bottlers (something they already did for foreign plants) in order to decrease freight costs. Coca-Cola executive Ralph Hayes proposed such an adjustment to company operating procedures in 1951, explaining to Robert Woodruff that Coke "could recoup into profits staggering amounts of money and radically recast our earnings picture if we could devise

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[31] "Statement of Income, Profit, and Loss for All Plants: January 1, 1951 to December 31, 1951," Box 2, Central Coca-Cola Bottling Company (Richmond, Virginia) Manuscript Collection, The Virginia Historical Society, Richmond, Virginia.

[32] "Processing Water for the Carbonated Beverage Industry," *The Coca-Cola Bottler* (January 1950), 42; "The Overseas Story," *Coca-Cola Overseas* (June 1948), 5.

a completely foolproof procedure of putting all the water in our syrup at the bottling plant instead of the syrup factory." Hayes continued, "We now have 5/6ths of the water added at the bottling plant. By having the other 1/6th added at the same place we can, in my opinion, save our future." Hayes concluded that it was imperative to find a "way to avoid the cost (and the hazard to freshness) inherent in transporting the water content of syrup."[33]

As Hayes's interest in "syrup-minus-water" mix demonstrates, Coke looked for every possible way to externalize the cost of water extraction and transportation, and while local bottlers were expected to pick up the tab, the system only worked if small franchisees could reduce their costs by relying on public infrastructure that was in part subsidized by taxpayer dollars. The company's plan for decentralized distribution simply would not have been possible without the concomitant expansion of public infrastructure in the first half of the twentieth century that enabled small bottlers with limited capital resources access to cheap water supplies in areas close to consumer outlets.

Coke's Anti-Government Rhetoric and Corporate Water Stewardship at Home, 1950-1990s

Despite Coke's reliance on government-funded infrastructure, the company often positioned the government as an enemy of the company. Coca-Cola Export head James Farley, for example, cautioned the US Trademark Association, "In nearly every Congress, thinly –disguised socialistic measures are introduced which would damage our system beyond repair." Expressing unbridled confidence in the free market system,

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[33] Letter from Ralph Hayes to Robert W. Woodruff, June 22, 1951, Box 138, Folder 2, RWW Papers, MARBL.

Farley added, "Let us protect what courage and enterprise has made possible—the miracle of American industry."[34]

Ironically, it was actually the unregulated growth of American industry in the 1950s that threatened the viability of the Coca-Cola system, as new industrial pollutants began to contaminate the public water supplies that were essential to Coke's operations. At that time, the US Public Health Service spent roughly one cent per American citizen on water quality research and analysis annually. With virtually no federal oversight of industrial wastewater management, creeks and streams feeding into municipal waterworks became contaminated with carcinogenic chemicals, insecticides, and other synthetic materials. Municipal governments gave vital public infrastructural improvements scant support, facing ever-tighter budgets due to the flight of middle-income taxpayers to the suburbs, an exodus that dramatically drained urban centers' revenue base. As a result, many municipal water systems fell into disrepair. In 1960, the American Waterworks Association informed citizens that two-fifths of the nation's waterworks had deficient water treatment programs.[35]

The soft drink industry suffered real hardships due to the contamination of public water supplies. A representative from the Society of Soft Drink Technologists argued in 1961 that because "municipal purification systems are over-taxed . . . some communities that never experienced product trouble are having problems with off-tastes and odors." The specialist recognized the impediments to salvation, noting, "improvements to

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[34] James Farley, "Trademarks: America's Goodwill Ambassador," Luncheon address given at the Annual Meeting of the United States Trademark Association, June 23, 1955, Box 58, Folder 1, RWW Papers, MARBL.

[35] Martin Melosi, *Sanitary City*, 283, 290, 296.

existing facilities or new ones involve additional taxes which is a nasty word these days, especially for something like water that people have taken for granted for generations."[36]

Rather than support long-term costly repairs to crumbling public water systems, Coca-Cola decided to make short-term gains from infrastructural failures. The company promoted soft drinks as a safe alternative to questionable tap water supplies. In 1960, for example, when an oil refinery leaked contaminants into New Orleans city water, the local Coca-Cola bottler secured a fleet of tankers and imported spring water located approximately sixty miles from the city, extracting some 4,000 gallons an hour. The company bombarded radio stations and print media with notices exclaiming Coke's value as a replacement for city water. One ad exclaimed: "New Orleans water tastes funny right now? Then drink Coca-Cola. No funny taste there from water because Coca-Cola, the New Orleans bottler, is using only water brought in by tank trucks from deep spring wells and the water supplies of nearby Coca-Cola bottling plants."[37]

In addition to these temporary emergency campaigns, Coca-Cola began to think broadly about ways to profit from city water problems, first considering the prospect of selling bottled water in the early 1960s. Coke executive Robert Broadwater, the man Coke president Paul Austin appointed to facilitate the company's experimental foray into the bottled water business, noted that the company had gathered information in the early 1960s clearly indicating "that the deteriorating quality of municipal water supplies and increasing awareness of environmental problems would be forcing factors in the future

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[36] *The American Soft Drink Journal* (May 22, 1961), 16

[37] "Ingenuity, Plus Spring Water, Turns Handicap to Build Sales," *The Coca-Cola Bottler* (April 1960), 29. In Aberdeen, South Dakota, concerns about the municipal water supply caused families with babies" to turn "to the Coca-Cola Bottling Company of Aberdeen for their water needs," reported the *Coca-Cola Bottler* in 1961. The plant's water, the *Bottler* explained, "is treated beyond the requirements of most local waterworks and is as pure as pure can be." Citizens in the town were invited "to drop by with jars, buckets and other containers and help themselves." "A Life-Saver for Babies: When City Water Develops Off-Taste, Aberdeen Bottler Comes to Rescue," *The Coca-Cola Bottler* (October 1961), 32.

growth of the bottled water business." By 1966, Coke decided to enter the market, first test distributing a brand of spring water in Belgium. Three years later, the company acquired Belmont Springs Water Company of Belmont, Maine, launching its first domestic bottled water campaign.[38]

But though Coke dabbled in the spring water business in the late 1960s, company management remained divided over whether to invest in future bottled water projects that would require costly outlays by the company. Coke made big earnings from its decentralized bottling system, a distribution network dependent upon cheap municipal water supplies and one that allowed Coke to save on the cost of shipping water, a dense, low-valued commodity. Some Coke officials questioned whether transporting water from remote springs to markets all over the world would be profitable. Executive C. A. Shillinglaw weighed in on the decision in 1971, expressing support for continued experimentation with spring water bottling considering that "the future quality of the public water supplies in the U.S. will continue to deteriorate, thereby generating for bottled water an increasing physical quality advantage." However, Shillinglaw suggested that the company consider developing a "national trademark for drinking water" that "need not necessarily be tied to water from a single source." In fact, he believed it might be possible to utilize "factory purified water" for such a brand. In the 1990s, the company would capitalize on Shillinglaw's suggestion, but for the next several decades, Coke largely stayed out of the bottled water business.[39]

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[38] Memorandum from Robert Broadwater to Paul Austin regarding Bottled Water Project, May 21, 1971, Box 48, Folder 11, RWW Papers, MARBL.

[39] Letter from C. A. Shillinglaw to James A. Schroeder, March 10, 1971, Box 48, Folder 11, RWW Papers, MARBL.

By the 1970s, the soft drink industry recognized that water quality issues were foremost on the minds of American consumers. The National Soft Drink Association reported in March of 1972 that a yearlong survey of over 20,904 national editorials revealed that of the articles dealing with environmental issues, water quality concerns were the most common. In part, the United State Public Health Service helped heighten concerns about public water supplies, issuing a report in 1970 stating that dozens of municipal utilities were supplying millions of Americans with potentially hazardous water resources. Following this report, a rash of similar studies emerged that frightened consumers into thinking their tap water was unsafe.[40]

In the wake of these reports, the federal government began to take serious steps to regulate water pollution. In 1970, Richard Nixon signed the National Environmental Policy Act into law, creating the Environmental Protection Agency (EPA). Two years later, Nixon gave the EPA powers to regulate point-source pollution under the Water Pollution Control Act of 1972. In 1974, Congress passed the Safe Drinking Water Act, a monumental piece of legislation enacted to regulate chemical contaminants in public water supplies.

New regulations had direct impacts on soft drink bottlers operation costs. In 1972, *Beverage Industry*, a soft drink trade journal, reported that "the most significant trend" within the bottling industry was the installation of water recycling technology. The inspiration for this shift, the journal explained, were new local and federal regulations that increased sewerage surcharges in many municipalities all across the country. As government agencies began to make heavy water users pay for the pollution

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[40] *National Soft Drink Association Bulletin* (March 1972), 5; Fred Powledge, *The Nature, Uses, and Future of Our Most Precious and Abused Resource* (New York: Farrar Straus Giroux, 1982), 55.

they caused, soft drink bottlers began to think twice about wasting resources, seeking new ways to use public water supplies more efficiently.[41]

Despite the apparent success of new federal regulatory policies to force industry to develop better water resource management strategies, Coca-Cola expressed its distaste for government intervention. In 1970, Paul Austin gave a passionate address concerning the environmental problems facing the nation, criticizing environmentalists who looked to improved federal regulatory policies for salvation: "The government can't solve our problem," Austin argued, "The government has been trying to do something about pollution and environmental decay since the first administration of Teddy Roosevelt." Consumers and corporations, "every individual and corporate citizen," would have to help turn the country towards environmentally sustainable economic growth, argued Austin.[42]

Austin's claims to the contrary, the government was indeed making effective strides to regulate corporate water pollution in the 1970s, forcing Coke and other heavy commercial water users to reconsider their hyrdological management practices. In part because of the new regulatory climate, Coca-Cola decided in 1970 to purchase Aqua-Chem, a company that specialized in water filtration, water recycling systems, and desalination technology. Austin explained the merger to the press, stating, "The Coca-Cola Company already is in the water business. Water is what carries our product and the water condition in this country is deteriorating . . . . For The Coca-Cola Company to use its resources to bolster a company that is one of the leaders in anti-pollution was a

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[41] *Beverage Industry* (July 25, 1975), 1.

[42] "Environmental Renewal or Oblivion, Quo Vadis?" Address by J. Paul Austin, President of the Coca-Cola Company, to the Georgia Bankers Association, April 16, 1970, Box 16, Folder 2, RWW Papers, MARBL.

logical approach to take."[43] In a conversation with the *Wall Street Journal*, president Austin added that the company's new water projects were a response to the fact that "the world's supply of water is getting increasingly worse, not in quantity but in quality."[44]

This was a radical departure from established company policy that kept the company out of capital-intensive industries associated with manufacturing and operating large-scale industrial technologies. For almost one hundred years, Coke had externalized the costs associated with water treatment, relying on local bottlers who in turn depended on public water systems for the majority of their technological infrastructure. Now the company would learn firsthand the costs associated with extracting and treating hydrological resources.

At first Aqua-Chem seemed like a smart investment. For one, it allowed the company to break into new markets in arid regions around the world. In the Middle East, Aqua-Chem became involved in a series of high-profile water projects, including a $15 billion deal with the government of Saudi Arabia to build 20 desalination plants by the 1980s. Coke initiated such projects to improve relations with Arab nations that had boycotted the company after Coke's had tried to open a bottling plant in Israel.[45]

But though Aqua-Chem proved useful for the company in its negotiations with Arab nations, the water company ultimately yielded weak profit margins for Coke. In 1981, roughly ten years after acquiring the company, incoming Coke chairman Roberto Goizueta sold the subsidiary, recognizing that the costs of developing and maintaining large-scale water treatment infrastructure was an expensive enterprise. Explaining the

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[43] *The Refresher* (November 1972), 3.
[44] "Coca-Cola Puts 2nd Period Net Up Over 11%, Weighs National-Bottled Water Operations," *Wall Street Journal*, July 29, 1971, 6.
[45] "20 Desalination Plants to Cost Saudis 15 Billion," *New York Times*, May 24, 1977, 51; Mark Pendergrast, *For God, Country, and Coca-Cola*, 302.

Aqua-Chem sell, Goizueta remarked, "I realized that the worst waste of time for a company is to try to do well something which we had no business doing." After selling the water company to Suez Lyonnaise des Eaux, Coca-Cola told the *Wall Street Journal* that the sell "reflected Coke's recently established strategy of concentrating on consumer products rather than industrial markets." However, analysts noted that the real reason for Aqua-Chem's sale was its lack of profitability. Coke was earning roughly 7 to 8 percent annually on their Aqua-Chem investments, "a far cry," the *Wall Street Journal* noted, "from the corporate Coke average of more than 20%."[46]

Thus, Coca-Cola learned an important lesson from the Aqua-Chem experience: that engaging in large-scale hydrological infrastructure projects was a costly affair, one filled with capital risks that threatened the profitability of the Coca-Cola enterprise. As a result, the company ultimately reversed its diversification strategy, getting out of infrastructural businesses that weighed down the company and halted growth.

By the 1980s, Coke had less reason to fear that the federal government would increase company operating costs by making the company pay for the pollution it caused. Coke looked favorably upon a Reagan administration whose pro-business agenda portended unprecedented growth for the company. Coke president and chief operating officer Donald Keough heralded Reagan's arrival in the White House claiming that the new administration "has set a new economic policy designed to unleash the force of the free enterprise system in this country," cutting corporate taxes and supporting private industry. Echoing Keough, Roberto Goizueta dubbed the 1980s the "era of deregulation," predicting a "general movement away from big government, and recognition of the

[46] "Putting the Daring Back in Coke," *The New York Times*, March 4, 1984, F1; "Coca-Cola to Sell Aqua-Chem Unit to Paris Company," *Wall Street Journal*, July 15, 1981, 31; "Spritzing New Zest Into Coke," *Industry Week*, November 1, 1982, 47.

stifling effects of over-regulation." Keough called on Coke and other corporations to "do more than merely applaud the new direction from the Federal government. We must assume new responsibilities as a result of it."[47]

Keough and Goizueta's optimistic assessment of Reagan's economic policy belied the fact that the Republican administration's deregulatory agenda threatened the viability of municipal water systems—infrastructure vital to company operations. As Martin Melosi explained, "The new Republican administration reshuffled priorities, strongly emphasizing federal support for national security and rebuilding of the nation's defense system at the expense of many domestic programs." As a result, municipal governments working to finance hydrological improvements went deeper and deeper into debt, relying on revenue bonds to finance much needed public works repairs. By 1986, municipal debt across the country totaled $164 billion dollars. With limited funds, many municipalities simply deferred work on much-needed water infrastructure improvements, thereby exacerbating supply problems.[48]

Again, rather than provide financial support for large-scale public infrastructure repair, Coke initiated relief projects throughout the 1980s designed to highlight the superiority of company bottlers' filtration systems. These projects increased consumer loyalty to Coke products and contributed to a growing belief that private industry, not government, was best equipped to serve the public's water needs. In 1983, for example, a coliform bacteria outbreak in Grand Rapids, Michigan, had thousands of citizens flocking to the Coca-Cola Bottling Company of Michigan for water. According to the *Coca-Cola*

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[47] "Managing Change – Challenge of the '80s," Remarks by Roberto C. Goizueta to the Georgia Bankers' Association, Marketing Conference, February 12, 1981, Box 121, Folder 7, RWW Papers, MARBL; Letter from Donald Keough to Jerry A. Ross, Vice President of Casey Electric Inc., August 25, 1981, Box 56, Folder 8, RWW Papers, MARBL.

[48] Martin Melosi, *Sanitary City*, 357, 359.

Bottler, the plant informed reporters that "the company's three-part water treatment system . . . surpasses any municipal purification network." The journal noted that the bottler's relief program spurred "record demand" for Coke products as "media coverage of water donations influenced the public's buying not only by promoting goodwill, but reinforcing confidence in the bottler's products."[49]

In Perdido, Alabama, Springfield, Missouri, and Paterson, New Jersey, and other small towns, Coke bottlers executed similar relief campaigns throughout the 1980s, and as municipal water systems continued to falter across the country, citizens increasingly turned to Coke and other private beverage providers for hydration, losing faith in public water management. As an indication of the public's pessimistic assessment of public utilities, between 1965 and 1982, average per capita tap water consumption in the United States declined from 269 liters to 178 liters, and as the decade progressed, more and more consumers turned to soft drinks for hydration. By 1986, Coke rejoiced that, "Right now, in the United States, people consume more soft drinks than any other liquid—including tap water." Roger Enrico, chairman of the Pepsi-Cola Company, praised the industry hallmark, exclaiming that same year, "You choose soft drinks—more often, these days, than you pour yourselves a glass of water or any other beverage—because soft drinks have become a part of American life."[50]

As tap water consumption declined, bottled water sales began to take off, and it was Pepsi, not Coke, that initiated the next major offensive against tap water, introducing

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[49] *Coca-Cola Bottler* (September 1985), 5.

[50] *Coca-Cola Bottler* (September 1982), 1; Coca-*Cola Bottler* (December 1982), 2; *Coca-Cola Bottler* (January 1983), 3; Robert Foster, *Coca-Globalization: Following Soft Drinks from New York to New Guinea* (New York: Palgrave Macmillan, 2008), 65; D.L.I. Productions, Canadian Broadcasting Corporation, Télé-Québec, Channel Four (Great Britain), and Microfilms Inc., *The Cola Conquest: A Trilogy*, DVD, (Canada: Microfilms Inc., 2004); Mark Pendergrast, *For God, Country, and Coca-Cola*, 375; Roger Enrico and Jesse Kornbluth, *The Other Guy Blinked: How Pepsi Won the Cola Wars* (Toronto; New York: Bantam, 1986), 15.

its bottled water label Aquafina in 1994. Unlike other companies, Pepsi decided to use purified tap water for its product, exploiting its established bottling network to secure its water supplies at low cost. Journalist Constance Hays noted that Pepsi's decision to use municipal supplies offered the company promising prospects for profits considering the fact that "the raw material was about as cheap as any could be."[51]

Coke hesitated to follow Pepsi's lead, concerned that the Pepsi model might undermine the company's unique partnership with its bottling partners. Coke made its money selling syrups to its bottling partners. If the company began selling bottled water, company president Doug Ivester surmised, bottlers would have no reason to send profits back to the parent company because these local distributors had access to the water supplies and filtration systems to run a bottled water enterprise on their own.

To solve this problem, Ivester came up with an ingenious solution. As Constance Hays explains, "Ivester decided that a dose of mineral salts, including potassium chloride, had to be added to the water. The minerals amounted to a concentrate that the bottlers would have to buy from Coke." Under this business model, Coca-Cola could preserve its franchise system, with local bottlers all across the country remaining dependent upon the parent company. By the spring of 1999, Coke was selling its own purified water label, Dasani, to its customers in the United States.[52]

As Robert Foster and Martha Kaplan point out, part of what made the Dasani campaign so successful from the start was the fact that company bottlers were "there, available, through the Company's extensive distribution system." Coke's century-long campaign to tap into public utilities all over the world provided it with a global reach that

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[51] Constance Hays, *The Real Thing*, 246.
[52] Ibid., 247.

few source-based spring water companies could compete with. As a result, both Aquafina and Dasani took off, quickly becoming the market leaders in bottled water sales by the early-2000s, controlling 11.3 percent and 10 percent of the market respectively by 2004.[53]

Dasani was profitable for Coke because the company accrued astronomical earnings from the markup of cheap municipal water supplies. In his work on bottled water, Tony Clarke, director of the Polaris Institute, revealed the disparity between what Coke paid per liter for municipal water supplies and what it charged consumers per liter for Dasani bottled water in the late 2000s. According to Clarke, Coke paid roughly 2 one-thousandths of a cent for a gallon of water from Marietta, Georgia's municipal water supply in 2007, yet sold a gallon of its Dasani product for $4.35 in that year. In other words, in that particular municipality, a gallon of Dasani water cost over 200,000 times more than a gallon of municipal water supplied through the tap.[54]

Coke actively contributed to promotional campaigns designed to decrease consumer acceptance of tap water. In 1998, for example, Coke began an aggressive campaign to reduce "tap water incidence" at Olive Garden franchises. The campaign, named "Just Say No to H_2O," taught Olive Garden's servers selling techniques to steer customers away from tap water to "a profitable beverage." PepsiCo also disparaged public water supplies, company chairman Robert Morrison labeling tap water the

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[53] Martha Kaplan, "Fijian Water in Fiji and New York: Local Politics and a Global Commodity," *Cultural Anthropology* 22, no. 4 (2007): 697; Steve Martinez, "Soft Drink Companies Make Splash in Bottled Water," *Amber Waves* 5 (June 2007), 4.

[54] Tony Clarke, *Inside the Bottle: Exposing the Bottled Water Industry* (Ottawa: Canadian Centre for Policy Alternatives, Polaris Institute, 2007), 81.

"biggest enemy" of the soft drink industry in 2000 and claiming that water obtained from public sources was only good enough for "irrigation and cooking."[55]

In addition to these public anti-tap advertising campaigns, Coke championed lobbying efforts to combat tax plans that would funnel a portion of its profits towards vital infrastructural improvements in the United States— improvements, government agencies argue, that are becoming increasingly more expensive every day. In 2009, the Environmental Protection Agency (EPA) asked the Government Accountability Office (GAO) to conduct a study to determine the most effective strategy for financing a clean water trust fund to pay for wastewater infrastructure improvements for years to come. The report came on the heels of an EPA report that highlighted an estimated funding gap of $524 billion dollars between current investments in wastewater improvement projects and expected costs over the next 20 years. Among reformers responding to the GAO report, some suggested excise taxes on specific industries, particularly heavy water users.[56]

Two months after the GAO report, Representative Earl Blumenauer (D-Oregon) proposed the Water Protection and Reinvestment Act in July of 2009, a bill that called for a 4-cent excise tax on beverages made from public water supplies. The American Beverage Association, the DC-based lobbying arm of the soft drink industry, met Blumenauer's bill with fierce resistance, arguing that the current funding strategy proposed under the bill would shift the responsibility for upkeep of public infrastructure from consumers to industry, thereby preventing consumers from recognizing the full cost

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[55] Robert J. Glennon, *Water Follies: Groundwater Pumping and the Fate of America's Fresh Waters* (Washington, D.C.: Island Press, 2002), 2; Quoted in Peter Gleick, *Bottled and Sold: The Story Behind Our Obsession with Bottled Water* (Washington, D.C.: Island Press, 2010), 7.

[56] "Clean Water Infrastructure: A Variety of Issues Need to Be Considered When Designing a Clean Water Trust Fund" (US Government Accountability Office, May 2009).

of municipal water supply management, consequently contributing to the perpetuation of wasteful consumption habits.[57]

Though as of 2012 the federal government did not implement an excise tax on soft drinks to finance a federal clean water fund, state legislatures all across the country began to push for similar funding mechanisms to help finance infrastructural water development in the 2000s. In Florida, for example, Governor Charlie Crist proposed a 6-cent tax on bottled beverages and in 2001, the Texas Senate considered a 5-cent tax on bottled water to pay for $17 billion worth of vital improvements to state water systems. In Texas, Coke spent $50,000 lobbying against the industry-specific excise tax, supporting Proposition 19, a funding plan that called for $2 billion in public loans to finance infrastructural development. Ultimately, Coke won its campaign. Summarizing Coke's crusade against the Texas bottle bill, Richard Girard, researcher at the Polaris Institute, argued, "In effect, the bottle water industry was able to prevent a tax being imposed on its own product sales by supporting another weaker funding mechanism for improving public water utilities, paid for by individual taxpayers in general."[58]

Coca-Cola's lobbying campaigns hinged on the idea that the corporation was self-reliant and autogenic. The company positioned itself as a target of discriminatory federal regulation rather than a corporation that profits from public services. It pitched clean water legislation as a classic battle between free enterprise and big government and argued that new state regulations would hinder the growth of private corporations, the real engines of development. It was this message that Coke would use in other parts of

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[57] H.R. 3202, Final Water Protection and Reinvestment Act, July 14, 2009.
[58] Richard Girard, "Coca-Cola Company: Inside the Real Thing," Corporate Profile: Polaris Institute (August 2005), 29, http://www.polarisinstitute.org/files/Coke%20profile%20August%2018.pdf.

the world to legitimate its global expansion overseas in the final decades of the twentieth century.

Citizen Coke and Water Resource Development Abroad, 1990s-Today

The cost of shipping Coke's carbonated beverages all over the world using centralized bottlers would have been prohibitively high. Mixing concentrate with water resources near the point of sale offered a critical solution to Coke's distribution dilemma, and the company knew that plugging bottlers' pipes into public water supplies all over the globe offered them a key cost-saving technique for supplying their customers worldwide.[59]

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[59] A host of new scholars have contributed excellent work on the ways in which neoliberal economic policies have affected water resource management practices in developing nations all over the world. The consensus among scholars such as Maude Barlow, Tony Clarke, and Peter Gleick is that multinational corporations like Coca-Cola and international organizations such as the IMF and the WorldBank, working with government institutions, have successfully initiated a crusade to privatize the world's public water supplies. A critical component of this global campaign has been a demonization of government regulators and municipal managers; an attempt, in other words to convince the public that the world's precious hydrological resources are not safe in the hands of government bureaucrats. "It is in the benefit of companies like Coca-Cola," explained Maude Barlow, "to allow the quality of water to decline" so that they can claim custodial responsibilities and take over control of hydrological resource facilities.[59] But while Barlow and others are right to suggest that Coke has often publicly demonized tap water, the truth is that privatization is really not in Coke's best interest, and the company knows this. As Alan Snitow argues, the leaders in private water utility development, businesses, such as Suez Lyonnaise des Eaux, Bechtel-United Utilities, Vivendi Universal, and RWE-Thames Water, have often been less interested in signing contracts with foreign governments to take over public facilities and more adept at negotiating deals that "leave cities as the owners of the underlying pipes and treatment plants."[59] Coke, likewise, has recognized that maintaining water infrastructure is costly, and has therefore committed itself to let other institutions deal with the costs of primary infrastructure development related to water resource extraction. A thorough examination of Coke's international operations in a historical context reveals that Coke has rarely tried to take over responsibility for the maintenance and upkeep of public infrastructure. Rather, like at home, Coke has worked to tap into the tap, finding ways to use tax dollars to help defray the cost of hydrological resource extraction, thereby minimizing the cost of overseas operations. See Sonia Shah, "Coke In Your Faucet?" 30; For a discussion of neoliberal privatization projects, see Maude Barlow and Tony Clarke, *Blue Gold: The Fight to Stop the Corporate Theft of the World's Water* (New York: The New Press, 2002), Alan Snitow and Deborah Kaufman with Michael Fox, *Thirst: Fighting The Corporate Theft of Our Water* (San Francisco: John Wiley & Sons Inc., 2007), Maude Barlow, *Blue Covenant: The Global Water Crisis and the Coming Battle for the Right to Water* (Toronto: McClelland and Stewart, 2007), Peter H. Gleick, *Bottled and Sold: The Story Behind Our Obsession with Bottled Water* (Washington; Covelo; London: Island Press, 2010), Alan Snitow, Deborah Kaufman, Kenji Yamamoto, and Snitow-Kaufman Productions *Thirst*, DVD (Oley, PA: Bullfrog Films, 2005).

Coke initiated its first major crusade to capture the European market in 1922, just three years after the Ernest Woodruff-led syndicate bought out the Coke enterprise from the Candlers. Spending over $3 million to finance local bottlers in Europe, Coke watched in horror as foreign consumers rejected the company's bottled beverages, all claiming that the soft drink made them sick. As Mark Pendergrast explained, the problem was that "no one had bothered to make sure the water was clean and nonalkaline. And no one had told them that the crown corks had to be sterilized. The bacterial Coca-Cola quickly reacted with the germ-infested corks to produce a poisonous brew."[60]

Though Coke experienced problems with European bottlers in the early 1920s, the company's choice of Europe as its primary market for expansion revealed the company's desire to seek out bottling sites where public water infrastructure had been established. The company chose cities such as Paris and Bordeaux (1912) to develop its overseas business in part because these municipalities offered the company inexpensive water supplies. Coke had opened bottling plants in Latin America and the Caribbean, but only in cities such as Havana (1909) and Panama City (1909), municipalities that had established public water systems. Only gradually would the company begin full-scale expansion into remote parts of the developing world, and only then, in localities where it could secure access to cheap municipal water supplies.

While Coke experimented with international growth in the immediate aftermath of World War I, the story of Coke's transnational expansion really begins in 1926 when the company set up the Foreign Department, a branch of the company, journalist Constance Hays argued, that was "inspired by the State Department." At that point there

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[60] Mark Pendergrast, *For God, Country, and Coca-Cola*, 171.

were only eight overseas bottlers of Coke, and the company believed that creating a branch of the company tasked with forming meaningful partnerships with international government agencies and foreign nationals might facilitate company growth into untapped markets abroad.[61]

Among the critical decisions the Foreign Department made in its first year of existence was to establish a policy of shipping a dehydrated concentrate rather than syrup to foreign plants, arguing that the arrangement would allow local bottlers to "make use of local supplies of sugar, and thus contribute to the economic growth of the individual countries." But while Coke boasted in company literature that the concentrate policy was designed to aid foreign bottlers, in reality the decision offered profound benefits to the parent company, dramatically cutting down shipping costs and relieving the home office of sweetener purchasing responsibilities, always a headache for the company considering the wild fluctuation of sugar prices.[62]

Having solved the problem of how to minimize shipping costs, Coke renewed its efforts to expand its operations abroad, forming the Coca-Cola Export Corporation in March of 1930, a company branch that took over the responsibilities of the Foreign Department. The new department helped the company gain access to untapped markets all across the globe. Despite such growth, as late as 1938, the company reported that

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[61] Constance Hays, *The Real Thing*, 80; "A Brief History of Coca-Cola Overseas," *The Coca-Cola Bottler* (April 1959), 181.

[62] Mark Pendergrast, *For God, Country, and Coca-Cola*, 172; "A Brief History of Coca-Cola Overseas," *The Coca-Cola Bottler* (April 1959), 182.

though the company was "aggressively pushing foreign business . . . it is still a minor part of the total volume."[63]

This assessment changed by the end of World War II, as company boss Robert Woodruff oversaw the completion of an aggressive campaign to "see that every man in uniform gets a bottle of Coca-Cola for five cents wherever he is and whatever it costs." Coke sold over ten billion bottles of Coke to US soldiers from 1941 to 1945 thanks in part to General Eisenhower who worked hard to secure Coke's contract with the military. As we will see in the following chapter, Coca-Cola's high sugar content made it a valuable tool during wartime. This was a product that could provide jolts of energy to the front lines and offer troops much-needed calories during war. With government support, the Coca-Cola Export Corporation worked tirelessly to develop bottling plants wherever GIs traveled.[64]

Setting up bottling plants overseas was often a difficult task, and, in the wake of the war, the company sought direct federal aid to help it expand into foreign markets abroad. Beginning in 1948, the Coca-Cola Export Corporation worked to secure from the Economic Cooperation Administration (ECA), a government agency set up to help administer the development initiatives of the Marshall Plan, guaranties on investments in western Europe and North Africa totaling $7,362,500. The company's key pitch was that "local, independently owned bottle operations in each country concerned would participate importantly in the project both financially and managerially," to which one loan advisor scribbled in the right-hand column of the guaranty proposal, "Good!" The

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[63] Mark Pendergrast, *For God, Country, and Coca-Cola*, 188; Letter from William T. Dorsey to Mr. Bernard H. Culver re: The Coca-Cola Co., September 23, 1938, Box 371, Folder 13, RWW Papers, MARBL.

[64] Constance Hays, *The Real Thing*, 81-82.

company explained that Coke production "is a business which for its success, prosperity and development in international trade relies on local or international sources of supply." Explaining the local benefits that would accrue over time, the company boasted that Coke would help local bottlers "increase their efficiency, modernize their factories, [and] appeal for more raw materials."[65]

Investment chiefs balked at the company's requests, maintaining that such aid would fail to improve the foreign exchange rate within recipient nations, a chief requirement of the ECA's loaning policy. Director Fitzgerald of the European Recovery Program argued, "Although we appreciate the value of incentive type goods, we believe that for the present at least, the European Recovery Program objectives can best be achieved by restricting authorized use of ECA funds to the basic needs of the countries. Up to this time none of the participating countries have even suggested that funds be allocated for items such as soft drinks."[66]

Despite the ECA's initial rejection of Coke's application, Coke persisted with its guarantee requests. Again, the ECA repelled Coke's appeals for financing, the loan officer in charge responding, "I strongly advise against the extension of ECA guaranties to the investments in question. The presumed intent of the guaranty provision of the ECA Act as indeed of the Act as a whole is to enable the countries assisted to become economically self-sustaining." He added, "The projects of the Coca-Cola Export Corporation will not contribute to achievement of the purposes of the Act. In fact they

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[65] Letter from Coca-Cola Export Corporation to the Administrator for Economic Cooperation, August 16, 1948, Mission to Greece, Construction Division Subject Files, 1947-53, Box 4, Records of US Foreign Assistance Agencies, 1948-1961, Record Group 469, National Archives II, College Park, Maryland (hereinafter NARA II).

[66] Letter from D. A. Fitzgerald, ECA Director of Food, to John Goodloe, Secretary of the Coca-Cola Company, August 18, 1948, Executive Secretariat, General Correspondence (Name Files), 1948-1954, Box 7, Record Group 469, NARA II.

may well accomplish the reverse." Miffed by Coke's intimation that a desire to help development causes in the countries in question motivated the loan request, the officer chided:

> The Coca-Cola Company makes the rather disingenuous assertion that the project will not affect the foreign exchange situation of the particular countries and requests therefore that the requirement that the approval of the particular countries be obtained be waived. As a matter of fact, it may be said that the projects will in the end adversely affect the foreign exchange situation of these countries in that it will require the application of resources to the manufacture and distribution of a product which can hardly be called essential and which is not designed for sale abroad.[67]

As the ECA recognized, Coke's bottling projects drained host communities of vital resources, transforming fresh clean water into commodities whose sale ultimately profited a parent company thousands of miles away. In short, they were hardly development projects that would improve the infrastructural integrity of provider communities. In fact, the projects were dependent on local infrastructure for survival. As the company acknowledged in its ECA application, Coke Export conducted extensive surveys of potential host communities to make sure that certain vital infrastructure was available—that, in other words, "the quality of water, the availability of electric power locally, buildings, local machinery and equipment...[and] distribution channels" were adequate to meet the company's needs. Summarizing its position on Coca-Cola funding mechanisms, the ECA concluded that supporting the Coke project "would be an unfortunate initial request to approve under a procedure which was developed essentially

[67] Letter from John C. Dewilde to E. T. Dickinson, August 26, 1948, Executive Secretariat, General Correspondence (Name Files), 1948-1954, Box 7, Record Group 469, NARA II.

to insure private investment in serious reconstruction projects, whereas the present item is of a far from essential nature—indeed may even be considered a luxury."[68]

In the ECA application, Coke failed to show that its investments would go to support water infrastructure improvements or any other large-scale development projects. All the listed capital outlays in the application, with the exception of the catch-all category of " technical services and promotion and development services," were for plant systems that would be used solely by the Coca-Cola bottler to improve water supplies and reduce operating costs. The ECA could hardly justify such projects that would have benefited private institutions but not the population at large.

In the 1950s, the International Cooperation Administration (ICA), the successor institution to the ECA pursuant to the Mutual Security Act of 1951, had similar reservations about supporting Coke's international bottling projects. Coke had applied to the agency for guarantees in 1957 to help Coke expand into India, but investment chief Charles Warden argued that the ICA should not fund the project. He stated that the financing arrangement "appears to be very bad business for the Indian Government in its present state of short exchange. I believe it should not be encouraged as a guaranty prospect either to the Coca-Cola Company or to the Indians." He went on to say, "It is going to be pretty hard to justify some of the loans that these people are going to need and if they are willing to undertake some of the less essential investments, as this

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[68] Letter from Coca-Cola Export Corporation to the Administrator for Economic Cooperation, August 16, 1948, Mission to Greece, Construction Division Subject Files, 1947-53, Box 4, Record Group 469, NARA II; Memorandum from Harper Sowles to C. L. Terrel, December, 10, 1948, Mission to Greece, Construction Division Subject Files, 1947-53, Box 4, Record Group 469, NARA II.

certainly appears to be, I would find it most difficult to justify it as being in accords with the Mutual Security Act objectives."[69]

Thus, as late as the mid-1950s, the federal government's foreign aid agencies maintained that Coca-Cola bottling projects abroad were not worthy of government-backed loans because they did not significantly contribute to the basic needs of developing communities. Coke depended on the resources and infrastructure that foreign host countries could provide more than these communities needed the investments the bottling projects offered. To finance Coke's bottling enterprises, the federal government maintained, would give the American company an unfair advantage against foreign competitors looking to use vital resources for development purposes.

The ICA's policy slowly eroded in the 1960s as the Kennedy administration reformulated the country's foreign assistance agenda. In the spring of 1961, President John Kennedy assembled an advisory panel made up of some of America's most prominent businessmen to discuss a "new and more effective approach to foreign assistance." Robert Woodruff was invited to the meeting to weigh in on the governments future plans "in the areas of investment guaranties, private participation in international development, including surveys of investment opportunities." Explaining the impetus for the meeting, the State Department stated, "From the point of view of our foreign policy objectives, aid to less developed countries has often had ambiguous results. The time has

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[69] Letter from Charles Warden, Chief of Investment Guaranties Staff to G. Anton Burgers, Investment Advisor, US Technical Cooperation Mission to India at the American Embassy, October 28, 1957, ICA US Operations Mission to India, Industry Division Investment Branch, Subject Files, 1953-1960, Box 4, Record Group 469, NARA II.

come to face candidly the lessons of our fifteen-year experience with foreign aid programs, and to reformulate our progress to take full advantage of that experience."[70]

Among the many proposed changes to foreign aid policy, the State Department Task Force on Foreign Assistance argued that private industry would have to become a bigger partner in US overseas development projects. The Task Force maintained, "A large portion of the resources and skills available to us lies in the private sector. If we are to approach a truly national effort in assisting the economic and social modernization of the less developed nations, we must find and utilize more effective means of enlisting these private resources." Because private industry offered resources unavailable to government agencies, foreign aid agencies would need to "provide special incentives, protection, or financial assistance which will mobilize U.S. business" towards overseas enterprises. The Department noted that guarantees and other lending measures had been implemented by past aid agencies, but suggested these operations be expanded and that many former restrictions on loan contracts be removed. Most importantly, the government's new proposed policy would permit "foreign chartered enterprises substantially beneficially owned by United States citizens" access to federal guarantees on overseas investments. Woodruff's proxy at Kennedy's business panel, company attorney John Sibley, agreed with the government's position, writing to Task Force head Henry Labouisse after the meeting, "My conclusion is that the distribution of money and

[70] Letter from Henry R. Labouisse, Director of the State Department's Task Force on Foreign Economic Assistance, May 10, 1961, Box 309, Folder 1, RWW Papers, MARBL; State Department Memorandum sent to Robert W. Woodruff dated May 9, 1961, Box 309, Folder 1, RWW Papers, MARBL.

credit and the adaption of those tools to local needs, can only reach maximum effectiveness through corporate form."[71]

With Coke's support, Congress enacted into law much of the State Department's recommendations, passing the Foreign Assistance Act of 1961. The law, later strengthened by House amendments in 1963, portended a new era of government support for private industry abroad. Explaining the significance of the legislation, Clarence Miles, Chairman of the Legislative Committee on international economic policy wrote to Robert Woodruff, "A series of House amendments have materially changed the thrust of the aid program. If approved by the Senate the future will see less reliance on government-to-government grants. In lieu thereof, there will be both stimulation and protection of private enterprise through A.I.D."[72]

As Congressman Miles stated, under the amended Foreign Assistance Act, newly created bureaucracies, such as the United States Agency for International Development (USAID), would channel government aid away from public institutions and into the pockets of private corporations operating abroad. Commenting on the new direction of federal loaning agencies in 1967, Austin argued, "Massive government aid, if it is regarded as a pump-primer, is justifiable; but to make a lasting imprint, to avoid sand castles from being swept back into the sea, free enterprise is the only answer." Coca-Cola

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[71] State Department Memorandum sent to Robert W. Woodruff dated May 9, 1961, Box 309, Folder 1, RWW Papers, MARBL; Letter from John Sibley to Henry Labouisse, May 19, 1961, Box 309, Folder 1, RWW Papers, MARBL.

[72] Clarence R. Miles to Robert W. Woodruff, September 30, 1963, Box 183, Folder 1, RWW Papers, MARBL.

would lift the "unsophisticated almost pastoral economies" of the developing world up through its effective investments abroad.[73]

Coke showed no signs of adjusting its established practices of investing only in those operations that were vital to the successful operation and maintenance of its bottling entities abroad. It continued to reap the rewards of public infrastructure overseas without paying the substantial costs for their development, upkeep, and repair.

By 1973, roughly 44 percent of Coke's earnings came from overseas sales and the company continued to expand into international markets in the decades years ahead. By the end of the 1970s, the company had made huge gains abroad, working with foreign governments to secure entrance into major urban markets within the Soviet Union, China, and the Middle East and by the end of the decade, over 60 percent of total unit case sales were made in foreign markets.[74]

Yet while Coke made significant gains in the 1970s, Coke faced serious fiscal concerns as it looked to expand into the developing world where local bottling facilities were rudimentary and public infrastructure was deficient. Making overseas investments in cities and towns lacking adequate infrastructure proved a costly affair and there were new risks to consider in places that lacked the government supports company bottlers enjoyed in the United States. Determined to solve this problem and externalize the capital risks associated with expansion into the Third World, the company turned to foreign assistance agencies created under the Foreign Assistance Act to help facilitate growth into less-developed regions of the globe.

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[73] Paul Austin, "Managing Abundance," Speech Given at the Economic Club of Detroit, Detroit, Michigan, November 27, 1967, reprinted in *Vital Speeches of the Day* 34 (February 1, 1968): 245-248.
[74] Coca-Cola Annual Report to Stockholders, 1978; "Coca-Cola Co. Seeking Access to Soviet Union, China, and Middle East," *Wall Street Journal*, November 8, 1977, 21.

The Coca-Cola Company's interest in decreasing bottling expenses became more critical in the 1980s in large part because the company had decided to buy out some of its independent bottlers and become more directly involved in distributing its own products both at home and overseas. The company believed that it could make greater profits if it cut out middlemen and became its own distributor. Ignoring the business strategy that had made it profits for years, Coke CEO Roberto Goizueta believed that a more streamlined distribution network managed and operated by the parent company would yield greater returns to Coke. This mission culminated in the formation of a megabottler in 1986 called Coca-Cola Enterprises (CCE), a firm in which the Coca-Cola Company had a 49 percent ownership stake. CCE took over part ownership of big bottlers overseas and became the single largest distributor of Coke products on the planet in the 1990s and 2000s. Coke now had an even greater vested interest in ensuring that bottling costs were reduced now that it was invested in the business of selling Coke syrup and water directly to retailers.

Coke's decision to invest in CCE occurred at the same time that the Overseas Private Investment Corporation (OPIC), a federal aid agency created in 1971, began large-scale finance operations overseas. By 1987, OPIC had accumulated enough capital to launch its first aid program, the Africa Growth Fund, a $25 million program designed to encourage American businesses to make substantial investments in private enterprises on the African continent. In the 1990s, OPIC expanded its operations, supported by a Clinton administration that was eager to use the agency as a powerful tool to help American companies break into emerging markets. In 1992, when Clinton came into

office, OPIC's budget was approaching $100 million, but by 1998, the agency boasted a budget approached $4 billion.[75]

Coke recognized the substantial benefits that could be accrued from the government's shift in foreign aid policy and completed a series of contracts with OPIC beginning in the fall of 1990 to secure guarantees on investments for bottling plants in Swaziland, Russia, Turkey, Barbados, Jamaica, Egypt, Ghana, and Nigeria. These were large contracts. OPIC, for example, agreed to provide up to $233 million of insurance for Coke's Russia projects and $48.6 million for its Nigeria operations. These OPIC loans and guarantees, many for partially-owned subsidiaries of the Coca-Cola Company, came with very few strings attached. The aid agency allowed Coca-Cola to "self-monitor" its compliance with federal development policies regarding foreign projects' "effects on the U.S. economy, on development in the host country, and on the environment." OPIC claimed that by financing Coke's bottling enterprises in developing nations, such as Nigeria, it "contributed strongly to U.S. and host country job creation," promoting "the dissemination of strong technology and knowledge transfer impacts to one of the world's poorest countries."[76]

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[75] "Spreading Global Risk to American Taxpayers," *New York Times*. September 20, 1998, BU1.

[76] Letter from Project Monitoring Coordinator Brenda Simonen-Moreno to the Principal Financial Analyst at the Coca-Cola Company, April 29, 1998 (FOIA Request 2010-00039 with OPIC); Letter from Project Monitoring Coordinator David L. Husband to the Coca-Cola Company, July 7, 1997 (FOIA Request 2010-00039 with OPIC); Letter from OPIC Senior Coordinator James E. Gale to the Coca-Cola Company, July 18, 1996 (FOIA Request 2010-0003 with OPIC); Letter from OPIC Vice President of Insurance Felton McL Johnston to Senior Risk Analyst at the Coca-Cola Company, March 25, 1993 (FOIA Request 2010-0003 with OPIC). OPIC redacted insurance coverage amounts from these files produced pursuant to a Freedom of Information Act request filed by the author in June of 2010. A large amount of information including the specifics of how OPIC money was to be used as well as insurance and guarantee amounts were redacted. OPIC claimed that the information was protected because it fell under the category of "trade secrets" or "commercial or financial information obtained from a person that is privileged or confidential"; Carlos Stagliano OPIC Report for Coca-Cola Nigeria Limited Monitoring Trip, November 13, 2009 (FOIA Request 2010-0003 with OPIC). A survey of Coca-Cola Sabco bottling plants in Africa revealed that these enterprises usually employed anywhere from 200-700 people. The company makes strong claims that these plants help multiply jobs in other industries, suggesting, for example, that its three

Nonetheless, OPIC noted that the "original clearance" for the Coke project in Nigeria "did not provide information on developmental infrastructure improvements." Rather, OPIC noted, Coke's major "infrastructural" contribution was supplying "bottled drinkable water in the host country." Thus, rather than funding capital-intensive public waterworks projects with US aid funds, an initiative that would have benefited the public-at-large, OPIC directed its resources towards increasing bottled water production in Nigeria, a campaign that ultimately boosted Coke's sales but did nothing to improve Nigeria's public water supplies.

OPIC supported the growth of bottled water at the expense of public water improvements in other regions of the world. In 2002, the American-owned ABI Group, Ltd., a longtime private partner with the Coca-Cola Company, secured a $9.2 million OPIC loan to build a state-of-the-art beverage manufacture and packaging plant in Kabul, Afghanistan. OPIC President Peter Watson explained that the loan helped "Kabul overcome an inadequate municipal water supply," allowing soft drink bottlers to provide bottled water to dehydrated communities. Just three years later, OPIC funded another soft drink project in Kabul, approving a $3.1 million dollar loan for the refurbishment of a soft drink bottling plant in the Afghan capital. No funds were directed towards municipal waterworks repairs.[77]

Not all of Coke's foreign aid projects were solely self-serving. Coke made strides in the 2000s to direct foreign assistance funds towards public work projects rather than

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plants in Mozambique generate over 10,000 jobs even though the company only hires 700 employees. Coca-Cola Sabco Territories Website, www.cocacolasabco.com/Territory.aspx/Show/Mozambique.

[77] *OPIC News* 6 (September 2004), 3. In 2005, OPIC reported a $348,000 loan to Philippines bottled water company Golden Cypress Water, a company, OPIC noted, "which is owned in part by two U.S. citizens." OPIC argued that the loan would help "meet a growing demand for bottled water" in Manila, helping the company acquire the necessary equipment to extract water from a local aquifer and supply citizens—only 60 percent of whom receive water from a public utility—with bottled water." *OPIC Highlights* (April 2005); *OPIC News* (2003).

internal improvements that largely benefited franchisees, partnering with USAID on a series of foreign water projects in the developing world. In November of 2005, for example, Coca-Cola and USAID launched the Water and Development Alliance (WADA), an initiative designed to bring much needed hydrological development to impoverished communities all across the globe. According to USAID, WADA "showcases the potential of the U.S. Government to partner with the private sector to make a long-term impact on pressing global challenges. By matching USAID's development expertise with the resources, capacities, and commitment of The Coca-Cola Company, we are making a positive impact on community water issues throughout the developing world." By 2010, the partnership had expanded development operations to thirty-two projects in twenty-two countries worldwide.[78]

USAID and its other government partners provided 50 percent of the funding for WADA water projects, with the Coca-Cola Foundation and the Coca-Cola Africa Foundation, charitable arms of the parent company, providing the majority of the private sector support. Specific WADA initiatives directed towards improvements in public water infrastructure included extending municipal water systems to semi-urban neighborhoods in Mozambique, improving and repairing broken pipes in South African townships, offering point of use (POU) water treatment products for poor communities in Nigeria, and providing technical assistance to city water managers in the Philippines.

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[78] "USAID Partners with Coca-Cola, Government to Provide Water Projects in Kano," *USAID Newsletter* (June 2008), 2; "The Coca-Cola Company and USAI Expand Global Water Partnership," USAID Press Release, March 22, 2010.

Many of these projects, USAID admits, have helped to improve "production facilities of Coca-Cola."[79]

Coke has worked with USAID to clean up watercourses in foreign countries and built public water infrastructure for local communities, but many WADA projects have also helped the company secure fresh, clean water in remote corners of the globe where public infrastructure is out-dated or non-existent. Speaking of its partnership with USAID in Chimoio, Mozambique, for example, Coca-Cola admitted that USAID support for "expanded water supply in Chimoio" benefitted the "Coca-Cola Sabco plant which currently risks suspending operations due to lack of reliable water supply." USAID funds have also been used to improve specific bottling plants in South America, with the agency helping to finance green technology investments and environmental training at a Coca-Cola bottling plant in Honduras, a major Coke distributor in Latin America. USAID earmarked Conservation of Central America's Watershed Program (CCAW) funds to go towards funding "cleaner production practices directed at reducing the consumption of water and energy" at the plant.[80]

While Coke has received immeasurable praise for its support for its WADA projects, the company's capital commitments to the development program, which largely comes via its tax-exempt charitable foundation, has been relatively miniscule. As of 2010, Coke's total contributions to WADA represented less than 0.06 percent of the company's net operating revenue (roughly $14 million), and though the company extracts water from public systems in over 206 countries in the world, its WADA initiatives up to

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[79] "Rehabilitating the TextAfrica Water Treatment System," Coca-Cola Press Release, March 18, 2008. WADA has invested roughly $28 million dollars in its 32 projects as of 2010.
[80] Ibid.

2010 have been confined to just over 20 countries (mostly in Africa, a target market for the company and a continent plagued with poor public water management).

Coke could argue that its OPIC- and USAID-backed investments in company bottling projects abroad, though modest in size, have generated substantial tax returns for foreign governments, but Coke has often received special concessions from foreign governments that allowed the US company to keep tax revenue that could have been channeled towards government-supported infrastructure programs. Using its powerful connections to foreign political leaders, the company has negotiated special deals for company bottlers that have limited their tax obligations. For example, in addition to the $45.6 million of contingent liability coverage provided Coca-Cola Nigeria Limited by OPIC in 1990, Coke also enjoyed a "five year tax holiday" from the Nigerian government, "meaning that the host government did not actually begin accruing taxes until the sixth year of operations."[81]

Thus, OPIC and USAID were not the only state entities subsidizing Coke's bottling expansion in Africa, with host governments offering Coke special enticements to invest on the continent, a pattern of public-private partnership Coke has benefited from in other parts of the world. In the 2000s, for example, the Mexican government proved particularly willing to grant Coke attractive tax breaks as it looked to expand into the interior of the country. In the town of Chamula, Mexico, located near San Cristobal de Las Casas, the company came under attack in the early 2000s from local activists who claimed that the company was depleting local water resources without paying extraction fees for service. According to townspeople in Chamula, President Vicente Fox—a

[81] Carlos Stagliano OPIC Report for Coca-Cola Nigeria Limited Monitoring Trip, November 13, 2009 (FOIA Request 2010-0003 with OPIC).

former chief executive at the Coca-Cola Company's Mexican office—oversaw the issuance of a federal permit that allowed a Coca-Cola bottler in central Mexico to extract thousands of gallons of water from the Huitepec aquifer at virtually no cost. Reporting on this controversy, scholar June Nash explained that the "water is not metered, and the municipality [of Chamula] does not receive reimbursement."[82]

In Australia, Coke paid next to nothing for its water supplies in the early 2000s when the national government overruled a municipal government's decision not to allow Coke to extract water from a local aquifer. The Australian Land and Environment Court gave Coca-Cola AMATIL, currently Coke's fifth largest bottler responsible for distribution to much of the company's Asia-Pacific territories, permission to pump millions of liters of water from underground reservoirs, much to the chagrin of the Gosford City Council who rejected Coke's plan for increased water extraction during one of the worst droughts the region has faced in a hundred years. The court set the extraction fee at just $200.[83]

Coke, however, has not always been victorious in its struggle against municipal governing bodies. In Plachimada, a small village located in the southern state of Kerala, India, local activists organized as the Coca-Cola Virudha Samara Samithi (Anti-Coca Cola Committee) put pressure on the Perumatty panchayat (the village governing body) to close down a Hindustan Coca-Cola Beverages Private Limited (HCBPL) bottling plant located in the Palakaad district of Kerala beginning in 2002. They claimed that HCBPL's production facilities put undue burden on underground aquifers and contributed to

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[82] Mark Thomas, *Belching Out the Devil*, 291; June Nash, "Consuming Interests: Water, Rum, and Coca-Cola from Ritual Propitiation to Corporate Expropriation in Highland Chiapas," *Cultural Anthropology* 22, no. 4 (2007), 631.

[83] Cameron Houston and Liselotte Johnsson, "Drought? It's Being Given Away," *The Age*, November 4, 2006; "Coke Cleared to Pump Extra Water, Court Rules," *Sydney Morning Herald*, October 4, 2008.

pollution that was contaminating local wells. By April of 2003, the Permuttay panchayat revoked HCBPL license to operate in Palakaad, forcing Coke to file an objection petition with the Kerala High Court weeks later. By February of 2004, in the wake of a series of scientific studies that revealed convincing evidence that the plant's point-source pollution was in fact contributing to groundwater contamination, the state government of Kerala issued an order preventing HCBPL from continuing operations in Palakaad until June 15th. By April, 2005, however, the High Court of Kerala ruled that HBCL could resume water extraction, despite the fact that the panchayat had not renewed the bottler's operating license. A year later, the state government of Kerala stepped in once again, responding to activists pressure and new reports detailing high concentrations of pesticides in Coke and Pepsi products, banning the sales of Coke and Pepsi in the state on August 9, 2006. However, Coca-Cola challenged the order in Kerala's High Court, suggesting that the state government had no jurisdiction to ban its products. As of 2012, these issues have yet to be resolved, the case against HCBL having been appealed to India's Supreme Court.[84]

India has been the exception rather than the rule. Most low-income communities believe in Coke's promise that bottling plants will bring economic growth and that Coke will bring much needed infrastructural development to their towns and cities. They do not question the company's long-term effects on community health. Even in the United States, Coke has secured special tax deals with municipal governments with the lures of jobs and economic prosperity. In Howard County Maryland, for example, Coke's

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[84] P. R. Sreemahadevan Pillai, *The Saga of Plachimada* (Vikas Adhyayan Kendra, 2008) 60-62; Michael Blanding, "The Case Against Coke," *The Nation*, April 13, 2006; K. N. Nair, Antonyto Paul, and Vineetha Menon, *Water Insecurity, Institutions and Livelihood Dynamics* (Kerala: Center for Development Studies, 2008); Mark Thomas, *Belching Out the Devil*, 189-246.

megabottler Coca-Cola Enterprises successfully negotiated with county officials for a dramatic $5 million reduction in sewer and water use fees, promising that their new plant would bring some 700 jobs to the area. In the end, Coke agreed to pay only $1 million dollars in sewer and water main construction fees, down from the $6 million fee originally suggested by the county. Coke ended up buying the property, but never went forward with development of the plant. The jobs, in other words, never came to Howard County.[85]

Coke promised economically vulnerable communities handsome rewards for backing bottling projects but ultimately contributed little to no support for public development projects. Many local bottlers have become rich from the Coca-Cola network, but the rewards have not been spread nearly as wide as the company would have potential host communities believe. The company has shied away from capital-intensive public works projects that help sustain the very water systems they depend on every day. In much of the United States, Coke's water use may not yet overburden municipal systems, but in southern India and other places where local water supplies are becoming scarce, Coke must make a hard sell to suggest that its contributions outweigh its demands on public resources.[86]

Conclusion:

Coca-Cola's national growth in the early twentieth century depended on hydrological scaffolding largely financed and built by municipal governments, and today

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[85] "Howard County Gives Coke A Break: Water, Sewerage Fess Reduced to Lure Plants," *Washington Post*, October 9, 1992, ▮1.

[86] Carlos Stagliano OPIC Report for Coca-Cola Nigeria Limited Monitoring Trip, November 13, 2009 (FOIA Request 2010-00039 with OPIC).

federal foreign assistance programs help to finance Coke's expansion into areas of the world lacking critical water infrastructure. As one of the wealthiest companies on the planet, Coca-Cola may seem an apt candidate for such development projects, but a survey of the company's water resource management practices reveals that the company has been far more often the beneficiary of state infrastructure rather than the engineer responsible for the construction of elaborate hydrological systems.

Coke has eschewed the business of managing large-scale water projects. It unloaded its industrial water subsidiary Aqua-Chem just a few years after acquiring it, realizing that the development of industrial water purification systems was a costly enterprise. Assuming the company will take on those responsibilities now is to ignore the company's established business practices. Coke's profitability has depended on technological systems and infrastructure it did not manufacture. Its perpetual growth, though seemingly indomitable, was contingent upon financial and infrastructural support that came from without, not within, the company. Externalizing the costs of extraction will remain a critical component of Coke's commercial success.

OPIC and USAID assistance programs have sent American multinationals to developing polities without shipping the government infrastructure that made these giants great. A new foreign assistance policy that recognizes the limitations of corporate development objectives might channel federal funds towards public projects that will make water fountains, not Dasani bottled water, the symbol of development success.

Chapter 2: Sugar
Citizen Cane: Building the World's Largest Corporate Sugar Empire

Introduction

Humans are biologically hardwired to like sugar (sucrose), a foodstuff that provides, in dense crystalline form, the basic molecular primers for metabolic processes in the human body. To encourage consumption of this energy-rich substance, humans have evolved a neurochemical regulatory system that stimulates the release of dopamine in the brain when sucrose is consumed. While this psychotropic reinforcement mechanism helps humans optimize caloric intake, it can also stimulate overindulgence of sugary products when sweet foodstuffs are available in abundance. Recently, scientists have even found evidence to suggest that neurological feedback loops affecting sugar consumption may very well produce addictive behavior akin to that exhibited by cocaine abusers.[1]

Considering humans' innate desire for sweet substances, perhaps no ingredient in Coca-Cola is as essential as sugar. Along with caffeine, this ingredient stimulates addictive overindulgence of Coke beverages. In 1886, the original Coca-Cola formula called for over five pounds of sugar per gallon of finished product. With company sales

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[1] M. Lenoir, F. Serre, L. Cantin, S. H. Ahmed, "Intense Sweetness Surpasses Cocaine Reward," *PLoS ONE* 2, no. 8 (August 2007): 1. In a related article on sugar addiction, researchers at Princeton University concluded that "sugar is noteworthy as a substance that releases opiods and dopamine and thus might be expected to have addictive potential." N. M. Avena, P. Rada, B. D. Hoebel, "Evidence for sugar addiction: Behavioral and neurochemical effects of intermittent, excessive sugar intake," *Neuroscience and Behavioral Reviews* 32, no. 1 (2008): 20.

topping nine million gallons by the mid-1910s, Coca-Cola became the single largest industrial consumer of sugar in the world.[2]

Coke's caloric appetite would have bankrupted the company had cheap sugar not been ubiquitous by the late-nineteenth century and early twentieth century. Coke was a non-essential foodstuff whose profitability depended on a low price point. Company chairman Robert Woodruff recognized this fact, insisting that company bottlers maintain a 5-cent retail price, even when operating expenses increased, and it achieved this goal up to 1950. To ensure bottler compliance with the parent company's pricing policy, the corporate office spent millions of dollars on advertising pieces that specifically listed the 5-cent selling price for Coke. Consumers reprimanded bottlers that sold above advertised selling prices. They pointed to billboards and newspaper spreads proclaiming Coke's universal 5-cent price, thus acting as enforcers of parent company policy. Technological factors also prevented Coke from raising retail prices. During the 1930s, Coke began a concerted campaign to sell its beverages in coin-operated vending machines—machines that only accepted 5-cent coins. As Emory University economists Daniel Levy and Andrew Young explain, this revolution in product distribution hampered Coke's retail price elasticity because the vending machines at the time were incapable of accepting multiple coins or providing change for overpayment. More importantly the "smallest price increase compatible with the consumer still using a single coin was a 100% jump to 10¢." Highlighting the company's transaction-cost problem, company executive Ralph Hayes remarked as late as 1951, "We dread going to 10¢ but we know that pennies, and a multiple-coin price are murderous to us." Coke simply could not raise the price of its

[2] Frederick Allen, *Secret Formula*, 104.

products without severely increasing "inconvenience costs" associated with multiple coin purchases, and then only if it was willing to abandon vending machines sales that required single-coin transactions.

It was this retail price rigidity that made Coca-Cola so dependent on a stable sugar market. Natural commodity price fluctuations threatened Coke's ability to maintain its 5-cent price, a price that guaranteed the company high volume sales. The company simply did not have an effective way to pass along dramatic increases in sugar prices to consumers without damaging its profitability. The company needed a steady supply of inexpensive sweetener.[3]

Cheap sugar was not the product of a free market in the twentieth century, the natural output of a competitive system self-regulated by international growers, but rather the result of deliberate state interventions. Since colonial times, European governments had used public funds to stimulate the overproduction of sugar both on home soil and in the colonial periphery. Likewise, beginning in the early 1800s, the US government had utilized tariff protections and bounty programs to promote the expansion of sugarcane and sugar beet cultivation throughout the world, often in places nature never intended these crops to grow. Tariffs also provided incentives for the expansion of the American sugar refining industry. With government support, vertically integrated corporations in the refining business invested large amounts of capital in the construction of large sugar mills as well as transnational transportation systems, thereby achieving economies of

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[3] Daniel Levy and Andrew T. Young, "'The Real Thing,': The Nominal Price Rigidity of the Nickel Coke, 1886-1959," *Journal of Money, Credit and Banking* 36, no. 4 (August 2004): 768-769; Letter from Ralph Hayes to Robert Woodruff, October 22, 1951, Box 138, Folder 2, RWW Papers, MARBL.

scale. The collective result of these state-supported industry expansion was a global sugar glut that kept sweetener prices down.[4]

The Coca-Cola Company never publicly acknowledged this history, believing that government interference in the sugar market hindered rather than abetted company growth. Obsessed with the perceived short-term "losses" trade restrictions inflicted on industrial sugar users, Coca-Cola and its confectionary associates complained about tariff protections for domestic sugar growers and the American refining industry. Coca-Cola believed sugar duties hindered company growth by disrupting the natural regulatory mechanisms of the free market, and in its promotional literature, the company professed its commitment to free trade policies and accused pro-tariff politicians of unduly burdening the workingmen and women of the country by increasing the price of their basic food products. To the American consumer, Coca-Cola was a champion of the American housewife, a defender of republican ideals, a company in favor of limited government.

Taking Coke's claims at face value, many scholars have underestimated the benefits the company received as a result of the federal government's sugar market interventions. Focusing on Coke's periodic frustrations with temporary tariff rate hikes, some scholars have treated Coke as the victim of discriminatory tariff polices rather than the beneficiary of an internationally integrated sugar production and distribution network

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[4] Anthropologist Sidney Mintz explains the rise of sugar's popularity in *Sweetness and Power: The Place of Sugar in Modern History* (New York: Penguin Books, 1985). Other excellent works that examine the cultural history of sugar cultivation and consumption over the long durée include Elizabeth Abbott's *Sugar: A Bittersweet History* (London; New York: Duckworth Publishers, 2009); Peter Macinnis's *Bittersweet: The Story of Sugar* (St. Leanords, New South Wales: Allen and Unwin, 2002); and J. H. Galloway's *The Sugar Cane Industry: An Historical Geography from its Origins to 1914* (Cambridge University Press, 1989); On the vertical integration of the American sugar refining industry, see César J. Ayala, *American Sugar Kingdom: The Plantation Economy of the Spanish Caribbean, 1898-1934* (Chapel Hill: University of North Carolina Press, 1999).

created through state protections. A closer examination of Coke's history that considers the company's relationship with the federal government and the American sugar refining industry over the long durée, reveals that Coca-Cola's global ascendancy depended on government interventions that helped Coke's suppliers achieve the economies of scale that made cheap sugar ubiquitous for much of the twentieth century.[5]

This chapter uncovers the public supports that allowed Coke to satiate its appetite for sugar in the late-nineteenth and twentieth centuries. The first section provides a brief examination of the world sugar market before Coke's inception in 1886 that highlights the critical role state institutions played in spreading sugar-containing biota all around the world. The next section reveals the US government's involvement in the construction of a vertically integrated international trade network managed by American sugar refineries in the nineteenth century. Coke never became involved in owning or operating sugar plantations or processing plants in the United States or in the Caribbean, but rather relied on large refineries, such as the American Sugar Refining Company, which expanded its operations in the late-nineteenth century to include management of sites of production in the Caribbean and the American West. American Sugar and other large-scale refining enterprises took on the risks of expansion in large part because of tariff protections and military interventions overseas that made such investments appear profitable and safe. Combining processes of production with systems of distribution, American Sugar Refining and other large refineries channeled more sugar into the United States than ever before.

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[5] Frederick Allen's *Secret Formula* and Mark Pendergrast's *For God, Country and Coca-Cola* suggest that government tariff restrictions and sugar quota restrictions more often hurt the company than strengthened its long-term profitability.

Coke's distance from sugar production and processing protected the company from market fluctuations that occurred later in the twentieth century. For companies that decided to take the path of forward integration and invest in sugar plantations in the Caribbean, environmental forces and changing international political conditions often produced significant financial problems. Coke sustained profitability by remaining above the fray, allowing other companies to make capital-intensive investments in production operations. Despite significant consolidation in the sugar refining industry in the early years of the twentieth century, competition remained, and Coca-Cola continued throughout the twentieth century to buy from multiple suppliers in order to keep costs down. When supplies of sugar did run short and the threat of increased prices emerged, especially during World Wars I and II, Coke depended on state programs that restricted competitor access to dwindling sugar inventories. During these times, the state helped eliminate buying competition for supplies Coca-Cola could not control as a third-party buyer lacking ownership of production facilities.

The benefits of Coke's lack of involvement in the sugar industry became most pronounced when the company made the switch to the cheaper artificial sweetener, high-fructose corn syrup (HFCS) beginning in the 1970s. Because Coke had not invested in Caribbean cane plantations or beet manufacturing enterprises in the United States, the company was free to transfer its purchasing accounts to new suppliers without incurring substantial costs. The company did not lose any money through the abandonment of fixed assets associated with the sugar industry. Coke simply switched suppliers, replacing American sugar refiners with new HFCS producers that could undersell sugar competitors because of a new government policy started in 1974 that generated

prodigious quantities of cheap corn. Coke capitalized on the best commodity-support program the government had to offer and expanded its operations exponentially in the final third of the twentieth century. It could do so because its slender organizational structure freed the company to pursue alternative suppliers when state interventions changed market conditions.

Sugar B.C. (Before Coke): How State Subsidies and Government Support Made Sugar Cheap

Before the eighteenth century, the Western world considered sucrose extracted from sugarcane a luxury spice reserved for elite consumption. First domesticated in New Guinea 12,000 years ago, *Saccharum officinarum* (sugarcane) gradually spread from Southeast Asia to the shores of the Mediterranean in the late 700s AD via Persian traders, and by the end of the 13th century, sugar had become an expensive spice and a medicinal dietary supplement for wealthy aristocrats, a "product *de luxe*" of the West's powerful and rich.[6]

As they had with black pepper, cinnamon, and other coveted spices, Old World elites turned to state institutions to help them acquire greater quantities of the "sweet salt" they desired, and by the 15th century, aristocrats in Western Europe secured state financing for colonial sugar cultivation projects in the imperial periphery. Under the sponsorship of Prince Henry the Navigator, the Portuguese crown took the lead, overseeing the creation of sugar operations on the Madeira and the Azores islands. Spain followed suit. Monarchs King Ferdinand and Queen Isabella financed Christopher Columbus's voyages to the New World, expeditions that ultimately resulted in the

[6] Sidney L. Mintz, "Sweet, Salt, and the Language of Love," *MLN* 106, no. 4 (September 1981) 853; Sidney L. Mintz, *Sweetness and Power*, 31; Richard Tucker, *Insatiable Appetite*, 16-17.

transplantation of sugar to the Caribbean islands. The Portuguese set up their own colonial satellites in the New World, brought sugarcane to Brazil, and began heavy cultivation of the crop by the 17th century. At the same time, the English, French and Dutch channeled imperial funds towards sugar plantations in the Caribbean. All of these colonial enterprises, in one form or another, depended on state support, whether through military aid or financial assistance.

The remarkable productivity of these colonial enterprises depended on the exploitation of slave labor. European colonizers enslaved African men and women and brought them to South America and the Caribbean to carry out the backbreaking work of clearing land for monocrop sugar cultivation. As is well documented in transnational histories of slavery told by Ira Berlin, David Bryon Davis, and others, enslaved Africans were integral to the success of colonial sugar plantations. More imported Africans worked in cane fields than in any other agricultural system in the New World during the entire period of the trans-Atlantic slave trade. According to David Bryon Davis, "In the long era from 1500 to 1870 . . . it was sugar-producing Brazil that absorbed over 41 percent of all African slaves and the sugar-producing British, French, Dutch, and Spanish Caribbean that imported over 48 percent more." These unpaid captives suffered from brutal working conditions and were often deprived of the basic necessities of life and forced to work endlessly without rest. Owners placed little value on the health of their slaves, and as a result, thousands of workers died of exhaustion or other ailments attendant to the poor working conditions of plantation life. A slave born on a sugar estate in northeastern Brazil, for example, could expect to live just twenty-three years. It was

because these human costs were not included in colonial expense ledgers that sugar plantations appeared profitable in the sixteenth and seventeenth centuries.[7]

Monocrop agriculture devastated the tropical ecology of sugar-producing regions of South America and the Caribbean. In *Insatiable Appetite: The United States and the Ecological Degradation of the Tropical World*, environmental historian Richard Tucker provided an excellent survey of the ecological costs associated with the expansion of sugar cultivation in the New World in the sixteenth and seventeenth centuries. He showed how vast forests were cleared on sugar isles to make way for large plantations and how intensive agricultural development reduced once-rich tropical soils to unproductive landscapes. Speaking of British Barbados, Tucker wrote, "By 1665 only one small hill forest remained on the entire island of Barbados. The island had suffered almost total loss of its ecologically complex forest. Some species extinctions ensued, since the island had many endemic species: one species of palmito, mastick (a timber tree), and shrub and ground plants were quickly depleted, and several monkey and bird species of the forest canopy were decimated." According to Tucker, "The English sugar islands were in long-term decline" by 1700 "brought on by the combined systems of forest clearance and soil depletion."[8]

Colonial governments exacerbated these environmental and social problems by subsidizing the expansion of sugar plantations. By the mid-seventeenth century the prodigious support of the royal treasuries of Old World empires allowed sugarcane to

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[7] David Bryon Davis, *Inhuman Bondage: The Rise and Fall of Slavery in the New World* (Oxford: Oxford University Press, 2006), 104, 117; See also Ira Berlin, *Generations of Captivity: A History of African-American Slaves* (Cambridge, Mass.: Belknap Press of Harvard University Press, 2003); Ira Berlin, *Many Thousands Gone: The First Two Centuries of Slavery in North America* (Cambridge, Mass.: Belknap Press of Harvard University Press, 1998); W. R. Aykroyd, *Sweet Malefactor: Sugar, Slavery, and Human Society* (London: Heinemann, 1967).

[8] Richard Tucker, *Insatiable Appetite*, 22-24.

become a truly global crop, cultivated in all corners of the tropical and semi-tropical world from Southeast Asia to the Caribbean. Operating under a mercantilist system designed to enrich the crown, colonial plantation elites benefited from protective tariffs and imperial military supports that enabled them to develop large sugar plantations using slave labor. The metropolitan core fed vital necessities to sugar colonies, allowing Caribbean and South American growers to direct capital and labor resources almost exclusively towards monocrop agriculture. Basic infrastructural development was a tertiary concern for colonial managers whose primary goal was to increase the production of colonial commodities that could be sold in international markets for the benefit of the imperial state.[9]

With the explosion of sugar production in the New World, the cost of sugar dropped dramatically, permitting the mass distribution and consumption of sucrose, and by the nineteenth century, sugar became a staple foodstuff of the Western commoner's diet. Describing the cultural transformation that took place during the eighteenth and nineteenth centuries, anthropologist Sidney Mintz argued, "As sugar became cheaper and more plentiful, its potency as a symbol of power declined while its potency as a source of profit gradually increased." Now a relatively cheap commodity, sugar found its way into a host of new consumer goods, especially tea and coffee but increasingly basic foods as well, becoming an essential component of the working man's diet.[10]

To the imperial ruling elite, sugar provided an effective means of feeding laborers at low cost. This foodstuff offered incredible caloric density, making it the ideal dietary

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[9] In the first chapter of *Insatiable Appetite: The United States and the Ecological Degradation of the Tropical World,* Richard Tucker provides an illuminating summary of imperial state interventions that accelerated the growth of monocrop agriculture in the tropical climes of the New World. See Richard Tucker, *Insatiable Appetite*, 15-30.

[10] Sidney Mintz, *Sweetness and Power*, 51.

staple for both plantation field hands in the Caribbean colonies and factory laborers working long hours in the burgeoning industrial centers of nineteenth-century Europe. Sugar, Mintz argued, permitted the exploitative colonial system to function, "positively affecting the worker's energy output and productivity" thereby, "balancing the accounts of capitalism" by "provisioning, sating—and, indeed, drugging—farm and factory workers, sharply reduc[ing] the overall cost of creating and reproducing the" metropolitan and colonial working class.[11]

Considering sugar's importance to imperial expansion, Old World state institutions continued into the late eighteenth and early nineteenth centuries to commit large amounts of capital to sugar operations abroad, but other European governments became concerned about the vulnerability of extended supply chains, fearing that sugar blockades imposed by enemy nations would jeopardize the economic viability of their polities, depriving them of the primary fuel necessary for agricultural and industrial productivity. As a result, some European nations began to look toward domestic beet sugar cultivation as a way to gain insulation from interstate competition.

The first experiments with European beet sugar cultivation began in Prussia in the mid 1700s. Prussian chemist and botanist Franz Carl Archard conducted cross-breeding experiments with various types of sucrose-rich beets, building on the work of his mentor Andreas Sigismund Marggaf. Archard's experiments received ample support from Frederick the Great, who saw domestic sugar production as a national security matter of supreme importance, a development he believed would free Prussia from its dependence on vulnerable colonial supply networks. By 1801, Archard oversaw the completion of

[11] Ibid., 148, 180.

the first beet sugar processing plant, inaugurating the birth of European beet sugar production. Rival nation states soon looked to capitalize on Archard's discoveries. In France, Napoleon Bonaparte issued a decree on March 25, 1811, ordering state funds be directed toward the development of beet sugar production. The French government provided subsidies to set up beet refining factories throughout Europe and appointed botanist Philippe-Andre de Vilmorin to continue crossbreeding experiments designed to identify particularly prolific sugar beets. In order to prevent Napoleon from gaining a competitive advantage, France's continental adversaries invested state capital in beet sugar technology in an attempt to jumpstart their own domestic sugar programs. Because beet sugar extraction required heavy capital outlays, Dutch, German, and Russian governments provided bounty supports to beet growers and imposed tariffs on foreign sugar imports in an attempt to give their domestic programs a competitive edge against cheaper sugarcane operations abroad. The collective result of these governmental supports was a dramatic increase in production on the European continent, an explosion that was far from natural and one that was only made possible by state investment.[12]

The United States government responded to the growth of Europe's sugar industry in the early 1800s by providing federal supports to Louisiana sugarcane growers in the form of protective tariffs. Since 1789, the federal government had imposed a duty of one cent on all imported sugar, largely as a relatively invisible means of generating revenue for federal projects. Up to 1860, roughly two-thirds to nine-tenths of all federal revenue came from similar duties on foreign imports, in part because such forms of taxation—transacted at ship docks not in consumer outlets—did not draw the ire of

[12] George H. Coons, "The Sugar Beet: Product of Science," *Scientific Monthly* 68, no. 3 (March, 1949), 151-154.

American citizens. But revenue generation was just one purpose for such imposts, and roughly ten years after the Louisiana Purchase of 1803—a transaction that required roughly $15 million of federal funds—the government began to utilize tariffs on sugar as a means of insulating Louisiana growers from international competition, thus encouraging domestic sugar production. Tariff-protected Louisiana growers expanded their operations between the War of 1812 and the 1890s, producing 17,050 tons of sugar by 1823, with total US imports reaching just 30,350 tons that year.[13]

Thus, as had European imperial powers, the United States government provided political and fiscal incentives to encourage the growth of sugar industries both at home and in its tropical satellites. These state supports contributed to a global explosion in production that deflated the price of sugar worldwide. In 1839 world sugar production totaled 820,000 tons. By the late 1880s, it had reached 5.5 million tons. The "free market" prices US sugar users heralded at the turn of the century were in reality the result of an international market created by government bounty programs and protective tariffs that stimulated growth of sucrose-containing biota in every corner of the globe. By the 1880s, "almost all the world's governments were providing some sort of assistance to their home and colonial sugar industries," making cheap sugar ubiquitous.[14]

Without subsidized international competitors in more temperate climes, tropical producers could have controlled prices. With fewer competitors, sugar planters in prime growing regions could have sold their sucrose to international buyers without concern for

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[13] U.S. Department of Agriculture, Economic Statistics and Cooperative Service, *A History of Sugar Marketing* (hereinafter USDA, *A History of Sugar Marketing*), Agricultural Economic Report No. 382, prepared by Roy A. Ballinger (Washington, DC, March 1978), 6.

[14] Bill Albert and Adrian Graves, *The World Sugar Economy in War and Depression, 1914-1940* (London; New York: Routledge, 1988), 1; Thomas J. Heston, *Sweet Subsidy: The Economic and Diplomatic Effects of the U.S. Sugar Acts, 1934-1974* (New York; London: Garland Publishing, Inc., 1987), 31.

Louisiana sugar growers or bounty-fed beet producers on the European continent. As it was, government-stimulated production worldwide produced a sugar glut, resulting in surplus prices that barely covered the cost of production in many sugar-producing regions of the globe. By 1894, sugar users in the United States could purchase sucrose at wholesale for just 4.1 cents per pound.[15]

It was upon this subsidized sugar system that Coke built its empire. In the years ahead, the company would attack the US government for artificially inflating sugar prices and complain about their inability to acquire "free market" sugar. But from the very beginning, their access to cheap sugar was guaranteed not by market mechanisms but by interventions of state institutions across the globe that fueled overproduction of sugar at the expense of the environmental health of host ecologies and the social well-being of laborers in the fields.

Sweet Bounty: US Tariff Policy and the Construction of the American Sugar Refining Industry

The availability of cheap sugar in the United States depended not only on the expansion of sugar plantation production at home and abroad but also on the construction of an efficient processing and distribution network that could make predictable deliveries of refined sugar to the United States market. Without a steady supply of cheap, refined sugar, Coca-Cola could never have made the profits it did on the sugar water it sold. The

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[15] USDA, *A History of Sugar Marketing*, 11; Louisiana Planters' Association, Louisiana Sugar Chemists' Association, American Cane Grower's Association, *The Louisiana Planter and Sugar Manufacturer* (June 11, 1904), 416; "The Cuban Sugar Industry," *The Louisiana Planter and Sugar Manufacturer*, January 2, 1904, 12.

company needed a reliable sugar distribution network that could bring their sweetener from distant fields of production to soft drink plants in the United States.

The expansion of the American sugar refining industry was a critical development that expedited the transformation of raw sugar into a refined product fit for consumer goods producers. The maturation of this processing industry, however, was not the sole product of free market forces. US government policies provided protection for burgeoning sugar processing plants beginning in the eighteenth century. The tariff of 1789 maintained a duty on refined sugar that was 2 cents above the one-cent duty placed on raw sugar. Small-scale refineries in the United States thus enjoyed protection against foreign competitors. Up through 1816, the government increased the tariff, with the margin between raw and refined duties reaching 9 cents that year. Protections would fluctuate, but the government maintained tariff protections for refining industries throughout the nineteenth century. Government policy also granted American refineries drawbacks on sales of refined sugar to overseas buyers. In 1887, this amounted to over 2 cents for every pound of refined sugar exported by an American sugar processing plant. Opponents of the drawbacks criticized refineries for "making money out of the Government," and argued that these businesses would not suffer if state supports were denied these subsidies. As Latin American historian César J. Ayala has shown, ultimately foreign exports represented a small portion of American refineries total sales, so this aid might have indeed been largely inconsequential. The competitive advantage

these refineries gained over foreign competitors through tariff protections in the nineteenth century ultimately proved far more important.[16]

State support increased refined sugar production in the United States. Between 1869 and 1887, production rose from approximately half a million tons to a million tons. The number of US plants increased from just a handful at the turn of the century to 59 by 1870. Most of these operations were small-scale, but large plants had begun to emerge as well. The dramatic increase in new processors increased competition that cut into profits by the 1880s. As a result, the margin between refined and raw sugar diminished to just .712 cents by 1882, and several small refineries were forced to close shop. By the time Coke began to be sold in soda fountains in Atlanta, there were around 27 refineries operating in the United States.[17]

In order to increase profits, Henry O. Havemeyer—the owner of Havemeyer and Elder, one of the largest refineries in the country— approached several refinery operators with the proposition of forming a manufacturing trust in 1887. The Sugar Refineries Company, as this trust came to be known, took over ownership of roughly twenty refineries and quickly closed half of the factories it now owned. Profits increased, with the margin between raw and refined sugar rising to 1.258 cents by 1888. Total refined sugar production was not hindered by this consolidation, but rather expanded as the new trust achieved economies of scale. As agricultural economist Roy A. Ballinger discovered, the ten operating plants owned by the Sugar Refineries Company produced

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[16] César J. Ayala provided an excellent chart of raw versus refined sugar duties from 1789 to 1861 in *American Sugar Kingdom,* 49; "The Sugar Refiners' Trust," *New York Times*, October 13, 1887, 8; César J. Ayala, *American Sugar Kingdom*, 50.

[17] Richard Zerbe, "The American Sugar Refinery Company, 1887-1914: The Story of a Monopoly," *The Journal of Law and Economics* 12, no. 2 (October 1969), 340; USDA, *A History of Sugar Marketing*, 11.

more barrels of sugar per year—roughly 34,000—than had been produced by the entire industry prior to trust formation.[18]

Despite the trust's early success, state courts in California and New York challenged the legality of the Sugar Trust and revoked corporate charters for refineries belonging to the Sugar Refining Company consolidation. In response, Havemeyer and his business partners decided to exploit a recent amendment to New Jersey's incorporation laws that allowed companies to buy and sell stock of businesses operating outside the state. The trust became the American Sugar Refining Company in 1891 and quickly came to control over 90 percent of the entire sugar refining business in the United States.[19]

Changes in tariff policy in the 1890s helped the new monopoly achieve record profits. The McKinley Tariff enacted in 1890 removed the duty on imported raw sugar, established a half-cent duty on all imported refined sugar, and established a two-cent bounty for domestic sugar growers (which at this point were still mainly Louisiana cane growers but also included a small cohort of beet farmers in California and other regions of the American West). The shift in policy was in part a response to a series of government surpluses that had accumulated over the past couple years. In 1899, Henry Havemeyer made clear how the McKinley Tariff affected his business strategies: "Without the tariff I doubt if we should have dared to take the risk of forming the trust. It could have been done but certainly should not have risked all I had, which was embarked in the sugar business, in a trust unless the business had been protected as it was by the

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[18] USDA, *A History of Sugar Marketing*, 12; César J. Ayala, *American Sugar Kingdom*, 37.
[19] César J. Ayala, *American Sugar Kingdom*, 39; Richard Zerbe, "The American Sugar Refining Company, 1887-1914," 354.

tariff." The McKinley Tariff lasted from July of 1891 to August of 1894, and allowed American Sugar Refining Company to purchase sugar at record low prices.[20]

Coca-Cola benefited materially from reductions in the American refining industry's production costs. In the 1890s, Coca-Cola purchased virtually all of its sweetener from Revere Sugar Refining Company of Boston, Massachusetts, a sugar operation that technically remained unowned by the Sugar Trust but which was closely affiliated with Havemeyer's consolidation. Revere benefited from the same competitive advantages that other American Sugar Refining Company affiliates enjoyed and accrued huge profits in the early 1890s. Revere and American put substantial quantities of the capital they earned toward creating larger and more efficient production facilities. The prospect of big returns under a high tariff on refined sugar spurred this investment. With the low cost of raw material inputs and bigger and assured markets, the Sugar Trust could offer Coke and other big commercial buyers cheap prices for refined sugar even while turning a profit. This was because they were selling more of their product at lower prices and allowing larger volume sales to generate increased revenue for their company. Under this business model, wholesale prices for refined sugar declined from 6.2 cents per pound in 1890 to 4.1 cents per pound in 1894.[21]

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[20] USDA, *A History of Sugar Marketing*, 11; Havemeyer's statement is quoted in Richard Zerbe, "The American Sugar Refining Company, 1887-1914," 341.

[21] Describing the relationship between Revere and the American Sugar Refining Company, historian César Ayala argued, "The one independent refinery in the United States, the Revere Refinery in Boston, worked harmoniously with the trust and was, through the brokerage house of Nash, Spaulding, and Company, the largest minority holder of American Sugar Refining Company stock. It cannot be called an independent refinery." César Ayala, *American Sugar Kingdom*, 37; Charles Howard Candler, *Asa Griggs Candler* (Atlanta: Emory University 1950), 113; Speaking of Revere's relationship to American, the *New York Times* reported in January of 1892 that the Boston refinery "has been an ally rather than a competitor" of the Sugar Trust. "The Sugar Trust," *New York Times*, January 15, 1892, 4; As tariff historian Frank William Taussig explained, "With a barrier against foreign competitors such as the tariff of 1890 gave, the profits were enormous." Frank William Taussig, *The Tariff History of the United States* (New York: G.P. Putnam's Sons, 1914), 312; Thomas J. Heston, *Sweet Subsidy*, 48-50; Lippert S. Ellis, *The Tariff on Sugar* (Freeport, IL: The Rawleigh Foundation, 1933), 44-46.

In the wake of the panic of 1893, calls for tariff reform resulted in the reinstatement of a duty on raw sugar to protect stateside sugar growers. Protection for refineries remained. Both the tariff of 1894 and the Dingley tariff of 1897 included provisions for higher duties on refined sugar than raw sugar. The margin between these two protective duties had diminished, but nonetheless the new tariffs continued to help domestic producers earn greater profits than they would have without the impost.

The increased production efficiency of American sugar refineries made massive quantities of refined sugar available for Coca-Cola and other American buyers. The Sugar Trust had a capacity of 34,000 barrels per day at its inception in 1887 but had increased its production efficiency to 49,500 barrels daily by 1892. In 1870, Americans consumed only 606,492 tons of sugar but by 1900, total consumption had increased to over 2,477,423 tons, an increase of over 400 percent. Refineries profited not by raising prices dramatically but through increased sales. Prices for refined sugar remained stable, hovering around 4 to 5 cents from the mid-1890s through the 1910s.[22]

American Sugar Refining and other major refineries increased production efficiency by integrating further backward into management and ownership of Caribbean production facilities in the wake of the Spanish-American War. As early as 1876, the US government had pushed for the territorial acquisition of sugar-producing polities in the tropical world beginning with the Kingdom of Hawaii with which it negotiated a reciprocity agreement that enabled island growers to achieve duty-free status in US markets. The treaty stimulated the growth of the sugar industry in Hawaii, as island

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[22] Per capita consumption increased from 35.3 pounds per person to 65.2 pounds per person over the same period. César J. Ayala, *American Sugar Kingdom*, 30; Paul Leroy Vogt, *The Sugar Refining Industry in the United States: Its Development and Present Condition* (Philadelphia: University of Pennsylvania, 1908), 46-67.

producers made profits selling their sugar at premium prices made possible by US tariff policy that granted duty-free access to Hawaiian growers. In other regions of the world, especially the Caribbean, powerful US sugar refineries put pressure on the federal government to use its military might to protect American investment in tropical sugar isles. Defeating the Spanish empire in the Spanish-American War, the United States gained control over the Philippines, Puerto Rico, and Cuba in 1898, and by the end of the nineteenth century, the federal government's tariff protections to these territories stimulated a sugar production boom with growers and millers benefiting from guaranteed US markets offering premium-selling prices. The Platt Amendment, signed into law in 1901, further encouraged US private investments in Cuba. The amendment stipulated that the US government was authorized to use military force to protect US investments in Cuba. As in Europe, state involvement stimulated growth. American refineries poured their capital into developing Cuban sugar mills and plantations.[23]

In *American Sugar Kingdom: The Plantation Economy of the Spanish Caribbean, 1898-1934*, Latin American historian César Ayala explained the significance of the extension of US imperial power into the Caribbean world to the organizational restructuring of American sugar refining businesses. According to Ayala, the Platt Amendment and attendant trade agreements regarding sugar imports from Cuba encouraged American refineries to invest in sugar mills and plantation operations in the Caribbean. In 1903, the federal government approved a reciprocity agreement that allowed Cuban sugar to enter the United States at a duty rate 20 percent below other

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[23] USDA, *A History of Sugar Marketing*, 9; Richard Tucker, *Insatiable Appetite*, 11; Though the Spanish crown officially ceded the Philippines and Puerto Rico to the United States under the Treaty of Paris, it did not allow for Cuba's annexation. Nonetheless, under the Teller Amendment and later the Pratt Amendment, the US government continued to hold significant control over the Caribbean island up through the beginning of the 1930s.

foreign imports. US refineries operating mills in Cuba could now acquire the raw sugar they needed below the full-duty price placed on other foreign imports. As a result, American Refining Company and other independent processing industries bought cane fields and expanded milling operations in Cuba. This "vertical integration," Ayala argued, would have been "unthinkable without the armed power exercised by the metropolitan state in the process of colonial conquest and occupation." American refineries could invest with confidence, knowing that they had the support and protection of the US military. By 1915, US refineries owned roughly 25 percent of all sugar milling plants in Cuba.[24]

Transnational integration produced increased efficiencies in the sugar refining industry in the first two decades of the twentieth century. USDA agricultural economist Roy Ballinger argued that American refineries' investments in Caribbean systems of production in the early twentieth century "gave them assurance of the availability of at least part of the supplies for their refining operations whenever needed and . . . greater control over the quality of the raw sugar they received." Large-scale capital investments in these plants made them more productive than Cuban-owned operations. US-owned mills produced roughly half of all Cuban sugar in 1915 though they represented a minority of all plants. American Sugar Refining Company's two Cuban plants generated more than 194,000 tons of sugar per year by the 1920s, each individual plant producing more than double the output of many major Cuban operations.[25]

By the start of World War I, the American market was flooded with cheap sugar produced and processed by fully-integrated American sugar refining mega-firms. Earl

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[24] César Ayala, *American Sugar Kingdom*, 120, 100, 76, 217, 218; USDA, *History of Sugar Marketing*, 18.
[25] USDA, *A History of Sugar Marketing*, 18; César Ayala, *The American Sugar Kingdom*, 83-84.

Babst, president of the American Sugar Refining Company, provided an excellent portrait of the industry in 1916 that illustrated just how capital-intensive sugar refining had become. He explained, "Today only a large corporation is able to compete successfully in the world's sugar markets . . . Not only does it require large organization, but vast capital, resources, and plants to draw the necessary raw products from quarters of the world sufficient to make a year-round campaign." He argued that the American Sugar Refining Company had become invested in industries as diverse as barrel manufacturing, owning and operating not only the factories that produced sugar barrels, but also managing "reforestation" programs to ensure adequate supplies of raw materials. According to Babst, the company planted "about one-half million of white pine and spruce trees . . . in the open Adirondacks" in order to meet demands for barrel production. The company also owned and operated over "130 miles of railroad" tracks channeling raw materials to refining plants on the East Coast.[26]

The increased production capacity of the American refining industry kept pace with the increased sugar demands of Coca-Cola and other consumer goods companies. By 1919, Coca-Cola consumed more than 100 million pounds of sugar per year, up from roughly 44,000 pounds in 1890. To put this in perspective, the total quantity of sugar entering the United States in 1830 was approximately 139 million pounds. Thus, Coca-Cola's sugar consumption in 1919 would have completely liquidated the American sugar supply in 1830, minus about 39 million pounds. The 2000-fold increase in Coke's sugar consumption between 1890 and 1919 was contingent upon the concomitant expansion of an American refining industry that kept large quantities of processed sugar flowing to

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[26] Earl Babst, *A Century of Sugar Refining in the United States* (New York: De Vinne Press, 1916), 15-17.

industrial users. Earl Babst explained the benefits of this remarkably efficient system, arguing that by the 1910s an American consumer could "buy his sugar at a price which is less than the cost in 1816 of turning the raw product into refined."[27]

What was remarkable about Coke's increased sugar consumption was that it required virtually no direct investment in the construction of mills, processing plants, or distribution systems. Coke purchased roughly half of all its sugar from the American Sugar Refining Company by the 1920s and added to these purchases contracts with other refineries, such as Imperial Sugar based out of Texas and Godchaux Sugars, Inc. from Louisiana. Thus, virtually all of Coke's sugar came from companies that had benefited from federal tariff protections and government agricultural support systems. For American Sugar Refining, the Platt Amendment and the negotiation of a reciprocity treaty with Cuba allowed the company to take over control of sites of production in the Caribbean, thereby generating larger throughput in their processing enterprise. Refineries such as Godchaux and Imperial, which relied largely on domestic cane and beet sources, also owed their profitability to federal policies that protected domestic sugar growers from foreign competition by maintaining a high duty on raw sugar produced outside the United States. Thus, Coke indirectly benefited from a diversity of federal sugar market interventions that prevented American Sugar Refining from gaining an absolute monopoly in the sugar trade. Independent refineries survived and Coca-Cola maintained

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[27] "Grand Consolidated (The Coca-Cola Co. and Its Subsidiaries)," Production and Advertising Balance Sheet for 1886-1955, Box 22, Folder 14, Mark Pendergrast Papers, MARBL; Earl Babst, "A Century of Sugar Refining in the United States," 4; César J. Ayala, *American Sugar Kingdom*, 30.

contracts with these processors in order to ensure that they received a competitive price from the mega-firms.[28]

But lacking control over sources of supply, the Coca-Cola Company still was subject to the vagaries of changes in international politics that threatened global trade networks. During World War I, the federal government would once again become a powerful ally in helping Coke secure sugar supplies, not by stimulating production as it had in the nineteenth and early twentieth century, but by limiting demand for sugar when international supply networks became constricted by wartime trade embargoes.

World War I, US Sugar Shortages, and the Problems of Vertical Integration

Responding to inflationary trends stimulated by increased wartime demand and sluggish European beet sugar production in 1917, the US Food Administration, headed by Herbert Hoover, began to impose rationing restrictions on industrial sugar users in an effort to stabilize prices. The Administration took aggressive steps throughout the war to control price increases, creating the Sugar Equalization Board in July of 1918, which limited large-scale commercial sugar consumption, froze sugar prices at nine cents per pound, and assumed responsibility for purchasing and distributing the annual Cuban sugar crop.[29]

The government's sugar controls had a direct impact on Coca-Cola. The Food Administration limited sugar use for Coke to 50 percent of its prewar consumption in the last two months of 1917. The company had fought these restrictions, sending corporate

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[28] "Sugar Position as of March 9, 1928," Sugar Inventory and Commitments Balance Sheet, RWW Papers, Box 58, Folder 5, MARBL; *Sugar Institute, Inc. v. United States* 297 U.S. 553 (1936), Transcript of Record, 969.

[29] USDA, *A History of Sugar Marketing*, 21-22.

attorney Harold Hirsch and executive Sam Dobbs to Washington, DC, to lobby for exemptions, but ultimately the company gave in to government demands. In a magazine layout entitled "Making a Soldier of Sugar," they stated that it was a "privilege to comply with the Government's request."[30]

The government's rationing program temporarily affected Coke's bottom line. Annual sales dropped from twelve million gallons in 1917 to ten million gallons in 1918, but by 1919, as the government removed purchasing restrictions, Coke made record profits, in part because government price controls kept sugar costs down. The Equalization Board's market interventions insulated Coke from the chaos of the world market, stabilizing prices during a period of great uncertainty. In 1919 alone, Coke witnessed exponential growth, posting volume sales of almost 19 million gallons.[31]

The corporate benefits of federal market regulation largely went unrecognized by American citizens who instead considered Coke a victim of wartime circumstances. To the American public, Coca-Cola was a patriotic company selflessly committing its resources to the national cause. Coke used its marketing might to solidify this image, presenting itself as an altruistic citizen willing to "enlist" its sugar for the public good. Few citizens knew about the company's closed-door politicking and its attempts to receive special exemptions from the Sugar Equalization Board. Even fewer citizens recognized how Coke and other commercial users benefited from the governments' price

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[30] Frederick Allen, *Secret Formula*, 104; Michael Blanding, *The Coke Machine*, 43; "Making a Soldier of Sugar," internal company memorandum, unknown date, Box 58, Folder 6, RWW Papers, MARBL.

[31] Pendergrast, *For God, Country, and Coca-Cola,* 130; "Making A Soldier of Sugar," Box 58, Folder 6, RWW Papers, MARBL; Blanding, *The Coke Machine*, 25; Frederick Allen, *Secret Formula*, 90, 104;

stabilizing measures. The indirect, yet no less tangible, benefits of federal government market management remained out of sight.[32]

But while the commercial benefits of the government's market regulations might have been invisible to the American public, and largely unacknowledged by soft drink giants in 1919, they certainly became apparent to Coke and other industrial sugar users following the expiration of the Sugar Equalization Board at the end of the war. When the government eliminated price controls in March of 1920, sugar prices soared from roughly seven cents per pound to over 20 cents per pound by May of 1920, causing Coke and their soft drink rivals to panic. The instability stimulated speculative buying. Coke and Pepsi secured large futures contracts from foreign suppliers, paying just over 20 cents per pound, only to watch the market price drop precipitously to 9 cents a pound by December, and further to 3 ½ cents just months later—a price drop brought on by unregulated overproduction in a cooling peacetime consumer market.[33]

For Pepsi, the decision to buy in the spring of 1920 led to the brand's temporary demise. The company declared bankruptcy in 1922, unable to recover from the financial losses it incurred for carrying overpriced sugar in a deflated market. Though able to stay afloat, Coke also suffered serious losses, the company estimating that the ill-advised sugar purchases cost the company $29,000 a day in 1921. These losses had to be eaten by the parent company, which could not raise the price of bottlers' syrup according to its contractual obligations. Though the company had been able to force its bottlers to amend

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[32] As Frederick Allen noted, "The episode was a foreshadowing of the strategy that would serve Coca-Cola so well during World War II: Lobby furiously behind the scenes, give in gracefully when the cause is lost, and be sure to associate the product with the highest national interest." Frederick Allen, *Secret Formula*, 89-90.

[33] John E. Dalton, *Sugar: A Case Study of Government Control* (New York: The MacMillan Company, 1937), 59; Daniel Levy and Andrew T. Young, "'The Real Thing,'" 773; Mark Pendergrast, *For God, Country and Coca-Cola*, 142.

their contracts to allow for marginal increases in the price of syrup during the war, the amended agreements still did not permit Coca-Cola to pass on the increased cost of sugar to its bottlers. In sum, Coca-Cola lost a reported $2 million because of the price collapse.[34]

Coke's losses, however, were not as severe as those incurred by Hershey that had become heavily invested in sugar production operations in the Caribbean in the 1910s and 1920s. Unlike Coke, the Hershey Company had chosen the path of integrating backward into ownership of Cuban sugar processing facilities in the 1910s. Milton Hershey had made this decision because, as did Babst and Havemeyer at American Sugar Refining, he believed his company could capitalize on government protections that encouraged transnational investment. He believed his company would achieve greater economies of scale by managing sources of supply. Beginning in 1916, Hershey bought over 60,000 acres of land for sugar production in Cuba and built sugar mills and a factory town to support company employees. The company also invested its capital in railroad expansion to serve its milling operations. All told, the company spent over $40 million on its Cuban processing centrales. Considering these investments, the sugar price drop of 1920 took a heavy toll on Hershey. According to some estimates, the company lost over $7 million dollars in 1920 because of price fluctuations. As a result, the National City Bank of New York, the lending institution that helped finance the construction of Hershey's Cuban factories, took over ownership of Hershey's operations and began to manage the company's property in the Caribbean. By 1922, with sugar prices stabilized, Milton Hershey was able to take back control of the company, but as historian Thomas

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[34] ; J.C. Louis and Harvey Z. Yazijian, *The Cola Wars* (New York: Everest House Publishers, 1980), 49; Michael Blanding, *The Coke Machine*, 53.

Winpenny has noted, investors knew that to "purchase Hershey stock was to play the commodities market." Hershey's profitability was contingent upon the perpetuation of state policies that permitted cheap imports of Cuban sugar.[35]

While Hershey renewed investments in sugar production facilities following the sugar panic of 1920, Coca-Cola boss Ernest Woodruff pushed for further insulation of his company from commodity price fluctuations. He was particularly concerned about the inelasticity of the company's bottling agreement, a perpetual, fixed-price contract that prohibited the parent company from adjusting the price of syrup sold to bottlers to reflect changes in commodity market conditions. Fluctuations in the price of sugar meant that the company had to sell inventoried sweetener to bottlers at a loss, and while distributors might benefit from the arrangement, the parent company took a serious hit. To correct this problem, Ernest Woodruff moved to abolish the company's bottling contracts outright in 1920. In response, company bottlers filed suit to protect their interests as distributors of Coca-Cola. The legal conflict was ultimately resolved in the spring of 1921 when an appellate court approved amendments to the bottling contract that allowed the parent company to adjust its syrup price according to sugar market conditions. Under the new contract established under the Consent Decrees of 1921, bottlers would receive syrup at a base rate of $1.17 ½ per gallon, but would be required to pay an additional six cents for every one-cent increase in sugar prices above an established market price.[36]

Abroad, Woodruff developed another plan to pass along sugar costs to bottlers. By the 1920s, company chemists had developed a dehydrated, sugarless Coca-Cola concentrate for export to foreign bottlers. The hope was that this concentrate would

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[35] Thomas R. Winpenny, "Milton S. Hershey Ventures into Cuban Sugar," *Pennsylvania History* 62, no. 4 (Fall 1995), 492, 494-495.
[36] *Elizabethtown v Coca-Cola* 88 F.2d 386 (1993).

allow the company to pass off the responsibility of purchasing sugar to bottlers operating in provider nations, thereby allowing the company to benefit from host government protections. Explaining the company's decision to ship concentrate overseas in 1956, then-Coke President Frank Robinson noted that the "greater shipping distances and tariff structures dictate that concentrate, not syrup, be delivered to [foreign] bottlers." The chief concern of the parent company, Robinson continued, was to ensure that concentrate prices were low enough "to permit the beverage to be sold at a popular price in each country that will appeal to large segments of the population." This could only be achieved by acquiring supplies within host nations, thus averting costly tariff payments.[37]

On its face, the new domestic bottling agreement and the company's overseas concentrate policy appeared to give the corporate office the kind of insulation it had always wanted against sugar market fluctuations. In reality, however, the parent company still had to be concerned about how sweetener costs would affect retail prices. Coke's empire depended on volume sales that in turn depended on low retail prices. If syrup costs increased precipitously, bottlers would have to raise prices in order to cover their operating expenses. Such increases would inevitably lead to decreased consumption, ultimately affecting the parent company's profitability. Thus, even after the 1921 contract amendments, the parent company still needed cheap sugar to make profits, and it looked to the federal government (as well as other host governments) to ensure that its purchasing demands were not unduly affected by unpredictable environmental and political factors affecting world sugar production.

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[37] Address by William E. Robinson, President of the Coca-Cola Company, at a meeting of the New York Society of Security Analysis, January 12, 1956, Box 3, Folder 5, Mark Pendergrast Research Files, MARBL; Mark Pendergrast, *For God, Country and Coca-Cola*, 173, 201.

Coke remained far less vulnerable to changing US tariff policy in the 1920s than Hershey was. Policy shifts that placed heavier duties on imported Cuban sugar proved most devastating to American enterprises with large fixed assets in Cuba. The federal government raised tariff prices on imported sugar from Cuba, first under the Emergency Tariff Act of 1921, then under the Fordney-McCumber Tariff of 1922, and once again under the Smoot-Hawley Act of 1930. Cuban sugar, which carried a 1.0048-cent per pound duty in 1913, was subject to a 2-cent per pound duty by 1930. This was done in an attempt to protect US cane and beet growers who were suffering from a flood of cheap sugar coming from the Caribbean. The collective result of these tariffs was a dramatic reduction in the price Cuban millers received for their finished product. Several sugar operations owned by American producers in Cuba were forced to close up shop. Milton Hershey vehemently opposed the new tariff policies that put his operations in a distinct disadvantage compared to other producers operating in the Philippines and Puerto Rico. With all his production facilities and milling assets located in a country that faced higher duty fees, Hershey sought relief from policies that threatened his profitability.[38]

Hershey partnered with Coca-Cola to put pressure on politicians to change the tariff restrictions. Though Coca-Cola did not own operations in Cuba, the company believed that reductions in tariff duties would reduce front-end costs to its chief suppliers, savings that could ultimately be passed on to them. Coke purchased over 600,000 pounds of refined sugar from Hershey in 1927 and was therefore eager to assist the company in reducing duties on Cuban sugar. Coke Chairman Robert Woodruff reached out to Milton Hershey in the spring of 1929 and expressed his interest in establishing "an office under a

[38] USDA, *A History of Sugar Marketing Through 1974*, 27, 29.

competent publicity man for the purpose of consolidating all our efforts to bring to the public's attention the evils of the contemplated increase in the raw sugar tariff and the proposed differential against imported refined." The key was anonymity. Woodruff suggested that appeals be made through third-party agents who would appear to represent the interests of the masses. He envisioned "cartoons and editorials" and anti-tariff articles in "sympathetic mediums" read by the average consumer. Coke and Hershey would supply the promotional directives and commissioned writers would plant the material in popular media outlets. Hershey agreed to the proposition, offering to pay up to half the cost of the campaign. By 1932, Coke and Hershey collectively spent over $50,000 on anti-tariff propaganda, working with publicity agencies, such as Baldwin and Company in New York and David J. Lewis of Maryland, to produce opinion pieces, editorials, and other publications designed to motivate consumers to push for sugar duty reductions.[39]

Change to tariff policy did come in 1934 when the US government implemented country-specific quotas on foreign sugar imports into the United States under the Jones-Costigan Act. This system, which remained in place with few alterations up to 1972, largely insulated the US market from world price fluctuations. It reduced the duty on

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[39] Memorandum of Conversation between Robert W. Woodruff and Milton S. Hershey, February 13, 1929, Box 371, Folder 13, RWW Papers, MARBL; Thomas R. Winpenny explores the close partnership between Coca-Cola and the Hershey Company during the interwar years in "Corporate Lobbying Was no Match for the Tide of History: Hershey and Coca-Cola Battle the U.S. Sugar Tariff, 1929-1934," *The Journal of Lancaster County's Historical Society* 111, no. 3 (Fall/Winter 2009/2010), 114-124. Christina J. Hotstetter's master's thesis "Sugar Allies: How Hershey and Coca-Cola Used Government Contracts and Sugar Exemptions to Elude Sugar Rationing Regulations," (master's thesis, University of Maryland, College Park, 2004) also looks at the effects of this corporate alliance; "Hoover Statement in Sugar Row Urged," *The Washington Post*, December 21, 1929, 1; "Shattuck Tells Senators He Never Discussed Sugar Tariff With the President," *The New York Times*, December 20, 1929, 1; "Sugar Witness Hotly Scolds Lobby Quizzers," *Chicago Daily Tribune*, January 9, 1930, 3; "Senate to Resume Sugar Lobby Probe," *The Washington Post*, January 7, 1930, 2; "Another Lakin Note Brought in Hoover," *The New York Times*, December 21, 1929, 4.

Cuban sugar and gave the USDA secretary the power to establish quotas for each country importing sugar into the United States. Describing the effect of the 1934 Sugar Act and the subsequent amendments to the legislation, soft drink historians J. C. Louis and Harvey Z. Yazijan argued, "There is no question that the Sugar Act vastly favored the growers over the buyers, who were made to bear the brunt of these massive premium payments . . . Yet the Act provided a predictability which was surely welcomed by Coke and Pepsi." The act created a more stable buying market for Coca-Cola and other third-party industrial consumers. Between 1934 and the start of World War II prices on retail refined sugar hovered around 5.5 cents per pound, rarely changing more than 2/10th of a cent from year to year during that period.[40]

Unappreciative of the long-term benefits of federal market regulation, soft drink giants focused on the perceived short-term financial losses associated with US import restrictions. For Coke, the costs of the 1934 Sugar Act appeared to outweigh the commercial benefits of the measure, and though the government's protective policies in the late 1920s and 1930s ultimately stabilized what had been a chaotic postwar US sugar market, Coke and other large-scale sugar users were frustrated that they were expected to pay for this government service. Ralph Hayes expressed this sentiment in a letter to US Senator from Georgia Henry S. George in 1936, arguing that if the price of sugar must, via the Sugar Act, "be permanently and artificially so supported, at least should not these now-proposed additions be financed by the tax-paying public as a whole rather than by levying on one item in the market basket of the consumers of this staple of the poor?" Despite Coke's complaints, the quota system helped to prevent price spikes, such as those

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[40] J. C. Louis and Harvey Z. Yazijan, *The Cola Wars*, 298; *National Carbonator and Bottler*, June 15, 1932, 26.

experienced in the 1920s. With stable sugar prices, Coca-Cola made record financial gains during the Great Depression, over $45 million in gross profits alone in 1937, up from just $24 million the year the sugar quota system began.[41]

Hershey was unhappy with the new quota system due to import restrictions that limited the amount of refined sugar that could be imported from Cuba. Under the Jones-Castigan Act, only 22 percent of "direct consumption sugars" produced in Cuba could enter the United States. H. H. Pike and Company, the sugar sales agent for Hershey, explained to reporters that the quota restriction would force Hershey to shut down a distribution facility in Mobile, Alabama, in 1937. Pike argued, "It is a matter of regret to us that the lobby, of which the President publicly complains, has succeeded in shifting business away from such ports as Mobile into their big refining centers, where the additional business from the 87,000-ton cut in the Cuban quota will be quite unnoticed and will not create additional jobs to replace those which we can no longer offer in the non-refinery ports." As Pike intimated, other American refining firms on the East Coast gained special protections under the Jones-Castigan Act. Companies whose refining operations were not concentrated in Cuba faced less competition from overseas producers under the quota system. Hershey, on the other hand, with proportionally larger investments in Cuban refining factories, could not capitalize on greater volume production of refined sugar because of discriminatory tariff policies.[42]

The Jones-Castigan Act, however, did not unduly diminish Hershey's profitability because the company had reorganized itself in 1927 in order to insulate its retail business from its Cuban operations. Milton Hershey's attorney John Snyder persuaded the

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[41] Ralph E. Hayes to Senator Walter S. George, June 4, 1936, Box 58, Folder 5, RWW Papers, MARBL; Coca-Cola Company Annual Report 1934, 1937.
[42] "H.H. Pike & Co." *Wall Street Journal*, September 3, 1937, 4.

chocolate baron to separate his company into three firms that year. The newly created Hershey Chocolate Corporation was responsible solely for selling company goods to consumer outlets, whereas Hershey Estates and the Hershey Corporation would take on the responsibilities of running the company's overseas Cuban plantations and other transportation and housing operations. The accounting books for these firms would remain separate. As Hershey historian Michael D'Antonio explained, now "no matter what happened in Cuba, the chocolate company back in Pennsylvania, which was the major source of profits, was protected" from risks associated with commodity production.

By the 1930s, both Hershey Chocolate Company's and Coca-Cola's insulation from sugar production and processing operations meant that changes in federal trade policy did not affect their profits in the same way that it did firm's with large factory assets overseas. Hershey had made the first step towards becoming more like Coke. It began to separate the cash cow of its operations from those industries that threatened profitability, and as a result, it posted a more attractive portfolio to its investors.[43]

The Cause that Refreshes: Coke Sends Sugar to the Frontlines, 1940-1945

Through the end of the 1930s, Coke enjoyed steady growth in large part because it could purchase sugar in a stable buying climate ensured by the federal quota system. By 1940, however, the outbreak of World War II began to seriously jeopardize Coke's sugar market insulation. Heavy sugar users in warring nation-states, fearing future embargoes and other trade disruptions, dramatically increased requests for sugar from international growers, hoping to stockpile reserve supplies. United States users followed

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[43] Michael D'Antonio, *Hershey: Milton S. Hershey's Extraordinary Life of Wealth, Empire, and Utopian Dreams* (New York: Simon and Schuster, 2007), 190, 197-198.

suit, dramatically increasing what USDA economic statistician Roy Ballinger called "invisible stocks" of sugar; that is, stocks that were not immediately consumed or made available by industrial users for retail. This dramatic increase in "invisible stocks" resulted in escalated raw sugar prices, inflation that the US government could not abate by increasing domestic supplies through sugar quota controls. As a result, the federal government, through the recently created Office of Price Administration (OPA)—an arm of the Office for Emergency Management—, took aggressive steps to halt the rise in sugar prices stimulated by increased demand, placing a $3.50 per pound ceiling on all duty-paid raw sugar in August of 1941.[44]

Coke—whose annual sugar consumption now totaled over 200 million pounds—welcomed the OPA's August 1941 price ceiling, recognizing that the government's intervention prevented exponential increases in sugar prices at a time when wartime demand and trade disruptions threatened runaway inflation. With the OPA putting a cap on sugar prices, it appeared that once again the government would help Coke avoid costly losses in the face of uncertain international market conditions.[45]

The company's praise for the government's price control interventions, however, was tempered with frustration about sugar-usage restrictions imposed by the Office of Production Management (OPM), the predecessor agency to the War Production Board (WPB) created in 1942. These restrictions, outlined in the OPM's General Preference Order M-55, went into effect on January 1, 1942, limiting sugar usage for Coca-Cola and other soft drink manufacturers to 70 percent of 1941 consumption. Coke executives were livid with the measure and believed that the government controls would severely impact

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[44] U. S. Department of Agriculture, Bureau of Agricultural Economics, *Sugar During World War II*, War Records Monograph 3, prepared by Roy A. Ballinger (June 1946), 4, 6.
[45] *Chicago Daily Tribune*, February 3, 1940, 23; USDA, *Sugar During World War II*, 6.

domestic sales. Determined to get around the OPM restrictions, Ben Oehlert, Coca-Cola executive and company lobbyist in DC, wrote to Woodruff just weeks after the OPM restrictions went into effect suggesting the company look into "the practicability of manufacturing Coca-Cola syrup in Canada, Mexico, Hawaii, Cuba, Puerto Rico, the Virgin Islands, and any other place outside the territorial confines of the United States, for shipment to and use in the United States." Ultimately, the Atlanta office tabled Oehlert's proposal, recognizing that transportation and import fees would make the plan cost prohibitive.[46]

Wary of an extra-state importation plan, Coke turned to working within the government to get what it wanted. As it had in World War I, Coke positioned itself as a dedicated public citizen committed to the war effort while at the same time leveraging its national appeal to gain special government favors. In a calculated attempt to both improve its consumer image and garner government kudos, Oehlert suggested in the winter of 1942 that Coke sell thousands of pounds of its inventoried sugar to improve its "psychological and public relations position." The ploy worked, with major newspapers, such as the *Washington Post,* praising Coke's government sales, citing the company's claim that the sales were made below market price. In the eyes of the American public, the Coca-Cola Company was once again sacrificing its bounty for the common good, aiding the federal government while asking nothing in return.[47]

Behind closed doors, however, Coke worked hard to capitalize on its "charitable" donations, relying heavily on their inside man, Ed Forio, a Coke official well-versed in

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[46] Ibid., 13; Christina J. Hotstetter, "Sugar Allies," 38; Letter from Ben Oehlert to Mr. A. A. Acklin, January 19, 1942, Box 58, Folder 6, RWW Papers, MARBL.

[47] Letter from Ben Oehlert to Mr. A. A. Aicklin, February 5, 1942, quoted in Mark Pendergrast, *For God, Country, and Coca-Cola*, 200; "U.S. Agency Takes Coca-Cola's Sugar," *The Washington Post*, February 27, 1942, 26.

DC lobbying tactics, to influence government policy in ways that would benefit the company. As a consultant for the Beverage and Tobacco Section of the WPB, Forio's first concern was to raise Coke's status on WPB quota charts from a luxury item associated with candies to a wartime necessity. Explaining his chief objective, Forio told the *Coca-Cola Bottler*, "An untiring effort was made to point out the tremendous part that soft drinks play in the ordinary every day lives of average people to those highest in authority in government. This effort was crowned with the publication of the Civilian Requirements Bedrock Report, which stated that a minimum of 65 per cent of the products of this industry was necessary to the maintenance of civilian morale."[48]

In addition to the lobbying efforts of Oehlert and Forio, the company also leaned on the talents of their advertising men to shape public policy in the company's favor. Coke's promotional team produced a series of publications in 1942, such as "Importance of the Rest-Pause in Maximum War Effort" and "Soft Drinks in War," that portrayed Coke as an essential foodstuff of the working man. These propaganda pieces proclaimed that Coke did not purchase sugar to satiate its corporate appetite; rather, Coke was simply a conduit to the consumer, channeling energy, both chemical and psychological, to the working men and women of America. And to those individuals who questioned the company's scientific assertions about the benefits of soft drinks, Coke offered another collection of publications that specifically addressed claims about the health benefits associated with soft drink consumption. Ben Oehlert, for example, sent one such piece to an OPM official which included a passionate appeal from a Dr. Thomas Parran, who exclaimed, "In this time of stress and strain, Americans turn to their sparkling beverage

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[48] Ed Forio, "Out of the Crucible," *The Coca-Cola Bottler* (December 1945), 15.

as the British of all classes turn to their cup of tea and the Brazilians to their coffee. From that moment of relaxation, they go back to their task cheered and strengthened, with no aftermath of gastric repentance. There is no undue strain upon the purse; no physiological penalty for indulgence."[49]

Ultimately, the federal government bought Coke's pitch and increased the company's sugar quota to 80 percent of 1941 consumption. The OPA transferred the company from the Beverage and Tobacco Branch to the Food Section, a division overseeing production and consumption of basic agricultural necessities. More importantly, the US army persuaded the OPA to offer sugar credits to Coke for all company shipments to military installations both at home and abroad, including PX stations at domestic army posts. Under the arrangement, Coke could sell virtually unlimited supplies of syrup to US soldiers without affecting its 80 percent cap on civilian sugar sales. This request for exemption came from the top, General Dwight D. Eisenhower issuing an order on January 23, 1943, asking Coke to supply the army with 6 million bottles of soft drinks each month.[50]

Coke's military contracts allowed the company to make record gross profits, almost $95 million in 1944 alone, not only because it enjoyed exclusive access to army markets but also because it could purchase unlimited supplies of sugar at government controlled prices—ceiling prices that would have been far higher in a turbulent wartime economic climate had the OPA not intervened to regulate inflation. With government

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[49] Letter from Benjamin Oehlert to A. S. Nemir, Sugar Division, Food Supply Branch of the Office of Production Management, January 6, 1942, Box 58, Folder 6, RWW Papers, MARBL; Michael Blanding, *The Coke Machine*, 99; Christina J. Hotstetter, "Sugar Allies," 66.

[50] Ed Forio, "Out of the Crucible," *The Coca-Cola Bottler* (December 1945), 15; Michael Blanding, *The Coke Machine*, 49; Daniel Levy and Andrew T. Young, "'The Real Thing,'" 773; Classified Message from Eisenhower's Headquarters in North Africa, June 29, 1943, Box 85, Folder 2, RWW Papers, MARBL.

controls keeping the cost of sugar down and new military contracts signed as the war progressed, Coke expanded its operations and increased its sugar consumption throughout the war.[51]

Coke's industry rival Pepsi-Cola, who had not received the same military exemptions Coke enjoyed, complained about the government's prejudicial sugar system, a rationing scheme they argued that gave Coke an unfair competitive advantage. Pepsi president Walter Mack wrote to the OPA in the fall of 1944 expressing frustration that some soft drink companies were allowed, through military rationing exemptions, to do "160%" of 1941 sales while competitors without government contracts were "held down to only 80% of 1941" production. Requesting that the OPA not offer "replacement sugar" or rationing credits to preferred companies, Mack pleaded with the OPA to abandon an inequitable sugar program that fueled the monopolistic growth of industry giants.[52]

Pepsi's pleas went unheeded, and for the remainder of the war, Coca-Cola continued to enjoy exclusive contracts with military installations across the globe. The company sold over ten billion bottles of Coke at military bases and home post-exchanges during the war, controlling 95 percent of all military soft drink sales. Due in large part to its overseas operations, between 1942 and 1945 the company earned at least $80 million in gross profits annually, totals significantly higher than the $58 million it made in 1939.[53]

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[51] Coca-Cola Company Annual Report, 1944.
[52] Letter from Walter Mack to Chester Bowles, Director of the Office of Price Administration, October 9, 1944, Records of the Office of Price Administration, Record Group 188, NARA II.
[53] Christina J. Hotstetter, "Sugar Allies," 110; Coca-Cola Company Annual Reports, 1942-1945.

After V-J day, Coke and other industrial sugar users petitioned the government to preserve wartime price controls, and for several months, OPA regulations continued, protecting Coke against postwar world market fluctuations. In 1947, Pepsi-Cola president Walter Mack called on the OPA to eliminate rationing programs—which largely benefitted Coke and other preferred government clients—but simultaneously urged the government to "continue price control for a year, with a maximum price ceiling to be established by the Secretary of Agriculture at such prices as he deems necessary to assure maximum supplies of sugar." Mack asserted that these measures were necessary because it was impossible for regulators to "guarantee what the rainfall, frosts, and other climatic conditions will be for the growing of sugar" in the years ahead. Mack asserted that the measure would serve as a "protective clause for the housewife and people, so that the Secretary of Agriculture, could have the power . . . to prevent the runaway prices forecast by other witnesses." The Association of Cocoa and Chocolate Manufacturers of the United States, a lobbying group representing Hershey and other chocolate companies, also pushed for continued government regulation of the sugar market, arguing that if the government abolished price controls the result would be "higher sugar prices, inequitable distribution, unwarranted economic disturbances among industrial users . . . generally disruptive speculative operations, and unfair competition for the housewife in obtaining her needs." Coke and its sugar associates needed the government to cap prices in a peacetime market.[54]

The federal government continued price controls up through the spring of 1947, but on July 28 of that year, the state officially removed price ceilings for sugar. Industrial

[54] House Committee on Banking and Currency, *Rationing and Price Control of Sugar*, 80th Cong., 1st sess., March, 6, 7, 10, 11, and 12, 1947, 257, 259, 226; Association of Cocoa and Chocolate Manufacturers of the United States statement quoted in Christina J. Hotstetter, "Sugar Allies," 106-107.

users did not suffer for long because within months Congress pushed through new legislation to stabilize the US sugar market, passing the Sugar Act of 1948, which reinstated the basic tenets of the prewar quota system. By 1948, refined sugar prices leveled off at around 8 cents per pound, raw sugar at roughly 6 cents per pound—dirt-cheap prices that did not even cover the cost of production in many regions of the world. More importantly, the act stabilized prices, which rarely fluctuated more than four-tenths of a cent from year to year for refined sugar, and never rose above 9.5 cents per pound before 1960.[55]

While the company reaped the benefits of a stable sugar market in the late 1940s and through the 1950s, continuing to post record profits ($127 million in 1949), the company nonetheless complained about the prejudicial tax burden placed on the company by federal sugar tariffs. Arguing that the Coca-Cola Company had "worked itself up the hard way, without seeking, or depending upon, subsidies or bounties or tariff preferment," Ralph Hayes objected to the fact that Coke had become a "payer and provider, on a sizable scale, of tariff 'protection' to others." The company wanted access to "dump" prices made available by overproduction in the world market, even if these "dump" prices were the artificial byproduct of international government regulation.[56]

But even as Coke complained about the quota system, some executives within the soft drink industry acknowledged the benefits of government market management. Commenting on the success of the Sugar Act in regulating market fluctuations, American

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[55] United States Department of Agriculture, *Trends in the United States Sugar Industry: Production Processing Marketing* (Washington, DC: GPO, 1958), 5-6; Thomas J. Heston, *Sweet Subsidy*, 355; USDA, *A History of Sugar Marketing*, 53, 56, 79, 82, 88.

[56] Coca-Cola Company Annual Report, 1949; Ralph Hayes Speech to 50th Anniversary Celebration of the Coca-Cola Bottling Company (Thomas), Waldorf-Astoria Ballroom, New York City, October 3, 1949, Box 137, Folder 7, RWW Papers, MARBL.

Carbonated Beverage Association Sugar Committee Chairman, Royal Crown Cola's Wilbur Glenn admitted in 1960 that "very few people advocated or wished the collapse of the entire sugar program—and the resultant disruption of the market—which would have been brought about had the Act been allowed to expire." As Glenn's statement suggested, soft drink representatives might have been upset about having to pay for high tariffs, but no one really wanted to chance entering the unprotected world market without state support.[57]

As Glenn predicted, it was in fact the removal of federal protections and an opening of the US market to world sugar in 1962—not the imposition of stricter importation controls— that disrupted over a decade of relative quiescence in US sugar price fluctuations. The shift in policy came following the Castro Revolution of 1959 and the subsequent cessation of diplomatic relations between the US and Cuba. The amended Sugar Acts of 1960 through 1962 prohibited imports of Cuban sugar and called for the Caribbean country's quota to be filled by "other nations on a first-come-first-served basis"— the free market ideal. Considering the large size of Cuba's quota, this essentially meant that the US market was now vulnerable to the vagaries of the global market. Robert Woodruff received an internal memorandum prepared by Coke's "top man in Washington," explaining the significance of the shift in policy as it pertained to the company's sugar purchases. The Coke insider pointed out that "prior to the global quota our market was completely insulated from the world market. Events that sent the sensitive world market skyrocketing or plummeting had little if any effect on our prices." In the wake of the recent Sugar Act amendments, he lamented, the company was now

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[57] Wilbur Glenn, President of Royal Crown Cola Company, "The Sugar Market: What Does Lie Ahead," *The American Soft Drink Journal*, July 25, 1960, 12.

purchasing "global quota sugar from the world market," thus perilously linking the company's purchase price to the world price."[58]

With the shift to a global quota, US raw sugar prices jumped from 6.30 cents per pound in 1960 to over 8 cents a pound in 1963, causing Coke's sugar agents to panic. One of the company's head sugar lobbyists, John C. Staton wrote to company president Paul Austin in the spring of 1963 stressing the dire need for amendments to the Sugar Act, stating bluntly, "Constantly rising prices have made it imperative that we get on the job immediately."[59]

Public outrage over rising sugar prices—outrage fueled by Coke and its lobbying team— led to the abolition of the global quota in 1965. USDA regulators shifted portions of Cuba's sugar allotment to specific provider countries, and as a result, raw sugar prices once again stabilized at around 6 to 7 cents per pound. From 1965 to 1972, US sugar prices certainly inched upwards, but largely in step with inflationary trends associated with a growing energy crisis that was driving the price of almost all consumer goods upwards. For the most part, the sugar market was stabilized, insulated once again from the international market.[60]

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[58] Memorandum (possibly from Ovid Davis) attached to Letter addressed to Lee Talley, April 19, 1963, Box 59, Folder 1, RWW Papers, MARBL.

[59] USDA, *A History of Sugar Marketing*, 79; Letter from John C. Staton to J. Paul Austin, April 12, 1963, Box 59, Folder 1, RWW Papers, MARBL.

[60] Encouraging company lobbyists to create an image of Coke as "the forgotten man of the 1962 Sugar Act—the American Consumer," Paul Austin suggested to Ovid Davis, another one of Coke's top sugar lobbyists in Washington, that the company reach out to "women's national organizations which interest themselves in national government activities having a direct affect on the housewife's pocketbook." Austin believed that company interests could best be promoted by such groups who were effective in stimulating policy changes because of their perceived power at the polls. Nonetheless, the company did not abandon traditional closed-door lobbying strategies, relying heavily on Washington liaisons like Davis and Staton to persuade specific congressmen to support Coke amendments. Letter from Thomas Deegan to Lee Talley, April 19, 1963, Box 59, Folder 1, RWW Papers, MARBL; Letter from J. Paul Austin to Ovid Davis, May 14, 1963, Box 59, RWW Papers, MARBL; Gail M. Hollander, *Raising Cane in the 'glades: The Global Sugar Trade and the Transformation of Florida* (Chicago: University of Chicago Press, 2008), 194-195; USDA, *A History of Sugar Marketing*, 57-58, 79.

Not until 1974 did erratic sugar price fluctuations again cause concern at Coke headquarters, and only then when price protections were removed. In December of 1974, Congress allowed the Sugar Act to expire, ending the almost three-decade old quota system. The Sugar Users Group, a new lobbying agency consisting of confectioners and heavy-sugar users including Coke, heralded the event. The organization mistakenly believed that the removal of federal protections would give Coke access to cheaper sugar. For the last five years, Coke had been prohibited from purchasing world sugar at "dump" prices that were lower than duty-paid sugar. Convinced expiration of the Sugar Act would allow Coca-Cola to purchase sugar at 3 to 4 cents per pound, Coke VP John Mount, the head of the Sugar Users Group, urged Congress to "move toward a freer market." Ovid Davis reported to the press that Coke and its sugar-using partners were "in the driver's seat for the time-being" looking forward to capitalizing on its unregulated purchasing power.[61]

Despite Coke's optimism, as protective barriers came down, prices skyrocketed, approaching 60 cents a pound by the end of 1974. With the growth of consumer markets in Asia and other parts of the developing world, sugar was in high demand. Enjoying an explosion in purchase orders, producers all across the globe continued to raise their prices. A dramatic drop in prices in 1975 and 1976, however, soon followed the production boom, threatening to bankrupt US growers who claimed they could not sell at prices below the duty-free market price. In an attempt to provide protection to American sugar producers, the government moved to reinstate a quota system in 1976, causing industrial sugar users to protest. As did domestic growers, they wanted to return to a

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[61] "'Freer Market' for Sugar Urged by Industrial Users," *New York Times*, February 22, 1974, 43; Letter from Ovid Davis to Paul Austin, June 6, 1974, Box 70, Folder 10, RWW Papers, MARBL.

stable sugar market, but they did not want to pay duty prices to make such stabilization possible.[62]

Coke lobbied for a new sugar support programs that would offer American growers price-support bounties with minimal restrictions on imports. With the support of Georgia-native President Jimmy Carter, the new program went into effect in 1977, much to the surprise of the American media. The *New York Times* reported, "In the name of free trade, Mr. Carter adopted a weird form of protection; instead of raising the price of sugar to Coca-Cola with a duty, he would protect corporations like Coke by paying their suppliers an estimated $240 million a year to cover losses." The *Times* claimed that Coke manipulated Carter to make the bounty system possible, cashing in on old debts accrued during gubernatorial campaigns in Georgia and the 1976 presidential race. The paper called the government's program "Carter-Coke-Castro sugar diplomacy," arguing that Carter's close relationship with Coke represented more than just "a potential conflict of interest. It's the real thing." Scholars may never be able to confirm or deny such conspiracy theories, as much of Coke's White House lobbying went on behind closed doors, but as company historian Mark Pendergrast explained, Coke certainly got a good deal under Carter's plan, with taxpayers "subsidizing Coke," allowing the corporation to avoid costly duty payments.[63]

In 1982, the government dismantled the 1977 sugar bounty program, but by this time, Coke had found a new way to avoid sugar price fluctuations by making the switch to a much more price-stable, low-cost sweetener: high-fructose corn syrup. This new

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[62] "World Approaching Sugar Shortage," *Washington Post*, February 27, 1974, A14; "Butz Sugar Sale Plan Killed After Lobby Bid," *New York Times*, May 20, 1974, A1.

[63] "Carter, Coke, and Castro," *New York Times*, July 7, 1977, 19; "Bitter Sugar for the Coca-Cola Connection?" *Washington Post*, July 28, 1977, A23; Mark Pendergrast, *For God, Country, and Coca-Cola*, 317.

sweetener was more attractive to Coke than sugar in large part because of a recent change in US agricultural policy that encouraged the overproduction of corn in the American West. In 1972, Richard Nixon's agricultural secretary Earl Butz terminated a New Deal corn support program that required corn growers to keep excess corn out of US markets. In its place, Butz implemented a new subsidy initiative that encouraged growers to produce corn "fencerow to fencerow." Under the new plan, corn growers received a bounty payment for each bushel of corn they produced. Payments were not contingent upon acreage reduction and growers were not prevented from selling surpluses to US buyers. As a result, corn growers upped production, hoping to make as much money as they possibly could on the new subsidy programs.

Cheap corn fueled the growth of the high-fructose corn industry. Wet mills in the American West expanded their operations in the 1970s and by the 1980s and soon they were able to offer prices for their sweetener that were well below what American refineries were offering for sugar. As a result, many sugar-intensive consumer goods companies made the switch to HFCS in the 1980s.

Coca-Cola could make the transition to high-fructose corn syrup without incurring substantial financial losses because it was not heavily invested in the sugar production business. Unlike the Hershey Corporation, which was forced to sell its Cuban sugar operations in the 1950s due to concerns about Fidel Castro's communist upheaval, Coca-Cola was never forced to sell ingredient production operations. Coke could adapt to changing political climates and shift its purchasing contracts to profit from low commodity prices at will. It chose suppliers that were in the best position to benefit from federal agricultural policy at a given time. By the 1980s, the sweetener production

companies that could best serve Coke were Archer-Daniel Midlands and the other major HFCS producers in the American West who could undersell sugar suppliers because of Butz's new corn bounty program.

As we will see in the final chapter, Coke's transition to high-fructose corn syrup allowed the company to achieve record profitability in the 1980s and 1990s. With a cheaper sweetener, Coca-Cola increased its productive capacity at low cost. For many years, the parent company even made extra profits by selling its syrup to bottlers at sugar prices, even after they made the switch to much cheaper HFCS. Ultimately, Coke's independent bottlers filed suit, and the company agreed to link syrup sales quotes to HFCS prices, but the company made millions of dollars by exploiting this price gap in the 1980s. Once again, Coke made profits by taking advantage of the fact that it did not own the systems of production and distribution that made its commercial empire work.

Conclusion

Coke's sugar panics in 1920, the early 1960s, and the mid-1970s, all owed their genesis not to increases in federal protections to US growers, but to the collapse of these controls. It was the dismantling of state trade protections that made the company vulnerable to market fluctuations, and it was during these periods of uncertainty that the company became most concerned about its profitability. Coke depended on stable markets to expand its productive capacity, and history showed that such markets only existed when the federal government intervened in the market either to stimulate production or control commodity price inflation.

Coke may have complained about state policies that kept US sugar prices above world prices, but an examination of Coke's sweetener procurement strategies over the long durée reveal that tariff protections, state military expeditions into the Caribbean, government import quota systems, and federal corn bounty programs all helped the company achieve profitability in the twentieth century. All these initiatives fueled the expansion of sweetener production, and while some industries suffered temporary losses due to discriminatory tariff rates or quota restrictions, cheap sweeteners remained in abundant supply for the vast majority of the twentieth century.

What made Coke more resilient than other companies reliant on cheap sweeteners was its strategy of remaining disconnected from ownership of agribusinesses associated with sweetener production. Shifts in federal policies nearly bankrupted fully-integrated confectionary firms, such as Hershey, but Coca-Cola was able to make quick adjustments to changing market conditions because it relied on multiple suppliers. Coke could choose from those businesses that could offer the best prices, firms that benefited from state policies at a given time. When environmental conditions or international political changes threatened supplies, Coke further depended on the government to restrict buyer access to reduced inventories. Coke's flexibility—a condition made possible only through state partnerships at critical times— gave it an advantage over integrated firms that had become enticed into ownership of production systems by capricious government policies. Externalization rather than internalization proved the most effective corporate business strategy for companies hoping to satiate their sweet tooth in the twentieth century.

Chapter 3: Natural Flavors - Coca
Cocaine-Cola

Introduction

Today, Coca-Cola's signature beverage brand contains small quantities of decocainized coca leaf extract. Originally the Coca-Cola formula called for coca leaf extract containing roughly 3/200th of a grain of cocaine per serving, but company president Asa Candler decided to eliminate the miniscule narcotic content by 1903 in the face of growing consumer fears about the adverse health effects of cocaine addiction. Determined to preserve the distinctive taste of the company's beverage product, however, Candler insisted that constituent components of the coca leaf be included in company beverages, even if cocaine had to be removed. The new ingredient, known within the company as Merchandise #5, consisted of trace quantities of decocainized coca leaves mixed with kola nut powder.[1]

Coke's demand for Merchandise #5 made it one of the largest commercial consumers of licit coca leaves in the United States by the end of the twentieth century. The company purchased its decocainized coca leaf extract from a processing plant in Maywood, New Jersey, which ultimately negotiated trade with Peruvian suppliers. This corporate partnership first emerged at the turn of the twentieth century, when Coke president Asa Candler approached Eugene Schaeffer of Schaeffer Alkaloid Works (later Maywood Chemical Works) to begin producing Coke's decocainized coca extract. Schaeffer signed on to the deal because there was no financial reason not to do so. The chemical company could still sell all the cocaine it extracted in the process of making

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[1] "A Card from Mr. Candler," *Atlanta Constitution*, 13 June 1891, 4; Frederick Allen, *Secret Formula*, 45.

Merchandise #5 to Merck of New Jersey, Mallinckrodt, and other pharmaceutical companies. The only difference was that the company now had a buyer for what had previously been a waste product of the cocaine trade: spent coca leaves.[2]

Coca-Cola found a way to recycle the refuse of another industry and turn it into a valuable component of its signature brand—valuable in this case not because it imbued company beverages with addictive properties, but because it allowed the company to preserve the most important component of its trademark brand: what Coke historian Frederick Allen termed "the cult of the secret formula." Indeed, there seemed to be no real material use for the coca extract other than to protect the company's brand image. Writing in 1951, Federal Bureau of Narcotics Commissioner Harry Anslinger—an official with considerable knowledge about the process of creating decocainized coca-leaf extract for Coke— suggested that if one compares "the limited quantities of coca extract manufactured with the huge volume of finished coca cola extract sold and exported," it appears obvious "that the contribution of the former to the ultimate flavor is insignificant and suspect that it continues to be used merely to enable the Company to retain the word 'Coca' in the name which it has spent millions to advertise." Coke's top executives believed that coca had to remain in the Coca-Cola formula. Company Vice President Benjamin Oehlert explained the reason for this company policy in 1948, saying that if Coke removed coca from its product, "It would, of course, become known that that

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[2] In the federal circuit court case *U.S. vs. Twenty-Barrels of Coca-Cola,* Eugene Schaeffer of Maywood testified in 1911 that cocaine was sold as a byproduct of making Merchandise # 5: "The cocaine which I obtain during this process is used subsequently because it is a product of value." Transcript of Testimony at 1296, *U.S. vs. Forty Barrels and Twenty Kegs of Coca-Cola*, 191 F. 431 (E.D. Tenn. 1911), Box 7, Record Group 21, Records of United States District Court (hereinafter Record Group 21), National Archives Southeast Region, Morrow, Georgia; Mark Pendergrast, *For God, Country, and Coca-Cola*, 90.

ingredient was no longer used, and the psychological impact of that public knowledge could be disastrous."[3]

Coca-Cola's demand for this "natural flavor" forced the company to become involved in a largely hidden transnational trade in coca leaves. The company partnered with the Maywood Chemical Company, which bought coca from Andean cocaleros (rural coca farmers). Throughout the twentieth century, protecting this trade network between Maywood and Peruvian suppliers would remain a top priority for Coke executives.

Historian Paul Gootenberg produced excellent scholarship on Coca-Cola's relationship to the international coca trade. His studies focused on Coke's efforts to control federal and international drug policy in the twentieth century and revealed how Coke and Maywood's lobbying efforts resulted in the construction of "a centralized and state governed coca chain" that channeled decocainized coca leaf extract to the Coca-Cola Company while closing off access to coca byproducts for other stateside buyers. Gootenberg was careful to note that Coca-Cola and Maywood never "dominated US cocaine policy toward Peru during the twentieth century," but he nonetheless revealed Coke to be a "junior partner in evolving drug policies," a company that shaped significant counternarcotics legislation at the federal and international levels that affected the transnational coca trade.[4]

This chapter builds on Gootenberg's work, showing how Coke's coca procurement practices reflect the company's larger business strategy of leaving the

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[3] Frederick Allen, *Secret Formula*, 195; Letter from Harry Anslinger to Charles B. Dya, Foreign Relations Division of the Office of Political Affairs in New York, January 10, 1951, Subject Files of the Bureau of Narcotics and Dangerous Drugs, 1916-1970, Box 63 (old box # 19) (hereinafter Box 63 (old box#19)), Record Group 170, Records of the Drug Enforcement Administration, 1915-46,1969-1980 (hereinafter Record Group 170), NARA II; Memorandum from Benjamin Oehlert to W.J. Hobbs, R. W. Woodruff, Harrison Jones, and Pope F. Brock, February 27, 1948, Box 242, Folder 4, RWW Papers, MARBL.

[4] Paul Gootenberg, *Andean Cocaine*, 122; Paul Gootenberg, "Secret Ingredients," 265; See footnote 11 in the introduction for more of Gootenberg's works that deal with Coke's relationship to the coca trade.

construction of material production infrastructure to non-company owned enterprises. Maywood was critical in securing Coke's coca supplies because of the type of company that it was. A wholesaler servicing other pharmaceutical industries, it was largely invisible to the public. The company made profits from the sale of intermediate products to pharmaceutical distributors, not from the sale of branded products in retail outlets. Maywood could thus distinguish itself from increasingly discredited quack medicine makers who sold directly to consumers. In the early years of the twentieth century, Progressive reformers began to combat the patent medicine industry and called for reforms that would make medical experts the primary dispensers of medicinal products. As a drug wholesaler rather than a brand-name retailer, Maywood could claim that its cocaine would only go into products prescribed by credentialed physicians, the new trusted custodians of professionalized public health.[5]

Maywood thus enjoyed legitimacy as a drug processor that Coca-Cola lacked given the particular socio-political climate of the Progressive Era and could therefore claim the right to import cocaine-containing biota for medicinal purposes. This allowed Maywood to recoup costs associated with the importation and processing of coca leaves through the sale of cocaine to legitimate, state-sanctioned, pharmaceutical buyers.[6]

Coke's coca leaf extract, then, was a byproduct of the wholesale cocaine trade.

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[5] Gootenberg discussed in detail Maywood's operations as they related to the Coca-Cola Company, but he largely saw the two acting as one. As he put it, "in practice," Maywood and Coca-Cola "became indistinguishable." Gootenberg, "Secret Ingredients," 246; For the history of the professionalization of the American medical industry, see Paul Starr, *The Social Transformation of American Medicine* (New York: Basic Books, 1982). Starr chronicles Progressive attacks on patent medicine makers in chapter three, "The Consolidation of Professional Authority, 1850-1930, 127-134. See also Robert Wiebe, "The Fate of the Nation," chapter 4, *The Search for Order 1877-1920* (New York: Hill and Wang, 1967).

[6] Historian Joseph E. Spillane has shown that cocaine "ranked among the top five products of United States pharmaceutical manufacturers" in 1903. Joseph E. Spillane, "Making a Modern Drug: The Manufacture, Sale, and Control of Cocaine in the United States, 1880-1920," *Cocaine: Global Histories*, 21.

Coke did not build the processing plants to decocainize its coca leaves and it did not conduct the day-to-day business of extracting or transporting leaves from Peru. It did not own the coca farms in Peru or hire and manage the labor force that produced the coca leaves. Rather, the company embedded itself in an international drug trade that already existed and purchased spent coca leaves from Maywood once it had been processed in New Jersey.

Coke's relationship with Maywood Chemical Company illustrates how mass-marketing firms externalized extractive operations associated with raw materials tabooed for domestic consumption. Coke needed a purchasing intermediary that could discretely import adequate supplies of coca leaves to meet company requirements, one that could make legitimate claims to state protections. Coca-Cola never sought monopoly control of production facilities because such an undertaking would have dramatically increased company operating costs and potentially exposed the company to consumer attacks for engagement in international drug trafficking.

Lacking ownership of suppliers and thus the ability to control cocaleros selling practices, Coca-Cola needed federal and international governments to create restrictions on trade that would eliminate international coca buyers. Deflated demand was the only way to reduce the price of what economist Oliver E. Williamson would term an ingredient with high "physical asset specificity," that is, a raw material exclusively controlled by a small number of suppliers. Whereas sugar could be purchased from hundreds of producers throughout the tropical world, there were only a few farms in Peru that cultivated the type of coca leaf (Trujillo) that Coca-Cola desired. Though coca production began to spread to Formosa and Java by the 1910s, Coca-Cola executives

consistently stated throughout the twentieth century that Trujillo coca leaves from Peru offered the exclusive flavor profile suited for company products. If enough buyers entered the coca market, Maywood would have to make high bids for Coke's coca supplies.[7]

Coca-Cola needed the state to protect Maywood's trade precisely because the soft drink company did not control the physical enterprises responsible for extracting and processing coca leaves. It could not prevent other companies from making demands on independent coca farmers in Peru by controlling supply because it did not run these Andean plantations. The only way to ensure adequate stocks of coca leaves at low cost was to eliminate purchasing competition. Federal and international counternarcotics policy achieved this objective, providing special exemptions for Coke's coca purchases while restricting access to other potential buyers.

Separation from direct management of the trade was important to Coca-Cola not only because it kept consumers from asking questions about the company's involvements in narcotics trafficking but also because it created a byzantine supply network that discouraged entry of potential Coke competitors. The Narcotics Division of the Treasury Department and later the Federal Bureau of Narcotics (FBN) received frequent requests from Coke's rival soda producers for access to decocainized coca leaf extract, but these federal agencies refused to force Maywood to make its products available to multiple

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[7] In 1931, Coke's legal department claimed that extract from Javan coca leaves did not produce the same taste as extract produced from Trujillo coca leaves and advised against switching to the non-Peruvian variety. Letter from Harold Hirsch to Robert W. Woodruff, Oct 21, 1931, Box 55, Folder 7, RWW Papers, MARBL;
Paul Gootenberg noted Coke's dependence on Peruvian coca in "Secret Ingredients": "Peru held a de facto world monopoly in extract-leaf (but not cocaine-grade coca, which by the 1910s spread to tropical colonies like Java and Formosa). Peru could have steeply increased the costs of making Coca-Cola, particularly in a world formally set on limiting coca crops." Paul Gootenberg, "Secret Ingredients," 252; Oliver E. Williamson, "The Economics of Organization: The Transaction Cost Approach," 555.

buyers. Maywood feared the loss of a major purchasing contract if it violated Coke's exclusivity requirements, so they respected Coca-Cola's s demands for secrecy and denied applicants seeking decocainized coca leaf extract. Maywood's refusal to supply other soft drink firms allowed Coke to eliminate competition without expending capital on buy-outs of other coca-beverage companies.[8]

International counternarcotics policies that restricted trade had adverse economic effects on cocaleros living in Peru. Many farming families entered the business of coca production in the latter-half of the nineteenth century believing that increasing global demand would yield large returns. But as international counternarcotics agencies began to put pressure on the Peruvian government to restrict trade, prices for coca quickly declined. Only in the 1960s when trafficking in coca leaves for illicit cocaine production began to become popular did cocaleros enjoy substantial returns for their investments in coca cultivation, but not all coca-producing families wanted to participate in the illegal trade which often proved dangerous and exploitative. In the latter half of the twentieth century, many cocaleros wanted to revive the international trade in coca and hoped to sell leaves to legal buyers for inclusion in a variety of commercial products, such as tea and flour, but the licit trade was controlled by the state-sponsored monopoly Empresa Nacional de la Coca S.A. (ENACO), the only organization permitted to export coca leaves from Peru. The United States FBN backed ENACO and worked with the American government to achieve counternarcotics objectives and restrict coca production. ENACO capped prices for legal sales and forced producers to sell to the state

[8] As Gootenberg explained, this protection "helped to consolidate Coca-Cola's market hold" on coca beverages in the United States. Paul Gootenberg, "Secret Ingredients," 255.

rather than play potential buyers off one another in a competitive international market. As a result, these farmers were not able to make much money selling to ENACO.

Today, the Centro de Investigación Drogas y DDHH (CIDDH) and other non-profits are fighting US counternarcotics policies that support ENACO's discriminatory policies because it is this extra-state pressure, they argue, that has led to the criminalization of coca leaf trade. They are pushing for a revalorization of the sacred Andean plant that will create new international demand for this Peruvian crop and thus yield rewards for poor farmers in the country. But for now, only a few international buyers enjoy the right to buy coca leaves from ENACO, and thus profits for farmers servicing these buyers are small. Chief among the licit international consumers is the Stepan Chemical Company (formerly Maywood Chemical Company), Coke's present-day supplier.[9]

This chapter examines the making of this trading monopoly that required virtually no vertical or horizontal integration. It treats Coke's involvement in the international coca trade as an example of the company's established practice of externalizing procurement strategies to achieve profitability. The chapter begins with an explanation of why Coca-Cola needed exclusive access to Peruvian coca and why the elimination of competitive buyers was so important to the company. It then examines the creation of the American chemical manufacturing oligopoly that ultimately served Coke's needs. The remainder of the chapter details Coke's efforts to control production systems it did not

[9] This information comes from interviews I conducted with investigators Jérôme Mangelinckx and Ricardo Soberón Garrido at the CIDDH in Lima, Peru, in January of 2012. Mr Soberón was formerly the head of the Peruvian government agency Development of Life Without Drugs (Devida) and had been an aggressive campaigner for coca leaf revalorization initiatives. In part because of his attacks on state policies that limit licit coca leaf production, he was forced to resign from Devida in January of 2012.

own with the help of state agencies and private sector partners that eliminated buying competition.

Why Coca-Cola Needed a Monopsony

A major impetus for the expansion of coca production came from the pharmaceutical industry after German scientists discovered that the alkaloid could be used as a local anesthetic in the 1880s. In 1884, using cocaine isolated by the German-owned pharmaceutical company Merck— the only international corporation at the time that owned the technology to isolate the stimulating alkaloid from coca leaves—German physician Karl Köller showed that cocaine could be used as an anesthetizing agent while performing eye surgery on a patient. Following Köller's discovery, interest in cocaine began to spread rapidly within the medical community. Citing Köller's experiment, the *American Druggist* reported in June of 1885, "Coca leaves and Cocaine—are undoubtedly the lions of the day, no other drug having caused such a stir, professionally or commercially, for many years past."[10]

Before Koller's discovery, only Merck of Damstadt in Germany processed coca leaves for cocaine, but after 1887, a host of new chemical processing companies in the United States and Europe began to take interest in the coca trade. The entry of Parke-Davis, New York Quinine, Mallinckrodt, and other similar companies made cocaine available in larger quantities, and wholesale prices for the narcotic dropped from over

[10] "Coca: Historical Notes," *The American Druggist*, May, 1886, 87, Box 11, Folder 1, Mark Pendergrast Research Files, MARBL; Richard Ashley, *Cocaine: Its History, Uses, and Effects* (New York: Warner Books, 1975), 18; Paul Gootenberg, *Cocaine Global Histories*, 22-23; Joseph F. Spillane, *Cocaine: From Medical Marvel to Modern Menace in the United States, 1884-1920* (Baltimore: Johns Hopkins University Press, 2000), 43; "Coca Leaves and Cocaine," *American Druggist*, June, 1885, 109, Box 11, Folder 1, Mark Pendergrast Research Files, MARBL.

$10 dollars a gram in 1884 to just 25 cents per gram by the time Coca-Cola first appeared in Atlanta soda fountains in 1886. In the United States, federal trade policy further stimulated the growth of domestic cocaine manufacturing. The tariff of 1896 placed high import duties on cocaine entering the country while reducing the impost on raw coca leaves needed for domestic narcotic production. Shielded from international competitors, American chemical processing companies expanded their cocaine production in the 1880s and 1890s.[11]

Andean cocaine manufacturers encouraged the expansion of coca production believing the commodity trade could lead to the modernization of South American polities. Paul Gootenberg focused on supply-side initiatives that shaped the global coca market in his book *Andean Cocaine: The Making of a Global Drug*. He highlighted the promotional campaign of Peruvian scientists such as Alfredo Bignon, who pushed for the construction of cocaine manufacturing infrastructure in Peru during the 1880s. In Gootenberg's telling, Bignon and other Peruvian scientists helped reclaim coca from its degraded cultural status as a "colonial pariah habit of backward and remote Indians," heralding the tropical leaf as an instrument of modernization. These Peruvian nationalists believed that the production of crude cocaine for international pharmaceutical companies could help bring cutting-edge industry into remote corners of the Amazon. According to Gootenberg, international markets for consumer products containing coca would not have matured "without a dynamic response by Andeans, from the Peruvian planters and peasants who planted tended, and expanded coca fields in remote tropical valleys to the

[11] Joseph Spillane, ""Making a Modern Drug," 22: David F. Musto, "Illicit Price of Cocaine in Two Eras: 1908-14 and 1982-89," *Pharmacy in History* 33 (1991), 5; Paul Gootenberg, "Reluctance and Resistance," 50.

pharmacy and factory entrepreneurs who built a new industry from scratch after 1885 to supply locally developed crude cocaine to overseas drug magnates like Merck."[12]

Patent medicine makers in Europe and the United States contributed to the exploding demand for coca leaves in the final decades of the nineteenth century as well. The pioneer in the coca-beverage market was a Corsican chemist named Angelo Mariani who in the 1860s created "Vin Mariani," a concoction containing wine mixed with coca leaf extracts. Mariani's beverage soon gained international appeal and sparked imitation in Europe and the United States. In Atlanta, Georgia, pharmacist John Pemberton took stock of Vin Mariani's popularity and decided to make his own version for an American market in 1886. As prohibition set in throughout the South, Pemberton was forced to create a non-alcoholic version of the beverage. Replacing wine with carbonated water, Pemberton's Wine of Coca became Coca-Cola in April of 1886.[13]

Coke and Vin Mariani were small commercial buyers among many enterprises interested in acquiring coca leaves from Andean suppliers in the late nineteenth century. As Paul Gootenberg noted, "a vibrant international market . . . emerged in coca beverages, tonics, medicinal tinctures, cordials, cigarettes, and the like" in the Gilded Age. A host of new companies hoped to make a profit on the new coca-cocaine craze endorsed by such popular luminaries of the time as Sigmund Freud and Pope Leo XIII. Coke was a marginal contributor to a coca trade that included many commercial buyers.[14]

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[12] Paul Gootenberg, *Andean Cocaine*, 62. For a discussion of Bignon's and other Peruvian nationalists' contributions to the construction of a cocaine industry in Peru in the late-nineteenth century, see chapter 1, "Imagining Coca, Discovering Cocaine, 1850-1890" in *Andean Cocaine*.

[13] Commenting on the popularity of Vin Mariani in 1885, the *American Druggist* reported, "The marked attention now paid by physicians to coca, cocaine, etc, as therapeutic agents of a very high order would alone justify us in referring our readers to the preparation of Erythroxylon Coca, now so widely and favorably known as 'Vin Mariani.'" "Erythroxylon Coca," *American Druggist*, July, 1885, 39, Box 11, Folder 1, Mark Pendergrast Research Files, MARBL.

[14] Paul Gootenberg, *Andean Cocaine*, 23, 60; Mark Pendergrast, *For God, Country and Coca-Cola*, 23.

Fueled by both exponential growth in international demand and nationalist development policy within coca-producing polities, coca cultivation exploded in the late-nineteenth century. Angelo Mariani commented on this trend in 1896: "For some time, as a result of the extended consumption of Coca and for a still stronger reason, now that the day is at hand when the consumption of Coca will assume greater proportions, numerous plantations of Coca trees have been laid out in regions where that shrub was formerly unknown." Dr. W. Golden Mortimer, author of *History of Coca, "The Divine Plant of the Incas* (1901) echoed Mariani's claims, commenting on the large scale cultivation of coca at the turn of the century, explaining that the "shrubs are found scattered along the entire eastern curve of the Andes, from the Straits of Magellan to the borders of the Caribbean Sea," adding, "Throughout this extent there are to be seen large plantations and many smaller patches where Coca is raised." According to historian Joseph E. Spillane, the global cocaine supply for licit consumption increased by over 700 percent between 1890 and 1902 with Peru leading world export in both coca leaf and crude cocaine production.[15]

The global popularity of coca, however, posed a serious threat to Coke's future profitability. As early as 1886, Pemberton had expressed concern about the company's ability to procure adequate quantities of coca leaves if too many buyers entered the international market. He wrote to the *Atlanta Constitution* in 1885 and argued, "The greatest misfortune that can ever arise, in regard to the coca question is that we may not be able to get sufficient supplies for all when once its great properties are known to the people." The Coca-Cola Company considered Trujillo leaves cultivated in Peru to be the

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[15] Angelo Mariani, *Coca and Its Therapeutic Application,* 3rd ed. (New York: J. N. Jaros, 1896), 13; W. Golden Mortimer, *Peru: History of Coca, "The Divine Plant of the Incas,"* (New York: J. H. Vail & Company, 1901), 234; Joseph E. Spillane, "Making a Modern Drug," 21.

only variety of coca suitable for company beverage flavoring extract and was therefore unable to consider other coca plantations viable sources of supply. As a result, the company feared that the multiplication of potential clients making claim on Trujillo leaves might force production to fall behind demand.[16]

Coke did not own coca plantations in Peru and therefore could not limit the issuance of coca purchasing contracts to other companies. In addition, Coke had to accept prices generated by Trujillo producers because these Andean farmers were the only producers of the type of coca leaf the company desired. This made coca different than other commodities Coke purchased. Coke acquired its caffeine and sugar from multiple producers and relied on inter-firm competition to help keep costs down. But coca suppliers in the Utuzco province of Peru, who enjoyed exclusive control of Trujillo coca production, were free to serve buyers at the highest bidding price, a price that was bound to rise if new buyers continued to increase demand.

The consolidation of the United States chemical manufacturing industry at the turn of the century, a monopoly construction facilitated by aggressive state interventions, offered Coca-Cola the relief it needed from coca-purchasing competitors. In the first two decades of the twentieth century, the United States government passed a series of counternarcotics measures that dramatically reduced the number of American firms licensed to import and process coca leaves. At the same time, international regulatory commissions backed by federal counternarcotics agencies imposed restrictions on coca use outside the United States. Coca-Cola was not the lone or even primary architect of this counternarcotics system, but it nonetheless exploited the state-sanctioned arrangement to achieve supply-side security in the early twentieth century.

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[16] "Wonderful Coca," *Atlanta Constitution*, June 21, 1885, 8.

The State, the Consolidation of the American Chemical Industry, and Coke's Coca Use Exemptions

Most corporate histories of international monopoly creation during the Progressive Era detail the strategies big businesses employed to acquire sole ownership of production facilities. In these narratives, American Sugar Refining Company, United Fruit and other fully-integrated firms became powerful by purchasing suppliers and thereby gaining exclusive access to vital resources necessary for commercial growth. The key to monopoly success was the successful integration of mass production and mass distribution within one megafirm.

The story of Coca-Cola's coca trade dominance is different because it begins with the creation of a monopoly that the company did not engineer. Coke never took over ownership of suppliers in Peru. Rather, it benefited from federal and international regulations that prevented potential commercial coca buyers from gaining access to Peruvian supplies.

The construction of this counternarcotics system began at the local level in the United States and involved Progressive reformers who were interested in restricting the consumption of cocaine, a drug now considered addictive and harmful to human health. At the turn of the century, local and state legislatures began to ban cocaine traffic in the United States. Throughout the nation, and especially in the South, state prohibition of cocaine use and distribution grew out of segregationists' fears that the drug was responsible for stimulating growth in black crime. The *New York Times* reported in June of 1903 that "cocaine sniffing" was "increasing among negroes of the South," arguing

that the drug "habit is growing with wonderful rapidity, and its evil effects are being seen in all the towns and cities of the Southern States." Playing up racist fears, Georgia legislators outlawed the distribution of cocaine within state borders in 1902.[17]

In light of the state ban on cocaine, Coke President Asa Candler decided to remove all traces of cocaine in his formula. He insisted, however, that the formula contain decocainized coca leaf extract so as not to alter the flavor profile of the company's finished product. In an attempt to distance Coke from any association with the cocaine industry, the company decided to rely on an outside chemical firm, Schaeffer Alkaloid Works of Maywood, New Jersey, (later Maywood Chemical Works) to manufacture this decocainized extract.[18]

The anti-cocaine agitation that played out in local assembly halls all across the country began to find expression in federal legislation beginning with the Pure Food and Drug Act of 1906, which required all products containing cocaine to say so on product packaging. Strict federal restrictions on imports and use of coca, however, did not occur until after the passage of the Harrison Narcotics Act of 1914, which, among other measures, restricted the use of cocaine to prescribed medicines. The act created the Federal Narcotics Control Board and the Narcotic Division within the Department of Treasury and assigned these agencies the responsibility of monitoring the cocaine trade. The Jones-Miller Import and Export Act of 1922 further reduced demand by officially

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[17] Michael M. Cohen discusses the racial fears that led to cocaine bans throughout the American South in "Jim Crow's Drug War: Race, Coca Cola, and the Southern Origins of Drug Prohibition," *Southern Cultures* 12, no. 3 (Fall 2006), 55-79; "Cocaine Sniffers: Use of the Drug Increasing Among Negroes of the South," *New York Times*, June 21, 1903, p. 11, Box 11, Folder 2, Mark Pendergrast Research Files, Emory MARBL.

[18] Cocaine, How Sold, H. B. 92-99, No. 61, 1902, Box 11, Folder 2, Mark Pendergrast Research Files, MARBL.

closing off importation of coca leaves into the United States except for distribution to select licensed cocaine manufacturers.[19]

The United States government's interventions gave fuel to international counternarcotics initiatives that also curbed global coca demand. By the turn of the century, the United States had become a major player in the international coca trade, importing over 800,000 pounds of coca leaves in 1901 alone, and as such, it held considerable sway in shaping international coca regulation as directed by extra-state institutions, such as the International Opium Convention, the League of Nations Opium Advisory Board, and later the United Nations. The United States government initiated the International Opium Commission in 1909, the first global governing body to address global counternarcotics issues, and served a leading role in the International Opium Convention at the Hague in 1912, which resulted in the signing of the first international treaty to control the manufacturing and trade of cocaine. This agreement, which was amended and expanded to include more nations at subsequent meetings in 1913 and 1914, did not establish effective punitive measures designed to reduce coca consumption, but it did provide the initial legal infrastructure for an international anti-cocaine crusade that over the next three decades would delegitimize the non-medicinal use of products derived from coca leaves and significantly reduce the number of cocaine manufacturers operating around the world.[20]

What had once been a vibrant international coca trade featuring multiple commercial buyers became by the early 1920s a restricted commercial environment dominated by a few chemical processors. The federal government sanctioned just two

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[19] For an excellent summary of this history, see chapter 5 "Anticocaine: From Reluctance to Global Prohibitions, 1910-1950," in *Andean Cocaine*, 189-244.
[20] Paul Gootenberg, "Reluctance to Resistance?" 48; Paul Gootenberg, *Andean Cocaine*, 206-207.

companies to bring coca leaves in the United States after the passage of the Jones-Miller Act in 1922, Merck of Rahway, New Jersey, and Maywood Chemical Works.[21]

This consolidation in the United States came about not because private interests captured federal narcotics agencies and forced them to do their bidding, but rather because the state actively pursued the construction of a monopoly to achieve its regulatory objectives. The federal government needed to simplify oversight of coca imports into the United States. Explaining the government's motivation for the consolidation of the chemical manufacturing industry in the first two decades of the twentieth century, Paul Gootenberg argued, "Not only was it far simpler for United States treasury officials to monitor a clutch of highly cooperative corporations (rather than scores of patent medicine men or thousands of dentists), but, after 1922, the Jones--Miller Narcotic Drugs Import and Export Act institutionalized this controlled structure of trade, by permitting only easily monitored bulk imports of coca."[22]

In an era dominated by so-called "trust busters," such as Teddy Roosevelt, William Howard Taft, and Woodrow Wilson, the federal government sanctioned the consolidation of the United States chemical industry in an attempt to protect American citizens from the importation of products perceived to be a threat to public health. Confirming what scholars such as Gabriel Kolko, Thomas McCraw, Martin Sklar, and James Weinstein have illustrated, the story of government counternarcotics regulation in

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[21] Paul Gootenberg, "Secret Ingredients," 255. Schaeffer Alkaloid Works was one of many chemical firms bringing in coca leaves into the United States at the turn of the century. In the late-nineteenth century, the federal government permitted small businesses like the Coca-Cola Company to import coca leaves directly from South American providers, and there were at least five major chemical processing firms importing coca leaves into the United States on a regular basis. In Germany, there were roughly fifteen firms engaged in cocaine manufacturing and distribution. Paul Gootenberg, *Andean Cocaine*, 109, 121.

[22] Paul Gootenberg, "Reluctance to Resistance?" 50. In speaking of state demands for regulatory legibility, I am drawing on James Scott, *Seeing Like A State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998).

the early twentieth century shows how Progressive reforms often aided monopolistic growth rather than hindered big business formation.[23]

During the debate over the Harrison Act and subsequent counternarcotics legislation, Coca-Cola did not seek state protections that would allow it to become a licensed importer of coca leaves in competition with Merck and Maywood. Coca-Cola wanted to remain separated from direct involvement in this trade, but in order to remain a third party buyer, the company had to put pressure on federal legislators to create legal exemptions permitting the company to use spent leaves from Maywood for the production of Merchandise #5. Eugene Brokmeyer of the National Association of Retail Druggists headed Coke's lobbying effort to include special exemptions for decocainzed coca leaf in the Harrison Act of 1914. The result was section 6 of the counternarcotics legislation and a clause that explicitly sanctioned the use of "de-cocainized coca leaves or preparations made therefrom, or to any other preparations of coca leaves that do not contain cocaine." This section of the law earned the title the "Coca-Cola joker" by anti-narcotics officials who recognized the exemption as the direct result of Coke lobbying. The Jones-Miller Act of 1922, the Porter Act of 1930, and subsequent legislation that expanded and amended the Harrison Act preserved this special exemption for Coke, and to this day, decocainized coca leaf extract is still available for purchase in the United States.[24]

Maywood benefited from the "Coca-Cola joker" because it created a market for a substance that had once been a waste byproduct of the cocaine manufacturing process.

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[23] Gabriel Kolko, *The Triumph of Conservatism*; Thomas K. McCraw, *Prophets of Regulation*; Martin J. Sklar, *The Corporate Reconstruction of American Capitalism, 1890-1916*; James Weinstein, *The Corporate Ideal in the Liberal State, 1900-1918*.

[24] Memorandum from Harold Hirsch to R. W. Woodruff, October 21, 1931, Box 55, Folder 7, RWW Papers, MARBL; Paul Gootenberg, "Secret Ingredients," 242.

The company continued to sell cocaine at great profit to pharmaceutical companies licensed to sell cocaine for "medicinal or scientific purposes" while making additional revenue from the sale of processed waste leaves to Coke. For the next several decades, the sale of decocainized coca leaf extract to Coke would remain a major source of revenue for the Maywood Chemical Works.[25]

But the law did not prohibit Maywood from selling decocainized coca leaves to alternate buyers, and this presented a potential problem for Coca-Cola. By the 1930s, Coke's coca leaf demands had risen dramatically and securing adequate supplies of raw materials became a major concern for company boss Robert Woodruff. In order to keep costs down, Coke had to ensure that Maywood did not extend new contracts to potential soft drink competitors.

How Coca-Cola Avoided Costly Competitor Buy-Outs in the 1930s

By 1930, Coca-Cola required over 200,000 pounds of coca leaves annually to make enough Merchandise #5 to meet growing demand for Coke's beverage products, more leaves than the Maywood Chemical Works needed to produce medicinal cocaine for its buyers. Maywood did not have permission from the federal government to import the quantity of coca leaves needed to meet Coke's demands. Coke was having trouble keeping up with increased gallon sales. The problem was exacerbated by the fact that Coke did not carry large reserves of Merchandise #5 to cover the company during period of shortages. With inventories dwindling, company syrup manufacturers predicted that

[25] Transcript of Testimony at 1296, *U.S. vs. Forty Barrels and Twenty Kegs of Coca-Cola*, 191 F. 431 (E.D. Tenn. 1911), Box 7, Record Group 21, National Archives Southeast Region, Morrow, Georgia.

they would run out of sufficient supplies of decocainized coca leaf extract by February 1, 1930.[26]

The fear of liquidating company extract inventories led the Coca-Cola Company and Maywood Chemical Works to explore the development of a Merchandise #5 production facility in South America. By 1928, they had constructed a plant under Maywood's name in Callao, Peru. That year the plant successfully produced over 4,000 lbs of coca leaf extract for Coca-Cola and 18 kilos of cocaine as a byproduct. Operating outside of federal narcotics oversight, Coke official Claude Gortatowsky believed the Peruvian plant could sell its cocaine to commercial buyers, which it did for over $1,000, but the State Department soon began to express concern about the plant's potential to increase supplies of cocaine on the international market. Recognizing the company had come perilously close to jeopardizing its state-sanctioned monopsony on coca purchases, Maywood and Coca-Cola abandoned the experimental plant by 1933 and never attempted to reopen it.[27]

Coca-Cola still needed an expanded source of supply, and rather than invest in expanding production facilities overseas, the company sought relief under the Porter Act of 1930. The new counternarcotics law created the Federal Bureau of Narcotics within the Department of Treasury and permitted the agency to expand Maywood's coca import quota to include "special leaves" specifically reserved for the production of coca leaf extract for beverage companies. Cocaine generated in the process of decocainizing the

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[26] Mark Pendergrast, *For God, Country, and Coca-Cola*, 188; Frederick Allen, *Secret Formula*, 194; For statistics on typical coca inventory practices, see Ralph Hayes to William J. Hobbs, July 24, 1946, Box 55, Folder 7, RWW Papers, MARBL.

[27] Paul Gootenberg, *Andean Cocaine*, 223. Paul Gootenberg, "Secret Ingredients," 248, 252; Frederick Allen, *Secret Formula*, 193; Undated Memorandum, "Preliminary History," Subject Files Related to the Control of Narcotics Traffic, 1903-1955, Box 4, Record Group 59, General Records of the Department of State, NARA II.

leaves had to be destroyed under supervision of FBN inspectors that would be stationed at the New Jersey plant at taxpayer expense. The arrangement was not ideal because it required Coca-Cola to take on additional costs once covered by the sale of cocaine to Maywood's clients. Coke now had to pay additional transportation and impost costs, as well as a higher decocainizing processing fee. All told, the company estimated it had to pay approximately 35 cents more per pound of coca leaves imported for the Merchandise #5 it needed, but the increase seemed a modest investment compared to the possibility of supply shortages.[28]

The state had once again intervened on Coke's behalf to help the company secure decocainized coca leaf extract. Paul Gootenberg found that special leaf imports into the United States exploded from just 98,486 in 1931 to over 290,000 in 1941, dwarfing medicinal imports that amounted to just 89,849 that year. Maywood's Merchandise #5 business became an increasingly important component of the chemical company's operations, although cocaine sales from processed medicinal leaves still helped generate revenue for the company.[29]

The problem of importation had been largely resolved, but questions remained about domestic competition for Maywood's finished product. Once coca leaves had been decocainized in New Jersey and the resulting cocaine shipped off to licensed buyers or burned at Coke's expense, the federal narcotics agencies did not regulate distribution of decocainized coca leaf extract to third party consumers, and there was no law that prevented small businesses from bidding for Maywood's decocainized coca leaf extract.

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[28] Frederick Allen, *Secret Formula*, 196; W. P. Heath to Harold Hirsch, October 30, 1931, Box 55, Folder 7, RWW Papers, MARBL.
[29] Paul Gootenberg, *Andean Cocaine*, 203.

Coke worried that a host of competitors would drive up the price of Merchandise #5 or place new demands on a circumscribed source of supply.

Company executive Ralph Hayes expressed his concern to Robert Woodruff early in 1936. He explained that Maywood's Vice President, Marion J. Hartung, had contacted him and indicated that "the pressure on Washington was heavy to prevent applicants other than ourselves from being shut out from a source of supply of extract." According to Hayes, the Federal Bureau of Narcotics had received multiple petitions from the Better Kola Company, among others, requesting the agency to force Maywood to provide them with Coke's coca leaf extract. Maywood appeared amenable to the idea of extending a contract to Better Kola and asked the Coca-Cola Company whether there would be any objections to servicing other buyers. Maywood proposed two solutions. In order to prevent a flood of new buyers from requesting Merchandise #5, Maywood could sell coca leaf extract to select companies through a wholesale intermediary such as Schieffelin & Company. Alternatively, the company could process small quantities for Merck, which would then in turn supply specific soft drink companies.[30]

Coke rejected these options on the grounds that the move would diminish the company's brand strength. Hayes explained, "The important factor, from the viewpoint of the other applicant, was that he secure an extract from the same source that produced ours and that such identity of source would be emphasized in the trade even through the distribution took place through some circuitous channel." A competitor with access to Maywood's product would undoubtedly "say in the trade that it was procuring this extract from the same source as we did with the possible implication that the two products were made from the same source." The material essence that decocainized coca

[30] Ralph Hayes to Robert W. Woodruff, March 19, 1936, Box 55, Folder 7, RWW Papers, MARBL.

leaf extract might offer a potential beverage competitor was clearly of secondary importance to Hayes. What the company wanted was exclusive access to an exotic ingredient because they believed it increased the value of their trademark.[31]

The Federal Bureau of Narcotics did not force Maywood to sell to Coke's competitors. When beverage companies wrote to the FBN to learn more about Maywood's operations, the agency responded with stock letters to a host of applicants, including RC Cola, Hoffman Beverage Company, Great Bear Water Company, the National Fruit Flavor Company, and many others, in which they declared, "The further processing or extraction of any non-narcotic alkaloids from these decocainized leaves is not under the jurisdiction of this Bureau." If these companies wanted to learn more about procurement possibilities they should contact the two companies licensed to distribute this product, Maywood and Merck.[32]

Coca-Cola gave Maywood a strong incentive not to accept future contracts from other companies. In March of 1936, Hayes wrote to Hartung explaining that Maywood's acceptance of competing contracts might force Coca-Cola to seek a new supplier. Hayes told Hartung that Coke "would be willing to negotiate an extension of" the company's established contract with Maywood, but "if circumstances were so to change as to make us one of a number of purchasers of extract from the present source, we would have freedom of discretion to consider the utilization of an alternative source ourselves." Coke leveraged its unmatched purchasing power to force Maywood to deny future

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[31] Ibid.; Ralph Hayes to Robert W. Woodruff, February 18, 1936, Box 55, Folder 7, RWW Papers, MARBL.

[32] The FBN's language comes directly from a letter from George Gaffney, Acting Commissioner of Narcotics in the Federal Bureau of Narcotics to Nolan Murrah, Royal Crown Cola Company, October 20, 1964, Box 63 (old box #19), Record Group 170, NARA II; Memorandum from Ralph Hayes, July 9, 1936, Box 55, Folder 7, RWW Papers, MARBL; Paul Gootenberg, "Secret Ingredients," 255.

applicants access to decocainized coca leaf extract. The loss of Coca-Cola's massive contract would have seriously reduced Maywood's profitability. It was a risk Maywood was not willing to take. The company rejected petitions from all other companies seeking access to Coke's supply.[33]

Coke was such a big client for Maywood that Hartung believed Coke might be interested in owning the chemical company's facilities in New Jersey, a deal he proposed in 1936. Coke flatly refused the offer. When Hayes mentioned the idea to company attorneys, the Legal Department wrote back "We should be more interested in seeing the plant in good hands than in owning." Coke did not want to assume the risks and liabilities associated with direct management of Merchandise #5 production. In refusing another Maywood proposal for merger in 1958, Coca-Cola Vice President Benjamin Oehlert argued that ownership of coca production facilities, "would violate our general policy of nonproduction of ingredients." He praised the company's historic partnership with Maywood as "highly satisfactory in that they have done a most commendable job in terms of raw material acquisition, maintenance of exclusivity, maintenance of formula and process secrecy, conduct of delicate government relationships here and abroad, and mutually agreeable pricing arrangements." For Oehlert, ownership "might raise troublesome problems of public relations," problems the company had successfully avoided as a third-party buyer of decocainized coca leaves. Protection of the company's goodwill was a paramount concern of company officials, and executives believed that

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[33]Coke's Legal Department supported Hayes strategy, saying, "This idea is good," in internal correspondence. Ralph Hayes to Robert W. Woodruff, March 19, 1936, Box 55, Folder 7, RWW Papers, MARBL. In the1940s, the company issued a brief on company policies to Coke officials in which it stated that the company never "used our volume and power to force unfair advantage or exclusive rights," but in the 1930s, it clearly did just that to preserve exclusive access to Maywood's coca leaf extract. "Outline of Brief on Company Policies," 1939, Box 56, Folder 9, RWW Papers, MARBL.

public awareness about Coke's links to the international coca trade might threaten consumer acceptance of their products.[34]

Coke wanted exclusive access to decocainized coca leaf extract but not at the expense of exposing the company to attacks that it was involved in the international narcotics industry. Coke had expressed this policy objective to commissioner Anslinger in 1937 when the FBN suggested the creation of a regulatory commission to oversee the export of Merchandise #5 to Coke plants outside the United States. Anslinger had proposed this initiative to protect Coke from pending revisions to federal narcotics policy that would have banned the sale of Merchandise #5 to international distribution facilities, a proposed amendment to the Jones-Miller Import and Export Act of 1922 that ultimately failed. Coke had balked at the measure because they believed the Coca-Cola Company "would possibly be grouped, as beneficiaries of the amendment, with some manufacturers of, let us say, 'innocuous narcotic' substances." Coke valued the obfuscation Maywood provided and remained committed to a policy of non-ownership of coca processing facilities.[35]

But the fear of supply shortages kept the Coca-Cola Company involved in production decisions at Maywood, and in the 1940s and 1950s, the beverage company once again partnered with the chemical company to develop experimental coca projects abroad designed to increase the productive capacity of their chief extract provider. New concerns surfaced about international narcotics regulation and potential restrictions on coca production in South America. Coke wanted to develop a new type of coca plant,

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[34] Ralph Hayes to Robert W. Woodruff, March 19, 1936, Box 55, Folder 7, RWW Papers, MARBL; Confidential Memorandum from Oehlert to Talley, October 17, 1958, Box 242, Folder 5, RWW Papers, MARBL.

[35] Memorandum from Ralph Hayes to John Sibley, March 20, 1937, Box 53, Folder 5, RWW Papers, MARBL; Mark Pendergrast, *For God, Country, and Coca-Cola*, 188.

one that would be narcotic-free and could grow on US soil. It set out to achieve this goal with Maywood.

Natural Deterrents to Mass Production Internalization

By the mid 1940s, the Coca-Cola Company became concerned that the newly created United Nations Commission on Narcotic Drugs would impose restrictions on coca cultivation that might hamper Merchandise #5 production. As an initial response to the problem, the company had worked with Maywood to produce a new version of Merchandise #5 that required significantly less coca leaves, but the company still required large supplies from Peru and feared future UN controls.

More distressing was a new effort on behalf of the Peruvian government to take over management of coca production within its borders. Paz Soldán, editor of the influential medical reform journal *La Reforma Médica* and former Sub-Director of the Pan-American Sanitary Union, led a campaign to end the international community's meddling in the Andean coca trade beginning in the 1930s. He pushed for a new state-run organization that would purchase coca from Peruvian producers and manage sales to international buyers abroad. In 1949, Soldán's vision became a reality when the government passed Peruvian Decree-Law No. 11406, which created a government monopoly, Estanco (later the National Coca Enterprise or ENACO), which would control all aspects of the domestic distribution and export trade of Peruvian coca.[36]

Coke believed that the entry of new state institutions and international counternarcotics agencies whose future agendas were difficult to predict might jeopardize

[36] See Paul Gootenberg's discussion of Soldán in *Cocaine: Global Histories*, 52-63; Paul Gootenberg, "Secret Ingredients," 253-254, 258-259; Paul Gootenberg, *Andean Cocaine*, 240.

the company's ability to control agricultural production in South America. Benjamin Oehlert expressed this sentiment in a company memorandum in February of 1948, just months before the official announcement about Estanco. He disliked the renewed attention "being given by governments and by the United Nations to narcotics problems" and predicted "that it is entirely within the realm of possibility that the cultivation and harvesting of coca leaves might be banned in Peru and elsewhere in the world" in the not too distant future. "Such a development," Oehlert continued, "could have such drastic results to the Coca-Cola Company as practically to destroy it, regardless of the actual physical importance of coca extracts."[37]

New changes to international counternarcotics policy also scared Coke officials. By 1961, the United Nations had organized the Single Convention on Narcotic Drugs to discuss growing international concerns about domestic consumption of coca in South America and the illicit international cocaine trade. According to the UN, one of the "original objectives of the 1961 Convention was to limit coca bush cultivation and coca leaf production to amounts needed for legitimate purposes."[38] If the Convention took too harsh a stand on coca eradication programs in Latin America, Coca-Cola's trade with its Peruvian provider might be threatened. Thus, as Gootenberg points out, Coca-Cola and the Stepan Company sent multiple representatives to the Convention (Stepan executive Marion Hartung and Ralph Hayes, among others). In the end, these company lobbyists along with US diplomats "were able to attain global recognition of the 'Coca-Cola joker' that had fired critics of the Harrison Act in 1914," but Coke remained concerned that

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[37] Memorandum from Benjamin Oehlert to W. J. Hobbs, Robert W. Woodruff, Harrison Jones, and Pope F. Brock, February 27, 1948, Box 242, Folder 4, RWW Papers, MARBL.

[38] United Nations International Narcotics Control Board, *Effectiveness of the International Drug Control Treaties: Supplement to the Report of the International Narcotics Control Board for 1994* (New York: United Nations, 1995), 11.

heightened fears about the cocaine trade might affect their ability to acquire coca in the years to come.[39]

In light of growing anti-cocaine agitation, Benjamin Oehlert proposed a solution that involved the company becoming more involved in biotechnological research and development projects. He recommended that "a reasonably substantial sum of money be appropriated each year, for as long as may be necessary . . . to try and develop a strain of coca plants whose leaves would have the flavor qualities we desire without any cocaine or other narcotics." For Oehlert, the "possibilities in the light of the importance of the venture seem to me to completely justify substantial expenditures."[40]

This was not the first time Coke had tried to find alternatives to Peruvian sources of supply. As early as the 1930s, Coca-Cola had experimented with production of Merchandise #5 from coca leaves other than the Trujillo variety. Ralph Hayes wrote to Woodruff in the spring of 1937 to suggest a potential switch to Brazilian coca leaf to ameliorate predicted shortages, saying, it would be "advantageous to know whether we are limited to one satisfactory source or have a serviceable alternative." But as with coca leaves produced in Java, the company ultimately concluded that the flavor profile of Brazilian leaves did not match that provided by Trujillo leaves.[41]

Initial experiments to isolate a cocaine-less variety of coca in the 1950s proved fruitless. Little is know about these projects because they were conducted in secrecy by Maywood, but Hayes reported in 1959 that they had not been satisfactory to meet Coke's needs. He explained that "Maywood's experimentation at our request a couple of years

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[39] Paul Gootenberg, "Secret Ingredients: The Politics of Coca in US-Peruvian Relations, 1915-65," 260.
[40] Memorandum from Benjamin Oehlert to W. J. Hobbs, Robert W. Woodruff, Harrison Jones, and Pope F. Brock, February 27, 1948, Box 242, Folder 4, RWW Papers, MARBL.
[41] Memorandum from Ralph Hayes to Robert W. Woodruff, April 2, 1937, Box 55, Folder 7, RWW Papers, MARBL.

ago to find an alternative for the tabooed component was less than successful, both because the resultant product was sub-standard and because, even if it were not, the compositional change might have left us vulnerable to essentially the same objection that we were trying to obviate," namely that raw materials needed for Merchandise #5 production contained cocaine. Nonetheless, Hayes urged Coke to continue financing Maywood's operations: "My layman's notion is that if the chance of success were even half what it is, we ought to keep the scientists at work."[42]

By the early 1960s, Coca-Cola pushed the Stepan Chemical Company, now the parent company overseeing Maywood Chemcial Works operations, to renew its commitment to discover a cocaine-less coca variety, this time proposing the construction of an experimental coca plantation on US soil. The Coca-Cola Company had begun discussions with the FBN about this potential project in the fall of 1962. Ralph Hayes corresponded with narcotics commissioner Henry Giordano in October and suggested that the Virgin Islands might provide a suitable site for the operation. Hayes argued that by comparing coca crops in the Virgin Islands with crops in Peru the company might be able to "learn something of the combination of soil, altitude, moisture, temperature, fertilizing, etc. that is conducive to the growth of leaves high in flavor elements and, hopefully, low in alkaloidal content."[43]

Coke's proposal intrigued the FBN because of its potential contributions to US counternarcotics initiatives. John Maher of the Bureau of Narcotics supported the initiative and argued that altering "the alkaloidal content of the coca plant would certainly be a note-worthy project and if successful a meritorious contribution . . . to the

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[42] Ralph Hayes to Clifford Schillinglaw, January 12, 1959, Box 138, Folder 6, RWW Papers, MARBL.
[43] Ralph Hayes to Henry L. Giordano, Commissioner of the Bureau of Narcotics, October 10, 1962, Box 63 (old box # 19), Record Group 170, NARA II; Paul Gootenberg, "Secret Ingredients," 262-264.

sciences."[44] Commissioner Giordano also approved Coke's appeals, and by the spring of 1963, Coca-Cola began to negotiate with the federal government to move forward with the operation. In April, Ralph Hayes contacted Giordano and explained that the Virgin Islands would not be ideal for growing coca, requesting that the Hawaiian island of Kauai serve as the base for future experiments.[45]

Coke did not want to take over direct management of the experimental site in Hawaii for fear that such involvement would tarnish the company's brand image. In keeping with company policy to remain disconnected from ownership and operation of ingredient production facilities, the Coca-Cola Company enrolled both public and private sector partners to provide the manpower and infrastructure needed to grow coca in Hawaii.

The proposed contract for what would become known as the "Alakea project" specifically stipulated that Coca-Cola not be listed as a contributor to the research initiative in Kauai. William Tollenger, narcotic agent for the Honolulu Branch of the Federal Bureau of Narcotics and one of the key state officials in charge of overseeing the Alakea project, explained that the Tropical Agricultural Department of the University of Hawaii would direct the operation. Tollenger noted that funding for all research would come directly from the Maywood Chemical Works Division of the Stepan Company "so that the name of the Coca-Cola Company is not generally associated with the coca

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[44] John T. Maher to Henry L. Giordano, October 19, 1962, Box 63 (old box # 19), RG 170, NARA II.

[45] Hawaii had just become a state in 1959. Many of the state officials who took part in the development of Coke's coca project certainly had to consider how the project might affect their political careers in a state in which political alliances were yet fragile and unstable; Explaining the reasoning behind the proposed relocation of the experimental coca fields, Hayes argued that "the factor of altitude (or lack of it) can better be assayed" in Hawaii than in the Virgin Islands. Ralph Hayes to Henry Giordano, October 16, 1962, Box 63 (old box #19), RG 170, NARA II.

leaf."[46] The federal government had its own reasons for supporting nondisclosure. Because federal law did not outlaw the cultivation of coca leaves on US soil in 1963, the Bureau was concerned that the Alakea project might foster imitation. Commissioner Giordano even argued that if the Hawaiian experiment proved successful, the federal government should develop a new law that would specifically ban the cultivation of coca in the United States, except, of course, for research purposes.[47]

In Honolulu, University of Hawaii officials were dissatisfied with the non-disclosure clauses in the original draft proposal. University President Thomas H. Hamilton argued that the University of Hawaii simply could not honor contract provisions banning the University from exposing Coca-Cola's connection to the Alakea project. Writing to Oehlert, Hamilton explained, "Dean Rosenberg has told me of your desire not to bring the name of Coca-Cola into this project. Certainly we shall not volunteer such information. On the other hand, should questions be raised I shall have to answer them. Being a public university we really can have no secrets!" Hamilton added that "grants such as this go on the agenda among others, and we do not spell out any details," suggesting only that the name of the project be changed from "Alakea" to the scientific name of coca in order not to "excite curiosity."[48]

The University's reluctance to agree not to disclose Coke's relationship to the coca experiments disturbed Coca-Cola executives overseeing the Alakea project. Benjamin Oehlert wrote to Giordano in January of 1964 outlining his grievances: "We are concerned about a number of points in this proposed agreement and the covering

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[46]Memorandum Report of the Bureau of Narcotics, District No. 16, Gen. File Title: Coca Cola Company Project (Hawaii), August 2, 1963, Box 63 (old box 19), RG 170, NARA II.
[47] Ibid.; Henry Giordano to Benjamin Oehlert, June 24, 1963, Box 63 (old box 19), RG 170, NARA II.
[48] Thomas H. Hamilton to Benjamin Oehlert, December 23, 1963, Box 63 (old box #19), RG 170, NARA II.

letter, principally the University's unwillingness to agree not to publish any of the experiments or their results." He asked for Giordano's advice "as to what we might say or do to persuade the University that under the very special circumstances involved, they should be willing to undertake the research with a commitment not to publish." Giordano responded that the FBN could not support the Alakea project unless the University of Hawaii agreed to a nonpublicity clause because it would threaten US security interests: "Knowledge of the existence of the research program could lead to an illicit production of the coca leaf and subsequently cocaine. Furthermore, other countries of the world with whom the United States cooperates under treaty obligations concerning the international controls on narcotic drugs could very possibly misinterpret the United States intentions in granting approval for this proposed research program."[49]

Oehlert used the state's argument to put pressure on Hamilton to approve the nondisclosure clause of the contract. He explained to Hamilton, "In view of the position taken by the Commissioner in the public interest, both national and international, with which I personally fully concur, it will obviously not be possible for us to proceed further with this project unless, of course, the firm position taken by the Bureau makes it possible for you to review and modify the understandings about publicity in accordance with the Bureau's attitude." The move proved to be effective. On February 11, 1964 Hamilton wrote to Oehlert explaining that he could "withhold any publicity on projects which are classified, and it would seem to me I could justify that action in this case because Commissioner Giordano indicates that such action is in the public interest."[50]

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[49] Benjamin Oehlert to Henry Giordano, January 17, 1964 and Benjamin Oehlert to Henry Giordano, January 31, 1964, Box 63 (old box 19), RG 170, NARA.

[50] John Burns to Benjamin Oehlert, February 7, 1964; Thomas H. Hamilton to Benjamin Oehlert, February 11, 1964, Box 63 (old box 19), RG 170, NARA II.

Oehlert responded jubilantly to Hamilton's missive, but reiterated that the Coca-Cola Company could only support the project if its involvement in the project remained secret. In an attempt to justify this position, Oehlert argued, "We feel that if, as and when such an agreement is executed in the name of Maywood Chemical Works Division of Stepan Chemical Company, the identity of that Company is adequate to respond to any questions which need to be answered as to the sponsorship of the project. The fact that The Coca-Cola Company was involved in putting the parties to the agreement together should, we feel, be of no consequence to anyone other than the parties themselves and the Bureau of Narcotics."[51]

By May of 1964 the University of Hawaii, the Stepan Company, and Coca-Cola had come up with a nonpublicity clause that was satisfactory to all interested parties. The contract now stipulated that "no publication or publicity regarding the research project will be released except by the prior, mutual consent of the parties to this agreement." In the section outlining the funding for the project, the Stepan Company was listed as the sole donor, offering $105,100 for the project to be distributed over the course of four years beginning in 1964. In December, Narcotic Agent W. F. Tollenger reported that the Hawaiian coca project was underway.[52]

Coca-Cola did not purchase land to grow coca in Hawaii or provide the manpower to oversee the project. This support came from the state university in Hawaii, which provided the scientists as well as the publicly owned experimentation centers for the project. Some of the field studies took place at the University's Lyon Arboretum, an

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[51] Benjamin Oehlert to Thomas H. Hamilton, February 11, 1964, Box 63 (old box 19), RG 170, NARA II.
[52] Memorandum of Agreement between the University of Hawaii Foundation and Stepan Chemical Company (Maywood Chemical Works Division), Maywood, New Jersey, For A Grant In Aid of a Research Project, signed June 1, 1964 by all parties, Box 63 (old box 19), RG 170, NARA II.

old cattle ranch that had been restored by the Hawaiian Sugar Planter's Association beginning in 1918. Other experiments occurred at the Foster Botanical Gardens (owned by the City of Honolulu) as well as the University-owned Experimental Station located on the Island of Kauai. University officials ultimately sent coca leaves from all of four sites to the Stepan Chemical Company for processing.[53]

By the spring of 1965, Coca-Cola had succeeded in its mission to cultivate Peruvian coca shrubs on United States soil.. The company had enrolled federal bureaucrats, university scientists, and Stepan chemists in a plan to bioengineer a new version of the South American coca plant that would allow the company to have a domestic supply of coca. Between April 21, 1965 and May 3, 1965, University of Hawaii agronomists reported that over 101 shrubs were "surviving" at various sites owned by the institution.[54]

The promise of a domestic source of supply excited Coca-Cola because it meant that the company could reduce supply-side risks associated with transporting raw materials from plantations it did not own in a country that was controlled by foreign state institutions Coke. Hawaii offered a source of supply under the complete jurisdiction of the Federal Bureau of Narcotics, one that was not subject to the vagaries of political changes in the developing world. In April of 1965, it seemed the company had finally found another source of supply outside of South America.

Natural forces, however, thwarted the continued expansion of the Alakea project in Hawaii. Within ten years of approving the Memorandum of Agreement to commence

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[53] Memorandum Report re: Progress of this project by the University of Hawaii, completed by W. F. Tollenger, Narcotic Agent for the FBN, December, 14, 1964 and Memorandum from John Maher to Commissioner Giordano, February 14, 1966, Box 63 (old box 19), RG 170, NARA II.

[54] "Acquisition and Disposal of Erythroxylon Coca Plants Materials July 1, 1964 to June 30, 1965," Box 63 (old box 19), RG 170, NARA II.

the coca cultivation experiments in Hawaii, the Coca-Cola Company learned that a mysterious fungus had killed off their entire Kauaian coca crop. The fungus, later identified as *Fusarium oxysporum* EN-4, was particularly devastating because it remained in the soil for years, preventing University of Hawaii agronomists from growing new crops.[55]

Coca-Cola abandoned the Hawaiian project shortly thereafter, and capital investments made by Stepan on behalf of the Coca-Cola Company became sunk costs. Their loss, however, was minimized by public commitments to the project. Coke and Maywood did not have to worry about the depreciation of the public property used for its projects. They did not own the sites that now lay fallow because of the fungal blight, and they did not have to pay for the restoration of the land. These companies walked away from the project largely unscathed by the environmental damage they had helped create.

The failure of the Alakea project did not drastically affect Coke's ability to acquire coca leaves in the years ahead. Fears of UN or ENACO interventions restricting Coke's access to Andean suppliers never materialized. ENACO ultimately respected Stepan's contracts with local purchasing agents and did not place restrictions that unduly increased price quotes for Coke's coca supplies. Likewise, the UN worked with Coke and Stepan to make sure that proposed counternarcotics programs did not hurt the established trade of these companies. In exchange for protection, Coca-Cola and Stepan offered their support for UN-sponsored coca eradication projects in South America that

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[55] Jeremy Bigwood suggests that the first fungal outbreaks began in 1964, but there is very little evidence to confirm exactly when the blight began. Jeremy Bigwood, "Repeating Mistakes of the Past: Another Mycoherbicide Research Bill," A report by the Drug Policy Alliance Network (March 2006), 4, http://www.drugpolicy.org/docUploads/Mycoherbicide06.pdf. Bigwood graciously provided me with copies of this report and other Network publications related to mycoherbicides; Paul Gootenberg, "Secret Ingredients," 264.

targeted illicit producers. In 1966, Stepan Vice President Donald H. Francis expressed his allegiance to the UN counternarcotics program: "Our commercial interests and the social interests of the United Nations and United States Government are peculiarly the same. We all believe in effective control of Coca and the elimination of the blight of Coca mastication and illicit Cocaine manufacture." Francis also praised ENACO, saying that though Stepan "did not welcome the intrusion of this agency in the 1950's," his company had "learned to work with it and [understood] the need of it."[56]

After the Alakea failure, Stepan continued to purchase coca leaves from Peruvian suppliers for Coke under state supervision. By the 1980s, the chemical company was the only firm licensed to process coca leaves in the United States. All the decocainized coca leaf extract the company produced went into Coca-Cola beverages, even though competitors continued to request access to Stepan's supplies. In 1964, Ralph Hayes praised Stepan for their persistent efforts to "brush off" beverage competitors seeking coca leaf extract. Hayes believed that even though other companies could seek state protections under the law to produce their own decocainized coca leaf extract, the only viable, cost-efficient way for a startup company to enter the coca-beverage market would be to tap into Stepan's supply. Hayes was confident that in the future Coke's exclusive partnership with Stepan "will enable us to tire out an applicant hopeful of hitching on for a free ride."[57]

Hayes's depiction of Coke's competitors as freeloaders is ironic. Coke had become the largest and exclusive consumer of decocainized coca leaf extract in the

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[56] Donald H. Francis (Stepan Chemical Company) to Henry L. Giordano (Commissioner of the Bureau of Narcotics), June 16, 1966; Letter from Donald H. Francis to Henry Anslinger, June 16, 1966, Brief Description of Records-o660-Foreign Countries- Mexico-Peru, Box 161 (old box #29), RG 170, NARA II.
[57] "How Coca-Cola Obtains Its Coca," *New York Times*, July 1, 1988; Ralph Hayes to Benjamin Ochlert, August 31, 1964, Box 139, Folder 2, RWW Papers, MARBL.

United States not by buying up manufacturing competitors and gaining exclusive ownership of the means of production, but by "hitching" itself to an international narcotics trade directed and controlled by state agencies and private sector partners. Coke's proprietary claim to decocainized coca leaf extract was no more legitimate than any other third-party buyer hoping to make a profit by harvesting the products of industrial systems managed by others. Thus, Hayes indictment of its soft drink competitors could aptly be redirected to the Coca-Cola Company. Coke's ability to procure coca leaf extract was always contingent upon the cooperation of businesses the soft drink company did not own and industrial systems it did not directly control. Coke had made profits by depending on the capital investments of others. It was not immune to the allure of the "free ride."

Conclusion: No Coca in New Coke?

It may seem odd that Coca-Cola continued to use a tabooed agricultural product for so long considering its minimal contributions to the secret formula. The question arises, Was it really such an important component of the secret formula? Why did not the company consider removing the product from its beverages?

In 1985 the Coca-Cola Company did just that with dire consequences. That year the company decided to remove coca leaves from the formula to create what became known as New Coke. As Mark Pendergrast aptly noted, the push to develop a new formula was likely driven in part by a desire to avoid any potential complications with securing coca supplies in the wake of Reagan's international coca eradication campaign in the mid-1980s. The war on drugs was heating up and it appeared once again that

federal and international restrictions might seriously inhibit Stepan's ability to acquire coca leaves in the years ahead.[58]

New Coke did not survive long. Despite their best efforts to market the new drink, Coca-Cola faced a barrage of consumer complaints as loyal Coca-Cola fans demanded that the company abandon the New Coke project. The Company listened, going back to their coca-laced formula (now advertised as Coca-Cola Classic) just three months after introducing the new beverage.

If the company had considered experimenting with formula changes to Coca-Cola before the New Coke fiasco, they recommitted themselves to preserving the flavor profile of Coke Classic after 1985. It seemed changing the formula to eliminate a tabooed ingredient was not as simple as some might have thought. Consumers loved the taste of Coke with decocainized coca leaf extract in it. Today, Coca-Cola continues to use large amounts of Peruvian coca leaves to create its secret Merchandise No. 5 for its products.

Coke's brand power came from its ability to deliver something to customers that no other company could provide: a specific taste that consumers liked. But explaining how it was that Coke acquired the monopoly on this flavor profile involves returning to the material story of commodity flows and to the extra-firm aid that allowed Coke to acquire exclusive access to the exotic materials it needed to make a unique consumer good. Coke's monopsony control of decocainized coca leaf extract depended on intimate partnerships with state agencies and private sector partners who helped structure

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[58] This discovery belongs to Mark Pendergrast who found a conversation between Coke President Robert Goizueta and advertising executive named John Bergin in which Woodruff stated that New Coke would not contain decocainized coca leaf extract. Mark Pendergrast, *For God, Country and Coca-Cola*, 355-356; Coke spokesman Randy Donaldson, in an interview with the *New York Times*, refused to comment on whether New Coke contained any coca, "noting that it was company policy not to discuss its product formulas." "How Coca-Cola Obtains Coca," *New York Times* , July 1, 1988

international markets that eliminated Coke's commercial competitors. These partnerships, however, were fragile. Lacking ownership over its sources of supply, Coca-Cola remained dependent on the allegiance of private sector partners and state agencies that helped the company restrict commercial demand for the precious components of Coke's secret formula. Coke's uniqueness, that which generated real value for the company, could only persist if the raw materials needed to create that uniqueness remained in ample supply. More valuable than a patent for a secret formula, state actions and private sector contracts that ensured the elimination of competitive procurement claims for rare commodities was one of Coca-Cola's most vital commercial assets.

Chapter 4: Caffeine
"Wealth from Waste": Coca-Cola and the Global Caffeine Industry, 1886-2010[1]

Introduction

In the latter-half of the twentieth century, waste became a major liability for Coca-Cola. One-way containers distributed by Coca-Cola's bottlers lay strewn across national parks and along roadsides, and consumers began to call on the soft drink industry to help defray the costs of cleaning up the mess. As we will see in the following chapter on packaging, Coca-Cola fought hard for publicly financed curbside recycling systems that could help keep the company's waste out of sight and allow the company to expand its productive capacity without diminishing its profits.

But while wastes threatened profitability in the twentieth century, they could also be turned into major assets for shrewd business firms. The very profligacy of global trade networks at the turn of the century generated cheap commodities useful for the production of low-value consumer goods items. As we saw in the sugar chapter, global agricultural productivity reached unprecedented heights by the end of the nineteenth century, as vertically integrated producers using new industrial technologies were able to increase throughput and bring greater quantities of staple food commodities to market. In this world of abundance, consumers in the Western World could afford to be picky and often preferred only those agricultural products that were of the highest quality. As a result, low-grade commodities—produce that did not meet certain quality standards—often ended up in the dustbins of trading exchanges. Unfit for direct distribution to consumers, these products nonetheless contained

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[1] Several Progressive-Era publications on industrial reclamation programs inspired the title of this chapter including George Powell Perry, *Wealth from Waste, Or Gathering up the Fragments* (New York: F. H. Revell Company, 1908) and Henry J. Spooner, *Wealth from Waste: Elimination of Waste a World Problem* (London: G. Routledge and Sons, 1918).

valuable minerals and chemicals that, if processed and extracted, could be salvaged for use in other consumer products.

The Coca-Cola Company used this resource reclamation strategy to acquire the caffeine it needed at low cost throughout the twentieth century. In the late-nineteenth century, international tea exchanges in Europe had become inundated with "tea sweepings" (broken or damaged leaves), and there appeared to be little use for these byproducts of trade. In Britain, Parliament had prohibited the sale of consumer products mixed with tea waste, and in the United States the federal government outlawed the importation of tea sweepings intended for sale to consumers. But what Western tea consumers considered waste became a lucrative asset for Merck and other pharmaceutical businesses, which had developed primitive decaffeination systems that allowed them to extract caffeine from broken tea leaves by the late-nineteenth century. With no restriction on the use of tea sweepings for pharmaceutical purposes, companies entered the caffeine producing business by the 1880s, selling their finished product to Coca-Cola and other beverage companies.

The processed caffeine industry expanded during the Gilded Age, and a host of new producers entered the market. American companies such as Maywood Chemical Works and Monsanto became major competitors with Merck, helping to keep global caffeine prices down. Coca-Cola and other commercial end-users benefited from the multiplicity of producers by playing rival suppliers off one another in order to secure profitable contracts.

But while Coke enjoyed a competitive market atmosphere that generated cheap sources of supply in the late-nineteenth and early twentieth centuries, it struggled for many years to convince consumers that processed caffeine was good for the human body. In the early twentieth century, processed caffeine extracted from tea sweepings became suspect

because it was thought to be an "unnatural" product that contributed to disturbing physiological disorders. By the end of the nineteenth century, Coke drinkers began to complain about abnormal digestive tract problems and nervous jitters they associated with increased caffeine intake. Processed caffeine was in danger of becoming a waste product unfit for human consumption, a cultural shift that would have destroyed the burgeoning Coca-Cola empire.

Restoring caffeine's connection to the natural world was the Coca-Cola Company's chief defense against pure drug and food reformers in the Progressive Era who labeled processed caffeine a corporeal pollutant. In a modern industrial food system in which producers were increasingly distanced from consumers, the term "natural" came to signify wholesomeness and purity. During the Progressive Era, consumers believed that nature was designed to serve human needs. Products that came from nature were expected to interact symbiotically with the human system. Claiming natural origins for its chief narcotic was a powerful way for Coke to combat the cultural deprecation of processed caffeine. Thus, Coca-Cola fought a public battle to associate its beverages with tea and coffee, hoping to convince consumers that their product was no different from any other natural foodstuff derived from the land. Reformers fought back against the Coca-Cola Company, but these battles ended in stalemates that did more to legitimate Coke's claims than to heighten fears about the health costs associated with caffeine consumption.[2]

The decision to privilege "naturalness" as the chief criterion denoting healthfulness profoundly affected the company's decisions about caffeine procurement for the remainder

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[2] For a discussion of how Progressives thought about the natural versus unnatural binary, see Benjamin R. Cohen, "Analysis as Border Control: Chemists along the Boundary Between Pure Food and Real Adulteration," *Endeavour* 35 (June-September 2011): 66-73. See also James Young, *Pure Food: Securing the Drug and Food Act of 1906* (Princeton: Princeton University Press, 1989), 66.

of the twentieth century. The company sought only sources of supply it could market as natural, even when environmental and political pressures jeopardized company trade with tropical provider communities. When synthetic substitutes emerged in the 1940s, the company refused to change its policy regarding "natural requirements" for caffeine. Coke believed that consumers would accuse the company of adulterating its products with artificial chemicals harmful to human health. Respect for consumer fears about the microscopic biological consequences of storing "unnatural" caffeine in the human body thus influenced macroscopic supply-side decisions.

Ultimately, fears about the human health costs of caffeine consumption created what might be called a new waste market for processed caffeine in the latter-half of the twentieth century. The resurgence of a health conscious consumer culture in the 1960s and 1970s led to the expansion of the caffeine-free coffee market. This decaffeination craze, a consumer movement spawned by the very same pure drug and food fervor that Coke had battled in the Progressive Era, generated prodigious supplies of caffeine. Because Coca-Cola was not directly invested in industries that used tea waste to produce caffeine, the company was able to transfer its purchasing contracts to major decaffeinated coffee producers beginning in the 1950s. Monsanto, on the other hand, was forced to close many of its processing plants because they could no longer compete with its new coffee rivals. Coke's supply-side flexibility allowed it to adapt to changing cultural conditions in America while Monsanto's integration left the company with millions of dollars invested in processing operations producing a product for which there was limited demand.

This chapter follows caffeine from the trash bins of commercial industries to the point of consumption, showing how changing cultural perceptions of caffeine's healthfulness

created and dissolved commodity markets critical to Coca-Cola's growth. Sometimes Coca-Cola played a leading role in shaping consumers perceptions, but at other times, Coke was a cautious observer, responding to cultural and environmental transformations it could neither foresee nor control. In the end, the company let others take risks and proved adept at turning the waste of profligate industries into wealth.

Turning Waste Into Wealth: Finding a Reliable Supply of Caffeine

As did many pharmacists in the 1880s, John Pemberton believed that caffeine extracted from the West African kola nut would soon become a preferred stimulant in the patent medicine market. Writing to the Georgia Pharmaceutical Society in April of 1886, just weeks before introducing Coca-Cola to soda fountains in Atlanta, Pemberton noted that "caffeine, as obtained from tea and coffee in this country, is inferior to that manufactured from the kola nuts by Merck of Darmstadt." Seeking to differentiate his new product from other caffeinated elixirs, Pemberton decided to feature the kola nut in the name of his new nostrum in an attempt to signal to consumers that his product was on the cutting-edge of pharmaceutical science.[3]

But Pemberton's enthusiasm for the kola nut as a source of caffeine was tempered by the realization that the cost of stimulant extraction from this resource was substantial, largely because kola nuts were in short supply. By the late 1800s, England and Germany had invested in colonial kola operations in western Africa, hoping to stimulate production. They even experimented with transplantation at New World outposts, such as Jamaica. Still, despite these colonial investments, production remained modest by the end of the 1800s, with

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[3] Mark Pendergrast, *For God, Country, and Coca-Cola*, 31. The *New York Times* claimed that kola nut extract was "superseding all stimulants in medical practice" in November of 1895. "That Nut From Africa," *New York Times*, November 3, 1895, 11.

total annual exports to England totaling just 18,000 pounds by 1898.[4] Considering the scarcity of kola nuts, Coke needed to find an alternative source of caffeine.

Fortunately for Coke, there were alternative ways of acquiring caffeine at low cost. Chemical processing firms mined the trash heaps of the world's tea exchanges to create processed caffeine at low cost. In the late 1880s, Merck and other chemical processing firms began to buy up large quantities of leaf fragments (referred to as tea sweepings) left on the floor of international tea warehouses. Considered garbage by tea traders, this refuse could be processed with lead acetate to extract caffeine. Recycling damaged tea leaves, Merck reduced their front-end expenses and expanded their caffeine sales.

The soft drink industry did not immediately realize the full benefits of this waste reclamation system because Merck had no incentive to pass on savings to Coca-Cola and other American buyers. The United States had yet to develop a chemical processing enterprise that could compete with the German pharmaceutical company, and there were very few European suppliers servicing international markets in the 1890s. Enjoying a virtual monopoly, Merck could control caffeine prices without fear of being undersold by rival suppliers abroad.

In 1895, however, Louis Schafer of Maywood, New Jersey, changed market dynamics when he developed the first decaffeination plant in the United States. The undertaking was costly, especially considering United States trade laws that required all imported tea sweepings to be mixed with lime and asafetida (a provision of the 1887 Tea

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[4] Edmund Abaka, *Kola is God's Gift: Agricultural Production, Export Initiatives, and the Kola Industry of Asante and the Gold Coast c. 1820-1950* (Athens: Ohio University Press, 2005), 86. Seventy years after Pemberton created the secret formula, Coca-Cola executives Benjamin Oehlert and Ed Forio explained to the FDA why Coke chose to use other sources of caffeine for its product, claiming "caffeine from sources other than cola nut, such as chocolate and coffee, is readily available on an economical basis, whereas the derivation of all of the caffeine from cola nuts, which are in relatively short supply, would be an expensive process and would cause substantial economic waste." Letter from Ed Forio and Benjamin Oehlert to George Larrick, July 12, 1965, Box 243, Folder 2, RWW Papers.

Importation Act designed to prevent adulterated tea from entering the United States). Unlike their German counterparts, the Schaefer Alkaloid Works had to spend capital resources cleansing their tea sweepings before beginning treatment for decaffeination. Yet despite these increased costs, Schaefer managed to turn a profit, and by the beginning of the 20th century, the company had become one of Coke's chief caffeine suppliers.[5]

Other American chemical companies quickly followed Schaefer's lead. In 1904, the Monsanto Chemical Company began commercial production of caffeine from imported tea sweepings. Founded by John S. Queeny in 1901, the Monsanto Company originally sold saccharin to United States food and beverage companies. Coca-Cola quickly became the company's most important customer, purchasing Monsanto's entire supply of saccharin in 1903 and 1905. Queeny invested in decaffeination equipment in 1903 and began producing the beverage company's chief stimulant just a year later.[6]

Monsanto and Schaefer Alkaloid Works continued to expand production throughout the decade, providing a powerful check to Merck's formerly dominant position in the international caffeine market. In 1908, both American companies successfully lobbied for an amendment to the tea importation laws that allowed tea sweepings to enter the United States without having to be treated with lime and asafetida. The amendment made Schaefer and

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[5] House Committee on Ways and Means, *Tariff Hearings, 1896-97, Vol. 1*, 54th Cong., 2nd Sess., December 28, 30, 31, 1896 and January 4, 5, 8, 9, 11, 1897, 133-134;Patricia J. B. DeWitt, "A Brief History of Tea: The Rise and Fall of the Tea Importation Act," Third Year Writing Requirement, Harvard Law School, 2000, 32.

[6] For a history of the Monsanto Company written by a former public relations executive at the corporation, see Dan J. Forrestal, *Faith, Hope and $5,000: The Story of Monsanto* (New York: Simon and Schuster, 1977). Today, Monsanto freely admits on its company website that its solvency in its corporate infancy depended on Coke purchases. See http://www.monsanto.com/whowearc/Pages/monsanto-history.aspx; "P.S. Just Got Our Special on Monday," Series 3, Box 1 Monsanto Company Records, University of Washington, St. Louis (hereinafter Monsanto Company Records).

Monsanto even more competitive with foreign producers, and by 1914 domestic caffeine producers provided over two-thirds of America's processed caffeine supply.[7]

Thus, by the end of the first decade of the twentieth century, Coca-Cola reaped the benefits of a competitive market served by multiple suppliers and acquired its chief stimulant at just $3 a pound. Considering a six-ounce Coca-Cola contained around 78 mg of caffeine in 1914, the cost of caffeine in one serving of Coke at that time was less than .00046 cents.[8]

It was not the cost of supply, then, that threatened Coke's caffeine delivery system in the Progressive Era, but rather popular concerns about the health costs associated with caffeine consumption. Powerful cultural forces challenged the idea that company beverages were in fact beneficial to society. Rather than front-end production systems, Coke had to worry about a different segment of the commodity chain: the human body.

Making Coke Safe for Consumption: The Human Body and Caffeine in the Progressive Era

By the beginning of the twentieth century, the United States had become one of the largest importers of caffeine-containing biota on the planet. Americans' preferred drink of choice was coffee, considered to be a more patriotic beverage than tea, which retained lingering associations with British imperial rule. By 1910, per capita consumption of coffee reached 12 pounds, up from 9 pounds in the 1880s and just 1/8th of a pound in 1783. Annual tea consumption, though more modest, reached roughly 1 pounds per capita by the 1910s.[9]

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[7] "Caffeine," Series 3, Box 1, Monsanto Company Records.

[8] Senate Committee on Finance, *Schedule A: Duties on Chemicals, Oils, and Paints*, 62nd Cong., 2nd sess., March 14, 15, 19,-22, 1912, 36; "Caffeine," Series 3, Box 1, Monsanto Company Records.

[9] Mark Pendergrast, *Uncommon Grounds: the History of Coffee and Hot It Transformed the World* (New York: Perseus Basic Books, 1999), 107; Steven Topik, "Historicizing Commodity Chains: Five Hundred Years of the Global Coffee Commodity Chain," in *Frontiers of Commodity Chain Research*, ed. Jennifer Blair (Stanford: Stanford University Press, 2009); United States Government Printing Office, *Summary of Tariff Information*, prepared for the Use of the Committee on Ways and Means, United States House of Representatives (Washington, DC: 1920), 798.

For many consumers, increased per capita caffeine consumption produced visible physiological changes that were less than desirable. Caffeine is a hormone inhibitor, bearing a similar molecular structure to adenosine, a chemical in the body that binds to receptors in the brain that essentially tell muscles to relax. When caffeine replaces adenosine in hormone receptors, signals that usually inhibit arousal never fire. As a result, high concentrations of caffeine in the blood can disrupt the normal functioning of neurochemical pathways, leading to a host of physical ailments including dyspepsia and nervousness. Feeling these physiological effects, heavy caffeine consumers began to question whether this narcotic was in fact an innocuous stimulant appropriate for daily consumption.

Concerned about the human health costs of the nation's caffeine craze, reformers began an anti-caffeine movement in the early 1900s. The crusade was in many ways a grassroots movement fueled by opportunistic businessmen and local politicians. Entrepreneurs such as C. W. Post and William Kellogg exacerbated growing fears about caffeine consumption in the early 1900s by advertising coffee substitutes as the healthful alternative to caffeine beverages. Post developed perhaps the most famous coffee imitation in 1895 called Postum made from various cereal grains, and, to sell his product, he published ads in national newspapers that featured testimonies from coffee drinkers complaining of nervous disorders allegedly connected to excessive caffeine consumption.

The caffeine debate also took place in local assembly halls. Throughout the country, state legislators proposed bans on caffeinated beverages beginning in the late 1900s. In North Carolina, Senator Douglas submitted a bill to the general assembly that would have prohibited the sale and distribution of all caffeine drinks in the state in 1907. The bill received considerable support, yet opponents ultimately defeated the bill by a narrow margin

of 51 to 39. In Alabama, Texas, Louisiana, Mississippi, and Georgia, state representatives proposed similar restrictions on caffeine beverages.[10]

Local beverage bans often singled out Coca-Cola as a particularly injurious consumer product, in large part because it appeared to be a perversion of nature. Progressives highlighted the fact that caffeine was added to Coca-Cola by company chemists, suggesting that there was an intentional effort to imbue the beverage with addictive properties. Speaking in favor of a caffeine ban in 1909, a Texas representative argued before the state assembly, "The reason they put this dope in Coca Cola is to create craving and to have such an influence upon the human system as to cause a constant craving for more and thus sell the drink."[11]

Coke defended itself against such accusations by countering that Coke contained "pure caffeine" identical to that found naturally in coffee and tea. Asa Candler stressed this point in a letter designed to discourage support for the proposed 1907 North Carolina caffeine ban. Writing to his "friends in North Carolina," Candler reassured consumers that Coca-Cola "does not contain as much caffeine as is to be found in the average cup of good coffee or tea."[12]

Candler's argument reflected certain assumptions about what purity meant in the context of Progressive-era debates about food and drug policy. In the late 1800s and early

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[10] "'Dope' Bill Defeated," *Washington Post*, January 26, 1907, 13; "Bills Favorably Reported," *Washington Post*, January 15, 1907, 13; "Bills Prohibits sale of Coca-Cola," *Atlanta Constitution*, August 16, 1909, 4; "Texas House Proceedings," *Dallas Morning News*, February 27, 1909; "Many New Bills in House," *Charlotte Observer*, January 26, 1909; "The Week's News," *The Cincinnati Lancet-Clinic*, July 9, 1910, 30; "Judge Stark's Bill Would Include Soft Drinks in Anti-Shipping Bill," *Macon Telegraph* (Macon, Georgia), November 16, 1915; "Fight on Sale of Coca-Cola in Georgia is on in Assembly," *Macon Telegraph*, July 15, 1919; "Possible Coca-Cola May be Barred," *Daily Herald* (Biloxi, Mississippi), February 24, 1911.

[11] "Texas House Proceedings," *Dallas Morning News*, February 27, 1909.

[12] Candler was not disingenuous in making this claim as Coke at that time contained roughly 78 mg of caffeine per serving, less than most teas and roughly half the caffeine content of a strong brew of coffee. Letter from Asa Candler, January 18, 1907, Box 4, Folder F, James L. Fleming Papers, Collection No. 427, East Carolina Manuscript Collection, J. Y. Joyner Library, East Carolina University, Greenville, NC.

1900s, the terms "pure" and "natural" became increasingly interrelated. In a world in which citizens had become disconnected from the main centers of food production, the field and pasture became romanticized landscapes, the food processing plant the site of adulteration. To be pure was to be from the land, to be from "nature." In linking his products to agricultural products such as coffee and tea, Candler sought to dispel any concerns that his beverage could be harmful to human health.[13]

These assumptions about food purity delimited the policy objectives of USDA Bureau of Chemistry chief Harvey Wiley. Since 1902, Wiley had headed a division known as the "poison squad" at the Bureau of Chemistry responsible for testing various preservatives and chemicals that were entering the nation's food supply. Under the Pure Food and Drug act of 1906, Wiley's division acquired enforcement powers to seize any food or beverage product shipped across interstate lines suspected of containing an "added poisonous or other added deleterious ingredients which may render such article injurious to health." For Wiley and his team of chemists, their primary mission was to protect public health by terminating the production and distribution of misbranded consumer products.[14]

It was with this narrow objective in mind that Harvey Wiley ordered the seizure of forty-barrels and twenty kegs of Coca-Cola in 1909. Outlining his grievances against the Coca-Cola Company, Wiley explained, "The extraction of caffein [sic] from any of its natural sources and the use of it in beverages which by their manner of use give no

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[13] This analysis builds on historian Benjamin Cohen's work on food adulteration in the late-nineteenth century. Cohen argues that "the environmental challenge of distance between producers and consumers was a cultural challenge of knowledge, character and ideas about authenticity from nature" that produced a new consumer culture that increasingly saw chemists and nutritional scientists as the ultimate arbiters of food purity. Benjamin R. Cohen, "Analysis as a Border Patrol," 3. See also James Harvey, *Pure Food*, 66.

[14] Wiley did suggest that not all food products found in nature should be considered beneficial to human health. In a letter to Coke president Asa Candler in February of 1907, for example, Wiley criticized Candler for suggesting that caffeine was harmless simply because it existed in tea and coffee, arguing, "You might as well say that hydrocyanic acid is harmless because it occurs in peaches and almonds." Mark Pendergrast, *For God, Country, and Coca-Cola*, 113.

suggestion of containing this product, appear to me to be an objectionable practice, irrespective of any opinion regarding the injurious qualities of this alkaloid." He was determined to open consumers "eyes to the dangers of extending use of caffeine beyond those beverages in which it naturally occurs."[15]

The case against Coke went to trial in the United States District Court for the Eastern District of Tennessee during the spring of 1911. It made headlines all across the country with national newspapers providing weekly coverage of the event, including anecdotes about Harvey Wiley's weekend forays into the countryside with his new fiancé. The fact that famous personalities attended the event, including Oswald Schmiedeberg of the University of Strasburg, considered by many to be the leading pioneer in modern pharmacology at that time, only increased the profile of the case. The *Charlotte Daily Observer* called the trial "one of the most important ever tried in . . . Federal court in the South," while the *American Druggist and Pharmaceutical Record* labeled it "a record case in many respects."[16]

The government focused its efforts on proving two main points: that Coke contained an "added ingredient, caffeine," considered "injurious to health" and that company labeling suggested that coca leaves were present in the product when in fact they were not. The wording of the district attorney's petition to the court made clear that the prosecution's burden would be to show that Coke contained ingredients not known by the public to be natural components of the consumer product.

The government's strict construction of the Pure Food and Drug Act of 1906 offered Coke's counsel an opportunity to develop a legal defense that would circumvent the question of whether or not caffeine was actually harmful to human health. Though Coke's attorneys

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[15] "The Drinking of Tea or Coffee Harmful to Health," *New York Times*, September 15, 1912, SM11.
[16] "Coca-Cola Wins Fight," *The Charlotte Daily Observer*, April 7, 1911; "Coca-Cola Wins in Government Suit," *American Druggist and Pharmaceutical Record*, April 24, 1911, 45.

called witnesses to counter government expert testimonies about the adverse physiological effects of excessive caffeine consumption, these examinations were largely distractions that bore little relevance to the final verdict handed down by presiding judge Edward T. Sanford.

Ultimately, the government lost the district court case, not because it was unable to prove that caffeine was harmful to human health, but because the district attorneys failed to prove to the court that caffeine was in fact an added ingredient in Coca-Cola. Judge Sanford granted a defense motion for preemptory instructions just four weeks into the trial, arguing that the lack of evidence to support the government's contention that Coke was misbranded provided grounds for dismal of the case.

Coke and its supporters celebrated the company's victory in the press. Georgia's *Columbus Daily Enquirer* labeled Sanford's verdict a "sweeping" success for Coca-Cola adding that the "decision failed to sustain the government in any of its contentions." A company advertisement run in the *Daily Oklahoman* featured Dr. Scheimberg's expert testimony about the healthfulness of caffeine paired with the statement that the testimony "was brought out at the trial in Chattanooga—U.S. Gov't vs. The Coca-Cola Co.—at which trial the Government lost."[17] In Chicago and New York, the company offered free booklets "telling of Coca-Cola vindication at Chattanooga."

Over the course of the next few years, the government appealed Judge Sanford's verdict, and the case ultimately made it to the Supreme Court in 1916. There, Chief Justice Hughes reversed the lower court's decision, arguing that caffeine was indeed an added ingredient in Coca-Cola. In his opinion, Hughes cited the fact that caffeine was mixed by hand in the "second or third melting" of the syrup to justify his classification of the

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[17] "Coca-Cola's Victory Was Very Sweeping," *Columbus Daily Enquirer*, April 9, 1911; *Daily Oklahoman*, February 18, 1913; *Chicago Daily Tribune*, May 12, 1912, D8; *The New York Times*, May 16, 1912, 8.

ingredient as "added." He ordered that the case be retried on the issue of whether of not caffeine was in fact "a poisonous or deleterious ingredient," a question, he believed, "was plainly one of fact which was for the consideration of the jury."[18]

But despite the reversal, the case was never retried. In November of 1918, Coca-Cola settled the issue out of court, agreeing to cut the caffeine content of its beverage roughly in half from over 70 mg per serving to roughly 39 milligrams. No jury ever weighed in on whether the caffeine contained in Coca-Cola was harmful to health.

Coke restored public confidence in its product, turning a potentially devastating federal indictment into a state endorsement of their beverage. At a time when consumers were seriously debating the prudence of permitting widespread distribution of an addictive psychoactive narcotic in the United States, Coca-Cola used the power of the state to legitimate caffeine consumption. By 1916, Americans turned their attention to wartime concerns and the anti-caffeine movement began to fade. Having won the battle for hearts and minds, Coke focused on acquiring ample supplies of caffeine for an American market ripe for expansion.

World War I and Coke's Caffeine Supplies From Chocolate Waste

During World War I, military blockades cut US supply networks channeling raw materials needed for caffeine production. Trade restrictions halted the importation of processed caffeine from German pharmaceutical companies, which supplied roughly 98 percent of US caffeine imports in 1914. Freight costs for transporting waste tea leaves increased dramatically from 65 cents per hundred pounds in 1914 to over $1.50 by the end of

[18] *U.S. vs. Forty Barrels and Twenty Kegs of Coca-Cola*, 241 U.S. 265 (1916).

the war. Considering the fact that chemical-processing companies needed over 45 pounds of damaged tea leaves to produce just one pound of caffeine, the new freight charges put heavy burdens on US producers.[19]

As a result of new wartime trade restrictions and supply shortages, caffeine prices skyrocketed. In 1912, the Monsanto Chemical Company reported international prices hovering around $3.22 per pound but by July of 1916 prices approached $17. With caffeine prices climbing to record high levels, Coca-Cola dipped into its inventories hoping to wait out the wartime market.[20]

As prices continued to rise, the Coca-Cola Company decided that reducing the caffeine content of its product would be prudent. Besides drastically lowering the company's operating expenses, doing so would finally put an end to the *Forty Barrels* case in a manner that would not draw much additional attention from the press. Thus, on November 12, 1918, the company approved a 50 percent reduction in the caffeine content of Coke and the Bureau of Chemistry finally abandoned its case against the company.[21]

After the war, Coca-Cola was able to significantly expand its beverage sales, not only because it required less caffeine to make its product but also because new sources of supply were available. Since 1907, US chemical companies had experimented with producing caffeine from theobromine, a stimulant found in cocoa beans. When war embargos severed US producers access to foreign tea exchanges, American chemical companies turned to chocolate manufacturers, requesting cocoa waste to supplement their caffeine supplies.

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[19] GPO, *Summary of Tariff Information*, 30; Senate Committee on Finance, *Tariff Act of 1921, Vol. 2: Schedule 1: Chemicals, Oils, and Paints; Schedule 2: Earths, Earthenware, and Glassware*, 67th Cong., 2nd sess., 1921, 886, 898.

[20] Senate Committee on Finance, *Schedule A: Duties on Chemicals, Oils, and Paints*, 62nd Cong., 2nd sess., March 14, 15, 19,-22, 1912, 36.

[21] Frederick Allen, *Secret Formula*, 90.

Maywood Chemical Company had begun using theobromine for caffeine production in 1911, depending largely on Dutch and German suppliers who had ample inventories of cocoa waste from domestic chocolate industries in those countries. Believing they could earn bigger profits by manufacturing theobromine on US soil, both companies invested heavily in theobromine manufacturing facilities in the 1920s. The Monsanto Chemical Company spent over $200,000 to finance the construction of a theobromine processing plant in Norfolk, Virginia, in 1925, and both Maywood and Monsanto purchased thousands of pounds of cocoa wastes from the Hershey Company in Pennsylvania.[22]

Coca-Cola president Robert Woodruff was hesitant to purchase caffeine produced from theobromine because he believed the public would consider the ingredient unnatural and attack the company for adulterating its beverages with a synthetic chemical. The company had just waged a major battle against the Bureau of Chemistry over the purity of its product in which its chief defense was the fact that caffeine was a "natural" constituent of its product. If the company made the switch to a new form of caffeine derived from a molecular isomer, Woodruff believed the company would expose itself to renewed attacks from pure food and drug zealots.

Monsanto chairman John F. Queeny reassured Woodruff that purchasing caffeine made from theobromine would not in any way jeopardize Coke's reputation. Citing reports from a series of distinguished scientists, Queeny explained that "the complete synthesis from chemicals is what every chemist would have primarily in mind if he hears the term synthetic caffeine." He concluded that if Woodruff chose to use caffeine made from theobromine in his product, he could "properly make the positive statement that the ingredients used in Coca

[22] Mark Pendergrast, *Uncommon Grounds*, 262.

Cola are obtained from naturally occurring products, instead of the negative announcement that no synthetic products are used in Coca Cola."[23]

Woodruff accepted Queeny's defense of theobromine and in the years ahead Coca-Cola would become one of the largest single buyers of caffeine processed from cocoa waste in the world. With two natural sources of supply, Coke purchased caffeine at historic low prices, which dropped to just $1.65 per pound by 1933.

Throughout the 1930s and the first half of the 1940s, Coca-Cola enjoyed bearish markets, purchasing caffeine at prices that were just half what they were at the turn of the century, between $1.58 and $2 per pound up through the start of World War II. With cheaper ingredients going into the same five-cent product, the company earned greater profits. In 1939 the company posted gross profits totaling $58.1 million, up from just $27.1 million in 1934.

But as the 1930s came to a close, war once again posed new challenges to Coke's commercial ascendancy. As in World War I, its supplies were in jeopardy and the company had to consider new ways of acquiring the chief narcotic for its beverages.

World War II: Monsanto Proposes "Another Chemical Victory Over Nature"

At the start of World War II, the Coca-Cola Company was the largest buyer of caffeine on the planet, consuming over 800,000 pounds of caffeine annually. The vast majority of this caffeine went straight into company beverages. Coke had experienced exponential growth in gallon sales of its beverages, and it needed all the caffeine it could find to meet demand. As a result, Coke did not inventory much caffeine in the years immediately

[23] Letter from John F. Queeny to Robert W. Woodruff, December 7, 1927, Box 49, Folder 7, RWW Papers, MARBL.

before the war and was therefore vulnerable to market supply shortages that would develop in the years following Pearl Harbor.[24]

Restrictions on transatlantic shipping vastly reduced imports of tea leaves and cocoa waste into the United States, causing a serious crisis for Coke's chief caffeine suppliers. In December of 1941, Monsanto wrote to Coke purchasing agent Horace Garner explaining that because of the shortage of raw materials, Monsanto would "only be able to supply 50% of our contractual requirements." Eleven months later, the Beverage and Tobacco Branch chief for the War Production Board reported that domestic caffeine producers were "literally 'scraping the bin' as their supplies of caffeine bearing raw materials are about to reach the vanishing point."[25]

Shortages caused caffeine prices to quadruple, but Coca-Cola was willing to make purchases at almost any price. In December of 1942, the company had just enough caffeine to cover 26 days of production. Facing complete liquidation of its stocks, Coke sought to purchase caffeine at $7 a pound, but Monsanto and Maywood simply did not have the supplies to satisfy its regular customers and honor new government contracts for caffeine.[26]

Company chemist Ralph Hayes suggested a way out of the dilemma: approve the use of a synthetic substitute. Hayes approached the American Cyanamid Company, Dupont, and Merck's American subsidiary in New York in the fall of 1942 to discuss the prospects of constructing a synthetic caffeine processing plant. By mid-September, Hayes reported that

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[24] Letter from Ralph Hayes to Robert W. Woodruff, May 5, 1954, Box 138, Folder 2, RWW Papers, MARBL; Memorandum from Ralph Hayes to W. J. Hobbs, September 12, 1947, Box 49, Folder 7, RWW Papers, MARBL.

[25] Letter from G. Lee Camp, Vice President of Monsanto, to Horace Garner, Purchasing Agent for the Coca-Cola Company, December 5, 1941, Series 3, Box 1, Monsanto Company Records; Memorandum from John B. Smiley, Chief of the Beverage and Tobacco Branch of the War Production Board (WPB), to Edward Browning, Jr., Assistant Chief Stock Pile and Shipping Branch of the WPB, November 5, 1942, Box 372, RWW Papers, MARBL

[26] Ralph Hayes to Robert W. Woodruff, May 5, 1954, Box 138, Folder 3, RWW Papers, MARBL; Frederick Allen, *Secret Formula*, 253.

he was discouraged by the talks. All three companies explained that serious capital commitments would have to be made to get such an operation up and running. Hayes concluded that the "likelihood of such a development coming sufficiently soon and in adequate volume . . . is virtually non-existent."[27]

With few options available, Woodruff decided once again to reduce the caffeine content of Coca-Cola. By the end of the war, Coca-Cola contained around 16 milligrams of caffeine per serving, approximately 1/5th the amount found in Coke syrup at the beginning of the twentieth century. This reduction, however, only lasted until 1945 when increased supplies of caffeine made it possible for the company to restore product concentration to pre-World War II levels.[28]

The opening of transoceanic trade in 1945 allowed Monsanto and Maywood to renew their international purchasing agreements with tea and cocoa waste suppliers abroad, causing caffeine prices to drop to around $5 per pound, but the deflationary trend soon leveled off, largely because of increased demand for these raw materials. New commercial buyers in the postwar market began to compete with American chemical companies for the waste byproducts of the tea and chocolate industries, driving up the cost of raw materials.[29]

As ready-made chocolate mixes and tea bags containing damaged tea sweepings became popular consumer items in postwar markets, waste that had once been considered a cheap commodity reserved for the use of chemical processing companies became high-value consumer items branded for commercial sale. This shift in consumer tastes, one Coke and its

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[27] Letter from Ralph Hayes to A. A. Aicklin, September 16, 1942, Box 137, Folder 3, RWW Papers, MARBL.
[28] Mark Pendergrast, *For God, Country, and Coca-Cola*, 469.
[29] Ralph Hayes to Robert W. Woodruff, May 5, 1954, Box 138, Folder 3, RWW Papers, MARBL; "Caffeine," undated and untitled Monsanto Company document, Series 3, Box 1, Monsanto Company Records.

commercial partners had no control over, presented a serious threat to the future profitability of the caffeine processing industry.[30]

In light of new market conditions, Monsanto renewed its efforts in 1945 to develop synthetic caffeine production facilities. Monsanto hoped to create a production system that would "not be subject to the vagaries of nature, politics, or international economics." The new factories would follow "nature's synthesis," according to Monsanto, drawing on "basic materials from a variety of sources," such as "charcoal or coke, air, water, salt, and lime."[31]

Monsanto's synthetic caffeine plant began operation in the winter of 1948, an accomplishment the company called "another chemical victory over nature." The caffeine project was part of a larger company campaign to produce chemical products that would replace "scarce, variable, expensive natural products." As the company's international branding manager explained, Monsanto believed that "modern mass production requires that raw materials be available in dependable supply and of a high purity. If this is improving on nature, it must be done again and again as industrial needs surpass nature's unplanned production." The company became a pioneer in a host of new chemical manufacturing enterprises in the postwar years, producing consumer items such as "soapless soap," synthetic rubber, and inorganic herbicides. Synthetic caffeine was just one of many products designed to make the company "independent of foreign" suppliers.[32]

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[30] "Caffeine," undated and untitled Monsanto Company document, Series 3, Box 1, Monsanto Company Records.

[31] Company publication written by Braxton Pollard, "NOW-Synthetic Caffeine," no date, Series 3, Box 1, Monsanto Company Records; Report on caffeine and theobromine prepared by John Ragsdale, 1945, Series 3, Box 1, Monsanto Company Records.

[32] For a detailed history of the Monsanto Company's postwar operations, see Dan J. Forrestal, *Faith, Hope and $5,000: The Story of Monsanto*, 93-107; Company publication written by Braxton Pollard, "NOW-Synthetic Caffeine," no date, Series 3, Box 1, Monsanto Company Records; News Release on Monsanto Synthetic Caffeine Operations, 1945, Series 3, Box 1, Monsanto Company Records.

Coca-Cola agreed with Monsanto that liberation from the international tea leaf and cocoa waste trade would reduce contingencies that could threaten corporate profitability, especially in light of postwar political revolutions abroad and recent unforeseen environmental catastrophes. On the political front, Ralph Hayes wrote in January of 1948 that the partition of India and Pakistan created "chaotic social and economic conditions" in Southeast Asia that hindered the tea leaf trade. In South America, a devastating cocoa tree blight significantly reduced production of cocoa waste, exacerbating what Hayes called a "serious, if not critical, undersupply" of caffeine.[33]

Still, Coke remained hesitant about switching to Monsanto's synthetic product. In April of 1948, Hayes corresponded with company chemist W. P. Heath, admitting that Coke's chief executives were "still making up [their] minds" about switching to the new caffeine. He explained that the publicity department "would refrain for the present from any comment outside the company concerning our not using this material." Whether or not Coca-Cola decided to use Monsanto's product, Hayes did not want the chemical company to halt production of its product. He wanted synthetic caffeine to be "acceptable to every other Monsanto customer" so that supplies of natural caffeine might be freed up for Coke consumption. Whatever happened, Coke would not have to pay for the experimental costs of constructing new processing plants. It would let others take those risks.[34]

Coke's chief worry was that customers would reject an ingredient made from urea. It "sounded too much like urine," explained Monsanto research scientist William S. Knowles who was intimately involved in the St. Louis plant's production. If word got out that Coke was using this coal byproduct to make their caffeine, Knowles argued, it "would really kill

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[33] Memorandum from Ralph Hayes re: "Merchandise No. 3 Through January 1948," February 18, 1948, Box 49, Folder 7, RWW Papers, MARBL.
[34] Letter from Ralph Hayes to W. P. Heath, April 12, 1948, Box 49, Folder 7, RWW Papers, MARBL.

them." As a result, Monsanto established a policy prohibiting "any public announcement of the starting material or intermediates in the synthesis" of its caffeine, hoping to lure Coca-Cola to purchase its product. Labels for synthetic caffeine read "caffeine anhydrous," making no "reference to its synthetic origin."[35]

Despite Monsanto's efforts to obscure its sources of supply, Coke executives believed the public would discover the synthetic caffeine-urea connection. In fact, the company suggested that it might be advantageous to intentionally expose the details of Monsanto's operations if indeed Coke decided to remain disconnected from the synthetic market. Hayes believed the company could achieve a competitive edge against rival brands using anhydrous caffeine by creating a "label on our goods that would differentiate it from synthetic material."[36]

With Coke wavering on approving new contracts, Monsanto set out to prove that Coke's foreign suppliers had already shipped large amounts of synthetic materials to company syrup plants without the soft drink giant's knowledge beginning in the late 1940s. To prove their point, Monsanto developed a method for determining whether caffeine came from coal byproducts or natural vegetable extracts, drawing on cutting-edge carbon-dating technology. Using this new technique, Monsanto showed conclusively that some of Coke's chief suppliers abroad had in fact shipped stocks of anhydrous materials rather than caffeine generated from tea leaves or cocoa waste.[37]

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[35] Letter dated June 27, 1951, Series 1, Box 1, Monsanto Company Records; William S. Knowles, interview by Michael A. Grayson at St. Louis, Missouri, January, 30, 2008, Chemical Heritage Foundation Oral History Transcript # 0406 (available by request from the Chemical Heritage Foundation); Letter dated June 27, 1951, Series 1, Box 1, Monsanto Company Records.

[36] Memorandum from Ralph Hayes to Daphne Robert, January 10, 1948, Box 49, Folder 7, RWW Papers, MARBL.

[37] Letter from Ralph Hayes to Robert W. Woodruff, January 10, 1962, Box 139, Folder 2, RWW Papers, MARBL.

Monsanto hoped that its exposé of synthetic production abroad would force Coca-Cola to accept anhydrous materials from domestic suppliers, but it in fact inspired a more rigorous crusade within the Coca-Cola Company to make sure that all future supplies of caffeine met "natural specifications." According to Ralph Hayes, Monsanto's studies forced Coke "to greatly enlarge and supplement our Quality-Control analysis" in the 1950s "by arranging for carbon-dating facilities at three outstanding laboratories" across the country. When the company identified caffeine samples that appeared to be synthetic in origin, they took "rigorous remedial and preventive action" against the offending supplier.[38]

With the emergence of new scientific tools that allowed chemists to determine the age of C^{14} molecules found in a grain of caffeine, Coca-Cola strove for molecular purity. Before Walter Libby developed carbon-dating technology in the mid-1940s, it was entirely possible that a product could be chemically constructed to look, taste, and smell like a natural foodstuff. Now scientists could see things in the molecular world that would allow them to identify synthetic imitations of natural products. If Coke had considered using anhydrous caffeine before the 1950s, it now backed away from the idea, convinced that consumers would be able to use the tools of modern science to identify products coming from dubious sources.[39]

Coke's decision not to use anhydrous materials led to serious financial losses for Monsanto in the late 1950s. The chemical company simply could not make a return on its investments without purchases from Coca-Cola, the largest industrial consumer of caffeine in

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[38] Ibid.

[39] For a description of carbon dating techniques used to identify synthetic caffeine, see Albert B. Allen (Coca-Cola Export Corporation), "Differentiation of Synthetic and Natural Caffeine," *Agricultural and Food Chemistry* 9, no. 4 (July-August 1961): 294-295, and Angus J. Shingler (Coca-Cola Company) and Jack K. Carlton (Louisiana State University), "Method for the Separation and Determination of Theophyllin, Theobromine, and Caffeine," *Analytical Chemistry* 31, no. 10 (October 1959): 1679-1680.

the world. The halving of US tariffs on imported caffeine between 1936 and 1957 had allowed foreign suppliers to offer American buyers competitive prices that barely covered the cost of production in the United States. Coke signed contracts with new suppliers in Western Europe, using its unmatched purchasing power to stimulate competition in a globalized economy. As a result, international prices dropped to just $2.50 a pound by the end of the decade and it appeared that new sources of supply would help push prices even lower in the 1960s. Monsanto could not recover costs on the millions of dollars it had spent to create its synthetic caffeine processing plants. In June of 1956, Monsanto was forced to close down it Norfolk, Virginia, caffeine plant and by the end of the decade, the company's caffeine sales were just half of what they were in 1955.[40]

While Monsanto suffered losses in its caffeine operations, Coke thrived. Coca-Cola happily reported in 1962 that one of the company's "minor current embarrassments is to prevent our inventory from becoming unmanageably large." Without abandoning its requirements for sourcing its caffeine from natural products, the company now had more cheap caffeine in its warehouses than at any other point in company history. The secret to Coke's newfound success lay in the rapidly expanding decaffeinated coffee market and the waste it generated.[41]

Turning Health Fears into Profits: Coca-Cola and the Post-1950s Decaffeinated Coffee Market

In the 1930s and 1940s, an anti-caffeine movement, one that Coca-Cola had worked hard to suppress, sustained the birth and growth of the decaffeinated coffee industry. Health-

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[40] Letter from Ralph Hayes to Robert W. Woodruff, January 10, 1962, Box 139, Folder 2, RWW Papers, MARBL; "Monsanto Cuts Synthetic Caffeine Price Sharply, Cites Import Pressure," *Wall Street Journal*, December 22, 1958, 32.

[41] Letter from Ralph Hayes to Robert W. Woodruff, January 10, 1962, Box 139, Folder 2, RWW Papers, MARBL.

conscious Americans created a niche market for narcotic-free beverages, believing that caffeine caused nervous jitters and insomnia. Many consumers began to ask for decaffeinated coffee as a healthy substitute to regular coffee brands. As the decaffeinated market expanded in the 1950s, large amounts of caffeine became available at coffee processing plants around the world. Thus, a consumer culture driven by a desire to limit the consumption of caffeine ironically stimulated an unprecedented production of the same narcotic, helping to create a huge supply of cheap processed caffeine.

In 1906 a German businessman named Ludwig Roselius patented a method for treating green coffee beans with steam that permitted caffeine extraction. Using this new decaffeination technique, Roselius began production of Kaffee-Hag, the first decaffeinated coffee blend branded for commercial sale. Over the next ten years, Roselius distributed decaffeinated coffee in France under the label Sanka (a creative coupling of the French words meaning "without caffeine") and in the United States as Dekafa. Hubner's Health Coffee and other competitors emerged by the 1910s, though it would take several more decades for decaffeinated brands to command a significant share of the coffee market.[42]

In the 1910s and 1920s, consumer demand for decaffeinated products was limited, in part because caffeine-free beverages were expensive. The first real efforts to mass produce decaffeinated coffee began when coffee bean prices reached new historic lows because of overproduction in Brazil, a country that provided over 50 percent of the United States coffee imports by the turn of the century. Brazilian growers had dramatically expanded coffee cultivation in the late nineteenth century to serve new purchasing contracts from Arbuckle Brothers, Folger's, and other burgeoning mass marketing firms. Anxious to capitalize on

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[42] Mark Pendergrast, *Uncommon Grounds*, 110.

high commodity prices, growers had planted thousands of new coffee trees at the end of the nineteenth century, but when they matured four years later, there was more coffee being produced than buyers needed. In 1901, over 5 million bags of surplus coffee remained in South American ports, contributing to a market collapse that reduced prices to 6 cents a pound, down from 20 cents a pound just thirty years earlier. Growers in coffee-producing countries received a pittance for their labor, even as American companies made profits on the markup of cheap commodities.[43]

With regular coffee prices plummeting, decaffeinated brands became comparatively more expensive. Significant capital outlays had to be made in order to process beans to make decaffeinated coffee in the first two decades of the twentieth century, forcing distributors to price their product at over a dollar a pound, significantly higher than regular coffee. Few consumers were willing to pay high prices for a product stripped of its chief ingredient, especially considering the fact that the new beverages did not, according to many consumers, taste very good.

But by the 1930s prices for decaffeinated coffee declined, as a result of new investments made by the Kellogg Company and General Foods. These two American companies bought out foreign decaffeinated producers, spending large amounts of capital to improve and streamline decaffeination processes. Kellogg purchased Kaffee-Hag in the early

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[43] Market forces would have driven growers out of business, ultimately yielding production shortages, but the Brazilian government intervened to stabilize prices in the early 1900s, fueling an expansion of the coffee industry in the country. Implementing a "valorization" program designed to increase coffee, prices, the state borrowed substantial amounts of money from international lenders to pay for surplus coffee bags, which the government either stockpiled in silos or burned. As historian Richard Tucker explains, the "valorization mechanism encouraged maximum expansion of coffee production by guaranteeing planters a profitable price without fixing any limits to government purchases." To be sure, international prices increased as a result of the subsidy program, but they remained well below the level they had reached in the 1870s. Richard Tucker, *Insatiable Appetite*, 191-192. In *Insatiable Appetite*, Richard Tucker catalogs the environmental degradation caused by the expansion of coffee plantations in the late nineteenth and early twentieth centuries. See Richard Tucker, "The Last Drop: The American Coffee Market and the Hill Regions of Latin America," *Insatiable Appetite*, 179-225.

1930s and spent over $1 million on a new decaffeination system. General Foods, formerly the Postum Company and by 1928 the major distributor of Maxwell House Coffee, developed a decaffeination plant in Hoboken, New Jersey, and bought out Roselius's Sanka decaffeinated brand in 1932, just one year after partnering with American Can to develop vacuum-sealed packaging that would preserve ground coffee for longer periods of time. In 1937, General Foods purchased Kaffee-Hag from Kellogg, making the company the sole producer of decaffeinated coffee in the United States.[44]

Achieving economies of scale, General Foods dropped the price of its decaffeinated brands by almost 70 percent in 1939. General Foods's celebrated the price reduction in the *New York Times*, and the company's merchandising manager reported, "Sanka Coffee, which ten years or so ago retailed at a dollar is now priced to sell at a little more than a third of that amount." By the end of the Great Depression, consumers could purchase decaffeinated brands at prices that were just a few cents higher than regular coffee, which averaged 22 cents per pound in 1939.[45]

As General Foods expanded its decaffeinated coffee operations, it quickly became one of the leading producers of processed caffeine in the United States. In 1944, the company produced over 300,000 pounds of caffeine for commercial buyers, almost 20 percent of total domestic production and just 50,000 pounds less than Maywood Chemical Works. This new domestic supply, coupled with collapsing tariff barriers, put incredible

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[44] "General Foods Corp." *Wall Street Journal,* July 30, 1931, 6; *Washington Post*, July 25, 1933, 8.
[45] "General Foods Cuts Decaffeinated Coffees; Puts Them Into 35 to 37 Cent Retail Range," *The New York Times*, July 21, 1939. United States Bureau of the Census, *Historical Statistics of the United States: Colonial Times to 1970*, vol. 2 (Washington, DC: GPO, 1975).

pressure on Monsanto and other domestic producers to reduce costs in the early 1950s in order to remain competitive.[46]

Yet, despite the emergence of a third dominant caffeine producer in the United States, Coke did not immediately switch the majority of its purchasing accounts to General Foods. It took several years for the Hoboken plant to improve their decaffeination process to meet Coca-Cola's standards of quality. According to Ralph Hayes, General Foods expended considerable resources beginning in the mid-1950s to revise "production procedures" to reduce "impurities sometimes found in the finished material."[47]

By 1957, General Foods had perfected its decaffeination system to the satisfaction of Coke chemists, and with the souring of the soft drink giant's relations with Monsanto, the Hoboken plant quickly became Coke's dominant caffeine supplier. That year, General Foods provisioned Coke with 350,000 pounds of caffeine, roughly 49 percent of the company's total annual demand.[48]

By the end of the 1950s, General Foods could undersell all other domestic suppliers. The company's competitive advantage can in part be explained by environmental conditions that encouraged coffee cultivation in South America after 1953. In July of that year, Brazil experienced a devastating frost that destroyed large numbers of coffee trees. The result was a temporary spike in coffee prices (up to $1 a pound) that drove many growers to plant additional rows of coffee plants. Two years later, when these new crops began to fruit, a flood of coffee beans entered the international market, causing prices to drop precipitously.

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[46] Monsanto Sales Survey: Caffeine and Theobromine, August 3, 1944, Series 3, Box 1, Monsanto Company Records.
[47] Letter from Ralph Hayes to Robert W. Woodruff, January 15, 1959, Box 138, Folder 6, RWW Papers, MARBL.
[48] Memorandum Re: Mdse. #3 in 1957 from Ralph Hayes, January 17, 1958, Box 138, Folder 5, RWW Papers, MARBL.

As a result, General Foods made huge savings on supply costs, allowing it to offer caffeine to Coke at just $2.10 a pound, the best price Coke had received in years.[49]

Coca-Cola had found a way to adapt to new market conditions without compromising its company policy of using natural ingredients. Caffeine extracted from coffee beans became Coke's main source of supply in the years ahead, and as the decaffeinated market continued to expand, Coca-Cola considered cutting out the middle man, becoming its own supplier.

In 1960, Coca-Cola purchased the Tenco Company, a recently-acquired subsidiary of Minute Maid that had become a major producer of instant coffees. Created by regional coffee producers such as Joseph Martinson and Company and Arnold and Aborn in the 1950s, Tenco was a conglomerate of ten smaller companies that sold coffee blends to A&P, Standard Brands, and other private-label retailers. Pooling resources, this small producer alliance quickly became a major competitor in the international coffee market. By 1961, it was the third largest coffee producer in the world.[50]

Coke purchased Tenco in part because they recognized the corporation could channel cheap processed caffeine to Coke's sparkling beverage departments. Tenco had developed a decaffeination plant in Linden, New Jersey, in the 1950s that produced thousands of pounds

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[49] In 1959, General Foods's offer to the Coca-Cola Company was so good that Ralph Hayes contacted its supplier to suggest that it actually consider raising its selling price. In January Ralph Hayes wrote to Ira Vandewater, General Foods purchasing agent, explaining that he thought the "price in this contract is too low." He added, "The frankness of our relationship has been such that, when I thought prices were high in 1954, I did not hesitate to tell you so. Now the pendulum has, I believe, swung too far in the opposite direction." Letter from Ralph Hayes to Ira Vandewater, President of R. W. Greef & Co., January 14, 1959, Box 138, Folder 6, RWW Papers, MARBL.

[50] Mark Pendergrast, *Uncommon Grounds*, 241. For a history of instant coffee, see John M. Talbot, "The Struggle for Control of a Commodity Chain: Instant Coffee from Latin America," *Latin American Research Review* 32, no. 2 (1997): 117-135.

of caffeine each year. In the 1960s and 1970s, the caffeine that Tenco extracted from coffee went directly into Coca-Cola's soft drink brands.[51]

But though Tenco's Linden plant offered Coke copious supplies of caffeine, the subsidiary's mediocre sales performance ultimately made it more of a liability to the parent company than a benefit. As early as July 1961, Benjamin Oehlert, head of the company's Minute Maid division (acquired by Coca-Cola in 1960), announced that Tenco's earnings report had "been very disappointing." He argued that the "only reason we bought" Tenco "was our conviction that we could "improve the stability, value and earning power" of the company. Coke was not interested in keeping Tenco as its in-house caffeine supplier if the company continued to post sluggish sales.[52]

Throughout the 1960s, Coca-Cola struggled to make Tenco coffees competitive with major labels produced by General Foods's and Nestlé. The main problem, according to Tenco head Ed Aborn, was that the company was "strictly a supplier of private brands" servicing regional retailers on the East Coast. According to Aborn, Tenco was "helpless to defend itself against aggressive promotional activities of the national brands." Coke's greatest strength lay in exploiting the price between commodity prices and the branded products it sold to consumers. Because Coke's coffee had no national brand recognition, it was little different from other beans sold by wholesalers. Buyers were not willing to pay a premium price for Coke's coffee. As a result, Coke was convinced that the subsidiary would remain a drain on company earnings, and the company sold Tenco in 1981. After nearly two

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[51] Reflecting on Coke's Tenco purchase, longtime coffee industry executive Stuart Daw argued, "Coca Cola bought out Tenco, a group of 10 amalgamated instant coffee producers, not because it wanted to enter the coffee business per se, but for the procurement of caffeine." Stuart Daw, "Reflections in a Cup: Caffeine Anyone?" *Canadian Vending and Office Coffee Service Magazine*, http://www.canadianvending.com/content/view/1113/; "Coffee Decline--Fewer Drinkers, Fewer Cups," *New York Times*, March 15, 1975, 12.

[52] Letter from Benjamin Oehlert to Lee Talley, July 19, 1961, Box 242, Folder 5, RWW Papers, MARBL.

decades of market experiments, company CFO Sam Ayoub explained, "We don't really care much to manufacture coffee we can't market." The company went back to being a third-party buyer of caffeine rather than its own supplier.[53]

While Coke's private-label enterprise faltered, other national decaffeinated brands that had been around longer became wildly popular. General Foods's decaffeinated coffees made significant gains in the 1960s, spurring the company to release two new brands in the early 1970s. Nestlé quickly followed with Taster's Choice Decaffeinated in 1971 and Nescafé Decaffeinated in 1975. Annual per capita decaffeinated consumption increased from just 1/10th of a cup in 1962 to almost 3/10th of a cup ten years later. Over the same period, regular coffee consumption decreased from over three cups a day to a little over two cups a day. According to industry spokesmen, decaffeinated coffee represented the "fastest growing coffee segment" in 1975, capturing 13 percent of the market, an increase of over 70 percent from 1970.[54]

The rapid expansion of the decaffeinated industry was in many ways a response to renewed consumer health concerns about caffeine. Beginning in the early 1960s and continuing into the 1970s, new scientific evidence suggested links between caffeine and increased incidence in birth defects. New reports also suggested that caffeine consumption was correlated to increased incidence of bladder and pancreatic cancer. Oncological studies were not conclusive, but uncertainty raised consumers' fears.[55]

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[53] Report from Ed Aborn, June 21, 1961, Box 35, Pendergrast Research Papers, MARBL; "Coca-Cola to Sell Tea, Coffee Unit to Tetley," *Wall Street Journal*, November 18, 1981, 4.

[54] "Nestle's Brewing Something New," *The New York Times*, October 1, 1971, 66; "Coffee Decline—Fewer Drinkers, Fewer Cups," *The New York Times*, March 15, 1975, 12; "Worries Start Bubbling Up Over Caffeine in Colas," *Washington Post*, January 11, 1970, B5; "How Dangerous is Caffeine in Cola?" *Los Angeles Times*, January 15, 1970, G18.

[55] "Clear Answers Lacking on Caffeine's Effects," *Los Angeles Times*, October 15, 1972, E6; Bennett Alan Weinberg and Bonnie K. Bealer, *The World of Caffeine: The Science and Culture of the World's Most Popular Drug* (New York; London: Routledge, 2001), 189.

In this climate of heightened sensitivity, Coke worked to keep the caffeine content of its beverages hidden, and it did so by appealing for special exemptions from the Food and Drug Administration. Before the 1960s, cola beverages did not have to list their caffeine content because the stimulant was considered an essential ingredient known by the public to be a constituent of all cola beverages. In fact, federal law prohibited the use of the word cola to describe a beverage that did not contain caffeine. In 1961, however, FDA Commissioner George Larrick proposed an amendment to the Food, Drug, and Cosmetic Act of 1938 that would have required all soft drinks companies to list caffeine as an ingredient on beverage packaging. The move was a response to a flood of letters the FDA had received from concerned citizens who wanted to know what was in soft drinks.[56]

Coca-Cola executives met with Commissioner Larrick to express their grievances about the proposed labeling requirements in 1961. Edgar Forio and Benjamin Oehlert argued that caffeine was an "essential ingredient" in cola beverages and that without the stimulant the soft drink could not properly be called a cola. The company's product was a "standard" foodstuff, Oehlert argued, one that was well-known to the public. If the FDA insisted that Coca-Cola list its ingredients, it would have to do so for natural caffeine-containing products, such as tea and coffee.[57]

Larrick balked at the company's appeals and explained at a private meeting with Coke executives that he would continue to push aggressively for a repeal of soft drink labeling exemptions. If the company wanted to challenge the FDA's move, Larrick

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[56] "Labels Required for Soft Drinks," *New York Times*, June 15, 1961, 45; A sample of these letters can be found in Box 22, Folder 6, Pendergrast Research Files, MARBL.

[57] They also made the argument that caffeine deserved special exemption because it was a "flavor" and should be subject to the provisions of the law that allow "flavors" to be listed simply as "flavouring." Letter from Edgar Forio and Benjamin Oehlert to George Larrick, July 21, 1965, Box 242, Folder 5, RWW Papers, MARBL.

suggested the company push for a public hearing where consumers could weigh in on the decision. As Coke historian Frederick Allen pointed out, Oehlert and Forio naturally opposed this option, believing a hearing would give health critics a highly visible "public forum" in which to attack Coca-Cola.[58]

Fortunately for Coke, the company never had to participate in a public hearing. In the fall of 1965, Larrick retired from the FDA, and in his place President Lyndon Johnson appointed Center for Disease Control (CDC) director James Goddard to take over the agency. The decision did not come as a surprise to Coca-Cola. Company executives had met with Johnson in 1965 to push for Goddard's appointment, believing he would be a useful ally for the company. A resident of Atlanta, Goodard was on "friendly terms with several company officials" at Coke, according to Frederick Allen, someone the company could trust.[59]

Goddard abandoned Larrick's proposals for new labeling requirements and approved an FDA order in 1966 that exempted soft drinks made from "natural caffeine-containing extracts" from having to list caffeine as an ingredient on beverage packaging. The fact that Coke used caffeine from coffee beans and not a synthetic product was crucial under the wording of the new order. While cola beverages and "pepper" soft drinks could continue their established labeling practices, all other beverages with added caffeine had to say so on company labels.

The FDA exemption allowed Coca-Cola to forego ingredient labels for a few more years, but consumer agitation continued to pose problems for the company in the early 1970s. Aggressive demands for corporate transparency forced Coke to reconsider its labeling policies, and in 1971 the company decided to voluntarily list caffeine as an ingredient on

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[58] Frederick Allen, *Secret Formula*, 329.
[59] Ibid.

Coke packaging. It did so in large part because they believed their intervention would forestall more aggressive federal regulations that appeared eminent in light of consumer agitation. Since World War II, Coca-Cola executives had talked about the importance of preempting a government crackdown on lax food labeling requirements. Benjamin Oehlert warned in 1948 that "ingredient labeling is an issue which must face us inevitably sooner or later" and noted that the company could either "continue to sit and wait for the explosion or we can do something about it now that will prevent the explosion from ever occurring." By taking the first step, Coke believed it would mollify consumer concerns about transparency and thereby deflect FDA attention away from the company's product.[60]

With caffeine now on the label of its signature beverages, the company turned its attention towards influencing the discourse within the medical community about the pros and cons of caffeine consumption. In 1978, Coca-Cola partnered with General Foods, Kraft, Heinz, and other major industrial food giants to create the International Life Sciences Institute (ILSI), an organization that offered a counterweight to research institutions publishing work questioning the healthfulness of caffeine consumption. According to caffeine scholars Bennett Alan Wienberg and Bonnie K Bealer, ILSI's Caffeine Department was "careful to search out and support those researchers who" treated "caffeine as a relatively harmless compound" and avoided "supporting those who would like to see it removed from the market."[61]

ILSI played a critical role in shaping the debate about caffeine consumption in the 1980s and 1990s, hosting a series of high-profile international conferences on caffeine consumption and human health. At these conferences, top scholars from all over the world

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[60]Letter from Benjamin Oehlert to Ralph Hayes, February 27, 1948, Box 242, Folder 4, RWW Papers, MARBL.
[61] Bennett Alan Weinberg and Bonnie K. Bealer, *The World of Caffeine*, 189-190; Mark Pendergrast, *Uncommon Grounds*, 309.

were invited to hear the results of industry-supported research, many returning to their home institutions convinced that caffeine did not present a health threat to American consumers. In an article entitled "Good News for Caffeine Consumers?" the popular journal *Science News* explained how three leading scholars—Harvard Medical Center scientist P. B. Dews, renowned Boston pediatrician Alan Leviton and Cincinnati Children's Hospital Research Foundation head James G. Wilson— all attended a 1982 ILSI-sponsored conference in Greece in which they heard overwhelming evidence that caffeine was safe for consumption. Speaking to the press, these scientists "said they were passing on the essence of recent medical literature and scientific results reported at the workshop." The results of the conference appeared to offer "almost too-good-to-be-true news," according to the journal: caffeine was not linked to pancreatic cancer, heart attacks, birth defects or hyperactivity in children. When asked whether any conference presentations highlighted studies that showed caffeine to be harmful to health, Dr. Dews responded, "Nothing raised a serious question. We cannot manufacture bad news."[62]

ILSI funded National Institute of Mental Health (NIMH) research in 1982 that sought to address the question of whether there was any correlation between caffeine consumption and hyperactivity in adolescent males. Dr. Robert Elkins, one of the leading scientists in the NIMH project, admitted that he felt pressure to produce certain results favorable to the Institute's membership. He explained, "It was clear that proprietary concerns had something to do with whether the research continued," adding, "One needs to be freer than that." With conflicting evidence before them, the NIMH team concluded that children should determine

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[62] The annual budget for ILSI in the mid-1980s was $3 million. "NIH Officials Role Disputed," *Washington Post*, September 28, 1985, A2; J. A. Treichel, "Good News for Caffeine Consumers?" *Science News* 122, no. 20 (November, 13, 1982); "No Need for Coffee Fears, Experts Say," *Chicago Tribune*, November 5, 1982, 12; "No Caffeine-Tumor Link Seen," *New York Times*, October 19, 1982, C7.

for themselves whether caffeine is an appropriate component of their diet. Elkins co-researcher, Dr. Judith Rapoport claimed, "It looks as if even children self-select diets that are right for their own nervous system," a conclusion contested by other leading scientists who pointed out that children often do not have enough information about the products they consume to make wise choices.[63]

In 1985, ILSI's ability to shape federal food and drug regulatory policy increased dramatically when Institute trustee and executive committee member Dr. Artemis Simopoulos became the chairwoman of one of the most important nutrition committees at the National Institute for Health (NIH). Heading the Nutrition Coordinating Committee (NCC), Simopoulos was responsible for overseeing and directing research related to food and beverage products in the United States. Considering the importance of Simopoulos's position and her links to ILSI, leading scientists questioned the prudence of her appointment. Peter Greenwald, a senior researcher at the National Cancer Institute (NCI), wrote to Simopoulos to express his reservations about her impartiality, saying, "I continue to be concerned that you personally have strong opinions about diet and cancer and are very selective about what gets presented to the NIH leadership and others." Others echoed Greenwald's concerns, NCI director Dr. Claude Lenfant claiming that the NCC under Simopoulos "operates as if it were independent and not part of NIH." These concerns ultimately led NIH director James B. Wyngaarden to reassign Simopoulos to another branch of the NIH in June of 1986.[64]

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[63] Matt Clark with Mariana Gosnell, Deborah Witherspoon, and Mary Hager, "Is Caffeine Bad for You?" *Newsweek*, July 19, 1982, 62; "Diet Therapy For Behavior Is Criticized as Premature," *The New York Times*, December 4, 1984, C14.

[64] "Scientists Question Objectivity of Top NIH Nutrition Official," *The Washington Post*, December 24, 1985, A6; "NIH Official's Role Disputed," *The Washington Post*, September 28, 1985, A2; "NIH Reassigns Controversial Official," *The Washington Post*, April 13, 1986, A5.

Despite Simopoulos's removal from the NCC, ILSI continued to shape health policy for decades to come. The Institute sponsored international conferences on caffeine research in the 1990s and 2000s and published a couple of major works on caffeine consumption and human health. In 2010, the Institute was responsible for completing a comprehensive review of all scientific studies relating to caffeine consumption and birth defects, publishing its findings in the well-read *Food and Chemical Toxicological* journal in 2010. The report concluded that there was not enough evidence to warrant warnings about links between caffeine consumption and birth defects.[65]

Coke's interventions in medical research were meaningful. Doubt remained the critical factor inhibiting government intervention in the 1970s and 1980s and ILSI helped fund research that fueled that doubt. With conflicting evidence on hand, FDA regulators were incapable of initiating regulatory initiatives to warn consumers about the potential health consequences of caffeine consumption. The *New York Times* summarized the FDA's stance on caffeine in the early 1980s, reporting, "Top F.D.A. officials tend to agree that the hazard is real. But for many reasons they are hesitant to act rapidly. Uppermost in their thinking is public reaction." Commenting on the FDA's reluctance to issue warnings about caffeine in the early 1980s, FDA general counsel Richard Cooper admitted, "Every time we face a problem like this you think about your long-term credibility." Cooper noted the decline in public confidence in the FDA following the agency's efforts to ban saccharin in

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[65] Jack E. James, claimed that ILSI's 1993 publication *Caffeine, Coffee, and Health* (New York: Raven Press, 1993), fell "short of providing adequate coverage of the available evidence on" the "health implications" of caffeine consumption, adding "Much of the extant literature is either scantly covered or omitted altogether, including the work of several major research groups (e.g., Shapiro et. al. at UCLA, Lane et al. at Duke University, and Smits et al. at the University of Njmegen, The Netherlands)." Jack E. James, book review of *Caffeine, Coffee and Health*, *Addiction* 90, no. 1 (January 1995), 134-135. James elaborates on his concerns about ILSI in "Caffeine, Health and Commercial Interests," *Addiction* 89, no. 12 (December 1994): 1595-9; 2010 International Life Sciences Institute (ISLI) North America Annual Report.

1977 and concluded, "You worry about whether the scientific case will satisfy the public and press. You can win in the scientific forum and lose in the political forum."[66]

Uncertainty paralyzed the FDA, and caffeine remained a Generally Recognized as Safe (GRAS) ingredient available in historically unprecedented quantities for consumption by consumers of all ages after the 1980s. With the state on the sidelines, the soft drink industry continued to use their products as a vehicle to channel thousands of pounds of caffeine to consumers each day. Coke and its beverage partners purchased over 2 million pounds of processed caffeine from coffee decaffeination plants in 1986 alone, helping to make soft drinks the single most consumed caffeinated beverage in the United States.[67]

Perversely, the caffeine debate of the 1980s and the fear it inspired in consumers helped Coke reduce its caffeine procurement expenses. Due to rising uncertainties about caffeine, regular coffee consumption decreased from 3.12 cups a day in 1962 to just 1.83 cups a day in 1985, while decaffeinated sales soared. By the middle of the 1980s, decaffeinated brands commanded over a quarter of the US coffee market. As a result, caffeine continued to pile up at decaffeination plants around the country, ensuring that Coke would have ample supply of it chief narcotic at low prices for years to come.

Health fears, then, posed both serious liabilities for company growth at the same time that they offered a means to reduce supply-side costs. Doubt was the company's biggest ally, not simply because it forestalled FDA interventions in the market, but because it sustained the growth of the decaffeinated industry whose primary waste helped supply an expanding

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[66] As Dan Carpenter has shown in his book *Reputation and Power: Organizational Image and Pharmaceutical Regulation at the FDA* (Princeton: Princeton University Press, 2010), the desire to preserve institutional reputation often took precedence over public health interests, and in the case of caffeine, FDA scientists simply were not willing to take the risk of exposing the agency to public ridicule in light of conflicting evidence about the health costs of caffeine consumption "Caffeine Quandary Illustrates F.D.A.'s Plight," *New York Times*, January 8, 1980, C1.

[67] "The Caffeine," *Washington Post*, February 26, 1986, H12.

caffeine commodity market. Having switched the vast majority of its caffeine accounts to General Foods and other coffee titans, Coca-Cola depended on the perpetuation of the decaffeinated consumer culture, even as it sought to tame the more extreme factions within it.

Epilogue: The Limits of Caffeine-Free Coke

When Coca-Cola introduced a caffeine-free version of its flagship brand in 1983, it was decidedly equivocal about whether the decision would ultimately produce dividends for the company. On the one hand, the company wanted to explore a market that proved lucrative for Pepsi, Seven-Up, and other soft drink competitors, but on the other hand the company did not want to unduly exacerbate anxieties about the potentially harmful side effects of caffeine consumption. Coke wanted a portion of caffeine-free market, but it did not want to jeopardize the profitability of its caffeine beverages to do so.

Coke's ambivalence about entering the caffeine-free market came across in company advertising. One television commercial featured a rambling ditty sung by a young girl that began, "Mom got it for me, cause it's caffeine free. I don't even know what that means," ending with the awkward refrain, "Well, I don't care if it's caffeine-free, I only know it tastes good to me." None of the company's advertisements ever overtly explained why caffeine had been taken out of this new company beverage and Coke executives never went on record saying that health fears were the primary impetus for the new product launch. Caffeine-Free Coca-Cola was just "the real thing" in new packaging, the company argued. Nothing substantial had changed.

But despite company efforts to downplay the differences between regular and caffeine-free Coke, the new product without caffeine simply did not generate the kind of

consumer demand that had made the Coca-Cola Company one of the most profitable corporations on the planet. In 2008, sales of Caffeine-Free Coca-Cola Classic represented less than ½ percent of Coke's total earnings. In 1907, Wiley had predicted that Coke without caffeine would not sell, arguing, "Even skillful advertising would not be able to maintain the popularity of a beverage which did not have something more than an advertisement in its appeal to human patronage." For Wiley, caffeine stimulated psychoactive reinforcement mechanisms that encouraged repeated consumption of Coke's products.[68]

Caffeine-Free Coke's sluggish sales showed that caffeine was indeed a critical component of the secret formula, and it appears that it will become an even more important ingredient in the years to come. In a busy digital age, consumers are once again looking for pick-me-ups that will help them sustain high levels of energy throughout the ever-expanding workday. Increasingly, people are seeking out beverages that will give them more of that caffeinated kick, turning to Red Bull and 5-Hour Energy, which promise to give consumers a bigger jolt than the leading soft drink brands.

The new caffeine fad may not prove beneficial to Coca-Cola. The history of Coke's procurement practices reveals that the company's future profitability will depend on the continued growth of the decaffeinated market. Fear is a critical asset for the company, one that has helped to generate "waste" markets that the company has been able to exploit at low cost. If consumer tastes shift and caffeine fears diminish, critical inventories may dry up. Coke's success in meetings its caffeine demands may be less contingent on environmental conditions abroad or international trade treaties and more dependent on a consumer tastes that will continue to define commodity markets for years to come.

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[68] Heather Landi, "A Challenging Year," *Beverage World* 127, no. 4 (April 15, 2008), 56; Harvey W. Wiley, "The Effects of Caffein Upon the Human Organism," June 1915, Box 192, Harvey Washington Wiley Papers, Library of Congress, Washington, DC.

Chapter 5: Packaging
Coca-Cola, The American Beverage Industry, and the Development of Curbside Recycling Programs in the United States, 1950-2000

Introduction

Coca-Cola is one of the most conspicuous corporations in the world. The company has placed vending machines in every corner of the globe, and bright red Coca-Cola signs dot rural roads from Alabama to Zimbabwe.[1]

Coke's exposure, however, has not always been its greatest strength. In the 1960s, Coca-Cola and its soft drink rivals began to produce prodigious amounts of packaging waste, switching to one-way containers in an attempt to secure greater profits by consolidating their domestic bottling networks. Nonreturnable distribution systems produced unsightly waste that stirred consumer backlash against corporate profligacy. The beverage industry's most precious commodity—its image of innocent fun—was at stake, and Coca-Cola, PepsiCo, and other beverage companies had to take steps in order to control the debate about producer responsibility.

Unable on their own to clean up the mess they helped create, the nation's big beverage companies turned to federal and local government agencies in the 1970s and 1980s to help develop solid waste management programs that would keep corporate waste out of sight. Opposing initiatives requiring producers to pay for industry pollution, beverage companies lobbied for "comprehensive" recycling programs to solve the problem. Recycling became a corporate weapon in a fierce battle to undermine

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[1] A version of this chapter will appear in a forthcoming issue of the *Business History Review*.

mandatory deposit legislation and bans on nonreturnable packaging, point-source pollution reduction programs popular among environmentalists in the "Age of Ecology."

In the end, industry lobbyists were victorious, pushing through legislation at the federal, state, and municipal levels that established recycling programs as the cure-all for the nation's solid waste problems. Recycling became the exclusive solution rather than the complement to mandatory source reduction programs. While Coke and its corporate partners continued to produce billions of one-way containers, municipalities took on new debts in order to deal with the mounting piles of trash.

Even as governments went about the hard work of constructing and developing the infrastructure to deal with nonreturnable packaging waste, Coca-Cola emerged in the public mind as one of the corporate champions of environmental stewardship, a dedicated industry leader in recycling technology. By the 1990s, Coca-Cola distributed brightly colored recycling bins and produced "green" advertisements declaring their commitment to recycling programs. Coke put all of its marketing might behind reinventing itself as an environmentally responsible company committed to resource reclamation.

This highly visible corporate greening campaign, however, represented the veneer of a much larger system that had to be built from the ground up, largely by city governments and largely with taxpayer dollars. In part because of the increase in beverage packaging waste, municipal garbage disposal costs had grown exponentially from an estimated $1 billion in 1960 to $4 billion just twenty years later. Shared by all American citizens who paid small sums to finance municipal programs, public commitments to alleviate mounting garbage problems seemed modest, even though the total bill was quite large. Because the costs of cleaning up the mess were distributed, few

citizens recognized the huge capital outlays that were being made by the public on behalf of private industry. Beverage and packaging companies had found a way to enroll local governments in a nationwide corporate clean up and had done so without drawing the ire of an American citizenry typically averse to government bailouts of private industry. They succeeded because the support they received was largely invisible to the public.[2]

When scholars look at the construction of the corporate commonwealth through the lens of environmental history, we see how the metabolic demands of the company helped shape the development of public waste management systems that reduced the material costs of managing the flow of natural resources critical to specific industries. Understanding corporate influence on the development of these environmental programs suggests avenues for reconstructing the systems we have to better serve the needs of the public at large.

Recycling, a system many people today consider the quintessential model of eco-stewardship, was not solely the creation of environmentalists hoping to reduce pollution. In many ways, the system as we know it was a corporate creation critical to the perpetuation of many nineteenth-century extractive industries. This is the story of its construction.

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[2] Martin V. Melosi, "Waste Management: The Cleaning of America," *Environment* 23, no. 8 (October 1981), 9; For a discussion of the massive increase in packaging waste in the twentieth century, see Susan Strasser, *Waste and Want: A Social History of Trash*. Strasser argued that the country's solid waste problems developed in the early twentieth century in part because of the emergence of a new consumer culture that considered recycling and reuse practices outdated and antimodern, symbolic of impoverishment, and potentially harmful to one's health. Ibid., 136, 200, 269.

Why Beverage Giants Switched to One-Way Containers

By the 1910s, soft drink companies and major brewing giants shipped millions of returnable bottles all across the United States. Most companies relied on a network of small bottlers to distribute their products to consumer outlets throughout America.

In order to keep production costs down and to increase profits, local bottlers had to rely on reusable packaging. Between 1899 and 1915, most distributors—small business owners with limited capital resources— used straight-sided returnable glass bottles to sell their products. These containers were fairly generic, but remarkably durable. In several areas of the country, beverage containers carried a one- to two-cent deposit redeemed to the consumer upon return of the empty containers. To receive their deposit back, customers had to return used bottles to retail outlets that sold the particular beverage they purchased (not necessarily the same venue where the customer originally bought their beverage). The *Southern Carbonator and Bottler* frequently exhorted distributors to implement deposit systems in order to ensure that their packaging materials were not lost or damaged. In 1905, the journal argued, "The customer's interest in all bottled beverages ceases when the contents are consumed, without the deposit attachment. The only sane, logical and lasting solution of the bottle question is the deposit system."[3]

Though many bottles were broken or discarded by consumers, most containers made their way back to bottlers for redistribution, some making over forty to fifty return trips to bottling plants. According to a United States Resource Conservation Committee

[3] "Deposit System," *The Southern Carbonator and Bottler* (November 1905), 10; According to the *Coca-Cola Bottler*, Coke distributors found deposit systems particularly effective in inducing returns. See "Bulletin of the Coca-Cola Bottlers Association," *The Coca-Cola Bottler* (April 1929), 34-35.

study completed by the Research Triangle Institute, soft drink bottles posted a return rate of 95.7 percent as late as 1948, just eight short years before the Coca-Cola Company began experimenting with one-way containers. On average, then, two-way soda containers made roughly 22.3 trips from bottler to consumer back to bottler for redistribution in the 1940s. Beer bottles showed similar results, average return rates approaching 32 trips in 1948.[4]

Both the parent companies and local bottlers profited from the two-way distribution system. Local soft drink bottlers—of which there were over 1,000 for Coca-Cola by 1930—spent less money purchasing containers from glass manufacturers, such as Owens-Illinois, and were thus able to use limited capital resources on other production and advertising costs. Parent companies benefitted because the decentralized system allowed them to supply remote outlets in rural America, extending their national reach. The packaging reuse system seemed to be good business for all.[5]

The shift to one-way container distribution began in the brewing business, not the soft drink industry, in large part because the major brewing giants desired a cost-efficient way to break into new markets made available by the collapse of small breweries in the wake of Prohibition. The passage of the Volstead Act in 1919 precipitated the closure of thousands of saloons and public drinking holes across the country, and the number of breweries operating in the United States declined dramatically from approximately 1,500

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[4] The forty to fifty figure reflects return rates for some bottles in the 1960s as calculated by the Investment Research Department of Laidlaw and Company in an Investment Report for the Coca-Cola Company, "Follow-Up Report No. 6 to Basic Report Dated October, 1963," August, 1965, Box 57, Folder 1, RWW Papers, MARBL; United States Resource Conservation Committee, *Committee Findings and Staff Papers on National Beverage Container Deposits* (Washington, D.C., 1979), 75, 76, 84; William K. Shireman, Frank Sweeney, David Newdorf, David McFadden, and Diana Noga, *The CalPIRG-ELS Study Group Report on Can and Bottle Bills* (hereafter cited as *Can and Bottle Bills*), (Stanford: Stanford University Press, 1981), 5.

[5] Constance Hays, *The Real Thing*, 11.

in 1919 to 785 by the time of repeal in 1935. The consolidation of the industry altered brewers' distribution philosophy. The three major national conglomerates, Anheuser-Busch, Schlitz, and Pabst, surveyed the American market after Prohibition and recognized that huge expanses of territory were now without local breweries. To tap these markets and ensure capital growth, large national breweries needed to ship their products in cheap, lightweight, and durable packaging over longer distances.[6]

Nonreturnable containers allowed centralized brewing operations to reach consumer outlets far-removed from distribution centers at low cost. As the American Can Company would write years later, "it was the nationally-minded brewers of that time [the 1930s] who foresaw how a one-trip package could provide a profitable way of quickly renewing franchises over a broad geographical range." The trend towards at-home consumption of beer influenced brewers' interest in new lightweight, durable packaging, but, as American Can noted, "consumers were largely satisfied with returnable bottles" in 1935 and did not call on the brewing industry to change their distribution practices; rather, the prime industry problem was to develop a new way to ship large amounts of beer across expanding national markets. The steel can offered an attractive solution to industry, and in little over a decade, 31 percent of the brewing industry used cans to sell their beverages.[7]

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[6] Shireman, et. al., *Can and Bottle Bills*, 4; American Can Company, *A History of Packaged Beer and Its Market in the United States* (New York: American Can Co., 1969), 7; Maureen Ogle, *Ambitious Brew: The Story of American Beer* (Orlando: Harcourt, 2006), 213; A. M. McGahan, "The Emergence of the National Brewing Oligopoly: Competition in the American Market, 1922-1958," *The Business History Review* 65, no. 2 (Summer, 1991), 229.

[7] American Can Company, *A History of Packaged Beer*, 29; "Soft Drinks: Will the Cans Take Over?" *BusinessWeek*, January 1954, 47; Shireman, et. al., *Cans and Bottle Bills*, 9; "Canned Soda Pop," *Wall Street Journal*, September 24, 1953, 1, in Box 292, Folder 10, RWW Papers, MARBL; McGahan, "The Emergence of the National Brewing Oligopoly," 230, 247-248.

Walter Mack, the savvy soft drink executive responsible for bringing the Pepsi-Cola Company back from near extinction in the 1940s, was the first entrepreneur to successfully introduce one-way containers to the soft drink industry. Mack had broken away from the Pepsi-Cola Company in 1950 and taken over ownership of the Cantrell & Cochran Corporation (C & C). He was interested in developing a new line of "Super" soft drinks that would only be available in cans. Teaming up with Continental Can, Mack began distributing his new beverage in steel containers beginning in 1953. Within weeks, news of Mack's enterprise made headlines not only in the United States, but also abroad. In Britain, the popular tabloid magazine *The Daily Mirror* reported that Mack's new Super colas introduced "a wholly new way of drinking that makes old-style bottled beverages as obsolete as yesterdays horsecars."[8]

Mack argued that one-way containers would allow his company to outcompete Coca-Cola and other industry rivals. In the early years, Mack contended, the soft drink industry "was designed on the little ice box, the horse-drawn cart and a grocery store that carried about four hundred items. The horse could make a hundred and fifty stops a day, to deliver and pick up the empties. Try that at today's truckers wages!" Rejecting the returnable distribution system of the soft drink giants, a system that would require the company to make expensive capital outlays to finance transportation costs, Mack argued that C & C would "have no distributors. We'll be our own."[9]

Coca-Cola watched patiently to see how the canning trend would develop, reluctant to force its bottlers to invest in expensive canning equipment. As Coke

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[8] "Now! Your Favorite Soft Drinks in Cans!" *Daily Mirror*, June 10, 1953, 19, in Box 292, Folder 10, RWW Papers.

[9] "C&C Super Corp. to Open Third Plant Next Month to Can Soft Drinks in Chicago," *New York Times*, April, 25 1954, F1.

President H. B. Nicholson explained, Coca-Cola mirrored other soft drink companies that were committed to "a healthy decentralization," with separate ownership overseeing bottling and concentrate operations. The company argued that a switch to canning soda pop would not be beneficial for their enterprise, considering such a transition would require thousands of independent bottlers—roughly 1,050 for Coke (5,905 bottlers industry-wide in 1953)—to replace expensive bottling and washing equipment with modern canning machinery.[10]

But despite its public praise for the decentralized bottling network, corporate executives at Coca-Cola headquarters relished the thought of developing a new distribution system that would diminish the power of the local bottler and allow them to accrue profits siphoned off by distributors. In *The Real Thing: Truth and Power at the Coca-Cola Company* (2004), *New York Times* reporter Constance Hays argued that for "nearly as long as there was Coca-Cola in bottles," figuring out how to gain back revenue generated through bottler-to-retailer exchanges "would be a strategic priority for a parade of senior executives."[11]

One-way containers offered an attractive solution to Coca-Cola's dilemma. Walter Mack had shown in 1953 that lightweight, nonreturnable packaging could dramatically decrease shipping and handling costs, allowing centralized distributors to serve retailers in distant markets. The lesson could not have been lost on Coca-Cola executives who realized that lightweight packaging offered the corporate office a powerful weapon in its intra-company war with local bottlers. The company believed

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[10] H. B. Nicholson, "The Fabulous Frontier," A Speech for the American Bottlers of Carbonated Beverages, November 11, 1953, Box 58, Folder 1, RWW Papers, MARBL.
[11] Hays, *The Real Thing*, xii.

that profits once destined for the pockets of local bottlers could now be channeled into corporate coffers if the parent company could take over bottling operations.

Intrigued by the success of Mack's distribution system, the Coca-Cola Company began to experiment with steel containers in 1955, teaming up with the American Can Company to produce 12-ounce "MiraCans" for export to post-exchange stores at military bases abroad. By the mid-1960s, Coke was selling thousands of cases of canned Coke to domestic markets, many in aluminum containers after 1967.[12]

Large Coca-Cola distributors enjoyed huge savings from the one-way container system. The Pacific Coca-Cola Bottling Company (one of the largest Coca-Cola distributors in the country) conducted an internal study in 1978 that revealed the bottler used just 42 gallons of gasoline per 1000 cases to distribute one-way containers compared to 94 gallons per 1000 cases to distribute and reclaim returnables. The company also reported savings in labor costs with the elimination of certain collection and cleaning services needed for returnables. Other mega-bottlers commented on the reductions in warehouse and machinery costs associated with the shift to one-way containers, costs that totaled some $4 million dollars, according to one Coke distributor.[13]

Smaller bottlers who depended on a returnable system to turn a profit lambasted the government for allowing soft drink giants to pass off the costs of container collection and disposal on the government. Independent distributors servicing small markets, such as Peter T. Chokola, president of the family-owned Chokola Beverage company in

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[12] "Coca-Cola in Cans for the Far East," *The Coca-Cola Bottler* (April 1955), 28; "Sales of Canned Soft Drinks Soar," *The Coca-Cola Bottler* (July 1965), 25-27; "Aluminum Aftermath," *The Wall Street Journal*, November 22, 1965, 2.

[13] Senate Committee on Commerce, Science, and Transportation, *Reuse and Recycling Act of 1979*, 96th Cong., 2d sess., March 3, 1980, 58; Senate Subcommittee for Consumers, Committee on Commerce, Science, and Transportation, *Beverage Container Reuse and Recycling Act of 1977*, 95th Cong., 1st sess., 25, 26, January 27, 1978, 158.

Wilkes-Barre, Pennsylvania, lobbied Congress to ban nonreturnable containers in the early 1970s, convinced that the containers gave soft drinks giants a competitive advantage. According to Chokola, the one-way distribution system adopted by Coca-Cola, Pepsi, and other corporate titans forced city governments to pay for the "recovery burden of 65,000 truckloads" of nonreturnable containers each day. "Centralization and intent to monopolize," Chokola contended, "is the underlying reasons behind rapid conversion of soft drink industry to throwaways."[14]

Chokola and other small bottlers had strong evidence to support their claims that one-way containers were helping large bottlers monopolize markets. The number of Coca-Cola bottlers operating in the United States had dropped dramatically from roughly 1,020 in 1929 to an estimated 500 in 1979, with the total number of bottlers in the soft drink industry declining from 4,519 in 1960 to 2,797 by 1972. Increasing the pace of consolidation in 1986, the parent company created Coca-Cola Enterprises (CCE), a company-owned mega-distributor that began gobbling up even more local bottlers in the 1980s and 1990s. By 1997 there were only 100 Coke bottlers servicing domestic markets. As journalist Constance Hays explained, the number of bottlers had not been that small since the early 1900s.[15]

The one-way container allowed Coke and the major beverage giants to achieve record profits by shifting key costs of distribution onto municipalities. Coke's success assured the consolidation of the soft drink industry as corporate rivals followed the

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[14] Senate Subcommittee on Environment, Committee on Commerce, *Solid Waste Management Act of 1972*, 92nd Cong., 2d sess., March 6, 10, 13, 1972, 35; Senate Subcommittee on Environment, *Nonreturnable Beverage Container Prohibition Act*, 93rd Cong., 2d sess., May 6, 7, 1974, 95, 108; Rogers, *Gone Tomorrow*, 136-137.

[15] Senate Subcommittee on Environment, *Nonreturnable Beverage Container Prohibition Act*, 108; Hays, *The Real Thing*, 11, 182.

number one brand's lead. The era of one-way metal soft drink containers had arrived by the mid-1960s, and though the beverage companies would look to develop new packaging designs in the years ahead, Coke making a major shift towards plastics in 1978, the most dramatic conversion had already taken place by 1960. The beverage industry was primed for a new era of growth in the age of convenience packaging. But would consumers remain committed to this new distribution system?

Consumer Backlash: The Excesses of Industry Become Visible

Soft drink giants' switch to one-way containers in the 1960s generated prodigious amounts of waste that alerted consumers to the environmental costs associated with corporate growth. Thousands of throwaway cans and bottles lay strewn across the American landscape by the 1960s, and many Americans began to call on the brewing, soft drink, and packaging industries to clean up the mess. The first petitions for government regulation began in the early 1950s, over a decade and a half after the major brewers inaugurated nonreturnable distribution systems. In Maryland, state legislators proposed a bill in March 1953 that would have required all one-way beer containers to carry a three-cent deposit. That same year, the Vermont General Assembly passed a law that prohibited the use of nonreturnable glass beer bottles within its state borders (a restriction that lasted up to 1957 when "beer industry pressure" led to its expiration). With the success of the Vermont campaign, one-way container producers and their clients

knew they needed to take more direct action in combating mandatory deposit legislation.[16]

In the mid-1950s, the American canning, brewing, and beverage industries responded to consumer concern about one-way container waste by creating the first national anti-litter organization, Keep America Beautiful (KAB). Though a relative latecomer to the one-way container system (compared to the nation's brewing giants), Coca-Cola and its soft drink industry rivals were committed KAB associates, channeling significant capital resources toward KAB's early publicity campaigns.[17]

KAB's central objective was to deflect accusations that producers were to blame for the country's growing litter problem. Describing the impetus for the new organization, American Can Company's Edward K Walsh admitted that "enlightened self-interest" was a prime-motivating factor. Through targeted education programs, national publicity campaigns, and local clean-up drives, KAB worked to dissuade voters from supporting extended producer responsibility programs that would require their industries to internalize the costs of waste disposal.[18]

KAB produced hundreds of advertisements designed to encourage consumers to do their part to clean up the environment. This promotional material appealed to an American public firmly rooted in a classical liberal tradition that stressed rational consumers' power to solve market problems. As environmental writer Ginger Strand

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[16] In 1961, John Atlee Kouwenhoven published *The Beer Can by the Highway: Essays on What's American about America* (Garden City, N.J.: Doubleday, 1961), a testament to public concern about the aesthetic costs associated with one-way container waste; "Beer Bottle Plan Offered by Delegate," *Washington Post*, 17 March 1953, 26; Andre J. Rouleau, Administrator of Vermont Beverage Container Law, "Vermont Deposit Law and Recycling," Presented at Vermont Solid Waste Summit, November 8, 1985, P2 InfoHouse Online Comprehensive Pollution Prevention Reference Collection, www.p2pays.org/ref/24/23636.pdf.

[17] "Heads New Anti-Litter Group," *New York Times*, October 14,1954, 31; Royte, *Garbage Land*, 184; Melosi, *Garbage in the Cities*, 225-226; Rogers, *Gone Tomorrow*, 141-146.

[18] "Litter Increased in Crowded Cities," *New York Times*, December 7, 1954, 40.

argued, KAB denied that structural changes to industrial technologies would solve the nation's litter crisis. Rather, the organization sought to preclude "any debate over the wisdom of creating disposables in the first place," in this way focusing public attention "on the symptoms rather than the system."[19]

Prime contributors to the growing litter problem, soft drink companies became increasingly concerned about anti-litter backlash in the 1960s. With nonreturnable soft drink cans representing 10.9 percent of all soft drink sales in 1963 (over 65 million cases that year), soft drink giants knew that their companies were exposed targets for anti-litter agitators in favor of industry-specific pollution taxes. Coca-Cola president Paul Austin admitted this fact in 1968. "We participate in the [creation of] litter to a significant degree," he argued, adding that the company had "earned various criticisms for littering the landscape." Austin lamented the fact that "the packaging for our products is highly visible," frustrated that Coke's "colored decoration on a can or the unique shape of our bottle doesn't deteriorate as readily as paper containers." The solution to this problem of exposure, as Austin saw it, was to encourage "individuals" to "actively get involved in the massive job" of cleaning up the unsightly byproducts of Coke's commercial growth.[20]

As they became more and more committed to one-way container technology in the mid to late 1960s, Coca-Cola and its industry partners began to initiate their own anti-litter campaigns to complement KAB efforts, working through their DC-based lobbying

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[19] Ginger Strand, "The Crying Indian: How an Environmental Icon Helped Sell Cans—and Sell Out Environmentalism," *Orion Nature Quarterly* (November/December 2008), 24; Finis Dunaway, "Gas Masks, Pogo, and the Ecological Indian: Earth Day and the Visual Politics of American Environmentalism," *American Quarterly* 60, no. 1 (March 2008), 67-99; Strand, "The Crying Indian," 24; Royte, *Garbage Land*, 184.

[20] Melosi, *Garbage in the Cities*, 170; *Beverage Industry* 87 (June 1996), 26, cited on the Library of Congress's "Coca-Cola Television Advertising' Homepage," http://memory.loc.gov/ammem/ccmphtml/indsthst.html; Paul Austin to Robert W. Woodruff, November 28, 1969, Box 16, Folder 1, RWW Papers, MARBL.

arm, the National Soft Drink Association (NSDA). Determined to control the discourse about waste management solutions, the NSDA spent millions of dollars on advertisements to discourage legislators from supporting mandatory deposit bills, which by 1966 had been introduced in over 23 states nationwide.

The NSDA's message was clear: "people, not containers, are responsible" for the growing litter problem facing the nation. The NSDA distributed thousands of posters, bumper stickers, and billboards (an impressive amount of litter by any standard), featuring "Handy," a lone hand with a string attached to the index finger, to remind consumers that "hands alone cause litter." Targeting America's youth, the NSDA also circulated booklets entitled "A Handy Guide to Lessen Litter" in schools throughout the country. The guides not only featured lessons on how not to litter but also included a great deal of soft drink advertising spotlighting "the history, growth and outlook for carbonated beverages."[21]

Coca-Cola developed independent programs to fight the backlash against one-way container technology. Coke's vigorous pursuit of these campaigns was in large part a response to the growing strength of an environmental movement that increasingly took aggressive actions towards visible corporate polluters. Commenting on the political and cultural climate in the final months of 1969, Coke President Paul Austin wrote to Robert Woodruff, "I was getting concerned about the exposure of the Coca-Cola Company to attacks because it is an outstanding member of the Establishment." He admitted that the "Coca-Cola Company is a serious offender in a certain part of the pollution problem" and believed that the initiation of a corporate greening campaign "would reap immeasurable

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[21] *The American Soft Drink Journal* (July 1967), 34; *National Soft Drink Association (NSDA) Bulletin*, April 26, 1968; *NSDA Bulletin* (January-February, 1968).

good will from government sources, the conservationists of the country, and the public at large."[22]

With Austin at the helm, the Coca-Cola Company launched a national "Bend a Little" campaign in 1970, placing ads throughout the country featuring an attractive woman bending over to pick up empty containers. The company also distributed "Bend a Little" litterbags to its customers. The message was obvious. As Coca-Cola archivist Phil Mooney explained, "The goal of the 'Bend a Little" campaign was to remind people that cleaning up America called for a little extra effort from all of us."[23]

Coke, NSDA, and KAB public ad campaigns in the 1960s and early 1970s certainly helped draw the public's attention away from the fact that American companies were producing prodigious amounts of packaging waste, but corporate polluters knew that litter bags would not, in the long run, solve their problem of exposure. In the Pacific Northwest and New England in particular, legislators were frustrated that little was being done to combat the nation's growing litter problem and pushed for mandatory deposit legislation in the late 1960s. The beverage industry had to respond with a more aggressive campaign focused on American lawmakers if it hoped to avoid costly pollution taxes.

Recycling Becomes the Solution

On October 1, 1972, the Oregon state government passed *An Act Relating to Beverage Containers and Providing Penalties*. State representative Paul Hanneman had

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[22] Paul Austin to Robert W. Woodruff, 28 November 1969, Box 16, Folder 1, RWW Papers, MARBL.
[23] "'Bend a Little' and 'Keep America Beautiful,'" featured on Coca-Cola's company blog, "Coca-Cola Conversations," edited by archivists Ted Ryan and Phil Mooney, http://www.coca-colaconversations.com/my_weblog/2009/04/bend-a-little-and-keep-america-beautiful.html; Pendergrast, *For God, Country, and Coca-Cola*, 301; *New York Times*, April 22, 1970, 33.

originally introduced the bill in 1968 at the urging of concerned citizen Richard Chambers. The measure failed to receive enough votes until the timely support of Governor Tom McCall got the legislation passed four years later. The law mandated a 5-cent deposit for all one-way containers and banned detachable pull-tabs for all beverage containers sold in the state. Vermont followed Oregon's lead in 1972, passing a mandatory deposit bill for all one-way containers sold in the state.[24]

The enactment of these statewide mandatory deposit bills occurred at the same time that the United States Congress began to consider a national ban on nonreturnable containers. By the mid-1960s, President Lyndon Johnson began to push for federal funding for municipal solid waste programs, in part because of pressure coming from his wife. As historian Lewis Gould has shown, Lady Bird Johnson was a strong proponent of conservation initiatives, and by the 1960s she helped lobby for a series of environmental programs, including the Highway Beautification Act of 1965. Spurred on by Lady Bird, Lyndon Johnson signed into law the Solid Waste Disposal Act of 1965 and later lobbied for the first National Survey of Community Solid Waste in 1968. These measures did not assign effective regulatory powers to the federal government, but they did set a precedent for increased federal involvement in solid waste management, a concern traditionally considered the responsibility of state and municipal governments.[25]

In 1970, continuing a new tradition of federal involvement in solid waste management issues, the House of Representatives considered an amendment to the Solid

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[24] For a detailed history of the Oregon battle, see Brent Walth, "No Deposit, No Return: Richard Chambers, Tom McCall, and the Oregon Bottle Bill," *Oregon Historical Quarterly* 95, no. 3 (Fall, 1994): 278-299; Stanford Environmental Law Society, *Disposing of Non-Returnables: A Guide to Minimum Deposit Legislation* (Stanford: Stanford Environmental Law Society, 1975), 17.

[25] Lewis Gould, *Lady Bird Johnson and the Environment* (Lawrence, Kan.: University Press of Kansas, 1988). See also Lewis Gould, ed., *Lady Bird Johnson: Our Environmental First Lady* (Lawrence, Kan: University Press of Kansas, 1999); Melosi, *Garbage in the Cities*, 198, 200-201.

Waste Disposal Act that would have prohibited the distribution of nonreturnable beverage containers within the United States. Testifying before Congress, the Mayor of Bowie argued that his city council had passed the ban because "rising cost to the taxpayer in gathering and disposing of these containers was becoming unconscionable." The twenty-two House legislators who sponsored the federal ban were equally concerned about escalating waste disposal costs, arguing that corporate polluters should be expected to pay the expenses associated with one-way container technology.[26]

Representatives from the beverage container industry attacked the proposed federal ban, arguing that the measure would hurt sales and "create severe economic dislocations in industries employing hundreds of thousands of people." Richard L. Cheney, president of the Glass Container Manufacturers Institute, explained in his testimony against the proposed legislation that "thousands of glass container plant employees would be put out of work" if the industry were limited to returnable bottle production. In 1972, when a national nonreturnable container ban once again came up for consideration in the Senate, Norman L. Dobyns of the Carbonated Beverage Container Manufacturers Association explained that doing away with one-way containers would completely eliminate the soft drink canning industry: "We won't be there any more. That is a very large, very important, very consequential industry, that is gone by that one legislative stroke."[27]

Industry lobbyists were victorious at the national level in 1970 and 1972, and continued to be throughout the 1970s, in large part because they convinced federal legislators that a ban would result in severe job losses within the soft drink and packaging

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[26] House Subcommittee on Public Health and Welfare, Committee on Interstate and Foreign Commerce, *Prohibit Certain No-Deposit, No-Return Containers*, 91st Cong., 2d sess., September 18, 1970, 53.
[27] Ibid., 46; Senate Subcommittee on Environment, *Solid Waste Management Act of 1972*, 79.

industries. In 1976, when another proposed ban failed to make it off the Senate floor, Senator Stevenson of Illinois maintained, "I think it failed because of the jobs question," adding, "I certainly hear the concern over jobs in my state, which is a large manufacturer of containers."[28]

What journalist Heather Rogers called the "smokescreen of job losses and economic doom" proved effective at the local level as well. In Yonkers, New York, for example, lobbyists working for the NSDA, Coca-Cola, Pepsi-Cola, and the United States Brewer's Industry testified before the city council in 1971 to promote a recycling program over a proposed ban on nonreturnables. According to the *New York Times*, the ban had originally received bipartisan support and "appeared to have at least a reasonable chance of passing" when it first came up for consideration in committee. Following the testimony of ten "industry spokesmen," including the head of the NSDA, however, several councilmen removed their support for the bill. As they had at the national level, corporate lobbyists in Yonkers used the threat of catastrophic job losses to scare lawmakers into opposing top-down regulation. Explaining the effect of the industry testimony, councilmen Peter Mancusi confessed, "The streets are dirty, and everyone agrees. But talk about 500 families out of a job and the Councilmen sit up and listen." Aloysius Moczydlowski, another councilman who was admittedly swayed by industry testimony, explained his rationale for opposing the ban, "I learned that the companies are understanding and facing the waste problem themselves. No voters have spoken to me, only companies. And who can solve problems better than private industry?"[29]

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[28] Senate Subcommittee on Science, Technology, and Space, Committee on Commerce, Science, and Transportation, *Materials Policy*, 95th Cong., 1st sess., 14, 19 July 1977, 62.
[29] Rogers, *Gone Tomorrow*, 150; "Yonkers Studies a No-Return Ban," *New York Times*, 9 September 1971, 59.

The soft drink, packaging, and brewing industries held out recycling as the panacea that would solve the nation's litter problems. Companies in these industries knew that they had to take preemptive steps to combat growing consumer concerns, and they believed recycling could be touted as an effective industry alternative to mandatory deposit schemes.[30]

Brewing, soft drinks, and canning giants were not the only businesses lobbying for recycling programs in the 1970s. In *Cash For Your Trash: Scrap Recycling in America*, historian Carl Zimring explained that salvage companies, such as the Hugo Neu Corporation, fought for the expansion of recycling programs, believing that publicly supported resource reclamation initiatives would offer new sources of revenue for their industry. Despite their enthusiasm, many scrap companies never received lucrative recycling contracts from municipalities, most going to burgeoning garbage conglomerates, such as Waste Management Inc. (WMI) and Browning-Ferris Industries (BFI). As Finn Arne Jørgensen has shown in *The Green Machine: The Infrastructure of Beverage Container Recycling*, supermarket owners and local grocery store proprietors welcomed recycling programs as alternatives to deposit programs that would force them to take on the messy work of receiving and processing used beverage containers. Paper manufacturing companies as well as representatives from the plastics industry also supported recycling. Executives at the American Paper Institute and the Society of the Plastics Industry spoke in favor of resource reclamation programs that would help generate recyclables valuable for their industries.[31]

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[30] Rogers, *Gone Tomorrow*, 172.
[31] Carl Zimring, *Cash for Your Trash*, 160; Finn Arne Jørgensen, *Making a Green Machine*, 29-31.

Support for public recycling initiatives came from non-profit organizations as well. Environmental groups lobbied for resource recovery programs, believing municipal reclamation schemes would help alleviate the nation's growing solid waste problem. The Sierra Club, National Wildlife Federation, and other major environmental organizations attended hearings on beverage container recycling programs and argued in support of funding programs that would channel federal revenue towards recycling grants. Importantly, though, these groups treated recycling as just one component of their conservation agenda. As Heather Rogers noted, Environmental Action and other similar conservation organizations "viewed the 'three Rs' in a hierarchical fashion: first, reduce consumption, then reuse goods in their already manufactured form as long as possible, and then, only as a last resort, recycle."[32]

Still, Coca-Cola, Pepsi, and the major beverage companies remained leading proponents of recycling initiatives, precisely because of consumer awareness of the industry's contributions to the solid waste problem. In 1970, the president of the National Soft Drink Association explained how company advertising on one-way packaging created this industry-specific dilemma: "It is your and my container that may lay along the side of the road inviting public wrath, not the glass or the can companies . . . . It is our trademark on it and it carries our product . . . . They are going to be concerned with the final social consequence of your and my enterprise, and they are going to expect us to account for that consequence."[33]

Recognizing their unique exposure to environmentalists' attacks, the beverage industry bombarded the public with advertisements highlighting their efforts to recycle in

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[32] Rogers, *Gone Tomorrow*, 140.

[33] Meeting Minutes from the State Association Conference, National Soft Drink Association, 10 November 1970, p. 12, American Beverage Association (ABA) Information Center, Washington, D.C.

the early 1970s. These ads suggested that American business was using its innovative strengths to solve the nation's litter problems. In New York City, for example, Reynolds Metals Company worked with Coca-Cola, Pepsi-Cola, and Mobile Oil on a citywide ad campaign to highlight industry efforts to reclaim container waste. The ads, which included "bus posters, transit cars, and Sunday comics advertisements," featured descriptions of 29 recycling collection centers throughout the metropolitan area run by various corporate partners. Coke claimed in its advertisements that "our city government has enough to do without setting up reclamation centers," suggesting that the company, in partnership with its consumers, had both the will and the resources to solve one "of the most important ecological problems of our day." Other businessmen echoed these claims. The American Can Company, which produced the first aluminum can recycling program in 1967, also spoke of corporate self-reliance: "We can solve the problem in industry and we are already working on it . . . . Industry is doing such a good job in the area of coming up with systems."[34]

Despite big business praise for privately run resource reclamation programs, support for these clean-up drives quickly began to wane. In February 1972, less than 12 months after Coca-Cola, Mobil Oil, and Reynolds began their recycling program in New York, the press reported that "enthusiasm for the recycling of waste on Long Island seems to be faltering." Mobil gas stations had already closed their reclamation centers by

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[34] "Advertising: Reynolds in an Ecology Drive," *New York Times*, 13 April 1971, 63; "Display Ad," *New York Times*, 9 February 1971, 25; Senate Subcommittee on Environment, *Solid Waste Management Act of 1972*, 81.

the winter of 1972 and several of the centers run by the Coca-Cola Bottling Company of New York dramatically reduced their hours of operation.[35]

The press reported similar problems with private recycling programs throughout the country. In California many reclamation programs were shut down in 1972, largely because they could not cover operation costs. The San Diego Ecology Center, a major recycling plant in southern California, barely broke even in 1972, relying on subsidies from outside sources to cover its operating expenses. The *New York Times* reported in May of 1972, "Recycling so far is not paying its own way. And there is a growing belief that it will be years—if ever, before it makes any major dent in the nation's mounting piles of solid wastes." According to the *Washington Post*, by 1978 virtually all of the "3,000 drop-off recycling centers that sprang up in the United States from 1970 to 1973" had "disappeared," unable to recoup capital expenses associated with collection and facilities maintenance.[36]

In addition to being unprofitable, recycling programs in the 1970s simply were unsuccessful at reclaiming the vast majority of refuse produced by the beverage industry. Of the 36 billion containers produced by the glass industry in 1972 only 912 million (2.6 per cent) actually made it to recycling centers. Aluminum reclamation showed similar results, with only 3.7 percent of all aluminum material making it back to producers through recycling programs. These results should not have been surprising considering the small fiscal enticements private collectors tendered consumers. Coke's collection centers in New York, for example, offered recyclers just one-half cent for every returned

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[35] Melosi, *Garbage in the Cities*, 221; "Recycling Efforts Faltering on L. I.," *New York Times*, 13 February 1972, A1.

[36] "Waste Recycling Effort Found to Lag," *New York Times*, 7 May 1972, 1; "A Guide to Recycling," *Washington Post*, April 13, 1978, VA1.

can. Small bottlers who were being pushed out of the soft drink market because of the switch to one-way containers highlighted the inconsistencies in soft drink giants' conservation rhetoric. As independent Dr. Pepper bottler Eugene Norton explained in 1972, "The public is . . . being told that people will not return returnable bottles for a deposit, yet on the other hand, these same pundits say the public will deliver throwaways to a recycling center for as little as a penny apiece providing they can find a recycling center."[37]

In order for recycling programs to work in the United States, public resources had to be channeled towards the innovation and construction of resource reclamation infrastructure. There was no profit incentive that would encourage the development of recycling systems in the 1970s; these programs had to be subsidized, and as early as 1970, Reynolds, American Can, Coca-Cola, and Anheuser-Busch, and other big businesses testified before Congress to promote the adoption of legislation that would channel federal funds towards municipal recycling programs.

Large soft drink, brewing, and packaging enterprises supported the Resource and Recovery Act (RRA) of 1970, which called for the federal government to provide assistance to municipalities struggling to deal with the nation's growing solid waste problem. City governments interested in constructing resource reclamation plants could expect the federal government to provide grants for the development and construction costs associated with resource recovery programs.[38]

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[37] "Waste Recycling Effort Found to Lag," *New York Times*, 7 May 1972, 1, 57; Senate Subcommittee on Environment, *Solid Waste Management Act of 1972*, 26.

[38] House Subcommittee on Public Health and Welfare, Committee on Interstate and Foreign Commerce, *Prohibit Certain No-Deposit, No-Return Containers*, 91st Cong., 2d sess., September 18, 1970, 39; Royte, *Garbage Land*, 127.

Not everyone in the beverage industry was happy with the federal government's new interventions under the RRA. Small, independent bottlers, such as Peter T. Chokola of Chokola Beverage Company, argued that federally-supported recycling programs shifted "the burden of recovery of containers from the private sector onto Government." They argued against programs that did not require companies using one-way containers to pay for the waste they helped create. One small bottler opposed federal grants for recycling research, arguing that "this is added consumer and taxpayer costs, millions, perhaps billions of dollars and it isn't going to solve the problem any better than the returnable system which is already here."[39]

Despite resistance from small businesses, Congress continued to generate legislation that would encourage government investment in municipal recycling programs. In 1976, Congress passed the Resource Conservation and Recovery Act (RCRA), which increased federal support for local resource reclamation initiatives. The big soft drink companies supported this measure, hoping to direct general tax funds towards clean-up projects that would help them keep their waste out of sight. The former president of the NSDA, Sidney P. Mudd of the Seven-Up company, praised the RCRA for setting a "clear national objective and a suitable funding mechanism to stimulate similar planning and action for appropriate solid waste management throughout the 50 States."[40]

By the end of the 1970s and into the 1980s, the increased visibility of the country's landfill problems intensified concerns about throwaway containers. As neighborhoods began to expand to the peripheries of solid waste dump sites, citizens

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[39] Senate Subcommittee on Environment, *Solid Waste Management Act of 1972*, 35.
[40] Senate Subcommittee for Consumer, Committee on Commerce, Science, and Transportation, *Beverage Container Recycling and Reuse*, 95th Cong., 2d sess., 25, 26, and January 27, 1978, 203.

increasingly came in close contact with piles of trash that had once been out of sight and out of mind. The birth of the environmental justice movement in the early 1980s was in large part sparked by increased awareness about the connections between low-income residential neighborhoods and municipal dumpsites. Private and volunteer recycling programs did not seem to be fixing the nation's litter problem, and legislators throughout the country now had empirical evidence from Oregon's and Vermont's mandatory deposit programs that suggested industry-targeted taxes would in fact reduce litter.[41]

Concerned about the perceived landfill crisis and following the lead of Oregon and Vermont, several states renewed campaigns to push through restrictive legislation designed to reduce one-way container waste in the late 1970s and early 1980s. Maine (1976), Michigan (1976), Connecticut (1978), Iowa (1978), New York (1982), Delaware (1982), Massachusetts (1983), and California (1986) all passed mandatory deposit laws which required nonreturnable cans and bottles to carry 5- to 10-cent deposits. Some states were finally making private corporations internalize the costs associated with one-way container technology.

Federal tax bills requiring offending companies to pay for the collection and disposal of their container waste resurfaced in the early 1980s as well. Just two years after Iowa became the fifth state to pass a mandatory deposit law, the US House of

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[41] On the birth of the environmental justice movement, see Eileen Maura McGurty, "From NIMBY to Civil Rights: The Origins of the Environmental Justice Movement," in *Environmental History of the American South: A Reader*, ed. Paul Sutter and Christopher J. Manganiello (Athens, Ga.: University of Georgia, 2009) and Robert Bullard, *Dumping in Dixie: Race, Class, and Environmental Quality* (Boulder, Co.: Westview Press, 1990); For works on the emergence of the modern environmental movement see Samuel P. Hayes and Barbara Hayes, *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955-1985* (Cambridge: Cambridge University Press,1987); Ted Steinberg, "Shades of Green," in *Down to Earth: Nature's Role in American History*, Chapter 15 (Oxford: Oxford University Press, 2002): 239-261; Adam Rome, *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism* (Cambridge: Cambridge University Press, 2001). According to Heather Rogers, one study showed that roadside litter in Oregon decreased by 35 percent in the wake of the new deposit law. Rogers, *Gone Tomorrow*, 147.

Representatives considered adopting a national bottle bill that would require all one-way containers in the United States to carry a cash deposit. The measure was ultimately defeated, in part due to the concentrated lobbying efforts of soft drink representatives, such as Edward Glaston, Vice President and Division Manager of Pacific Coca-Cola Bottling Company (one of the largest Coke bottlers in the country), who testified to Congress that mandatory deposit legislation in Oregon had dramatically increased his company's operating costs and hurt business. Glaston argued that his fuel costs "more than doubled" because of deposit legislation, considering the company had to pick up its containers. Of course, what was left unsaid was that municipal agencies had been paying the fuel costs to pick up the company's waste. Ultimately, Glaston argued, consumers were hurt most, forced to pay higher prices to pay for the new deposits.[42]

Major beverage companies did little to develop infrastructure that would make deposit systems work in bottle bill states. Finn Arne Jørgensen argued that big bottlers "did their best to sabotage" New York's Returnable Container Law in 1982, requiring reverse-vending machine (RVM) producers to develop complicated container scanning systems that ultimately made them too expensive for retail grocers. Jørgensen showed how Tomra, a Norwegian engineering firm, had tried to bring laser-scanning RVMs to New York in the 1980s but was ultimately stymied by beverage giants, who argued that the machines would not be able to distinguish between containers of different brands and would therefore be unable to ensure accurate assignment of deposit refund responsibilities. Ultimately, RVM machines never enjoyed the popularity they did in other parts of the world, especially Scandinavia where Tomra's systems became

[42] Senate Committee on Commerce, Science, and Transportation, *Reuse and Recycling Act of 1979*, 68.

commonplace by the end of the 1980s. Lacking the backing of the major beverage giants, the development of high-tech, private-sector reclamation vending systems lagged in New York and the rest of the country.[43]

Publicly funded curbside recycling programs, or rather the promise of such programs, became the US industry's primary mechanism for combating legislation that would demand extended producer responsibility for packaging waste in the 1980s. Curbside reclamation programs became the alternative to mandatory deposits and returnable bans, a system pitched as a fix-all rather than a complement to additional waste reduction initiatives. What might have made these programs so attractive to legislators was that their costs would not be visible to the voting public. Recycling programs would be paid for with general tax funds received at the state, local, and federal level and small user fees. As soft drink, brewing, and packaging lobbyists explained to lawmakers, recycling, unlike mandatory deposits, would not take jobs away from their district or increase taxes in ways that would draw the ire of the American consumer.[44]

The beverage industry positioned itself as the keystone that would make the recycling system work. Through the end of the 1980s, soft drink, brewing, and beverage packaging companies sought to convince citizens and lawmakers alike that container waste was actually the essential fuel driving nascent recycling programs. Industry spokesman argued that because aluminum cans and glass containers represent "an excess of 70 percent of the scrap value in the curbside bin," cutting out this source of revenue would destroy resource reclamation programs across the country. In 1987, when a mandatory deposit initiative came up for citywide vote in Washington, DC, Coca-Cola,

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[43] Jørgensen, *Making a Green Machine*, 89.
[44] Rogers, *Gone Tomorrow*, 154.

Pepsi-Co, Anheuser-Busch, and Miller Brewing Company, among others, committed $1.1 million dollars to an ad campaign to promote the idea that beverage cans were essential to recycling programs. The *Washington Post* reported that these corporations maintained "that if consumers take their bottles and cans back to grocery stores to collect their deposits, those items will not go to independent recycling centers that need revenue from glass and aluminum to survive." NSDA Vice President Gifford Stack summarized the industry's position on mandatory deposit legislation and the importance of keeping one-way containers in the municipal waste stream in 1989, arguing, "If these packages were not included in curbside recycling programs the operational cost to the municipalities would, indeed, skyrocket."[45]

This strategy proved effective. After 1986, only one other state (Hawaii) passed a mandatory deposit law, most municipalities committing significant resources and political support to the development of what industry called "comprehensive" recycling programs. In 1986, only Rhode Island had a mandatory statewide recycling law on the books, but just three years later, twenty-six states had passed laws requiring recycling as a component of solid waste reduction and seven states mandated the creation of statewide curbside programs. The number of curbside programs in the United States increased from just 600 in 1989 to over 4,000 in 1992. With the rise of curbside recycling,

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[45] "Bottle Bill Foes' Recycling Claim Disputed," *Washington Post*, 25 October 1987, B7; Senate Committee on Energy and Natural Resources, *Recycling*, 102nd Cong., 2d sess., September 17, 1992, 160; House Subcommittee on Transportation and Hazardous Materials, Committee on Energy and Commerce, *Recycling of Municipal Solid Waste*, 101st Cong., 2d sess., July 12, 13, 1989, 256; For a thorough analysis of the DC bottle bill debate, see Joy A. Clay, "The D.C. Bottle Bill Initiative: A Casualty of the Reagan Era," *Environmental Review* 13, no. 2 (Summer, 1989): 17-31.

industries abandoned many of their own buy-back programs, relying largely on municipal services that required them to pay no extra fees.[46]

By the end of the 1990s, publicly funded recycling programs had become the accepted method for cleaning up industry container waste. Touted by industry as self-sustaining systems, however, curbside programs depended for years on subsidies. According to a study conducted in 1999, revenue generated from the sale of recyclable materials covered less than 35 percent of municipal expenses for recycling programs in the United States. The *New York Times* reported in 1993, "Five years after recycling took hold in this country, it has become clear that the market value of the materials left at the curbside is not likely to cover the collection and processing costs for a long time." Taxpayers were taking on the vast majority of the cost of collecting, processing, and returning corporate byproducts back to producers, and industry remained exempt from disposal fees that might have been used to pay for expensive recycling systems. More importantly, government mandated source reduction and polluter-pays programs had been discredited as viable methods for reducing the nation's pollution problem.[47]

Conclusion

Curbside recycling has not been the panacea the beverage industry has claimed. In 2001, the recycling rate for aluminum cans was just 46 percent. That year, waste disposal agencies trucked 700,000 tons of aluminum cans to landfills all across the

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[46] Bruce van Voorst, and Rhea Schoenthal, "The Recycling Bottleneck," *Time*, 14 September 1992; Carl Zimring, *Cash for Your Trash*, 134; Debi Kimball, *Recycling In America: A Reference Handbook* (Santa Barbara, Calif.: ABL-CLIO, 1992), 23-24.

[47] Royte, *Garbage Land*, 14; "Who Foots the Bill for Recycling," *New York Times*, 25 April 1993, F5; David H. Folz, "Recycling Performance: A Public Sector Environmental Success Story," *Public Administration Review* 59, no. 4 (July-August 1999), 343; Daniel H. Loughlin and Morton A Barlaz, "Policies for Strengthening Markets for Recyclables: A Worldwide Perspective," *Critical Reviews in Environmental Science and Technology* 36, no. 4 (2006), 290.

country. Conditions have not improved much over the last decade. According to a GAO study conducted in 2006, the national recycling rate in America leveled off at around 32 percent in the mid-2000s. Today, consumers recycle only about 28 percent of all PET bottles used in the United States.[48]

Though statistics reveal the shortcomings of our current waste management practices, beverage giants continue to receive praise for their recycling efforts. Coca-Cola has garnered special commendations for its commitment to packaging reclamation programs. In 2009, the press praised Coca-Cola's for helping to finance the construction of the largest plastic-to-plastic recycling plant in the world in Spartanburg, South Carolina, and others applauded Coke's 2007 partnership with RecycleBank, a national recycling program that offers consumers coupons in exchange for recyclable containers. The company has distributed thousands of recycling bins featuring Coca-Cola's trademark throughout the country and has continued to produce promotional material about its "green" packaging. To the public, Coke has appeared the champion of sustainable business development.

Despite the fanfare about corporate greening campaigns, today's curbside reclamation programs would not have been possible without public funding. Corporate recycling programs have been built on infrastructure that it took municipalities decades to construct. For years, recycling programs proved unprofitable and private institutions failed time and time again to create comprehensive programs that would dramatically reduce container litter. Expensive resource reclamation programs survived as the

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[48] Rogers, *Gone Tomorrow*, 176; "Can or Bottle, Bill Wants Makers to Pay for Recycling," *New York Times*, 11 July 2002, A16; United States Government Accountability Office (GAO), *Recycling: Additional Efforts Could Increase Municipal Recycling* (Washington, DC: GAO, 2006), 11; United States Environmental Protection Agency (EPA), *Municipal Solid Waste in the United States: 2009 Facts and Figures* (Washington, DC, 2010), 52.

preferred and exclusive solution for solid waste disposal in this country only because private corporations used their lobbying might to shift responsibility for the collection and recycling of corporate waste onto the public sector. In the end, consumers did most of the work, subsidizing (both through their labor and through taxes) the beverage industry's packaging reclamation system, allowing companies to expand their operations without incurring increased costs.

The history of corporate involvement in the construction of public waste management systems challenges interpretations of the rise of big business in America that portray modern mass-marketing firms as self-reliant, the product of systems devised, owned, and managed by private enterprise. It is a history that belies the prudence of nominating private corporations to be the primary architects of waste management projects designed to protect the health of our ecology. History has shown Coke and its beverage allies to be far more often the beneficiaries of infrastructural supports constructed by public institutions, rather than the bulwark of elaborate systems engineered with private-sector capital. Coke's recycling bins scattered across the landscape may be evidence of a new era of corporate interest in contributing to greening strategies, but past experience suggests that the company's commitments will remain a small component of a much larger effort financed by the public.

Chapter 6: High-Fructose Corn Syrup
From Silos to Stomachs: America's Sweet Excesses Become Visible

Introduction

Coke's corporate pollution came in many forms. Empty containers and wastewater from distribution plants were just two of the more visible pollutants produced by the company. As we have seen, managing waste and keeping it out of sight were essential concerns of the Coca-Cola Company. Companies have had to consider the full life-cycle of the ingredients they distribute to their customers and figure out ways to insulate themselves from liabilities across a commodity chain that extends from the point of extraction to the homes of consumers.

To manage waste, the company traditionally relied on state agencies that developed public systems for collecting and processing corporate refuse. Coke's bottling plants have used public sewage systems to remove wastewater from the vicinity of their plants. As we saw in the last chapter, the company also relied heavily on public recycling systems to clean up the packaging waste it helped to produce.

But some of the harmful environmental byproducts of Coke's commercial enterprise have not been easily transferred to state waste management systems. Coke's distributors have relied on gas-guzzling trucks that produce large quantities of carbon dioxide that have been emitted freely into the atmosphere. Likewise, for many years Coke coolers pumped CFC's into the air, contributing to the depletion of the earth's ozone. Consumers never attacked Coke for emitting these pollutants, largely because they were invisible and therefore more difficult to trace back to their source.

This chapter is a foil to the story of Coke's involvement in public recycling programs and focuses on the transformation of a company ingredient into a visible pollutant that has caused major problems for the company in recent years. In the twentieth century, Coke made billions of dollars by channeling more and more caloric sweeteners into the bodies of its consumers, and after the 1970s, government subsidies for corn production ensured that Coke would make even greater profits by using a new product, high-fructose corn syrup (HFCS), to sweeten its beverages. But by the 1990s, consumers' waistlines began to expand as they consumed more and more calories in the form of HFCS. American stomachs had replaced grain silos, storing the excesses of bounty-fed corn producers. Human fat deposits, a very visible corporeal pollution, forced citizens to ask important questions about the types of foods they were consuming.

By the 2000s, health activists began to call on the government to implement "fat" taxes that would increase the price of sugar-rich foods, and by 2011, over thirty municipal and state governments had considered bills that would have placed small fat taxes on soft drinks. Abroad, countries, such as France, have approved increased tariffs on soft drinks entering their polities in order to discourage sugary beverage consumption. These taxes represented a serious threat to the future profitability of the Coca-Cola Company and may prove devastating to the company in the years to come. Thus, this chapter focuses on Coke's inability to control the metabolic transformation of corn sugar into fat within the human body, a problem that challenged the message that soft drink consumption was merely an innocent diversion, a mere pause that refreshes, a product that contributes to the betterment of society.[1]

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[1] "Bad Food? Tax It, and Subsidize Vegetables," *New York Times*, July 23, 2011, SR1; "French Authorities Approve Soda Tax Legislation," *Beverage Daily*, January 30, 2012.

How the Federal Government Helped Create the HFCS Revolution

Beginning in the 1930s, the United States Department of Agriculture (USDA) enforced acreage-reduction loan programs for corn production, hoping to keep the excesses of American agribusiness locked up in silos and out of retail outlets. The goal was to support commodity prices by limiting supply. The American taxpayer financed the loan payment system, but not through visible sales tax. Rather, the USDA's Commodity Credit Corporation allocated tax revenue held by the US Treasury to pay for loans to farmers producing surplus corn during bumper crop years. The collateral corn was held in federal repositories, collectively referred to as the "ever normal granary" until prices rose sufficiently to allow producers to make adequate profits on market sales.[2]

As with the protective policies that allowed domestic sugar growers to expand in the twentieth century, the corn support programs from the 1930s to the 1970s allowed large-scale American agribusinesses to increase their productive capacity without suffering serious financial losses. Even though federal programs provided incentives for farmers to reduce corn acreage, price supports allowed growers to sustain production even in uneconomical times. The end result was lots of corn—more corn than Americans could possibly consume. Each year the government's stockpile of agricultural surplus grew, not just of corn, but also of other commodities supported by similar New Deal loan programs. In 1952, the federal government held roughly $1.3 billion worth of agricultural surplus stocks in government storage facilities across the country.[3]

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[2] Michael Pollan, *Omnivore's Dilemma: A Natural History of Four Meals* (New York: Penguin Books, 2006), 49.

[3] Arturo Warman, *Corn and Capitalism: How A Botanical Bastard Grew to Global Dominance*, translated by Nancy L. Westrate (Chapel Hill; London: The University of North Carolina Press, 2003), 189.

Many consumers did not complain about the system—a system whose price they never registered, whose full cost they were never forced to confront. Most consumers never saw a silo packed with surplus grains purchased with their tax dollars. The costs of the loan program supporting corn production, like the costs of the quota system and tariff programs that stabilized the sugar market and fueled the exponential growth of confectionary businesses and soft drink enterprises, never became manifest in sales tax at retail outlets. The revenue that paid for sugar and corn programs came from general tax funds or from one-time duty imposts covered by large-scale users at US ports. The consumer simply never saw the price tag for agricultural support programs.

Dramatic changes occurred in1972, when the federal government dismantled the New Deal programs. Worried about escalating prices for consumer products and a growing trade deficit, President Nixon's agriculture secretary Earl Butz executed a comprehensive overhaul of agriculture policy, hoping to utilize the country's agricultural bounty to curb inflationary trends. Urging American farmers to "get bigger, get better, or get out," Butz abandoned New Deal policies that coupled price support mechanisms with acreage reduction programs, implementing a new system under the Agriculture and Consumer Protection Act of 1973 that favored production-stimulating bounty payments over loan programs designed to prevent farm product surpluses from flooding consumer markets. In *Omnivore's Dilemma: A Natural History of Four Meals*, food journalist Michael Pollan described the transformative power of Butz's seemingly innocuous policy initiative:

> The change from loans to direct payments hardly seemed momentous—either way, the government pledges to make sure the farmer receives some target price

> for a bushel of corn when prices are weak. But in fact paying farmers directly for the shortfall in the price of corn was revolutionary, as its proponents surely must have understood. They had removed the floor under the price of grain. Instead of keeping corn out of a falling market, as the old loan programs and federal granary had done, the new subsidies encouraged farmers to sell their corn at any price, since the government would make up the difference.[4]

The implementation of the 1972 Farm Bill resulted in an explosion of corn and sugar production. Because Butz's program dismantled the ever-normal granary, the glut of agribusiness—a superfluity that for so many years had piled high within federally-financed silos hidden in America's heartland—now came pouring into consumer markets all across the country.

The long-term success of the Butz program depended on the creation of new retail markets capable of absorbing bounty-fed producers' excesses. Annual per capita consumption of sugar reached 94 pounds by 1974, but corn products enjoyed small consumer markets with per capita consumption totaling just 11 pounds by the 1970s. Without commercial buyers, the cost of supporting corn prices would have become unbearable, resulting in the collapse of the federal loaning program. The USDA needed a new place to store the surpluses of American agribusiness without paying excessive fees for storage.[5]

High-fructose corn syrup (HFCS) offered a solution to this market dilemma. Since the 1920s, Coke and other soft drink companies had experimented with using corn sweeteners in their beverages, but up through the mid-1960s, commercial users had largely been dissatisfied with the off-taste alternative caloric sweeteners contributed to finished beverage products. In 1967, however, the Clinton Processing Company of

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[4] Michael Pollan, *Omnivore's Dilemma*, 52; Butz comment quoted in David B Danbom, *Born in the Country: A History of Rural America* (Baltimore; London: Johns Hopkins University Press, 1995), 255.
[5] USDA Agriculture Factbook 2001-2002, "Chapter 2: Profiling Food Consumption in America," (Washington, DC, 2003) 19, 20, http://www.usda.gov/factbook/chapter2.pdf.

Clinton, Iowa, began selling an artificial sweetener that was as sweet, if not more sweet, than sucrose and featured no unpleasant aftertaste. Clinton made the new sweeteners using a patented bacterial enzyme called *Isomerase* (first isolated in Japan) capable of transforming glucose molecules (extracted from cornstarch) into sweeter fructose monomers. The Clinton sweetener proved far superior to its predecessors. In the wake of the 1974 sugar crisis, which increased the price of duty-paid sucrose well-above the price of subsidy-supported HFCS, Coke and other industrial sugar users began switching to the alternative corn sweetener.[6]

Hoping to capitalize on cheap HFCS prices hovering around 12 to 15 cents per pound, Coca-Cola announced in the summer of 1974 that 25 percent of the sweetening agent in its non-cola beverages (Sprite, Mr. Pibb, and Fanta) would come from corn products. The plan was to test out the cheaper sweetener in its less-popular beverages before tampering with its flagship brand. Hearing no backlash from consumers, Coke made the switch to 100-percent HFCS in all of its non-cola beverages by 1979. This decision excited HFCS-producers Archer Daniels Midland and Clinton, who believed soft drink giants would soon commit to huge HFCS contracts. A year later, Coke approved 50-percent HFCS for its number-one-selling product, Coca-Cola, and by 1985 Coke made the switch to 100-percent HFCS in all of its cola and non-cola beverages sold within the United States.[7]

By shifting to HFCS, Coca-Cola and other US confectioners channeled millions of pounds of cheap American corn byproducts into human bodies. Rather than decrease

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[6] Betty Fussell, *The Story of Corn* (New York: Alfred A. Knopf, 1992), 273; "The Wet Millers of Corn," *Washington Post*, June 11, 1981, A1.

[7] "Fructose Makers Say 'How Sweet It Is,' As Sweetener Wins Major Acceptance," *Wall Street Journal*, August 3, 1978, 10; "Coke OKs Corn Sugar in Non-Colas," *Chicago Tribune*, July 1, 1978, H6; "Commodities: Sugar Bill Called Aid to Fructose," *New York Times*, November 2, 1981, D4.

prices for their product to reflect multi-million dollar savings in production costs (said to be some $20 million dollars for every cent decrease in the cost of sweeteners in 1978), Coke looked to sell greater quantities of their beverages to their consumers at marginally higher prices. In *Omnivore's Dilemma*, Michael Pollan explained Coke's mindset in the 1980s: "Since a soft drink's main raw material—corn sweetener—was now so cheap, why not get people to pay just a few pennies more for a substantially bigger bottler? Drop the price per ounce, but sell a lot more ounces. So began the transformation of the svelte eight-ounce Coke bottle into the chubby twenty-ouncer"[8]

Working with McDonalds and other fast food chains, which, under the direction of retail strategist David Wallerstein, introduced supersizing as a marketing campaign to increase volume sales in 1993, Coke began to sell sodas in jumbo-sized containers. In *Fast Food Nation*, food journalist Eric Schlosser provided an illustrative example of how the retail system worked in the 1990s: "The fast food chains purchase Coca-Cola syrup for about $4.25 a gallon. A medium Coke that sells for $1.29 contains roughly 9 cents' worth of syrup. Buying a large Coke for $1.49 instead . . . will add another 3 cents' worth of syrup—and another 17 cents in pure profit for McDonald's." The profitability of the system enticed soft drink companies and retail distributors to promote sales of larger and larger beverage containers, first shooting for 20-ounces per sale, than encouraging consumer purchases of 64-ounce containers by the mid-1990s. The result was a dramatic increase in per capita soft drink consumption, which rose from 41.25 gallons in 1985 to 56.1 gallons in 1998.[9]

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[8] "Case of the Sugar Papers," *Chicago Tribune*, July 10, 1978, 10; Michael Pollan, *Omnivore's Dilemma*, 105.

[9] Eric Schlosser, *Fast Food Nation: The Dark Side of the All-American Meal* (Boston: Houghton Mifflin, 2001), 54; Michael Blanding, *The Coke Machine*, 67, 68.

The problem with this increase in per capita consumption of artificial sweeteners was that Americans were not suffering from caloric deficits. Far from receiving nutritional benefits from this supersize revolution, consumers functioned as the new repositories of agricultural surplus. They were consuming large amounts of calories their bodies did not need. In 1950, per-capita consumption of caloric sweeteners had topped out at over 100 pounds per person (almost twice the per-capita sugar intake of 49.2 pounds in 1885), but by the end of the1980s, annual per capita consumption had risen to over 125 pounds. The upward trend continued into the 1990s, and by 2000 with average annual per capita consumption of caloric sweeteners in the United States reaching 152.4 pounds. Thus, citizens who had once thrived on less than 50 pounds of caloric sweeteners annually were by the twenty-first century consuming over three times that much each year. The country's subsidized super-farms were not recharging citizens' under-filled caloric reservoirs; they were fueling an unhealthy trend toward overconsumption of carbohydrate-rich sweeteners.[10]

HFCS as Corporeal Pollution

What made the HFCS revolution acceptable to consumers initially was the fact that its material costs were kept out of sight. Describing the continued political success of Butz's agricultural support program in the 1990s, food journalist Betty Fussell contended that "Americans don't believe in what they can't see, and the superstructure of American agribusiness that controls the production of corn is as invisible and pervasive as the industrial products of corn." The loan payments that stimulated corn

[10] *The Banker's Magazine and Statistical Register*, vol. 41 (New York: Homans Publishing Company, 1886-1887), 655; USDA Agriculture Factbook 2001-2002, 20.

overproduction, totaling billions of dollars by the late 1980s ($5.7 billion in 1983 alone), came from general tax funds, not itemized sales tax, thus limiting consumers exposure to the cost of agricultural subsidies.[11]

Over time, however, consumers' waistlines exposed the expensive storage costs that allowed the over-supplied corn market to function. Consumers' bodies became jammed-packed silos, replacements for the federal repositories that had once helped stimulate scarcity by keeping excess corn off retail shelves. Consuming ever-greater quantities of calories each year, Americans became bigger and bigger. According to National Health and Nutrition Examination surveys conducted by the Center for Disease Control (CDC), only 14.1 percent of Americans were considered obese (defined as a Body Mass Index (BMI) equal to or greater than 25.0) between 1971 and 1974 compared to 22.4 percent by the early 1990s. In 2008, over 34 percent of the US population had a BMI over 25. The biological explanation for this phenomenon was quite simple. Consumers were taking in more carbohydrates than their bodies needed, and as a result, most Americans were turning excess sugars into fat.[12]

Distended stomachs were symptomatic of other health problems associated with excessive caloric consumption, and concerns about maladies attendant to obesity, not just corporeal aesthetics, forced some consumers, especially parents with small children, to push for dietary reforms by the 1990s. Diabetes was perhaps the most serious side effect of excessive sweetener consumption. Between 1980 and 2000, the prevalence of diabetes

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[11] Betty Fussell, *The Story of Corn*, 159; United States Department of Agriculture, "Feed Grains: Background for 1995 Farm Legislation," Agricultural Economic Report No. AER714 prepared by William Lin, Peter Riley, and Sam Evans (April 1995), 53.

[12] K. M. Flegal, M. D. Carroll, C. L. Ogden, and L. R. Curtin, "Prevalence and Trends in Obesity Among Us Adults, 1999-2008," *Journal of the American Medical Association* 303, no. 3 (January 20, 2010): 235-241; K. M. Flegal, M. D. Carroll, R. J. Kuczmarski, and C. L. Johnson, "Overweight and Obesity in the United States: Prevalence and Trends, 1960-1994," *International Journal of Obesity* 22, no. 1 (January 1998): 586-589; Michael Blanding, *The Coke Machine*, 48.

for citizens aged 0 to 44 doubled, rising from .6 percent of the population to 1.2 percent (over 2 million people). The CDC also registered increases in diagnoses for citizens aged 65-74, the center reporting a rise in rates from 9.1 percent to 15.4 percent over the same period. By 1996, adult-onset diabetes, a condition believed by most physicians to be linked to overconsumption of sugar and caloric sweeteners, had been renamed type-two diabetes because so many children were exhibiting symptoms of the disease. In the early years of the 21st century, then, it appeared diabetes, a condition once affecting a small fraction of the population, was quickly becoming an American epidemic.[13]

Though there had been critics of the Farm Bill before the 1990s, growing health fears in the wake of the HFCS revolution added new resistance to perpetuating the corn bounty program. It was not the financial costs of production but rather the physiological storage costs associated with excessive sugar and corn consumption—costs individual consumers dealt with every day and saw in the mirror—that created a new constituency that began to question the merits of federal agriculture policy. The physical surpluses of grain, once stored in the silos of the American West, now manifested themselves as bulging protrusions hanging over American consumers' belts.

Coke could hardly claim it was an insignificant contributor to the problem. Gallon sales of soft drinks had exploded during the 1980s and 1990s, and old Coke customers were consuming greater quantities of carbonated beverages than they ever had in history. The CDC reported that the quantity of soft drinks and fruit drinks/aides

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[13] "Percentage of Civilian, Noninstitutionalized Population with Diagnosed Diabetes by Age, United States, 1980-2008," Center for Disease Control and Prevention, National Center for Health Statistics, Division of Health Interview Statistics, data from National Health Interview Survey. Statistical analysis by the Center for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health, Division of Diabetes (posted October 15, 2010), www.cdc.gov/diabetes/statistics/prev/national/figbyage.htm; Michael Blanding, *The Coke Machine*, 81.

consumed by adults between the period 1977 to 1988 and 1994 to 1998 increased by 100 percent. This increase in per capita consumption helped to make soft drinks containing caloric sweeteners the "largest single food source of calories in the US diet" in 2004 according to the Journal of the American Medical Association. Coke scholar Michael Blanding explained the connection between Coca-Cola and obesity thus: "The math is simple: At the same time that America's obesity rates doubled, so has Americans' soda consumption; between 1970 and 1980, it accounted for nearly half the increase in calories in the average diet."[14]

Well before it made the switch to HFCS, Coke had recognized that the visible health costs of excessive soft drink consumption could potentially hurt Coke's profitability, and the company worked hard to come up with a corporate solution to the burgeoning obesity problem beginning as early as 1962. That year, a company study revealed that over 28 percent of US consumers worried about how food and beverage intake affected their weight. With these results in hand, Coke decided to market a new non-caloric beverage that would leave no trace on the human body once consumed, introducing its first diet beverage, Tab, in 1963. Coke sweetened its new non-caloric drink with a mixture of saccharin, a coal-tar derivative discovered in 1877, and cyclamates, sweet byproducts generated during processing of tobacco leaves. Within months, Tab sales produced profits for the company, and in 1965, hoping to make further inroads into the diet cola market, Coke introduced its second low-calorie beverage,

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[14] Center for Disease Control, Research to Practice Series, no. 3 (September 2006), http://www.cdc.gov/nccdphp/dnpa/nutrition/pdf/r2p_sweetend_beverages.pdf; Caroline M. Apovian, "Sugar-Sweetened Soft Drinks, Obesity, and Type 2 Diabetes," *Journal of the American Medical Association* 292, no. 8 (August 25, 2004): 978; H. K. Choi and G. Curhan, "Soft Drinks, Fructose Consumption, and the Risk of Gout in Men: Prospective Cohort Study," *British Medical Journal* 336, no. 7639 (February 9, 2008), 309; Mark Bittman, "Soda: A Sin We Sip Instead of Smoke?" *New York Times*, February 12, 2010, WK1; Michael Blanding, *The Coke Machine*, 79.

Fresca. The excellent sales record of Tab and Fresca forced Pepsi and Royal Crown Cola to develop their own non-caloric competitors, Patio and Diet-Rite, respectively, and by 1965, all of the major soft drink companies were distributing diet drinks to their customers.[15]

Despite early success, soft drink industry giants became concerned about the future of calorie-free beverage sales when the Food and Drug Administration exposed the hidden carcinogenic risks associated with large-scale cyclamate consumption in the late 1960s. Enforcing the Delaney Clause of the Food, Drug, and Cosmetic Act, an amendment to the 1938 legislation passed in 1958 that prevented the introduction of known carcinogens into the food supply, the FDA in 1969 banned cyclamate use within the United States. The agency cited scientific studies that linked heavy consumption of cyclamate-rich solution to increased incidence of bladder cancer in laboratory rats. Overnight, Coke, Pepsi, and RC Cola's diet drinks came off retail shelves.[16]

In the wake of the 1969 cyclamate ban, the Coca-Cola Company asked the federal government to reverse its decision, citing the lack of sufficient evidence to prove that cyclamates caused cancer. The same year studies revealed that rats developed bladder tumors after consuming large amounts of cyclamates, company president Paul Austin claimed that the government's findings were inconclusive, saying, "We are aware, of course, of the current attention being directed to cyclamates, but to date we have seen no confirmed evidence that the substance is unsafe, particularly at present levels." Working

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[15] "Diet Coke Reflects Changes in Market and the Industry," *New York Times*, August 23, 1982, D4.

[16] Memorandum to the Directors of Coca-Cola, October 20, 1969, Box 16, Folder 1, RWW Papers, MARBL; In 1969 and early 1970s, studies hypothesizing a link between cyclamate consumption and cancer were inconclusive. See M. W. Wagner, "Cyclamate Acceptance," *Science* 26 , no. 3939 (1970), 1605. In a recent study published in the *Annals of Oncology*, scientists concluded that "epidemiological studies in humans did not find the bladder cancer-inducing effects of saccharin and cyclamate that had been reported from animal studies in rats." W. R. Weihrach and V. Diehl, "Artificial Sweeteners--Do They Bear a Carcinogenic Risk?" *Annals of Oncology* 15, no. 10 (October 2004): 1460-1465.

with the euphemistically named Calorie Control Council, (CCC) a non-profit organization founded in 1966 by non-caloric sweetener producers and users to protect industry interests, Coca-Cola and its corporate allies petitioned Congress to grant compensation for ban-induced losses inflicted upon cyclamate-reliant industries. The measure made it through the House of Representatives, but stalled in the Senate.[17]

While it continued to fight for compensation, Coca-Cola nonetheless moved forward with marketing of cyclamate-free Fresca and Tab by 1970, using larger amounts of saccharin to sweeten its beverages. However, in 1977, the FDA initiated a new directive to prohibit the use of saccharin in carbonated beverages, citing recent studies that raised concerns about the potentially carcinogenic effects of the product. To counteract the FDA's efforts, the Calorie Control Council once again went to work, channeling $500,000 to the Coca-Cola Company's ad agency, McCann-Erickson, for the purposes of creating and distributing pro-saccharin ads in over 32 newspapers countrywide. Explaining the objective of the ad campaign, one CCC member told the press that blocking an FDA ban was "just a matter of getting consumers—diabetics and diet-conscious—to complain to Washington." CCC newspaper pieces encouraged consumers to write their congressmen expressing their support for a "postponement of a ban so an independent and thorough scientific review can be made to evaluate the total

[17] Senate Select Committee on Nutrition and Human Needs, *Hearing on Nutrition and Human Needs, Part 13C: Nutrition and Private Industry*, 90th Cong., 2d sess., July 30, 1969, 4609; "Cyclamates and the Try for Reimbursement," *Washington Post*, September 22, 1972, A26; "Bill to Provide Relief From Cyclamate Losses Expected to be Introduced by Sen. Griffin of Michigan," *National Soft Drink Association Bulletin* (July 1970), 6; "Decision on FDA Petition Not Due Until 1975, FDA Says" *National Soft Drink Association Bulletin* (March 1974), 2; Beatrice Trum Hunter, *The Sweetener Trap and How to Avoid It: The Power and Politics of Sweeteners and Their Impact on Your Health* (Laguna Beach, CA: Basic Health Publications, 2008), 372.

evidence on saccharin." In addition to these print ads, CCC also ran a series of radio commercials that stressed the effects of the ban on the common citizen.[18]

The Council's lobbying efforts paid off and thousands of consumers wrote to their congressmen (often forwarding copied CCC ads) to express their disapproval for the FDA restrictions on saccharin use. Congress responded to the public uprising and granted a moratorium on the proposed saccharin ban, which allowed soft drink manufacturers to continue use of saccharin until May of 1979. Ultimately, the moratorium was renewed and by the late 1980s saccharin had become an FDA-approved artificial sweetener. At that point, however, saccharin had begun to lose market share to a new artificial sweetener produced by the Searle Company called aspartame. The new sweetener, first discovered in 1965, offered many benefits. It was some 200 times sweeter than sugar and produced no bitter aftertaste (a problem saccharin producers never fully resolved with their product). More importantly, the FDA found no evidence that aspartame was carcinogenic. With FDA approval in 1983, the Coca-Cola Company began using the new product, adding aspartame to Diet Coke, its newest non-caloric beverage brand, but because saccharin was still significantly cheaper than Searle's new product, Coke continued to use saccharin in combination with aspartame in its diet drinks to keep production costs down. Thus, a food supplement that some scientists claimed might contribute to significant health problems remained in millions of beverages sold throughout the country.[19]

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[18] "Caloric Council Sparks Protest Against Saccharin Ban," *Chicago Tribune*, March 15, 1977, C9; Caloric Control Council Ad copied in Carolyn de la Peña's *Empty Pleasures: The Story of Artificial Sweeteners from Saccharin to Splenda* (Chapel Hill: University of North Carolina Press, 2010), 171.

[19] Coke decided to use 100-percent aspartame in its diet beverages in 1984. Coca-Cola 10-K Securities and Exchange Commission Filing, 1989; " The Bittersweet Mystery Behind Aspartame," *Chicago Tribune*, June 26, 1983, N1; In *Empty Pleasures*, Carolyn de la Peña provides an illustrative look into the Caloric

For years, questions remained whether saccharin (or even aspartame) caused cancer, but FDA battles to remove these *potential* carcinogens from retail outlets were lost time and time again, largely because consumers' obsession with the visible pollution of obesity outweighed their fears about contracting a disease whose causal vectors remained hidden in a microscopic world foreign to most Americans. It was easier to rally public support for a war against a conspicuous and identifiable enemy such as obesity than it was to sustain a guerilla campaign against an unknown adversary whose epidemiology was not yet fully understood. As a result, cancer organizations and consumer interest groups lost in their fight against the Calorie Control Council and other big-business lobbying giants in the 1980s and 1990s, unable to compete with corporations that spent thousands of dollars mobilizing voters to oppose FDA regulatory efforts.[20]

Individuals who responded to the propaganda pieces of the CCC, protesting the saccharin ban in the 1970s and 1980s, were convinced that non-caloric sweeteners helped them lose weight, but by the 1990s, statistical evidence revealed that the promised benefits associated with diet drink consumption were less than weight-conscious consumers had hoped. Even as per capita consumption of non-caloric sweeteners rose 150 percent between 1975 and 1984, per capita consumption of sugar increased from 118.1 pounds to 126.8 pounds over the same period. After the introduction of aspartame, the trend continued, and per capita consumption of all caloric sweeteners increased by

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Control Council anti-ban campaign, showing how the organization effectively motivated constituencies of influential politicians to act in favor of a government moratorium. Carolyn de la Peña. *Empty Pleasures* 170-175; Explaining Coke's level of involvement in CCC politicking, the *New York Times* reported in 1978, "Coca-Cola is fighting hard against the proposed [saccharin] ban, and is the largest single contributor to the Calorie Control Council, the chief lobbyist against the ban." "A Market Thirst Never Quenched," *The New York Times*, April 9, 1978, F4.

[20] Saccharin was only removed from the Department of Health and Human Services list of potential carcinogens in 2000, 23 years after the FDA moved to ban the product in 1977.

over 20 percent between the end of the 1980s and 2000. As artificial sweetener historian Carolyn de la Peña explained, "History reveals" that "low-calorie foods" have been used "to sell products not create thin people." Though Americans sought to curb their consumptive desires by experimenting with non-caloric sweeteners, they continued to consume larger and larger quantities of HFCS and sugar. Non-caloric sweeteners did not fix the country's obesity problem; they merely helped to temporarily assuage overweight consumers' guilt.[21]

Coca-Cola Classic remand Coke's flagship brand even in the era of diet drinks. Per capita consumption of this sugary beverage continued to climb, and as it did, the obesity epidemic in the country worsened. By the 1990s, concerned citizens pushed for government intervention that would help curb the country's appetite for soft drinks.

Consumer Backlash and Obesity Taxes, 1990s to Today

With private sector solutions failing to solve the country's weight problem, some citizens began to call on the government to help reverse a consumer trend towards overeating that seemed to be spiraling out of control. In 1994, Dr. Kelly Brownell, the director of the Yale Center for Eating and Weight Disorders contributed an editorial to the *New York Times* entitled "Get Slim With Higher Taxes," and in it he proposed a federal obesity tax on snack foods and soft drinks as a strategy for altering Americans' dietary habits. He also called for federal regulation of commercial advertisements that would limit schoolchildren's exposure to TV ads for sweet, calorie-dense foods and

[21] Carolina de la Peña, *Empty Pleasures*, 180, 216.

urged the government to require the removal of snack-food and soft drink vending machines from public schools cafeterias and concessions.[22]

Brownwell's message represented a radical challenge to corporate America, for in calling for government aid, Brownwell acknowledged that many consumers were not really "free" to make wise dietary choices. New scientific evidence showed that many people were genetically predisposed to overindulge on sugar-rich foodstuffs if given the opportunity, and other studies revealed that most people developed deleterious eating habits during childhood, a time when consumers made irrational dietary choices with limited information about health consequences.[23]

A new cohort of scientists and consumer activists echoed Brownwell's call for obesity taxes and demanded that industrial food producers be held accountable for their contributions to the health costs associated with overeating. Consumer advocate Michael F. Jacobson, for example, published a report at the Center for Science in the Public Interest entitled *Liquid Candy: How Soft Drinks are Harming Americans' Health* (1998), promoting the imposition of federal vice taxes on carbonated beverages. The pamphlet made national news, drawing the attention of the NSDA, which challenged Jacobson's claims and argued that soft drink taxes were discriminatory because they targeted one industry rather than dealing with the larger breadth of factors contributing to obesity in America. But even as the NSDA worked to build momentum for an anti-tax movement, new medical studies continued to erode NSDA's propaganda platform. These scientific reports showed that soft drinks were in fact a major contributor to America's obesity epidemic. Dr. David Ludwig of the Boston Children's Hospital, for example, produced a

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[22] "Get Slim With Higher Taxes," *New York Times*, December 15, 1994, A29; "Americans, Obesity and Eating Habits," *New York Times*, January 29, 1995, CN3.
[23] Ibid.

report in 2001 revealing that schoolchildren who drank at least one soft drink per day increased their risk of becoming obese by 60 percent for every drink consumed. Other reports provided evidence that the human body only partially registered calories consumed in liquid form, a phenomenon, some researchers postulated, that explained why heavy soft drink consumers overindulged on calorie-dense foods.[24]

With these studies in hand, a host of best-selling journalists, including Eric Schlosser and Michael Pollan, published wildly-popular books in the 2000s that amplified the concerns raised by the country's scientific and medical communities. In addition to calling for the termination of federal subsidy programs that encouraged surplus production of HFCS, virtually all these authors stressed the need for new federal regulations that would require "junk" food producers to pay for the huge costs associated with storing caloric surplus in human bodies, costs which had risen dramatically from an estimated total of $78.5 billion in 1998 to over $147 billion in 2008.[25]

The storage costs associated with America's agricultural support systems, costs that had been kept hidden from the American public for years, had finally become visible to the average American citizen by the twenty-first century. Corn surpluses had become fat deposits carried by millions of overweight citizens. Obesity presented consumers with immediate fiscal (in the form of medical payments) and physical (in the form of health problems) costs that forced consumers to scrutinize an agro-industrial complex that for decades had enriched Coke and other big food and beverage firms.

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[24] Michael F. Jacobson, *Liquid Candy: How Soft Drinks are Harming Americans' Health* (Washington, DC: Center for Science in the Public Interest, 1999); "Extra Soft Drink is Cited as Major Factor in Obesity," *New York Times*, February 16, 2001, A12; Michael Blanding, *The Coke Machine*, 79-80, 85; R. D. Mattes and D. P. DiMeglio, "Liquid Versus Solid Carbohydrates: Effects on Food Intake and Body Weight," *International Journal of Obesity* 24, no. 6 (2000), 794-800.

[25] Eric A. Finkelstein, Justin G. Trogdon, Joel W. Cohen, and William Dietz, "Annual Medical Spending Attributable to Obesity: Payer-And-Service Specific Estimates," *Health Affairs* 28, no. 5 (September 2009), w822.

Disturbed by the now conspicuous excesses of American agribusiness, excesses made even more visible by bloggers and new-media muckrackers, a growing number of citizens began to demand that Congress penalize corporations that contributed to the country's obesity problem, and politicians on Capitol Hill listened. Beginning in the late 2000s, a number of legislators proposed obesity taxes that would require soft drinks to carry a modest excise tax. The American Beverage Association vehemently opposed these proposals, spending millions of dollars to convince congressmen and their constituents that industry-targeted vice taxes would do little to solve the country's obesity problem. Coca-Cola strongly supported ABA anti-tax lobbying efforts, acknowledging in its 2009 10-k report that "adverse publicity surrounding obesity concerns" represented one of the gravest threats to the company's future profitability.[26]

Just as it had urged its customers to do their part to clean up plastic and aluminum containers in the 1970s, the Coca-Cola Company argued that caloric waste management was the responsibility of the consumer. The company hoped to appeal to Americans' infatuation with the republican principles of individual freedom and limited government. Throughout the 2000s, Coke, often in partnership with the ABA, funded ad campaigns to convince consumers that exercise and dieting were the best ways to combat obesity, not taxation, and as in the 1970s, consumers were buying into the company's free-market pitch. According to a CBS poll conducted in January of 2010, 60 percent of Americans opposed vice taxes on high-caloric sweets, with over 72 percent of those polled arguing that taxation would not help in reducing America's obesity rate. Disturbed by these statistics, Kelly Brownwell criticized obesity tax skeptics, arguing, "The personal responsibility approach is a fine place to start, but we've been doing that for forty years

[26] Coca-Cola Company 10-K Securities and Exchange Commission Filing, 2010.

now and we're losing the battle with obesity— that's been an experiment that has failed."[27]

Brownwell was not alone, and for the growing cohort of citizens who supported obesity taxes, it was apparent that what was good for Coke was not necessarily good for the public. These tax supporters challenged company lobbyists who—adopting century-old promotional tactics—presented their pleas for redress as the lamentations of the American commoner. Obesity-tax proponents argued that the Coca-Cola Company was more concerned about securing corporate profits than promoting the public good. More than the fiscal losses any obesity tax could inflict on the company, this was by far the greatest consequence of the consumer resistance to America's commercial food industry. For many, Coke was no longer the pause that refreshes; it was a pollutant rapidly contributing to the degradation of their bodies.

Many consumers now believed Coke was generating not consumer value but toxic waste, waste that was now visible to millions of Americans, and there was no evidence that the company would ever stop polluting. Coke's profitability depended on volume sales, and so long as the company sold sugary beverages, it had to encourage increased per capita consumption of unhealthy calories. This system worked in the first half of the twentieth century when per capita consumption was limited to less than a hundred six-ounce bottles per year, but it was simply unsustainable by the 1990s when annual consumption rose above 600 twelve-ounce cans per person.[28]

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[27] Quoted in Seth Doane, "Battling Obesity in America," posted January 7, 2010, http://www.cbsnews.com/stories/2010/01/07/eveningnews/main6069163.shtml?tag=contentMain;contentBody.

[28] Michael Blanding, *The Coke Machine*, 68.

Unlike government-sponsored recycling programs or municipal wastewater treatment systems, there was no effective public solution Coca-Cola could rely on to hide its caloric waste problem. Excess sugar and corn sweeteners, once converted into fat deposits in the private domain of citizen's bodies, could not be extracted and shipped to government landfills. They had to be paid for directly and at full-cost by average citizens, and many consumers simply were not happy when it came time to pay the bill.

For obesity-tax supporters, the federal government had helped to create the prodigal system fueling excessive caloric consumption, and it was, therefore, only fair they argued, that the government be expected to play a significant role in the unmaking of that system. For over a century, the federal government had committed its prodigious resources to the construction and maintenance of a modern industrial food system that now was threatening the health of the American people. For Brownwell and others, it was time for the government to help clean up the mess and to hold those corporations accountable for the waste they helped generate.

Coda: Towards Bio-economic History

When economic historians analyze commodity flows, they rarely consider what happens to goods once they are digested in the human body. Certainly, many scholars talk about post-consumer waste and the toxic byproducts of corporate growth, but they are largely referring to packaging waste or air and water pollution expelled into the environment in the final stages of production or consumption. Few scholars journey into the human body to understand how macroeconomic policies disrupt microscopic systems,

and even fewer scholars consider how these disruptions can in turn undermine the very policies that first created them.

Analyzing Coke's global ascendancy from a perspective that acknowledges the intimate connections between commodity flows and biochemical pathways allows scholars to see that Coca-Cola's greatest vulnerabilities lay not in its exposure to government-imposed trade restrictions but in its unrestrained exploitation of the human body. For American consumers, Coke's perpetual growth produced toxic consequences, and as Coke's profits got bigger each year, so too did Americans' stomachs. The result has been consumer backlash against Coca-Cola and the federal policies that support its growth. Today, fighting this backlash remains the top priority of the company, with many industry analysts uncertain about the future profitability of caloric beverage enterprises.

The biochemical had become political. Transformations in the molecular world inspired a health-food movement that challenged a federal-corporate system costing millions of Americans millions of dollars. For years, Americans had ignored the environment degradation that monocrop corn and sugar cultivation caused all across the globe. Now, they were spurred to action by the waste generated at the end of the agricultural commodity chain.

Though some of the health costs associated with excessive soft drink consumption were now visible, hidden costs remained, especially for diet soda drinkers. Scientists know surprisingly little about the plethora of synthetic sweeteners mixed into non-caloric beverages today, and while FDA researchers investigate a host of potential health problems that could be associated with these substances, most scientists would agree that

it is virtually impossible to predict how these synthetic chemicals will affect the human body over the long term when consumed in large quantities. The potential health costs associated with synthetic sweetener consumption, costs invisible to American consumers today, may begin to add up in the years ahead. For now, we simply do not know what the consequences will be. In the end, then, it may be the corporate pollution we cannot see that proves the most deadly.[29]

[29] Recent reports in 2012 suggest that caramel coloring in Coca-Cola may in fact be carcinogenic. See Michael Jacobson and Ted Nixon, interviews by Allison Aubrey, "Coca-Cola Modifies Caramel Color to Avoid Cancer Warning Label," *Morning Edition*, NPR, March 7, 2012.

Conclusion

Coke did not always follow its secret formula for profitability. At different points in its past, the company sought greater cash gains by integrating into ownership and operation of production systems. Often this resulted in serious financial losses for the firm.

Coke's recent investment in bottling operations represents a striking example of how integration can stifle corporate profitability. As discussed in the chapters on water and packaging, since 1986, the parent company has bought up local bottlers all around the country to create the parent-owned mega-bottler Coca-Cola Enterprises (CCE). Coke believed that it could achieve economies of scale by streamlining its distribution system and cutting out middlemen that siphoned off profits generated through the sale of goods to retail outlets all around the world. Their move was a classic Chandlerian story of a company seeking efficiency through direct management of systems of distribution.

But bigger did not prove better for Coke. CCE was a drain on capital investments. In 2006, CCE was one of the biggest money losers of the year, posting a $1.2 billion loss in that year alone. The problem was that CCE was unable to sell all of the syrup that the parent company distributed to it. As *New York Times* reporter Constance Hays pointed out, the Coca-Cola Company (CCC) often bailed out its megabottler, offering it just enough "marketing" support at the end of the fiscal year to cover losses associated with the expensive business of distribution. To investors, the Coca-Cola Company looked stronger than ever, selling more of its syrup to its largest bottler than ever before. The parent company only owned a 49 percent stake in CCE and therefore did not have to report bottling operations on its balance sheet. But even if its

profitability looked good on paper, the company had to channel more of its cash towards operations it had once left to others. As Hays explained, "The whole system, as rewritten, leaned heavily on the Coca-Cola Company," and CCE remained forever dependent on end-of-year payments from the parent company to keep from going into the red. CCE shareholders remained committed to the enterprise because they were unaware of the losses. Parent company expenditures designed to prop up CCE were "reported in the notes section of the annual report" and their effects on profitability remained "buried in the equity-income line."[1]

Throughout the 2000s, CCE continued to accumulate debts to the point that incoming revenue barely covered the cost of servicing interest owed on outstanding loans. Year after year, the Coca-Cola Company funneled cash towards CCE's struggling operations. In the spring of 2008, the Coca-Cola Company reported that it faced a 23 percent reduction in quarterly profits in large part because of CCE expenses. In an attempt to further insulate themselves from the mega-bottler's financial liabilities, Coca-Cola reduced its ownership stake in the bottler to just 35 percent by December of 2007.[2]

Coke's troubles with CCE mirrored problems the company faced when integrating into other capital-intensive technological systems associated with natural resource extraction and processing. As we have seen, the company's forays into ownership and operation of coffee firms, water purification technologies, and private recycling centers often proved a drain on company resources. For Coke, these industries did not produce enough profits to warrant continued investment in their operation, but they nonetheless provided services that were essential to the company's commercial

[1] Constance Hays, *The Real Thing*, 155-156.
[2] Constance Hays, *The Real Thing*, 157; "Biggest Bottler of Coke Plans to Increase Prices," *New York Times*, July 18, 2008, C3; Coca-Cola SEC 10-K Report, 2008, 5.

growth. Success hinged on finding partners, whether public or private, that would cover the majority of the costs of supporting these technological systems that produced the cheap commodities vital to trade in low-value consumer goods.

This lesson is important when considering the proper role of Coca-Cola and other profitable businesses in shaping development initiatives at home and abroad in the twenty-first century. Proponents of limited government consistently maintain that private industry should take over certain services that are now being provided by the state. They argue that businesses could run these systems more efficiently and reduce costs to the public. The story of Coke's ascendancy, however, suggests that many of America's big business firms are ill-suited for the tasks that would be demanded of them as executors of public service projects. The history of the Coca-Cola Company and its corporate partners demonstrates that some of the most profitable businesses of our time are those that have embedded themselves in systems built, financed, and constructed by extra-firm institutions. They have been successful and profitable precisely because they have not invested in expensive infrastructural projects. Coke and other profitable low-value consumer goods companies were not the engineers of their destinies, but businesses dependent upon scaffolding provided by others, and they were far more often the beneficiaries of state support programs than the material developers of technological systems that benefited the public at large.

To claim it prudent to nominate our most profitable corporations to be the architects of large-scale sustainable development projects in the twenty-first century would be to ignore the history of how these businesses became what they are. Coke has shunned investment in operations that would prevent it from making cash gains year after

year, yet some of the most important public service projects that face our global community in the years to come—alleviating a growing solid waste problem, improving crumbling municipal public water systems, and restoring the health of exploited agricultural systems—will require substantial capital investments in large-scale technological construction projects. Even though American businesses depend on these operations for their continued growth, they have historically been reluctant to use private capital to fund restoration and improvement. For decades, companies have not been required to pay the cost for sustaining the public infrastructure that has served their needs, and there has therefore been fierce backlash against any alteration to the status quo that might force private industries to make financial commitments to critical public systems rehabilitation or expansion.

Though Coke professes an allegiance to public recycling programs, the company has remained a limited financial partner in the construction of municipal resource reclamation systems. Likewise, while Coke has made public waterworks improvement a central tenet of its corporate social responsibility platform, the company has consistently fought tax initiatives that would require beverage businesses to pay for a portion of the cost of financing much-needed infrastructural repairs to municipal water systems. Coke's commitment to sustainable development projects that benefit a large citizenry, in other words, have always been contingent upon whether or not those initiatives affected the company's ability to make profits. The company has not shown itself willing to venture beyond that threshold, a pattern that should give proponents of privatization pause when considering the limits of corporate public service.

In order to transform America's most powerful corporations into institutions whose profits benefit the public weal, government must begin to create new fiscal incentives to motivate corporate behavior. The history of Coca-Cola shows that corporations respond to financial pressures, because it is profits after all that drive company decision-making. The only way to make corporations change their behavior is to make it expensive for them to support the expansion of industries that are harmful to the public. Many people would argue this is common sense, yet a survey of government efforts to correct destructive corporate behavior in the twentieth century shows that time and time again the state has failed to force companies to pay for hidden expenses— whether environmental, social, or economic— associated with product manufacture and distribution. In fact, the state has often subsidized behavior that has reduced the quantity and quality of public resources.

Even if prices were raised to reflect hidden costs, it is not clear that Coca-Cola would have the power to make the kinds of changes in its purchasing practices to make it a truly sustainable company in the decades to come. To increase shareholder value, Coca-Cola has to sell more of its product year after year. Value after all is contingent upon increased production. But it is clear from the history offered here that increased sales means increased demands on ecologies with finite resources. It also means more people will have to drink more of its sugar-filled beverages, a recipe for a disastrous explosion of the growing obesity epidemic. There are fundamental flaws with Coke's model for producing economic wealth that will limit the company's ability to become a force for public betterment in the decades to come.

Creating a sustainable economy in the twenty-first century, one that generates public resources rather than diminishes the value of environmental and social capital, will have to begin without, not within, the modern corporation. It will involve eliminating those government policies that encourage the expansion of corporate habits that are destructive to the public weal and providing new incentives for the construction of institutions whose value is not measured by product sales but the contributions they make to improving the ecological and social environment of the world in which we live.

When I began this dissertation, I started by saying that I drink Coke, but considering the history described in this dissertation an important question is, Should I drink Coke? Considering how fiscal incentives motivate Coca-Cola and other profitable consumer goods companies, I believe the answer should be no. With my purchase of a Coke product, I support the continued expansion of a company that I know has contributed to major problems around the world and a company whose model for growth is inherently unsustainable. Coke is a company that generates millions of pounds of packaging waste each year, a company that extracts public water resources from dehydrated communities, a firm that encourages monocrop agricultural growth, and a business that is perhaps the single largest contributor to a national obesity epidemic. These are costs that if included in the price of a Coke, I am not sure I would be willing to pay. If I want my government to hold Coke accountable for the social and environmental costs of running its business, I should do the same.

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