



## **Murals as Ephemeral Urban Heritage: Embodied Spatial Continuity Beyond Architecture**

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### **Abstract**

Although murals have become increasingly visible components of contemporary urban environments, they remain insufficiently theorized within the framework of urban heritage and embodied spatial experience. Rather than approaching murals solely as artistic objects, this study examines them as spatial practices that contribute to urban conservation, the formation of urban identity, and the lived experience of public space. The research aims to reveal how murals operate across different socio-spatial contexts and how they shape collective meaning in the city through their forms of spatial organization, production processes, urban functions, and relations to movement, encounter, and perception.

Adopting a comparative qualitative methodology, the study analyzes three cities with strong mural cultures: Pachuca de Soto, Berlin, and São Paulo. These cities respectively represent locally embedded, historically linear, and metropolitan-scale distributed mural production logics. The analysis, conducted under the headings of spatial organization, production processes, urban function, and urban impact, demonstrates that murals operate as distributed systems of meaning-making beyond architectural permanence. At the same time, they shape how urban surfaces are encountered through everyday movement and influence how public space is perceived and experienced.

The findings indicate that, depending on the socio-spatial context, murals function as narrative producers, memory carriers, or visibility enablers. Unlike architectural heritage, murals shape urban identity not only through contextual continuity but also through embodied and dynamic processes of urban encounter. Although not formally recognized within traditional heritage frameworks, mural practices contribute to the continuity and transformation of urban meaning by mediating relations between surface, movement, and lived experience.

By repositioning murals as spatial practices that mediate the production of urban meaning rather than as purely artistic interventions, this study opens a discussion on the role of non-architectural, experience-based elements in contemporary urban heritage.

### **Keywords**

Urban Murals, Urban Identity, Embodied Spatial Practices, Ephemeral Urban Heritage, Distributed Urban Layers

## 1. Introduction

Cities are predominantly defined through architectural structures, monumental elements, and planned public spaces. This perspective largely associates the distinctive character of the city with the permanent components of the built environment; consequently, discussions of urban identity are often conducted through building stock, morphology, spatial organization, and monumental architecture. However, meaning-making in the contemporary city is too layered to be reduced solely to the built environment. Everyday urban experience is shaped not only by the configuration of buildings and spaces, but also through surfaces, images, temporary interventions, and practices.

In recent years, the transformation of urban surfaces into spaces of public narration has become one of the most visible indicators of this shift. Facades, walls, infrastructural surfaces, and transitional spaces increasingly host interventions that do not alter permanent architectural forms yet directly engage with questions of what is valued in the city, which narratives are circulated, and who becomes visible in public space. In this context, murals emerge not merely as aesthetic productions or examples of public art, but as surface practices that intensify, transform, and multiply the layers of urban meaning.

Urban space is not only visually perceived but also experienced through bodily movement, sensory engagement, and patterns of encounter. Murals, as surface-based interventions, are not encountered as static images; rather, they are perceived, interpreted, and reinterpreted through movement within the city. As individuals navigate streets, turn corners, and pass along façades, murals emerge as sequential and situated experiences that unfold in time. In this sense, murals operate as embodied spatial interfaces that reorganize how urban space is encountered, perceived, and remembered in everyday life. Precisely because murals are encountered through movement and everyday urban navigation, their contribution to the city cannot be reduced to visual representation alone.

Despite this growing presence, murals remain insufficiently theorized within urban heritage debates. Existing studies tend to approach murals primarily through the lenses of art history, public art, political expression, or cultural activism, while how these practices operate within urban space, particularly at the level of spatial function, remains relatively underexplored. Yet mural practices reconfigure public experience by transforming urban surfaces into sites of representation and interaction without producing new architectural forms. For this reason, they warrant consideration at the intersection of urban identity and urban conservation.

Building on this gap, this study aims to reconsider the position of murals within urban heritage. While existing literature largely interprets murals in aesthetic, political, or cultural terms, how they function spatially within the city and contribute to the production of urban meaning remain only partially examined. Accordingly, this study approaches murals not as artistic objects but as spatial practices that interact with urban space.

In this context, the study seeks to answer the following research question: How do murals contribute to the production of urban meaning, continuity, and lived spatial experience across different socio-spatial contexts without relying on architectural permanence? To address this question, the study conceptualizes mural practices not as object-centered artistic productions but as distributed spatial layers operating at multiple scales within the city and influencing urban experience. This perspective enables murals to be understood not as elements excluded from heritage discourse due to their ephemerality, but as practices capable of generating process-based and contextual forms of continuity.

Following this framework, the article first reviews the relevant literature and theoretical discussions on murals. It then presents a comparative analysis of Pachuca, Berlin, and São Paulo to examine how mural practices operate across different urban contexts. The final section evaluates the findings in relation to debates on urban heritage and spatial continuity.

## 2. Literature Review and Theoretical Framework

The literature on murals largely discusses them through the lenses of visual/political representation, public art, conservation, and memory-identity. However, these strands remain limited in explaining how murals operate as spatial functions within the urban environment.

In this study, spatial functions are understood through parameters such as where murals concentrate in the city, which surface types they relate to, how they intersect with patterns of movement and encounter, and how they distribute across different urban scales.

Studies that examine murals in relation to art and political expression emphasize their ideological and cultural representational power in public space. This perspective aligns with the broader street art literature, which evaluates murals as aesthetic interventions that produce meaning in public environments. Riggle (2010), for instance, defines street art not merely as an object but as an aesthetic practice inseparable from its context, arguing that its relationship with public space constitutes an integral part of its meaning. Similarly, Schacter (2014), through a global mapping of street art practices, demonstrates how murals gain visibility through urban surfaces and interact with local contexts to generate urban narratives. These works suggest that murals are not simply representational images, but practices that engage with urban surfaces and intervene in public experience. Murals are also frequently described as tools of public discourse, particularly in moments of political rupture or social tension, where urban surfaces become a form of “public media.” Yet the limitation of this approach lies in its tendency to read murals primarily as message-bearing visuals, often relegating their spatial organization, distribution, accessibility, and relationship with urban morphology to a secondary position.

Public art literature similarly treats murals as cultural interventions shaping the experience of public space, but here, too, their spatial positioning within the city is often treated as background rather than as an analytical focus. Contemporary scholarship increasingly frames street art and murals not merely as aesthetic expressions but as

spatial interventions that reconfigure urban experience and public visibility (Iveson, 2010; Young, 2014). In Latin American contexts, muralism has also been linked to community identity formation and collective spatial narratives emerging from hybrid public-social processes (Campos, 2015). These perspectives align with studies that interpret graffiti and mural practices as mechanisms through which cities are read, represented, and socially negotiated (Avramidis & Tsilimpounidi, 2017).

Within conservation literature, murals are often approached through their ephemerality and variability, thereby exposing the limits of conventional conservation frameworks. Recent studies emphasize that heritage should be understood not only as material preservation but as a process shaped by cultural values and contextual conditions (Harrison, 2013; Jones & Leech, 2015). This perspective highlights that mural conservation cannot be reduced to material degradation alone; technical interventions that ignore social context, production processes, and public values remain insufficient.

Research focusing on material deterioration and environmental vulnerability highlights the fragility of murals while raising questions about their continuity. Studies on the impact of environmental conditions on the built environment demonstrate how material and atmospheric factors affect the persistence of surface-based interventions (Brimblecombe, 2014), while conservation research further emphasizes how environmental and material conditions shape the durability of historic materials and structures (Moropoulou & Kouï, 2001). Although their physical permanence may be limited, these studies suggest that the meanings produced by murals can persist through contextual and process-based continuity within collective urban memory. From the perspective of memory and urban identity, murals are often discussed as vehicles through which collective memory is reproduced in public space. Nomeikaite (2023) approaches the relationship between street art and heritage through affective atmospheres, arguing that mural practices shape urban experience not only visually but also sensorially and emotionally. This perspective highlights the role of murals in shaping

belongings and urban identity, suggesting that collective memory circulates not only through monuments and museums but also through everyday surface practices. Community-oriented studies further demonstrate how murals can strengthen social ties at the neighborhood scale, make local participation visible, and contribute to the co-production of public space (Back, 2015).

Despite these contributions, a shared gap persists across the literature: while murals are frequently examined in terms of meaning, the spatial mechanisms through which such meaning is produced remain insufficiently addressed. The impact of murals in the city derives not only from the images they represent, but from where they are located, the surfaces they occupy, how they are encountered, how they are accessed, and how they transform over time. What remains underdeveloped is a spatial reading capable of explaining murals' distribution logics, systemic roles, and operations across scales.

The theoretical framework of this study draws on approaches that conceptualize space not as a fixed backdrop but as socially produced through practice. Lefebvre's (1991) notion of the production of space reframes space as a dynamic process constituted through everyday practices, representations, and lived experiences. This perspective resonates with De Certeau's (1984) emphasis on the production of spatial meaning through everyday practices rather than solely through planning or architectural design. Similarly, Massey (2005) defines space as a network of relations shaped by interactions among actors and practices. Lynch's (1960) discussion of urban imageability further suggests that cities are perceived not only through built forms but also through surfaces and visual markers.

In addition to these perspectives, this study approaches space as an embodied and lived experience shaped through bodily movement and sensory engagement. Urban space is not only produced through social relations but is also continuously reconfigured through patterns of movement, perception, and encounter. From this perspective, murals are interpreted not only as spatial practices but as interfaces experienced through

movement, shaping how bodies navigate, perceive, and interact with the urban environment. Together, these perspectives provide the conceptual grounding for understanding murals as spatial practices that operate beyond architectural production. Building on this framework, the study proposes to conceptualize murals as distributed urban layer practices that produce meaning through their spatial positioning, relational interactions, and contextual continuities within the city.

Building on this theoretical framework, murals can be interpreted as practices that reorganize spatial experience through public surfaces without producing architectural form. In other words, murals are not architectural elements; yet they establish, direct, and intensify spatial relationships within the urban environment. In doing so, they transform urban surfaces from passive carriers into active interfaces through which urban meaning is produced.

From this perspective, the study conceptualizes murals not as singular artworks, but as a distributed urban layer that emerges across different scales and assumes varying functions depending on context. The notion of a distributed urban layer is grounded in the idea that mural practices do not operate according to centralized monumental logic. Instead, they spread across the city, at times clustering in specific areas, at times concentrating along linear trajectories, and at other times expanding at the metropolitan scale. The identification of three distinct spatial organizational logics of mural production and their association with the functions of narrative, memory, and visibility enables the relationship between murals, urban identity, and urban heritage to be understood not through physical permanence or object-centered valuation, but through process, interaction, and context.

Accordingly, this study engages with contemporary heritage debates on temporality and value, while simultaneously situating murals within discussions on the production of space and urban memory by treating them as practices that generate meaning in the city (Lefebvre, 1991; Nomeikaite, 2023; Back, 2015). This theoretical framework provides a basis for analyzing how murals

shape collective urban meaning across different socio-spatial contexts through functions such as narrative production, memory mediation, and visibility. Such an analysis makes it possible to interpret murals as producing value as a form of ephemeral urban heritage, grounded not in material permanence but in contextual continuity.

### 3. Methodology

This study is based on a comparative qualitative research approach aimed at understanding how murals operate across different urban contexts and how they contribute to the production of urban meaning. Rather than treating murals as artistic objects, this research considers them as spatial practices that interact with urban space. Accordingly, the study focuses on evaluating murals through their spatial organization, modes of production, urban functions, and urban impacts.

The research is conducted through three cities that represent different logics of mural production: Pachuca, Berlin, and São Paulo. These cities were selected through purposive sampling, as they represent contexts in which mural production emerges in spatially distinct ways (Creswell, 2013). Pachuca presents a model in which mural production develops in an embedded relationship with local urban fabrics; Berlin represents mural practices that concentrate linearly along a historical boundary; and São Paulo is examined as a context in which mural production is distributed across the metropolitan scale. This diversity allows for an examination of how murals develop different spatial forms depending on context, rather than following a single production or settlement logic.

To analyze the role of murals within urban space, a spatial-function-based analytical framework was developed. This framework focuses on four key dimensions: spatial organization, production process, urban function, and urban impact. These dimensions aim to reveal how murals generate meaning not only through the images they represent, but also through their positioning, distribution, and processes of encounter within the city.

The study's data collection relies not on direct field observation but on secondary sources, including existing literature, visual documentation, and urban morphological data. Rather than focusing on the aesthetic qualities of murals, the analysis examines their spatial distribution, surface relationships, and interactions with public space. Academic literature, visual archives, and urban morphological studies constitute the primary data sources for understanding the spatial organization and functions of murals. This approach enables murals to be examined through a process- and context-oriented perspective rather than an object-centered one. Although the study does not rely on direct ethnographic observation, it considers movement, encounter, and public circulation as spatial conditions through which murals are experienced and interpreted in the urban environment.

The analysis was conducted through a comparative spatial reading based on mural concentration patterns, surface typologies, and relationships with public circulation in each city. The comparative approach aims to identify whether mural practices assume similar functions across different contexts and under what conditions they diverge. This method is grounded in qualitative research approaches that emphasize context-sensitive analysis in urban studies (Yin, 2018).

The study focuses on large-scale and publicly visible mural practices. Small-scale interventions that are rapidly removed were not systematically analyzed. Furthermore, the research relies on existing data and literature rather than direct field observation. While this limitation allows for a contextual examination of murals' spatial functions, it excludes detailed analysis of micro-scale productions.

### 4. Findings and Discussion

The comparative analysis demonstrates that murals do not follow a uniform mode of production across different urban contexts; rather, they are shaped in a context-sensitive manner in terms of spatial organization, production processes, and social functions. While mural practices contribute to the production of urban meaning in all three cities examined, the form and intensity of this contribution vary. This suggests that murals should not be

understood as singular artistic expressions, but as spatial practices that evolve in response to specific contextual conditions.

In this respect, the three cities examined represent contexts with distinct geographical, historical, and urban development dynamics. Pachuca, located in Mexico, stands out as a medium-sized city characterized by strong neighborhood structures and a locally embedded settlement pattern shaped by its topography. Berlin, the capital of Germany, possesses a unique historical-urban structure in which physical, political, and social boundaries stemming from its long-standing division into East and West have directly shaped urban space. The traces of this division continue to influence urban morphology and spatial continuity today. São Paulo, one of Brazil's largest metropolises, is characterized by

high-density, multi-layered, and fragmented urbanization dynamics, representing a global mega-city context. These differing urban characteristics provide a comparative basis for understanding the socio-spatial environments in which mural practices emerge.

#### 4.1. Spatial Organization: Embedded, Linear, and Distributed Structures

The three cities examined demonstrate that mural production emerges through different spatial logics within the urban fabric. In all three contexts, murals create a spatial layer through urban surfaces without altering architectural form; however, the location and concentration of this layer vary significantly across cities. This variation indicates that mural production is not merely an aesthetic choice, but a result of its relationship with the physical and historical structure of urban space.



Figure 1: Embedded Spatial Organization: Murals Integrated into the Urban Fabric of Pachuca. Macromural “Pachuca se Pinta”, Colonia Palmitas, Pachuca, México. Source: Wikimedia Commons, 2026

In Pachuca, mural production develops through large-scale, integrated surface transformations that emerge primarily within residential neighborhoods. Rather than appearing as isolated interventions, murals take the form of interconnected compositions extending across building façades, stairways, and street surfaces. This suggests that mural production does not concentrate around a particular route, axis, or symbolic center; instead, it is directly embedded within the settlement fabric. In Pachuca, murals function not as individually marked surfaces, but as a continuous visual layer operating at the scale of the neighborhood.

This mode of organization reveals that murals are not positioned as external additions to urban space; rather, they become part of the existing residential fabric and

operate within the everyday scale of spatial experience. In this sense, murals do not function as standalone public art objects, but as an embedded spatial layer that dissolves into the built environment and generates perceptual coherence at the neighborhood level. This embedded structure highlights the integration, rather than purely representational, nature of mural production.

In Berlin, mural production develops in relation to the spatial traces of the city's historical division. Murals are particularly concentrated along the former boundary that once separated East and West Berlin. This pattern indicates that mural production does not follow a random distribution across the city but instead forms a linear organization along a historically defined axis.



Figure 2: Linear Spatial Organization: Murals Along the Historical Axis of Berlin. Berlin Wall murals (East-West division traces), Berlin. Source: Wikimedia Commons,2026

Here, murals operate not simply as individual surface interventions, but as a visual continuity that enables the reinterpretation of a former physical division within the contemporary urban landscape. This linear concentration suggests that mural production establishes not only a spatial arrangement but also a temporal layer. Rather than merely marking urban surfaces, murals in Berlin align themselves along a line that reactivates the memory of division within public space.

This form of organization demonstrates that mural practices function not as dispersed visual interventions, but as a spatial system that builds continuity around a shared historical reference. Thus, in Berlin, murals constitute a linear urban layer that renders the city's former East-West division legible within contemporary spatial experience.

In São Paulo, mural production does not concentrate along a central axis or historical line; instead, it is dispersed across the metropolitan scale. Murals appear in a wide variety of spatial contexts throughout the city from highway façades and industrial structures to high-rise residential blocks and public infrastructure surfaces. This suggests that mural production in São Paulo develops through a polycentric and fragmented logic of distribution rather than around a singular spatial focus.

Rather than forming a continuous spatial corridor, murals in São Paulo emerge as visible nodes distributed across the city. This distribution enables mural production to create a network that establishes visual and symbolic relationships between different parts of the metropolis. In this context, murals function not only as surface transformations but as visual markers that connect fragmented urban territories and reframe the metropolitan experience.

This organizational logic indicates that mural practices in São Paulo do not revolve around a central narrative or historical reference; instead, they permeate urban space through multiple interventions dispersed across the metropolitan landscape. Consequently, murals form a distributed surface network that influences the perception of public space and produces continuity at the

metropolitan scale.

Taken together, these three organizational modes, embedded, linear, and distributed, demonstrate that murals do not follow a single spatial logic of placement. This differentiation suggests that mural production is shaped not solely by aesthetic preference but by its relationship with urban morphology, historical structure, and social context. Despite these differences, murals in all three cities operate as an alternative spatial layer that functions through urban surfaces without transforming architectural form.

By concentrating in certain areas or dispersing across urban fabric, murals reshape the experience of urban space without relying on physical permanence. These findings indicate that mural production does not adhere to a fixed spatial model; rather, it generates a distributed layer of meaning shaped by contextual spatial organization. In this sense, murals can be understood as an alternative urban layer that operates through surfaces and produces spatial continuity without requiring architectural intervention. These spatial configurations also shape how murals are sequentially encountered through movement in everyday urban life.

#### **4.2. Modes of Production and Contextual Differentiation**

Across the three cities examined, the emergence of mural production reveals significant differentiation, comparable in importance to spatial organization. Murals differ not only in where they are located but also in how they are produced and by whom, resulting in distinct operational dynamics within the urban system. This suggests that the spatial outcomes of mural practices are shaped not solely by physical placement, but also by the nature of their production processes.

In Pachuca, mural production follows a model that is initiated through public support but realized through community participation and individual appropriation. Murals are directly implemented on residential façades inhabited by residents, emerging as a collective transformation process at the neighborhood scale. In this process, public actors act as facilitators and

initiators, while implementation and spatial placement are shaped through the participation and consent of local communities.

This structure indicates that mural production operates not merely as an artistic or political expression, but as a spatial intervention that supports social cohesion. The participatory nature of the production process enables murals to engage directly in everyday life and transforms them into tools through which collective identity becomes visible at the neighborhood scale.

Thus, in Pachuca, mural production is neither entirely spontaneous nor fully institutionalized; rather, it is grounded in a production logic that is publicly triggered yet socially appropriated. This hybrid structure allows murals to transform urban surfaces from purely aesthetic sites into interfaces where social relations become spatially visible.

In Berlin, mural production largely originates from individual artistic interventions and develops through a production logic closely tied to political and historical contexts. Mural practices are especially evident along spatial traces symbolizing the former East-West division

of the city. This suggests that mural production functions not merely as an artistic activity but as a public mode of expression that facilitates the reinterpretation of the past. Rather than adhering to a predefined aesthetic program, mural production in Berlin is often oriented toward engaging with urban memory. Particularly in areas associated with the Berlin Wall, mural practices enable political narratives to re-enter circulation through public surfaces. This production logic positions murals as tools that render historical ruptures visible and connect public space with temporal layers. Consequently, in Berlin, murals emerge not only as artistic outputs but as political and spatial expressions that establish continuity between past divisions and contemporary urban experience.

In São Paulo, mural production appears as a professionalized practice operating at the metropolitan scale. Large-scale murals are produced not only through individual artistic initiatives but also through sponsorships, municipal programs, and cultural projects. This expands the visibility of mural practices across the city while simultaneously differentiating production processes in terms of scale and access.



Figure 3: Politically and Historically Framed Production: Mural Practices in Berlin. Source: Photographed by the author, 2025.



Figure 4: Professionalized Production: Large-Scale Mural Creation in São Paulo center.  
Source: Wikimedia Commons,2026

This professionalized model demonstrates that murals can transform urban surfaces through planned and strategic interventions. In São Paulo, mural production operates through a hybrid structure in which individual artistic beginnings are often scaled up through institutional support, allowing murals to reach broader audiences and operate at the level of metropolitan visibility.

These three production logics, community-based, politically framed, and professionalized, demonstrate that murals do not emerge through a singular production model. Nevertheless, across all three contexts, mural production transforms surfaces from sites of artistic expression into public interfaces through which urban meaning is produced.

The diversity of production processes reveals that mural practices become embedded within distinct urban dynamics and generate continuity through these processes. These findings indicate that mural production is not merely an aesthetic or representational act, but a dynamic spatial process that enables urban surfaces to take on an active role in meaning-making. As such, mural production can be understood as a context-dependent practice that contributes to spatial continuity within the city.

#### **4.3. Urban Functions: Narrative, Memory, and Visibility**

The impact of murals in the urban context is not limited to their spatial positioning or modes of production; these practices also assume distinct urban functions depending on their socio-spatial context. Across the three cities examined, murals influence urban experience through functions such as narrative production, memory mediation, and visibility generation. This indicates that mural practices operate not merely as physical surface interventions but as mechanisms of meaning-making that actively shape urban experience.

In Pachuca, the primary urban function of murals is associated with the reconstruction of urban narrative. The Macromural project implemented in Colonia Palmitas

emerged not as a series of individual representations or aesthetic interventions, but as a surface-based practice aimed at transforming how the neighborhood is collectively perceived. Rather than producing singular artistic statements, this intervention facilitated the internal redefinition of a settlement that had often been externally labeled as marginal, fragile, or problematic.

Through the painting of approximately two hundred housing units, the project generated not simply an aesthetic enhancement but a spatial marker that rendered the neighborhood perceptible as a unified whole. In this sense, murals function not only as representational surfaces but as tools that support social cohesion and reinforce spatial belonging. Thus, in Pachuca, mural production can be understood not as the creation of representational fields but as a practice that enables the spatial re-narration of a stigmatized urban area. This function reveals that murals do not reflect urban identity as a fixed condition but rather participate in its ongoing reconstruction through collective narrative processes.

In Berlin, the urban function of mural practices is less related to narrative production and more closely aligned with the spatialization of memory. Murals that emerge particularly along surfaces bearing the traces of the Berlin Wall do not merely represent the past but enable it to be spatially re-experienced. These interventions transform urban surfaces from passive witnesses of historical events into active interfaces that establish relationships between past and present.

By creating spatial links between historical rupture and contemporary urban experience, murals contribute to the reproduction of urban memory within public space. This capacity points to the potential of murals to rearticulate temporal continuity through spatial surfaces. In this sense, murals convert urban surfaces into spatial bonds through which relationships with the past are continually renegotiated, allowing memory to persist as a distributed yet continuous layer within the city.



Figure 5: Memory Carriers: Murals Referencing Historical Continuity in Berlin. Kani Alavi, *Es geschah im November*, East Side Gallery, Berlin. Source: Wikimedia Commons, 2026

In São Paulo, the primary urban function of murals is defined through the production of visibility. Here, murals operate not simply as aesthetic interventions but as mechanisms that determine which actors, themes, and identities gain presence within public space. As mural production spreads across the metropolitan scale, urban surfaces are visually marked in ways that allow particular social groups, cultural expressions, and narratives to become publicly visible.

Through this process, murals transform urban surfaces from carriers of localized narratives into public interfaces where representation itself is produced. Rather than reproducing a specific historical trajectory or conveying a singular local story, murals in São Paulo construct an infrastructural framework through which diverse actors

and identities gain visibility within the urban environment. Consequently, murals in São Paulo emerge as visual markers that reshape the perception of public space. By creating focal points across different parts of the city, these interventions establish visual continuity and enable murals to function as a distributed representational network at the metropolitan scale. In doing so, mural practices contribute to the circulation of urban meaning through visibility rather than through material permanence.

Taken together, these three functions: narrative production, memory mediation, and visibility generation demonstrate that murals assume different roles depending on their context. Nevertheless, across all three cities, murals consistently operate as surface-

based practices that contribute to the formation of urban meaning. These functions emerge not only through visual representation but also through embodied experience, as murals are encountered through everyday movement and shape how urban space is perceived, navigated, and remembered. In this sense, murals operate as surface-based interfaces that mediate the relationship between body, space, and movement in the contemporary city.

These findings suggest that murals, without relying on architectural permanence, support the production of urban continuity through varied functional mechanisms. Thus, beyond their physical presence, murals may be understood as dynamic practices that sustain the continuity of urban meaning. These findings suggest that murals, without relying on architectural permanence, support the production of urban continuity through varied functional mechanisms. Thus, beyond their

physical presence, murals may be understood as dynamic practices that sustain the continuity of urban meaning.

#### 4.4. Urban Impacts of Murals

The spatial organization, production logics, and urban functions of murals generate broader-scale effects on the city. Across the three cities examined, murals have been observed to contribute to the formation of urban identity, the perception of public space, and the continuity of cultural meaning without introducing architectural intervention. This demonstrates that murals possess the capacity to transform urban experience without producing physical structures.

In Pachuca, the urban impact of mural practices emerges through the reconfiguration of spatial representation regimes. Initiated through a public initiative and gradually expanded through the participation of local actors,



Figure 6: Visibility Production: Murals Enhancing Urban Representation in São Paulo. Beco do Batman murals, São Paulo. Source: Wikimedia Commons, 2026

mural production has not only transformed urban surfaces into sites of expression but has also redefined the neighborhood's position within the city. Without producing structural changes to the physical environment, murals have created an intermediary layer that reshapes how the area is perceived at the urban scale.

As murals became widespread, a settlement previously perceived as peripheral and largely invisible was incorporated into the networks of urban circulation and attention. This indicates that mural production does not merely represent the neighborhood but actively repositions it within the urban map. In this sense, murals have altered spatial hierarchies through visibility and recognition rather than through physical infrastructure. Thus, in Pachuca, the impact of murals lies less in the reinterpretation of public space and more in the renegotiation of the relationship between urban periphery and center. By rendering the neighborhood newly legible within the city, murals have facilitated a symbolic transformation of spatial status.

Berlin presents a different trajectory. Here, the urban impact of mural practices manifests through the spatial reconstruction of historical continuity. Murals concentrated along surfaces that retain traces of the Berlin Wall have transformed these sites from static remnants of the past into active components of contemporary urban experience. In doing so, murals have produced a perceptual line that persists within the city's spatial memory despite the physical disappearance of the former boundary.

Through this concentration, mural practices have enhanced the readability of Berlin's fragmented historical narrative within urban space, reinserting the former division into public experience. Rather than merely representing a past rupture, murals shape how that rupture is remembered and experienced within the present.

Consequently, the urban effect of murals in Berlin lies in their ability to sustain temporal continuity within urban space. By perceptually rearticulating a physically vanished

boundary, murals maintain the connection between the city's historical topography and its contemporary spatial experience.

In São Paulo, the urban impact of mural practices emerges through their capacity to reshape the perception of public space at the metropolitan scale. Distributed across various parts of the city, large-scale mural interventions generate visual focal points that enhance the legibility of the urban environment without altering building functions or physical form.

The increasing visibility of murals across extensive surfaces reshapes how the fragmented metropolitan landscape is experienced. Certain areas gain prominence, become more memorable, and acquire navigational significance within the dense and layered urban fabric.

In this way, mural practices in São Paulo extend beyond representation to establish a visual infrastructure that produces perceptual continuity. By creating relational links between different parts of the metropolis, murals contribute to the visual integration of an otherwise fragmented urban environment.

Taken together, these findings demonstrate that murals can exert influence on urban identity, public perception, and cultural continuity without relying on architectural permanence. While their material durability may be limited, the meanings and effects they produce exhibit contextual sustainability.

Murals may therefore be understood as distributed urban layers that transform urban experience without requiring architectural intervention. This perspective suggests that mural practices can be interpreted as process-oriented forms of urban heritage production.

Table 1 demonstrates that mural practices do not operate within a uniform spatial system across different contexts; rather, they form a distributed layer that contributes to the production of urban meaning through diverse organizational patterns and production logics. The comparative analysis reveals that murals function not as singular aesthetic interventions but as context-sensitive spatial practices within the city.

In Pachuca, embedded spatial organization combined with publicly initiated production processes enables the generation of collective narratives at the neighborhood scale. In Berlin, linear concentration along historical boundary traces, together with individual interventions, allows murals to function as surfaces that engage with public memory. In São Paulo, a hybrid production structure emerging from individual initiatives and later scaling through institutional support enables murals to exert influence at the metropolitan scale through the production of visibility. These variations indicate that mural practices assume different functions depending on their contextual conditions.

Nevertheless, despite differences in spatial organization, production logic, and urban function, murals in all three cities operate as surface practices that shape urban experience. Without requiring architectural intervention, murals contribute to social cohesion, render temporal and perceptual layers of public space visible, and facilitate the reproduction of cultural continuity in diverse forms.

These findings suggest that murals do not align with traditional heritage frameworks based on material permanence. Instead, they function as spatial practices that generate social, temporal, and perceptual continuities within the urban environment. Murals may therefore be

Dimension	Pachuca	Berlin	São Paulo	Contribution to Discussion
Spatial Organization	Embedded and integrated at the neighborhood scale	Linear along historical boundary traces	Distributed at the metropolitan scale	Murals do not follow a fixed spatial model; they form context-sensitive urban layers
Production Logic	Publicly initiated, with community and individual appropriation	Individually driven, linked to historical surfaces	Individually initiated, visibility-oriented scaling (hybrid)	Production processes directly shape the urban function of murals
Urban Function	Collective narrative production	Carrier of public memory	Production of visibility	Murals contribute to urban meaning through different functional roles
Scale of Influence	Neighborhood/ community	Urban memory corridor	Metropolitan	Scale of impact relates to spatial organization
Urban Impact	Socio-spatial integration	Spatialization of temporal continuity	Perceptual legibility of public space	Murals transform urban experience and structure patterns of perception and encounter without architectural intervention.
Type of Continuity	Social continuity	Temporal continuity	Perceptual continuity	Murals generate contextual rather than physical continuity
Relation to Heritage	Everyday life based	Memory-based	Representation-based	Murals should be understood as processes rather than objects

Table 1: Comparative Spatial and Functional Characteristics of Mural Practices

understood as processual formations that contribute to the production of urban meaning by forming a distributed layer within the city.

This also demonstrates that urban heritage cannot be defined solely through material assets that require preservation. The reorganization of social relations in Pachuca, the rearticulation of historical ruptures through public surfaces in Berlin, and the circulation of urban representation at the metropolitan scale in São Paulo all indicate that heritage may relate not only to physical permanence but also to the continuity of urban experience. In this sense, murals should be understood not as objects to be preserved, but as spatial processes that enable the circulation of meaning and continuity within the city.

## 5. Conclusion

This study has demonstrated that murals can be understood not merely as aesthetic interventions or forms of public art in contemporary urban environments, but as spatial practices that contribute to the production of urban meaning. The comparative analysis conducted through the cases of Pachuca, Berlin, and São Paulo reveals that mural production develops through distinct forms of spatial organization, production logics, and urban functions. Despite contextual differences, murals in all three cities operate as surface practices that influence urban experience without requiring architectural intervention.

The findings indicate that murals assume different roles across contexts: enabling collective narrative production in Pachuca, engaging with historical memory in Berlin, and generating metropolitan-scale visibility in São Paulo. Through these functions, murals contribute to the formation of urban identity, transform the perception of public space, and facilitate the reproduction of cultural continuity at different scales. This demonstrates that murals can produce continuity within the city without relying on physical permanence.

These results align with theoretical perspectives that conceptualize space as produced through social practices

rather than as a fixed physical form (Lefebvre, 1991; De Certeau, 1984). By transforming urban surfaces into active interfaces, murals illustrate that spatial meaning is generated not only through architectural structures but also through everyday practices and visual markers (Lynch, 1960; Massey, 2005). In this sense, mural practices can be understood as revealing the relational and processual nature of urban space.

The study also shows that murals do not correspond to the material permanence emphasized in traditional heritage frameworks. Instead, they operate as spatial practices capable of producing social, temporal, and perceptual continuities within the urban environment. This observation resonates with contemporary heritage approaches that increasingly emphasize process and context. The value of murals lies not in their physical persistence, but in their capacity to generate meaning and shape public experience through urban surfaces.

Such findings are consistent with recent perspectives that conceptualize heritage not solely as physical entities requiring preservation, but as practices continuously reproduced through social and cultural processes (Harrison, 2013). From this perspective, heritage emerges not as a collection of fixed objects but through ongoing processes of social interaction and meaning-making. In this regard, mural practices may be understood as formations capable of producing relational and processual continuity within urban space, independent of physical permanence.

Murals, therefore, reveal the limitations of object-centered heritage approaches and contribute to the development of a process-oriented understanding of urban heritage. This study suggests that heritage should be considered not only in terms of material preservation, but also through spatial processes that sustain the continuity of urban experience.

Accordingly, murals should be approached not as singular objects to be conserved, but as distributed spatial formations that enable the circulation of meaning and generate multiple forms of continuity within the city.

Beyond their role as spatial practices, murals can also be understood as embodied urban processes that operate through movement, perception, and encounter. Their impact emerges not only from their visual presence but from how they are experienced through everyday bodily navigation in the city. In this sense, murals contribute to the production of urban meaning by shaping lived experience and reconfiguring the relationship between body, space, and movement beyond architectural permanence. Future research examining mural practices in relation to user experience, urban transformation processes, and diverse geographic contexts would further clarify their role in the production of urban heritage.

#### **Conflict of Interests and Ethics**

The author declares no conflict of interest and confirms that this study complies with all relevant research ethics standards. This study does not involve human participants or personal data.

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