Industrial heritage, identity, and memory: the case of the Ruhr Valley

Patrimônio industrial, identidade e memória: o caso do Vale do Ruhr

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Abstract

This article aims to describe and analyze the process of preservation and repurposing of industrial heritage in the Ruhr Valley based on field research conducted in the region between October 2023 and July 2024. To achieve this, we will begin by contextualizing the industrialization and deindustrialization process that has been occurring over the last century and a half in the Ruhr Valley. We will demonstrate its connections with the urbanization of the area and the construction of a local collective identity grounded on the memory of the mining and industrial past. Then, we will explore the political and economic processes that led to the formation of the Ruhr Industrial Heritage Route, a collection of industrial sites of historical interest now protected and repurposed.

Keywords: *deindustrialization; industrial heritage; social memory*

Resumo

Este artigo tem como objetivo descrever e analisar o processo de preservação e de refuncionalização do patrimônio industrial do Vale do Ruhr a partir de uma pesquisa de campo realizada na região entre outubro de 2023 e julho de 2024. Para tal finalidade, iniciaremos contextualizando o processo de industrialização e de desindustrialização ocorridos nos últimos 150 anos, no Vale do Ruhr, demonstrando suas conexões com a urbanização da área, bem como com a construção de uma identidade coletiva local fundamentada na memória do passado mineiro e industrial. Em seguida, demonstraremos como ocorreu o processo político e econômico que levou à formação da Rota do Patrimônio Industrial do Ruhr, um conjunto de espaços industriais de interesse histórico agora protegidos e reconvertidos a novas finalidades.

Palavras-chave: desindustrialização; patrimônio industrial; memória social.

Introduction

Ruhr Valley, a region in the far west of Germany known as the Ruhrgebiet, has become famous as one of the most important industrial regions in Europe. With 5.1 million inhabitants, Ruhrgebiet is the largest metropolitan area in Germany and the fifth largest on the continent, behind Paris, Madrid, Barcelona, and Berlin (Statistikportal Ruhr, 2022). Part of the state of North Rhine-Westphalia has more than a dozen cities that are very well connected by rail and road, forming a polycentric metropolis (Reicher et al., 2020). Some of the most important cities in this region are: Bochum, Dortmund, Duisburg, Essen and Gelsenkirchen.

For at least a hundred years, from the mid-19th century to the mid-20th century, Ruhr Valley was one of Europe's largest industrial centers. The region was considered the engine of German industrialization, with an economy based on coal mining and steelmaking. From the 1950s onwards, coal mining went into crisis, followed by the steel industry two decades later. As we will explore further, social, economic, cultural, and environmental consequences are immense. Hundreds of mines and industrial plants were abandoned, jobs were decimated, and the region had to devise ways to restructure its economy and urban fabric.

While the hegemony of the industrial economy and society belongs to the past of the Ruhrgebiet, certain elements of those times remain vivid among the population and its authorities: memory and identity. A notable example is the Route der Industriekultur. Dozens of mines, factories, canals, and old sediment deposits have been repurposed as parks, museums, and venues for various events, forming this tourist and cultural route. It showcases 150 years of German industrial culture along a 400-kilometer route that includes 27 key points (parks, museums, convention centers, documentation centers), 17 viewpoints, and 13 villages, all of which are meticulously preserved.

In this article, we present the results of a case study conducted on-site regarding the refunctionalization of industrial heritage in Ruhr Valley. This study was guided by the following question: How, why, and for whom has the Ruhr Valley preserved its industrial heritage? To answer this question, we draw on existing literature, examine documents, and analyze sites of identity and memory related to Ruhr's industrial heritage on-site. By the end of this article, the author had visited thirteen[1] cities in the Ruhrgebiet and thirteen points[2] along the Ruhr Industrial Heritage Route, including parks, museums, viewpoints, and working-class neighborhoods. During the visits, the author conducted interviews and held informal conversations with researchers (sociologists, historians, and urban planners), museum professionals, curators, independent artists, former workers, union leaders, and local politicians.

Industrialization and deindustrialization

Urbanization in the Ruhr Valley is directly linked to coal mining. The first mines in the region appeared in the 13th century, when the Ruhrgebiet was still a mostly rural territory with

a few medieval towns, some of which were members of the Hanseatic League. At that time, coal mines were small, scarce, and located on the surface. Mining was a secondary activity for peasants. This slowly began to change in the 17th century, during the Thirty Years' War, when Essen began to use coal on a larger scale to feed the forges that blacksmiths used to produce weapons, beginning the city's long relationship with the military industry (Harris, 1946).

It was only in the 19th century that mining truly changed the history of Ruhr Valley forever.[3] At the beginning of that century, there were 127 coal mines in the region. By 1870, this number more than doubled. This evolution is associated, among other things, with the emergence of the steam engine, which facilitated water pumping, tunnel drilling, ventilation, and the hoisting of workers and extracted coal. The average annual production per mine increased from 50,000 tons in 1870 to 500,000 tons in 1909, and 1 million tons in 1937. In that year, coal production in Ruhrgebiet was three times greater than that of France and larger than that of the entire Soviet Union (Harris, 1946).

From the mid-19th century onward, the steel industry flourished in the region, making the Ruhr Valley the engine of German industrialization. The combination of a vast reserve of high-quality coal to fuel the large furnaces of the steel industry; good railway connections to other regions of the country (especially after the opening of the Köln-Minden railway); relative proximity to Siegerland, which provided iron ore; growing demand for steel; and economic protectionism, all contributed to the proliferation of industries that integrated different stages of production (Feldenkirchen, 2006). Two companies were particularly important for the Ruhr Valley: Bochumer Verein, founded in the second half of the 19th century in the city of Bochum; and Krupp AG, whose operations date back to the early 19th century in the city of Essen. These companies played a crucial role in German unification, providing the necessary steel for the construction of railways that connected different regions of the emerging state, and supplying armaments for wars against Austria (1866) and France (1870–1871).

The industrialization process in Ruhr Valley was marked by two general characteristics: high speed and lack of planning (Berger; Golombeck, 2020). These characteristics were a result of urgency, as German industrial development occurred later than other European states such as England and France. Associated with these characteristics, we can also note disordered urbanization, rapid population growth, and a significant environmental impact.

Until 1823, Essen did not expand beyond its medieval walls. In the early 19th century, the combined population of Bochum, Essen, and Dortmund did not exceed 12 thousand people (Pounds, 1952). Just over two centuries later, the population of these three cities together reaches almost 1.5 million people (Statistikportal Ruhr, 2022). This population growth was associated with the disorderly evolution of cities, mirroring the emergence of mines and factories during their various stages of development. Therefore, according to Wehling (1982), Ruhr Valley presents uneven patterns of urbanization and urban dynamics.

The significant population growth described in the previous paragraph would not have been possible without a massive migratory flow that can be divided into three waves. The first wave, which occurred in the mid-19th century, attracted workers from various regions of Prussia, especially Silesia and Posen, which are now parts of the Czech and Polish territories. The second wave occurred after World War II, when more than 13 million people fled East Germany. A lot of them were employed in the mines and factories of Ruhrgebiet. The third wave took place in the 1950s when, due to the post-war economic boom, the government of the Federal Republic of Germany entered into agreements with other countries to attract workers known as Gastarbeiter (guest workers). The first agreement was signed with Italy in 1955, followed by agreements with the Spanish, Turkish, Moroccan, Portuguese, Tunisian, and Yugoslav governments (Nogueira, 2018). Nowadays, the region continues to be a destination for immigrants. Among the over 5 million inhabitants, 891 thousand are of foreign nationality. The largest groups are Turks (20%), Syrians (12%), Ukrainians (6%), and Poles (6%) (Statistikportal Ruhr, 2022).

The rapid and disorderly industrialization in the Ruhr Valley also produced severe consequences for the environment: "air pollution was widespread, trees were blighted, crops were reduced, and rivers were clogged with waste and dirt" (Brüggemeier, 1994, p. 48). River pollution was associated with a typhoid fever epidemic that, in the early years of the 20th century, killed more than 3,000 people in the region. Air pollution was equally problematic. Cities in the Ruhrgebiet lived under heavy smog, and the complete lack of control over the release of sulfur dioxide was evident in the fields where vegetables barely grew, and in the trees, whose canopies became increasingly smaller (ibid.).[4]

The industrial cycle of the Ruhr Valley began to decline following the 1959 Coal Crisis (Berger; Golombeck, 2020), caused by low demand as coal faced competition from alternatives, such as oil and natural gas. This crisis marked the first challenge faced by the European Coal and Steel Community, the precursor to the European Union, which threatened its existence (Economic And Political Weekly, 1959). Between 1957 and 1967, 267 thousand workers lost their jobs in Ruhr Valley (Oei; Brauers; Herpich, 2020). Thanks to the Co-Determination Law for the steel and coal industries (Montanmitbestimmungsgesetz) of 1951, which stipulated equal participation between workers and employers in the executive committees of companies, the negative consequences of the crisis could be mitigated: shifts were shortened and workers were retired with state support. However, layoffs were unavoidable. Fortunately, for many people, the coal crisis occurred in the last years of the German Economic Miracle, allowing some of the mining workforce to be absorbed by local industry (ibid.).

It did not take long for a new crisis to emerge. According to Hosperr (2004), the oil crisis in the 1970s reduced demand for cars and ships. Additionally, imports from countries with much lower average wages than Germany increased, posing challenges for Ruhr industries to compete. The first economic reorientation strategy for Ruhr, the Ruhr Development Program, failed, and the number of unemployed people in the region

rose from 12,000 in 1970 to 100,000 in 1976 (Oei; Brauers; Herpich, 2020). Truly effective measures were only implemented with the regionalization of economic restructuring policies, beginning in the mid-1980s, focusing on economic diversification and professional qualification, including the establishment of numerous universities

Today, despite some extremely specialized steel industries still operating in the region, the heavy industry of Ruhr has become more of a memory than a vibrant presence (Berger; Golombeck, 2020). To understand the extent of the transformation the Ruhrgebiet has undergone, it is important to note that in 1961, 61% of the region's population worked in the secondary sector and 36% in the service sector. By 2000, 33% of the population worked in the secondary sector, while 65% worked in the service sector (Oei; Brauers; Herpich, 2020). Furthermore, the coal mining was discontinued. In 1958, there were 138 mines in operation, employing almost half a million people. Forty years later, only 13 mines were operational and employed 60,000 people (Goch, 2002). Currently, there are no more active mines in the Ruhr Valley.

Identity and memory

In an article on the memories of a mining city in Brazil, Maia and Silva (2019, p. 67.) assert that "the counterpoint and the very condition of the existence of memory is forgetting. Memory is selective. We only remember because we forget." Therefore, before analyzing the preservation of the industrial heritage of Ruhr Valley, it is pertinent to question which memories have been selected and why this selection was made. We anticipate that the answer is directly linked to the identity produced and shared by the population in that region.

Anderson (2008) was the first to propose an interpretation of the nation as an imagined community – that is, as a collective united by the force of certain shared signs. By the time his most famous book was released, Castoriadis (1982) had already introduced the idea of the imaginary, a symbolic network that operates as a constituent dimension of social life.The novelty of Anderson's idea was the possibility of understanding nations beyond their material and tangible properties, perceiving them through the relation between these properties, and the sharing of imaginaries by people who understand and recognize themselves as part of a group, even though they may never have had any contact with each other.

According to Anderson (2008, p. 33), "in fact, all communities larger than of face-to-face contact (and perhaps even these) are imagined." With this in mind, we can view Ruhrgebiet as an imagined community and the preservation of its industrial heritage as a determining element for this imagination and the conservation of its identity. This identity, far from being a finished and frozen product, should be seen as a process resulting from multiple social interactions — mediated or not by symbols, but certainly permeated by various imaginaries – which is similar to what Domingues (1999) called collective subjectivity.

To understand the process of forming Ruhrgebiet's identity, it is important to consider its temporal dimension. Today, there is a common identity in the Ruhr Valley, displayed on shirts and caps with crossed pickaxes and sledgehammers or with the phrase "Glück Auf" (a miner's greeting); in insider jokes, such as calling pigeons "Ruhr flamingos"; in events like the Ruhrpott Rodeo, one of Germany's largest punk music festivals; in linguistic regionalisms, like starting a sentence with 'Hömma' (listen!). However, this is not always the case. Van Houtum and Lagendijk (2001) recall that in the past, people's loyalty was more linked to their hometown than to the region.[5] There was even a rivalry between the cities fueled by the football teams of Ruhr Valley. An example is the dispute in the 1970s between VfL Bochum, a football team from the city of Bochum, and FC Schalke 04, a football team from Gelsenkirchen, over their right to name their stadium (Ruhrstadion).

Football is an essential element in shaping the identity of Ruhr Valley.[6] During a visit to Ruhrstadion (now Vonovia Ruhrstadion, following the leasing of naming rights to a real estate company based in the city) organized by Ruhr University Bochum, the author of this article was guided by an approximately 75-year-old man, a supporter of VfL Bochum, and a volunteer. With evident pride, the gentleman showcased the entire stadium, including the players' entrance tunnel, which realistically simulated the interior of a coal mine. When asked about the possibility of demolishing the old stadium for the construction of a new one, an idea suggested by local politicians and sports officials, the guide interrupted the question, stating emphatically, "No chance. This is our history. They can modernize and expand, but not destroy." This statement indicates that, despite the stadium not being officially recognized as part of the industrial heritage of Ruhr, it is considered by many as a symbol of Ruhrgebiet identity.

The relation between FC Schalke 04 and coal mining was not significantly different. According to the club's website

> Like the coal industry, football – and especially FC Schalke 04 – is deeply connected to the so-called "Ruhrgebiet", the Ruhr area. The men who founded Schalke in 1904 were working-class people who completed apprenticeships at the mine. Mining is therefore an essential part of our founding history; our founding fathers are born on coal.

After the closure of the last coal mine in Ruhrgebiet in 2018, FC Schalke 04 organized an emotional farewell at its stadium, as we can see in photo of the club's supporters holding black papers, representing the "black gold" of the Ruhr, and an image of a miner (Figure 1).

Figure 1 – Tribute from FC Schalke 04 fans to the Ruhrgebiet miners

Source: FC Schalke 04 (2018).

While the idea of the Ruhgebiet as a singular region and a co-shared identity emerged in the interwar period, propelled by the French and Belgian occupation (Berger, 2019), from the 1960s onwards, amidst the mining and industrial crisis, interest in the Ruhr Valley's past and memory emerged (Berger; Golombeck, 2020).[7] Since then, industrial heritage has become a crucial element of this identity. As Berger and Wicke (2014, p. 232) point out, "it is difficult to think of any other urban region in the world in which industrial heritage has taken on such a significant role in public representation of the region during massive processes of de-industrialization."

The relationship between a region's historical heritage, memory, and collective identity cannot be understood as mechanical, static, or unilateral. It is a continuous feedback process that involves individuals, collectivities, time, and space. Augusto (2011) identifies the collective sharing of memories as a factor that ensures what Giddens (1991) called "ontological security", i.e. the maintenance of one's identity, environment and surrounding material. She further suggests that the relationship with memory is currently undergoing transformations, including shifts in the connection between the present and the future and a loss of confidence in progress as a historical narrative. This is precisely the technical progress of which large industries, such as those in the Ruhr Valley, were the greatest representation and subject to radical critique by German philosopher Walter Benjamin (2005). Consequently, the industrial heritage of the Ruhrgebiet also stands ambiguously as a monument to both culture and barbarism, to ontological security and to "mistrust in all reconciliation: between classes, between nations, between individuals. And unlimited trust only in I. G. Farben and the peaceful perfection of the air force" (Benjamin, 2005a, p. 34).

Memory, whether lived or transmitted, is an experience that can be collective and individual. In their book on romanticism as a cultural movement critical of modernity, Löwy and Sayre (2015) argued that this movement, often characterized by an idealization of the past, can manifest in various forms with differing contents: progressive or conservative. Similarly, industry, as one of the great symbols of modernity and progress, can be subject to different critiques and idealizations. In analyzing the case of Ruhrgebiet, Berger (2019) arrived at a similar conclusion, noting the existence of both reactionary and progressive nostalgia.

Memory is a collection of fragments that can be organized in infinite ways. If, as Benjamin (2005a) claimed, the angel of history perceives a catastrophe accumulating ruins, we can conceive of memory fragments as shards taken from the ruins of history.[8] Depending on how these fragments are organized, nostalgia emerges as a felt memory. Therefore, the preservation of the industrial heritage of the Ruhr Valley also serves as a source of nostalgia for the region's population

Berger (2019) analyzed nostalgia in the Ruhr Valley not as the result of an antagonistic memory, but rather as agonistic — meaning reflexive, multi-perspectival, and counterhegemonic (ibid., p. 41). According to him, such agonistic memory would be capable of absorbing ambiguities such as

> [...] recognize the victims of this industrial past and deindustrializied present and support their just causes. At the same time, agonistic memory frames bring the victim's perspective into dialogue with other perspectives, thereby producing a political debate on deindustrialization and opposing its (now dominant) understanding as an unchangeable natural force. It would also seek to understand the sociopolitical conditions of our increasingly post-industrial present by pointing to different possible futures arising from diverse representations of the past. (Ibid., p. 41)

Berger, assuming that agonistic memory can handle ambiguities, presented a typology of industrial nostalgias in the Ruhr Valley as seven layers, which is not necessarily exclusive. The first layer comprises pride related to the rise of an industrial region and its distinct identity, history, and aesthetics. The second layer is linked not to a regional but rather to a national identity, largely based on an economic dimension tied to the significance of the Ruhr Valley in German history. The third layer is related to artistic modernity. In addition to important museums, the cities in the region have numerous modernist constructions, many designed by architects associated with the Bauhaus movement or New Objectivity (Neue Sachlichkeit). The fourth layer concerns solidarity built among members of the working class in Ruhrgebiet. The fifth layer is connected to the idea of openness and tolerance, developed after many decades of receiving migrants from different origins. The sixth layer relates to the many environmental issues of the past that fuel the possibility of building a more sustainable future. The seventh and final layer is linked to the everyday culture of Ruhr Valley, with its beers, foods, pigeons, and elements documented by historians who founded oral history as a research methodology in Germany.

The origins of preservation and refunctionalization

We have established that the industrial past fuels the memory and nostalgia of the people of Ruhr Valley. Now, we will explore how the reverse is also true: the memory and nostalgia of the population are crucial for the preservation of industrial heritage. It is noteworthy that the political and economic decision to preserve and repurpose this heritage was neither obvious nor natural. Rather, it stemmed from a bottom--up movement involving the mobilization of a segment of society that advocated for this goal.

From the 1960s onward, a series of initiatives have been implemented to mitigate the effects of deindustrialization in the Ruhr Valley. These initiatives, characterized by their conservative nature, aim to maintain old economic structures. They were guided by the paradigm "no miner should be unemployed" and were based on the strong corporatist framework that emerged after the war. However, despite their high costs, these policies achieved modest results in terms of maintaining jobs and social well-being in the region. From 1973 onwards, the unemployment rate skyrocketed and never returned to previous levels.

In the late 1980s, with the regionalization of policies aimed at guiding structural changes, a new approach was experimented (Dahlbeck et al., 2021). This included significant investments in the construction of universities, transforming the Ruhrgebiet into the Wissensregion Ruhr (Ruhr Knowledge Region); economic diversification oriented towards specialization; and the exploration of endogenous economic potential. This latter aspect encompasses efforts to develop the cultural sector, including the preservation of industrial heritage.

The first milestone in the cultural turnaround in the Ruhr Valley, centered on repurposing and preserving industrial heritage, was the realization of the Internationale Bauausstellung Emscher Park (IBA), initiated in 1989. The IBA was an architectural exhibition focused on implementing landscape and urban development projects covering more than 800 square kilometers, aimed at revitalizing the economy and culture of the Ruhr Valley as well as preserving the region's environment. Seventeen cities were included in the program, primarily in the northern part of Ruhr Valley, an area that typically exhibits the worst economic and social indicators in the region. By the end of the exhibition, hundred and seventeen projects had been implemented.

> This was more than just a clearing, refurbishment, or repair. By creating a (new) sense of identity, the IBA made a special contribution to the concious restructuring of the region in the midst of fundamental structural change. The IBA projects were grouped under six central guiding topics: working in the park, new buildings and modernizing housing estates, ecological renewal of the Emscher system, promotion of urban development and social stimuli for urban development, and the establishment of a regional park structure. (Internationale Bauausstellung Emscher Park, s.d.)

In addition to being a milestone in the process of preserving and repurposing the industrial heritage of the Ruhr Valley, the IBA was of fundamental importance for the

valorization of ruhrgebiet's intangible heritage (Berger; Wicke, 2014). Food (currywurst), sports (football), and conflicts (strikes) came to be regarded as integral components of local culture and were linked to industrial identity. Similarly, the concept of solidarity among miners (Kumpel) and the prevalence of kiosks selling beers, tobacco, and other products in the Ruhrgebiet also became emblematic of the region's cultural heritage

It should be noted that public authorities have not always prioritized the preservation of industrial heritage. Parallel to the organization of the IBA, in 1992 the city of Oberhausen authorized the demolition of factory structures on the site of the former Gutehoffnungshütte mining company. Four years later, on the same site, Westfield Centro opened, a gigantic shopping center that today boasts the second largest food court in Europe.

It was with the realization of the IBA that the idea of creating a national park began to be discussed, inspired by the example of the Lowell National Historical Park, founded in 1978, in Massachusetts, to preserve and disseminate the history of the local textile industry. The idea was promptly rejected by the political and business elite of the municipalities in the Ruhrgebiet, fearing that such a project would limit the region's development potential. According to Berger and Wicke (2014), the Ruhr Industrial Heritage Route emerged as a compromise established between politicians, businessmen, and movements advocating for the preservation and repurposing of historic industrial spaces. The way found to establish this compromise was the creation of the route that connected different points of interest without, however, operating as a national park. In the first decade of the 21st century, with a fixed budget, the route was expanded and gained even more popularity, attracting residents and visitors from all over Germany and various countries worldwide.

In 2001, a new milestone for the preservation of the industrial heritage of the Ruhr Valley emerged: the Zollverein Coal Mine Industrial Complex was designated by the United Nations Educational, Scientific and Cultural Organization (Unesco) as a World Heritage Site, the second related to Germany's industrial history. Today, the country boasts 52 sites recognized by Unesco as World Heritage Sites. Only three of them have ties to the industrial past: the Völklingen Ironworks, located in the city of the same name and inscribed in 1994; the Zollverein Coal Mine, located in Essen and inscribed in 2011; and the Fagus Factory, located in Alfeld and inscribed in 2011. Unesco's recognition was of great importance, as it certifies the architectural and cultural, tangible and intangible value of these spaces to the history of humanity

A third milestone for the preservation of the industrial heritage of the Ruhr Valley was the awarding of the Ruhr (represented by the city of Essen) as the European Capital of Culture in 2010, which entailed a significant financial contribution from the European Union and the German state to the region. The adopted slogan for the candidacy could not be more representative: "Change through culture – culture through change." Equally emblematic of the structural transformations the region underwent was the headline in which the state-owned communication company Deutsche Welle (2010) announced the award: "From coal to culture." Despite the majority of projects related to the award not being directly linked to the industrial past, it was not ignored. In

fact, the symbolic inauguration of the project took place at the Zollverein Coal Mine, now converted into the Ruhr Museum. Since then, the same location has continued to host an enormous permanent exhibition on the history of the Ruhr Valley, including, as expected, its mining and industrial past

For the three milestones listed here to exist, years of social mobilization and political negotiation were necessary. In the 1960s, local and national politicians were more concerned with combating deindustrialization than preserving the skeletons of large industries. The powerful unions in the region considered the preservation of industrial heritage a way to "kill jobs," and a significant portion of retired workers just wanted to see the mines closed quickly and cheaply (Berger; Wicke; Golombek, 2017). The preservation and refunctionalization of the industrial heritage of the Ruhr Valley was boosted by an articulation between intellectuals, academics and the population of the Ruhr Valley.

Berger, Wicke, and Golombek (2017) list three emblematic cases of civil society mobilization that can be considered the embryos of the movement for the preservation and repurposing of the industrial heritage of the Ruhrgebiet. The first case occurred in the second half of the 1960s when historians, architects, students, and artists organized a substantial petition against the demolition of the historic building of the Zollern Mine, closed in 1966, in Dortmund. The construction, designed by Bruno Möhring in the Art Nouveau style, was preserved after the petition was delivered to the governor of North Rhine-Westphalia. The second case was called the Workers' Initiative (Arbeiterinitiativen), a large movement for the preservation of workers' housing that involved the inhabitants of these neighborhoods, students, and university professors. In 1972, the Eisenheim settlement, founded in 1848 in the city of Oberhausen, became the first neighborhood of its kind to be considered industrial heritage and receive protection. The last case listed was the Carl Mine, founded in 1886 in Essen. In 1977, the progressive pastor Willi Overbeck began mobilizing working-class youth to organize a socio-cultural center in the complex of the old mine, which was threatened by a rezoning plan led by the municipal council. In 1985, the site eventually received the title of industrial heritage.

Two conditions, one political and the other cultural, can be pointed out as facilitators for the emergence and maintenance of the process narrated here. The first relates to the social-democratic government in North Rhine-Westphalia.[9] In 1980, the then governor (and future President of the Republic) Johannes Rau established the Ministry for Regional Urban Development, which included the Department for Historical Monuments and Monument Preservation, creating an institutional link between monument preservation and urban planning. The simple preservation of these spaces would not be possible without refunctionalizing their structures. Therefore, planning and a budget designated for this purpose were necessary, which became a reality with the creation of the mentioned ministry (Oesters, 2015). At that moment, the Social Democratic Party began to see industrial heritage not only as an element for the structural transformation of the Ruhr Valley's economy but also as a foundation for the construction of a social-democratic Ruhr Valley based on the preservation of working-class memory (Berger; Wicke; Golombek, 2017).

The second condition that facilitated the preservation and repurposing of the industrial heritage of the Ruhrgebiet was the creation and popularization of the concept of Industrial Culture (Industriekultur), attributed to the art historian Tilmann Buddensieg. While Buddensieg's work in the 1970s focused on the question of industrial aesthetics, Hermann Glaser (1981), in the following decade, began to consider it from a social and cultural perspective. It didn't take long for the concept to be used as a tool to connect the preservation of industrial spaces, urban spaces, and everyday life, operating as one of the elements that helped legitimize the civil society's demands for the conservation of old industries (Berger; Wicke, 2014).

Examples of preservation and refunctionalization

It's pertinent to point out that the Ruhrgebiet's industrial heritage can be divided into two categories: immaterial and material. In the first category, we find foods, idiomatic expressions, sports, festivities, and symbols related to steelmaking and mining. In the second category, which we observe more closely in this article, we find the physical structures themselves. Secondly, it is worth noting that not all industrial heritage in the Ruhr Valley is part of the Ruhr Industrial Heritage Route. Two examples of constructions connected to the industrial past of the region that are not part of the trail are the Ruhrstadion, the stadium of the VfL Bochum team mentioned in this article, and the Dortmunder U, also known as the U-Tower. The 70-meter-high building, inaugurated in 1927 in the center of Dortmund, housed the Dortmunder Union--Brauerei, a brewery founded in 1873. In 1968, a four-faced gold-plated letter "U" was placed on top of the building. The logo eventually became a symbol of the city. Sixty-seven years after the building's inauguration, the brewery sought a new location for its operations, and the Dortmunder U was abandoned. Only in 2008, in the context of RUHR.2010 - European Capital of Culture, the building underwent a repurposing process, becoming the home of the Ostwall Museum, a university campus, exhibition halls, and restaurants.

Analyzing the Ruhr Industrial Heritage Route, we can produce two types of classifications about its points of interest: one based on the original function and another based on its preservation and refunctionalization. According to the first classification, we can observe locations that were mines, industries, ports, warehouses, water or power stations, and waste deposits. According to the second classification, we can observe locations that have become museums, parks, educational and research institutions, convention centers, and viewpoints. It is worth noting that there are places that can fit into more than one category, such as the Wetspark in Bochum, which is both a park and a convention center. There are also two exceptions to the categories: residential spaces and monuments. With rare exceptions, such as Der Hohenhof – which was a house and became a museum – residential spaces and monuments, like the Berger-Denkmal auf dem Hohenstein, typically maintain their original function.

Unfortunately, residential spaces, former workers' neighborhoods, might be the least visited points on the Ruhr Industrial Heritage Route. This is because they lack the tourist appeal or family leisure that other points have, making them a destination sought mostly by architects, urban planners, or enthusiasts of Industriekultur. Upon arriving at Arbeitersiedlung Dahlhauser Heide, the visitor encounters a small neighborhood with curved streets in a garden city style. The houses, almost all semi-detached, built in Heimatstil with space for a garden, were erected in the early 20th century by the Krupp group to house its employees.[10] While the current residents may no longer be miners or mine workers, memories of hard work persist in the streets named after mines, in the old miner carts used as large plant pots, or in the miniature mining tower used as decoration in the garden.

Unlike the residencial spaces, the Zollverein Mine is a public success. Spanning over 100 hectares, the complex attracts approximately 1.5 million visitors every year and stands as the largest tourist attraction in the Ruhrgebiet (Nordrhein-Westfalen, n.d.). Once Europe's largest coal mine, the site now hosts a variety of establishments, including restaurants; a design hotel with 67 individually designed rooms inspired by mining culture; the Folkwang University of the Arts; the PACT Zollverein Choreographic Center; spaces for public and private events; the Red Dot Design Museum, one of the most important museums of its kind in the world; and the vast, fully equipped, and diverse Ruhr Museum, which tells the geological, biological, social, cultural, and economic history of the Ruhr Valley. As justification for being considered an industrial heritage, Unesco emphasized the mine's

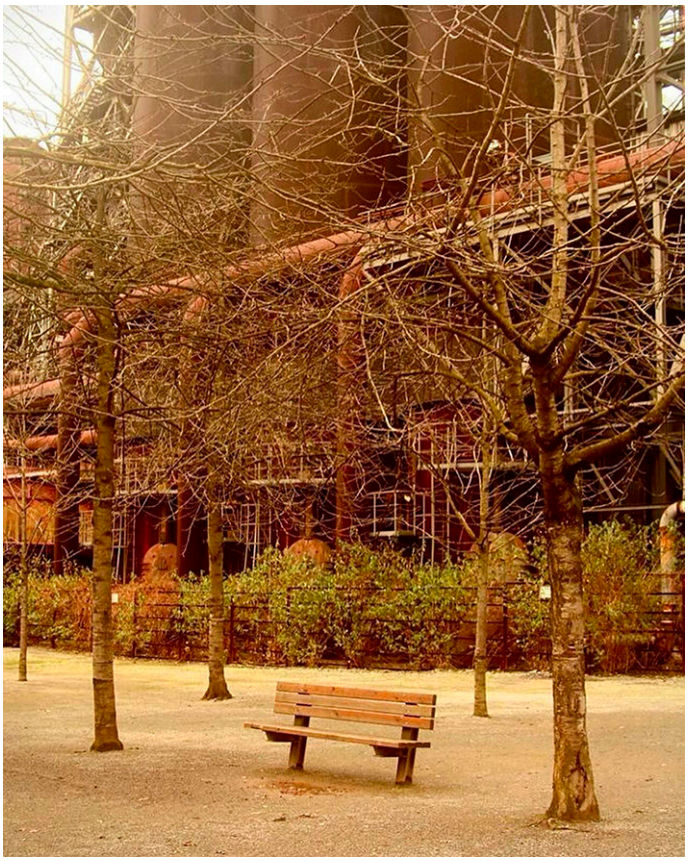
Figure 2 – Zeche Zollverein

Source: author, in 2023.

historical significance and "the masterful combination of form and functionality in the architectural language of the Bauhaus" (Deutsche Unesco Kommission, n.d.). Despite its refunctionalization being part of the IBA, the mine closed in 1986 and the last furnace was shut down in 1993. Nevertheless, the land had already been acquired by the state, and the complex had been protected since 1986, as the company owning the plant intended its total demolition.

Arguably, the most colossal and awe-inspiring industrial structure preserved in the Ruhrgebiet is now part of the Landschaftspark Duisburg-Nord, a sprawling 180-hectare landscaped park situated on the grounds of a former Thyssen-Gruppe steel mill that operated for 84 years. In 1985, the plant underwent refunctionalisation and was opened to the public six years later as part of the IBA initiative. The visionary behind this project was Professor and architect Peter Latz, who successfully

Figure 3 – Landschaftspark Duisburg-Nord



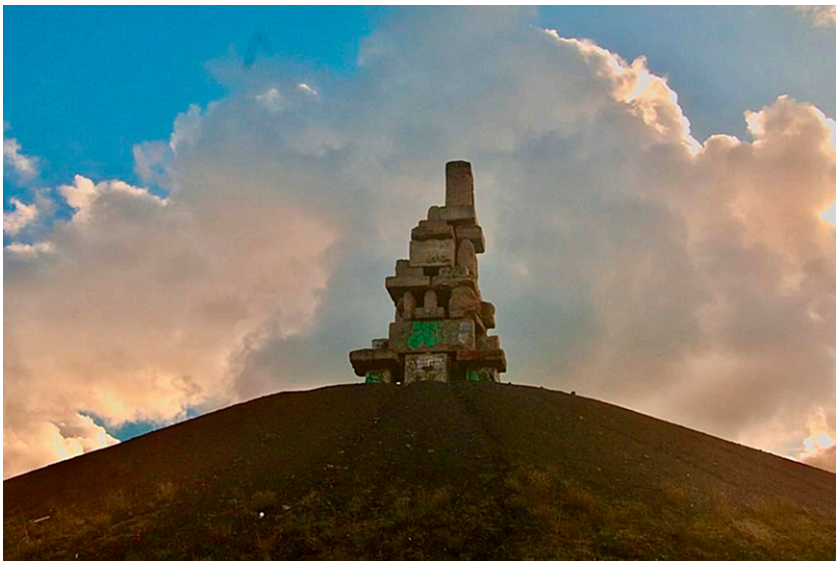
Source: author, in 2023.

integrated leisure, sports, nature, and industrial culture into a cohesive space. Today, the park boasts lush greenery, cycling paths, children's playgrounds, a climbing route amidst old steel factory structures, scenic viewpoints, a biological station, and Europe's largest indoor diving tank – an impressive 45 m in diameter and 13 m deep – housed within a converted gasometer.

An unusual highlight along the Ruhr Industrial Heritage Route is the Halde Rheinelbe. What initially appears as a natural elevation in Ruhrgebiet's terrain is, in fact, a towering mound of mining waste reaching a height of 100 m, situated in Gelsenkirchen. As a vestige of the Rheinelbe coal mine, shuttered in 1928, the heap continued to accumulate debris from other mines until 1999. Today, the site attracts numerous visitors, particularly cyclists, who are intrigued by the opportunity to ascend to the summit of the waste heap and admire the panoramic vista of the Ruhr Valley. The Halde Rheinelbe serves not only as a testament to industrial heritage, but also as a poignant reminder of the environmental repercussions stemming from the region's past economic endeavors.

Another example of industrial heritage repurposing in Ruhr Valley is the German Mining Museum (Deutsches Bergbau-Museum Bochum), renowned as the largest museum of its kind worldwide. Unlike other museums on the Ruhr Industrial Heritage Route, the Mining Museum was originally opened in 1930, predating the closure of mines, the onset of deindustrialization, and the subsequent structural transformations that involved the

Figure 4 – Halde Rheinelbe



Source: author, in 2023.

preservation and repurposing of Ruhrgebiet's industrial heritage. Since its foundation, the museum has undergone significant changes, partly because of the severe damage caused by bombings during World War II. In the nearly 100 years since its founding, the museum has gained a permanent exhibition, a sheave wheel structure from the Germania Mine in the nearby city of Dortmund, a 2.5 km tunnel serving as a demonstration mine faithful to the original model, and has also become home to an important documentation and research center.

Conclusion

In this article, we conducted a case study focusing on the preservation and refunctionalization of extensive industrial heritage in the Ruhr Valley, situated in the far west of Germany. Our exploration began with an overview of the region's industrialization and subsequent deindustrialization, highlighting the interplay between industrial expansion, mining activities, and urban development that has transformed this area into the nation's largest metropolis. Subsequently, we delved into the intricate relationship between identity, social memory, and tangible and symbolic structures within the urban landscape. Following this, we elucidated the multifaceted political, economic, and social processes that facilitated the preservation and repurposing of Ruhr Valley's industrial heritage. Finally, we provided illustrative examples of spaces that have been successfully preserved and repurposed, serving new social functions within the community.

We begin this article by asking how, why, and for whom did the Ruhr Valley preserve its industrial heritage? Based on our research, which involved a literature review, visits to points of interest, and interviews with local residents and scholars on the subject, we believe that we have found the answer. The preservation of the industrial heritage of Ruhr Valley occurred as part of the structural transformation that the region underwent. After various attempts to slow down the deindustrialization process and the coal mining crisis, the cities of Ruhr Valley managed to partially reinvent themselves through a coordinated regional project, promoting more modern, diverse, and sustainable economic matrices.

Despite the structural changes in the Ruhr Valley opening up space for discussion on what to do with the skeletons of these industrial mastodons, there was no guarantee that they could be preserved.[11] The usual path in capitalist societies, where urban space is a valuable commodity, is to allocate these lands to the real estate market (Rolnik, 2004). If old industrial structures were not demolished to make way for shopping centers or residential condominiums, it was because there was an intense mobilization of civil society advocating for the preservation and repurposing of these places of identity and memory. As we demonstrated, this mobilization was effective by leveraging representations such as the concept of Industriekultur and political opportunities such as the presence of a social-democratic government interested in sustaining a working-class identity closely linked to social democracy.

In conclusion, we have observed how the persistence of a particular shared identity, the endurance of social memory, and the preservation and repurposing of material heritage can operate as a circular yet dynamic feedback process. However, this relationship is not a metaphysical necessity; it is possible to maintain a collective identity and social memory without associated material structures, and vice versa. As demonstrated in this article, what occurred in Ruhrgebiet was a successful contingent association between identity, memory, and preservation that yielded remarkable results in terms of urban planning. This approach effectively connected structural transformations, respected the local identity and history, and created high-quality public spaces for the population. Therefore, we contend that the experience of the Ruhr Valley described here can serve as a model for many cities in Brazil and around the world whose historical spaces, not only industrial, are subject to various cycles of real estate development.

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Acknowledgements

This work was carried out with the support of the Coordination for the Improvement of Higher Education Personnel Foundation (Capes) of the Ministry of Education through the International Cooperation Programme - Brazil-Germany Research Programme (Probral), process no. 88887.700864/2022-00

Notes

(1) Bochum, Bottrop, Castrop-Rauxel, Dortmund, Duisburg, Essen, Gelsenkirchen, Hagen, Hattingen, Herne, Oberhausen, Recklinghausen, Witten.

(2) Arbeitersiedlung Dahlhauser Heide, Arbeitersiedlung Lange Riege, Deutsches Bergbau-Museum Bochum, Duisburger Innenhafen, Fernsehturm Florian, Gasometer Oberhausen, Halde Rheinelbe, Jahrhunderthalle Bochum, Landschaftspark Duisburg-Nord, LVR-Industriemuseum, Peter-Behrens--Bau, Nordsternpark Gelsenkirchen, Unesco-Welterbe Zollverein.

(3) It is no exaggeration to say that mining has forever changed the history of the Ruhr Valley. The excavations required for mining activities caused the region's terrain to sink by up to 20 meters relative to its original altitude, necessitating the existence of water pumping stations to prevent flooding in the Ruhrgebiet. The author visited one of these stations and was greeted by the responsible engineer. When asked how long these stations would need to operate, he replied: "forever."

(4) The case of the Emscher River is exemplary. The river, which runs through the northern part of the Ruhr Valley for 80 kilometers from Dortmund to the Rhine, was for many years the destination for household sewage and waste from industry and coal mines, and was considered biologically dead. Since 1992, the Emscher has undergone a highly successful restoration process led by the Emschergenossenschaft, a century-old public corporation responsible for the river's waters. After nearly 6 billion euros invested in sewage collection and treatment, and ecosystem restoration, the Emscher is now clean and available for use by the population of the Ruhr Valley.

(5) The authors acknowledge the presence of a regional identity but argue that identification with one's hometown holds greater significance.

(6) It is no accident that the German Football Museum (Deutsches Fußballmuseum) is not located in the country's capital, but rather in Dortmund, in the Ruhrgebiet.

(7) Between January 1923 and August 1925, the Ruhr Valley was occupied by French and Belgian troops as punishment to the German Empire for not paying the war reparations imposed by the Treaty of Versailles. The occupation fueled German nationalism and pride among the Ruhrgebiet population, which engaged in tactics of peaceful resistance.

(8) In a passage from the poem "The Waste Land," in which Eliot (1981, p. 105) deals, among other things, with forgetfulness, he states: "These fragments I have shored against my ruins”.

(9) The Social Democratic Party of Germany (Sozialdemokratische Partei Deutschlands - SPD) governed North Rhine-Westphalia between 1966 and 2017, with a short break between 2015 and 2010.

(10) Heimatstil can be translated as "homely style". It is an architectural style that was very common in the first decade of the 20th century in Germany. Its main characteristic is its inspiration from traditional local buildings.

(11) Freeman (2019), in an interesting work on the history and importance of industrialization, refers to factories as "mastodons," that is, as giants that have become extinct. Nevertheless, Freeman argues that the extinction of factories, or at least of industrial society, is a Western phenomenon. According to the author, the gigantic factories continue to thrive in Asia.

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Translation: this article was translated from Portuguese into English by the author himself and reviewed by Victor Serebrenick, email: serebrenick@gmail.com

Received: March 13, 2024
Approved: July 19, 2024