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Chicago and New Orleans: opposite ends of a great river

DOSSIER RIOS E CIDADES: ARAGUAIA

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Abstract
This paper considers the contrasting and deliberate efforts to reshape the fluvial futures of two important American cities which essentially re-wrote their riparian heritages. Chicago's aggressive extension of its commercial reach through its artificial connection with the Mississippi has become embodied in its environmental, political, and literary history. Conversely, New Orleans crafted a defensive local culture in its environmental history, politics, and literature. The contrasting investments in river-altering infrastructure and urban relationships with the one river expose the significance of each city's position within a watershed and in shaping its respective cultural history and its identity.

Keywords
River. Urban infrastructure. Chicago. New Orleans.

1. Introduction

Chicago straddles the banks of the Chicago River. Its modest length is only 250 kilometers and its headwaters rise mere meters above its mouth. The river enabled transportation by early 19th century human-powered canoes, but not industrial-era watercraft. Commercial ambitions prompted a re-engineering of the Chicago River which enlarged it and connected the city to the Mississippi River system. New Orleans also straddles a river that provided the justification for its founding. But the Mississippi River flows 3700 kilometers from its source, tumbles from 4200 meter high peaks in the Rocky Mountains, and drains over 3 million square kilometers. New Orleans, laid out on the alluvial floodplain soils, literally became part of the Mississippi nearly every spring. Citizens there sought to re-engineer the landscape to prevent regular inundations in order to disconnect the city from the river's regular rhythms. By nature, these two rivers were vastly different and were wholly disconnected. One flowed into the Atlantic basin and the other into the Gulf of Mexico. But by human handiwork, they are now part of the same basin.

This paper considers the contrasting and deliberate efforts to reshape the fluvial futures of these two cities which essentially re-wrote their riparian heritages. Chicago's aggressive extension of its commercial reach through its artificial connection with the Mississippi has become embodied in its environmental, political, and literary history. Conversely, New Orleans crafted a defensive local culture in its environmental history, politics, and literature. The contrasting investments in river-altering infrastructure and urban relationships with the one river expose the significance of each city's position within a watershed and in shaping its respective cultural history and its identity.

2. Environmental Histories

Let's start with the environmental histories of these two cities. William Cronon's sweeping account of Chicago's rise to economic prominence through the control of timber, corn, and livestock across the Midwest and into the Great Plains is a tale of economic hegemony and territorial ambition achieved through a canal and later rail transportation and aggressive commodities traders (Cronon, 1991). Cronon presents the environmental impacts as an ever-expanding urban influence across a wide hinterland — that is also the upper Mississippi River basin. Chicago's humble beginning on the banks of the Chicago River was fundamentally altered by the completion of the Illinois and Michigan Canal in 1848. This canal connected Chicago to the emerging agricultural heartland of the US and to potential western markets (Figure 1). By making transportation linkages with this expansive hinterland, Chicago accelerated the deforestation of Wisconsin, Minnesota, and Missouri; it stimulated conversion of prairie grasses to corn fields; which fattened hogs and cattle that the city's packing plants disassembled for consumption on the eastern seaboard. Control of these commodities fueled Chicago's economic growth. An outward looking commercial

Figure 1. Chicago and its connections to the Mississippi River.

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view transformed the landscapes within reach of the transportation networks that originally centered on rivers and later railroads (Cain, 1978).

The economic reach did not stop with agricultural and forest commodities. Steel making on the south side of Chicago, enabled in part by a second even larger canal in 1900, connecting Lake Michigan with the Mississippi River basin, brought together iron ore from Minnesota and coal from southern and central Illinois (Figure 2). Waterborne transport was even more essential for the movement of these bulky minerals and further strengthened Chicago's economic position in the upper river basin (Colten, 1985).

Figure 2. Steel mills at the mouth of the Calumet River.

New Orleans has had two environmental histories appear in this century. Ari Kelman acknowledges that New Orleans also had economic ambitions which produced considerable changes to the fluvial form of the Mississippi (Kelman, 2003). Jetties constructed in the nineteenth century scoured a deep channel at the river's mouth. This engineering triumph enabled the city to maintain its position as an entrepôt for incoming international commerce and the export of upstream cotton to England and New England (Figure 3). This commercial flow never passed through Chicago.

Yet, on many other fronts, New Orleans looked at the river as a threat and not an opportunity. Regular spring floods threatened the city's survival. Construction of earthen embankments to fend off high water became the trademark of the city's relationship with nature and continue to dominate its landscape toady. These prominent features fostered a defensive culture, a fortress mentality. The story of New Orleans is less a tale of environmental hegemony across its hinterland, than the story of a constant struggle to keep runoff from a massive drainage basin from invading its crescent-shaped urban footprint. The key to understanding New Orleans's relationships with nature is evident in the steps it took to modify its improbable site, to make a quagmire a metropolis. City officials for decades have been engaged in a perpetual effort to improve the site where the city rose from the marsh. Levees held back floods and drainage works lifted excess water to the lake (Figure 4). Together these and other efforts transformed an impossible site into something passing as terra firma. Fending off high water and expelling wetlands were the dominating themes of this city's relationships with nature (Colten, 2005). Without protection, the river's natural commercial connections were worthless.

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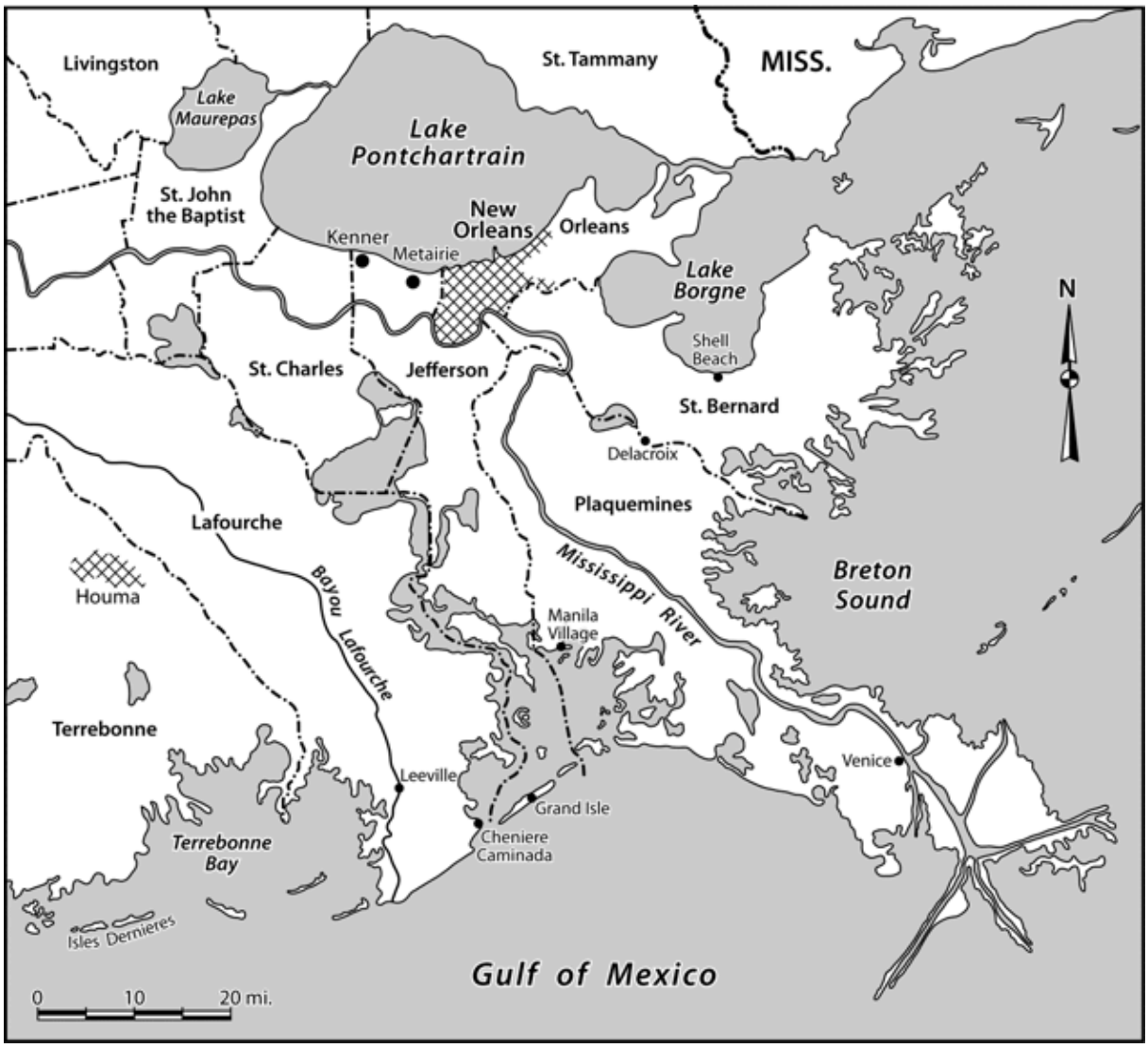

Figure 3. New Orleans on the lower Mississippi River.

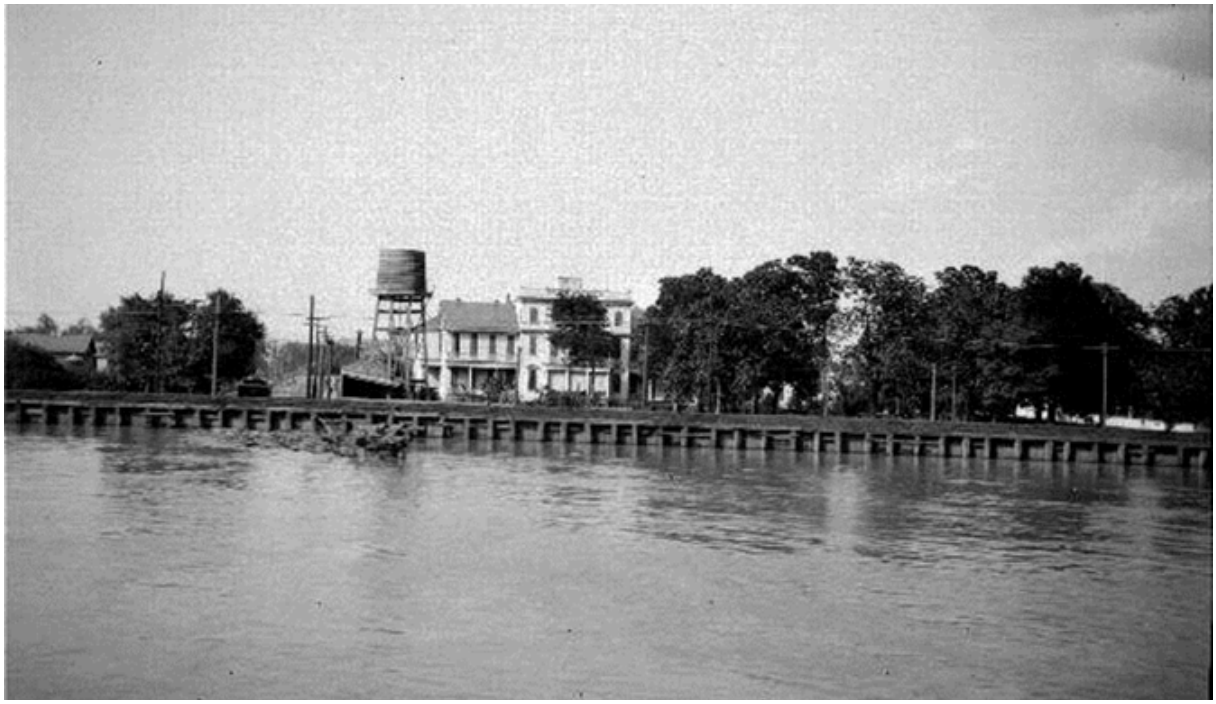

Figure 4. Levees protecting New Orleans.

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3. Environmental Politics

Environmental history intersects with political heritage in these two cities as well. Chicago looked to the broader environment for raw materials to fuel its economic engine and turned to external sinks to dilute its urban wastes. As the city grew rapidly after the completion of the canal, it drew its water supply from Lake Michigan. It also poured its sewage into the lake via by the Chicago River. In the 1870s and 1880s, a series of summer storms flushed the fetid Chicago River and it bacteria-laden contents into the lake. A series of cholera epidemics overwhelmed the city and caused alarm among public health authorities and political leaders. A committee of sanitation and commercial interests was appointed to consider the problem, and they developed a plan for a new larger canal system connecting Chicago to the upper Mississippi River system. The new canal system would have two channels running from Lake Michigan to the Illinois River. One would flow from the city center and the other from an emerging industrial district some 19 kilometers south of the business district. The new waterways would provide two critical functions: diversion of sewage to the Mississippi River and enlarged transportation capacity. A key difference from the older I&M canal, was that these channels would cut through the modest ridge separating the Mississippi and Great Lakes systems and allow Lake Michigan water to flow by gravity into the adjacent basin. Thus, they would not have locks other than at their connection to the lake, and considerable quantities of Lake Michigan water would flow westward to flush the sewage along (Cain, 1978). Yet, the use of lake water presented major interstate and international legal issues in terms of the impacts the flow would have on the lake levels and the discharge of the St. Lawrence River in Canada. Other states took action to block this effort and embroiled the Chicago in lengthy legal and political confrontations (Colten, 1992).

Figure 5. St. Louis feared that Chicago wastes would pollute its drinking water. St. Louis Globe Democrat, 14 January 1900, p. 1

In addition to concerns in the Great Lakes basin, cities and residents in the Illinois and Mississippi River basins challenged the delivery of Chicago's sewage to their door steps. Downstream politicians from Illinois tried to derail the project without success. St. Louis, through the state of Missouri, filed the first inter-state water pollution case heard by the US Supreme Court to block the canals' opening (Figure 5). Yet, Chicago facing the threat of a law suit blasted the final geologic formation holding lake water back from the Mississippi and unleashed a

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virtually irreversible diversion. St. Louis's suit proceeded nonetheless. After hearing a raft of expert testimony, the Supreme Court ultimately concluded that the Illinois River effectively "purified" Chicago's effluent and declared that it did not pose a health risk to residents of the Mississippi River valley (Missouri v. Illinois, 1906).

Chicago's wastes did contribute to many environmental impacts in the Illinois basin. The increased flow produced more frequent and longer lasting floods which prompted a massive levee building and wetland reclamation program on the Illinois's floodplain — furthering environmental transformation. The sewage and explosion of bacteria placed a huge burden on the stream's oxygen supply and effectively destroyed a lucrative mussel gathering and button making trade along with undermining a sizable commercial fishery (Colten, 1992). As the biggest city in the state and with its considerable political clout, the city withstood in-state criticism. While the city's impacts on the main stem of the Mississippi were minimal, use of the Illinois as its sewage sink was devastating. Despite political and legal challenges, Chicago was able to muscle its way into the position as THE headwater city.

New Orleans fought a different set of environmental political battles. The river drained a huge portion of the U.S. territory — today a portion of 31 states. Controlling the annual spring rises were far beyond the city's and even the state's political and economic reach. Flood protection was a national-scale problem. A first step to gain assistance from the federal government was supporting the passage of the Swamp Lands acts in the mid-nineteenth century. These acts transferred millions of acres of wetlands to states like Louisiana and Florida. The states could then sell the property for wetland reclamation and use the proceeds to build levees and other flood protection structures. Louisiana made little progress transforming wetlands into revenue and then the American Civil War (1861-65) disrupted levee maintenance and left New Orleans in a perilous situation (Colten, 2014). Floods in the 1870s prompted congress to create a commission to oversee the construction of federal levees for the lower river. This action was the result of considerable political maneuvering by Louisiana and Mississippi — states which had revolted against the central government a mere 18 years previously. Experts had convinced congress that a river hemmed in by levees could carve and maintain a deeper channel and thus enhance navigation. In the act that authorized federal funding for levees, congress explicitly declared that they were for navigation and NOT flood protection.

It took another major flood in 1882 to compel congress to actually fund the project and a series of floods in the 1910s exposed serious weaknesses in the improved levee system. Congress eventually conceded that design and construction of the levees was to prevent flooding in 1916 and set the commission on a course to protect the floodplain, not to maintain navigation. In 1926, officials optimistically proclaimed the system was prepared to handle the most extreme flood the river could deliver. The following year that prediction proved horribly inaccurate. The flood of 1927 broke through the levees in Mississippi and Louisiana and unleashed unprecedented flooding, property damage, and caused hundreds of fatalities (Kelman, 2003).

In the wake of this event, the New Orleans advocates launched a major political battle to augment the levees with outlets — that is they sought to create artificial diversions that would re-direct portions of the river flow to the Gulf of Mexico well before it passed New Orleans. The Corps of Engineers, the builders of the river infrastructure, designed two spillways — the Bonnet Carre and the Atchafalaya (Figure 6). They would be capable of moving almost half of the river flow and lessen the height of flood stages at New Orleans. Residents in the Atchafalaya basin objected to the use of their land to protect New Orleans, yet the metropolis won out and the Corps proceeded with the diversions. These projects, largely funded by the federal treasury, have proven effective in their flood protection role. However, as some feared, they have caused periodic devastation to oyster harvesting in the Gulf and contributed to filling lakes in the Atchafalaya with sediment — effectively terminating commercial fishing there (Reuss, 2004).

Today, New Orleans' political leaders fear that coastal erosion will undermine the city's viability, and they are advocating for artificial diversions to deliver sediment and restore the state's coastal wetlands. Huge sums of money are targeted to pay for a $50 billion dollar plan that will protect the city and neighboring industries and transportation infrastructure (CPRA, 2012). The bunker mentality continues to guide politics in Louisiana.

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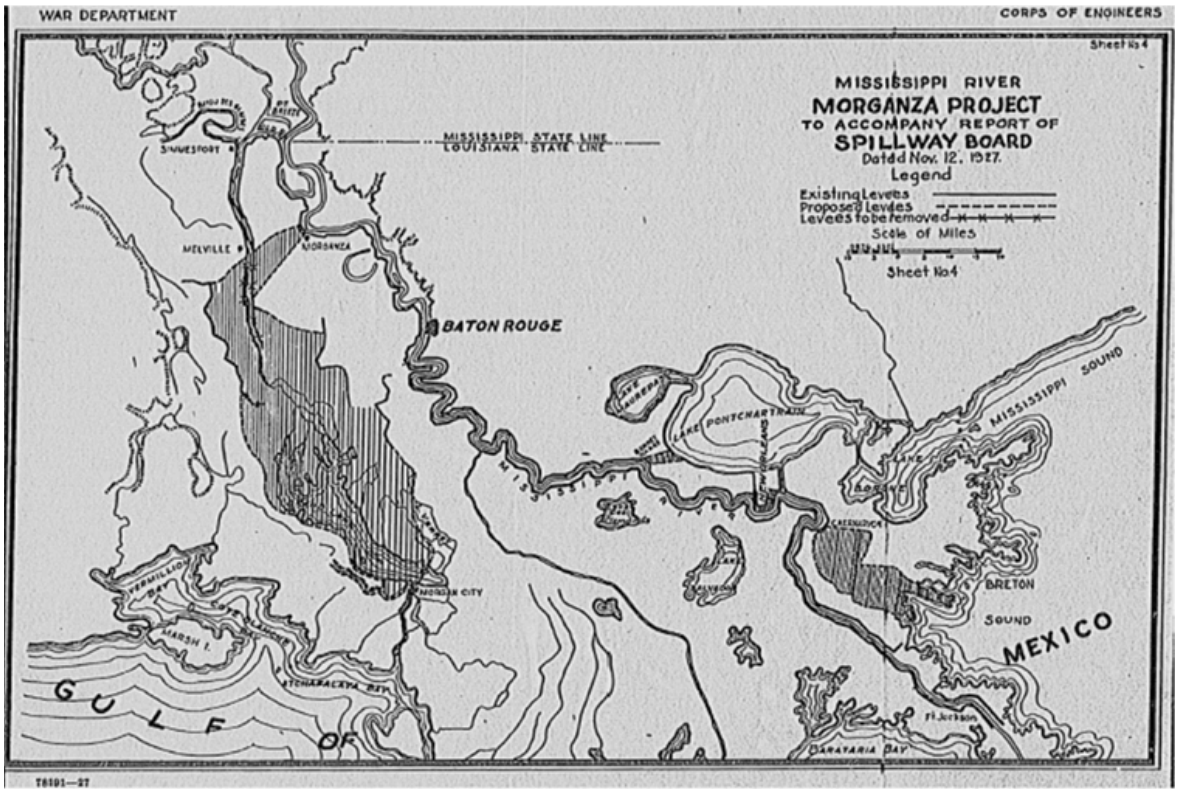

Figure 6. New Orleans successfully lobbied to divert flood waters through the Atchafalaya Basin.
U.S. Congress House of Representatives, Spillways on the Lower Mississippi, House Doc. 95, 70th Cong., 1st sess., 1927, n.p.

4. Literary Culture

Chicago's upstream attitude has found expression in its literary heritage as well. Its nickname, the "windy city," reflects its assertive self confidence. Authors of local fiction have consistently portrayed the city as ambitious and outward looking. Sinclair Lewis's *The Jungle* narrates the travails of immigrant laborers. They flocked to Chicago from eastern Europe to provide labor for the massive stock yards and packing plants. Lured by opportunity, they served as the human equivalent of the cows and hogs fed into the abattoirs. They were not dismantled to feed the nation, rather they were dismantled culturally and emotionally as they tried to survive the maw of the industrial capitalists seeking to create an economic juggernaut by bringing together raw materials and raw immigrants. Other laborers transformed the iron ore into agricultural machinery, barbed wire, and rails to enable the swift movement of both raw materials and finished goods through the commercial hub on the shore of Lake Michigan. The machinery of Chicago's factories and its transportation networks became an prominent trope in the city's literature (Lewis, 1906).

In his *Devil in the White City*, Erik Larson recounts the race of Daniel Burnham and Frederick Law Olmsted to complete the magnificent grounds for the 1892 World's Fair - a grand showcase of the city's emergence on the global stage. Constantly comparing itself to New York, Chicago strove to prove it was capable of competing with the Empire City. Through the fair grounds, Chicagoans sought to present a powerful and creative city, an emergent global metropolis. Intrigue and ambition enabled civic leaders to complete an impressive showcase that garnered international acclaim (Larson, 2004).

New Orleans, has its commercial boosters too, but key literary contributions reflect its place as a sanctuary not a place bent on economic conquest. Arguably the two leading characters in the city's rich literary history personify this tendency. Ignatius Reilly, the principal character of *Confederacy of Dunces*, was a reclusive and socially awkward self-defined intellect. Although he preferred to sequester himself in his bedroom and pen philosophical treatises in his Big Chief

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notebook, he found himself thrust out into the working world. Through his encounters with street characters readers discover a man best suited to seclusion. A short, but torturous bus ride from New Orleans to Baton Rouge left him thoroughly traumatized. After a brief but agonizing visit to the campus of Louisiana State University, he returned to the cloisters of the Crescent City. Blanche DuBois, Tennessee Williams' character in the play "Street Car Named Desire," had retreated to New Orleans from rural Mississippi to escape the intense glare of small town life. She takes refuge in the anonymity of urban life, not behind levees but behind her own walls of insanity. The French Quarter, where Williams wrote, along with other historic neighborhoods have become bohemian quarters where the exiles from across the culturally intolerant South can find comfort among others of their kind. To the present, artists, gays, and assorted misfits from across the South still descend on the French Quarter in search of sanctuary behind the levees while their counterparts who desire commercial success gravitate to Atlanta or Houston.

5. Conclusions

Chicago has adopted an outward, expansionist attitude. It is a city of bluster and bold actions on a grand stage. By dominating river and canal commerce in the upper Midwest by 1850, it strengthened its position to do the same with rail networks. And in doing so, it became a major force in transforming the forests and prairies of the Middle West. Its unapologetic diversion of its sewage downstream promised its citizens safe drinking water, but unleashed flooding and devastation to residents in the Illinois River valley. It was a city too big for the tiny river it straddled and effectively commandeered the upper Mississippi to satisfy its gargantuan commercial appetite. Since the 1840s, the city has been a major fixture in the Mississippi River and not just the Great Lakes. Technology has been applied to a host of transport and public health issues over the years that demanded continued manipulation of nature and reliance on the Mississippi River drainage basin for success. Although it outwardly sees itself as a city on Lake Michigan, Chicago, in many respects, has become the bully of the headwaters of the Mississippi, and its economic connections via that river assist in these outwardly ambitions.

New Orleans, near the river's mouth, continues to call for bigger and better flood protection. Now the city's appeals apply not just to the Mississippi, but to storm surge and rising sea level. The bunker mentality permeates all aspects of society. Its leaders have cajoled and begged for federal dollars to build the monumental levees that surround the city. The city and state were able to displace the cost of levees to the federal government and to divert floodwaters through spillways and thereby displace risks — all to protect the *entrepôt* on the lower river. In recent decades the pleas for external funds to rebuild the coastal wetlands represents a shift in how federal dollars will be spent, but to the same end. Within the ring of levees, the city hordes its uniqueness and uses it to lure tourists and carnival revelers. It does a better job drawing in tourists than extending it economic and political reach. And, tourism has become a leading justification for investments in flood protection. Once known as the Isle of Orleans, the place that New Orleans occupies, becomes more island like with each passing year.

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