From Ephemeral to Permanent: Street Experiments and the Evolution of Historical Urban Landscapes

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Abstract. From the 2005 San Francisco experiments by Rebar to the post-pandemic urban responses, temporary interventions, known as Street Experiments, are a consolidated trend in tactical urbanism. Public spaces, streets and squares have become key places for testing innovative, accessible, and landscape-sensitive urban models, integrating social interaction, recreation, and commerce. These, generally characterised by a bottom-up and reversible approach, link spatial alterations to urgent contemporary issues such as quality of life, energy transition, and active mobility.

The study proposed here is part of broader research on street experiments aimed to investigate their transitional potential and propose design methodologies to bridge the gap between ephemeral trials and permanent urban improvements.

In particular, this contribution proposes a reflection about how street experiments can act as a bridge to lasting structural changes in complex historical contexts. This study views the historic city as a place of long-term change where temporary experiments act as catalysts for permanent transformation. These approaches in stratified urban contexts, examining both the underlying processes and the physical alteration of urban fabrics, have been analysed. Through a selection of European case studies and international best practices, the study proposes a critical reflection on urban design within historical settings.

Keywords: Tactical Urbanism · Street Experiments · Historic City · Urban Transition · Public Space · Sustainable Mobility

1 Introduction

The transformation of urban public space is a pivotal issue in the current international debate on urban policies and contemporary city design strategies [1–4]. Specifically, new intervention modes have been defined, integrating design experimentation, sustainable reconfiguration strategies, and urban participation processes, and they have been fostered by the progressive redefinition of the role of the street. This has evolved from an infrastructure primarily dedicated to vehicular mobility to a multifunctional hub for sociality and urban life [5–9].

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In this context, in the recent years, the temporary space transformation practices have spread widely, and they have been often categorised as interventions of tactical urbanism [10, 11]. Among these, the street experiments are one of the most significant forms of contemporary urban experimentation. They introduce temporary configurations of street space aimed at testing new relationships between mobility, public space, and urban quality [7, 12–15].

Within the European landscape, issues linked to the ecological transition, carbon emission reduction, and the promotion of sustainable mobility have repositioned urban infrastructures at the center of the planning and design debate, emphasising the need to reinterpret the street not merely as mobility infrastructure, but as a fundamental component of public space and a central tool in constructing urban quality.

From this perspective, the street experiments are intentional, temporary interventions that modify the use, regulation, or spatial configuration of a street. Their goal, as the scholar Luca Bertolini states, is to explore new modes of organising mobility and public space, facilitating the shift from a "streets for traffic" conception to a "streets for people" vision [16].

Furthermore, during the pandemic, there was a significantly accelerated adoption of the street experiments [17–21]. Numerous European and North American cities introduced temporary interventions to ensure safety in public spaces and encourage active mobility, such as walking and cycling [22–25]

It is interesting to put in evidence how the operational efficacy of the street experiments is in the relationship between time and urban design. Temporary practices demonstrate that permanence is not an original condition, but the result of selection, adaptation, and consolidation, as modern tradition often thought of city transformation as the establishment of stable, finished layouts. Time is not an external variable, but rather a structural component of the project that tests, refines, and gradually stabilises spatial configurations. The scientific community increasingly views these practices not just as operational temporary fixes, but as tools for knowledge and urban innovation. Indeed, these experiments allow us for the observation of user behaviour, the collection of data on public space usage, and the assessment of impacts under real-world conditions, thereby building an empirical foundation to inform design decisions and urban policies [26–29].

Starting from these considerations, the study proposed is part of ongoing research, and aims to interprete the street experiments as design transition devices through which urban projects can evolve from experimental spatial configurations into permanent urban assets [7, 30, 31]. In this view, temporality is not merely a preliminary phase but an operational tool capable of mediating between experimentation, learning, and the consolidation of public space transformations, specially in a consolidated urban fabrics. This issue is particularly relevant in historic cities, where morphological stratification and conservation constraints require an approach that balances innovation with preservation. Here, temporary experiments serve as effective tools for introducing innovation in sensitive contexts, allowing for the testing of new models of use without producing immediately irreversible changes.

Thus, this contribution aims to understand how can temporary and reversible interventions contribute to lasting urban change without compromising the morphological and heritage balance of historical urban fabrics.

Based on this framework, the paper addresses two research questions:

1. Which design and operational characteristics enable a street experiment to evolve from a temporary configuration into a permanent transformation of public space?
2. How are these conditions reconfigured when experiments are applied to historic contexts, characterised by established spatial layouts and a high density of cultural and identity values?

To achieve this aim, the paper's organisation is articulated as follows: After the Introduction (1), the contribution highlights the role of temporary experimentation as a tool for urban learning and an incremental component of urban design through a comparative analysis of significant European case studies (Paris, Barcelona, and Milan), (2), then, it proposes a reflection on the street experiments are applied to historic contexts, and their relationships (3). The Conclusion (4) discusses the results obtained from the literature evaluation, as well as the main findings of the study, and the research agenda.

2 Street Experiments and Urban Design

The role of the street experiments in the transformation of urban space is analysed through a comparative approach based on the examination of several significant European case studies. The selection, Paris, Barcelona, and Milan, was made in relation to the relevance of the urban policies adopted in recent years and the widespread use of temporary experimentation in public spaces.

This analysis focuses on the strictly design-oriented aspects of these transformations: it observes how temporary interventions affect spatial configuration, the redistribution of surfaces among different uses, and the redefinition of the street as a place for social interaction and urban life. By comparing these diverse contexts, the main aim is to identify the operational conditions and design logics that allow temporary experiments to evolve into permanent urban transformations.

In this perspective, the street experiments redefine the role of urban design. Temporary experimentation introduces a design mode based on incremental, reversible, and adaptive processes, which is contrary to how planning has traditionally operated through the definition of stable and definitive layouts. The project is no longer designed as a final act, but rather as an evolving process that develops through successive phases of testing, verification, and consolidation.

Within this framework, the street-space assumes a new centrality as a privileged field of design intervention. Traditionally conceived as a space intended primarily for vehicular circulation, the street is now reinterpreted as a complex and multifunctional public space capable of hosting diverse forms of use, lingering, and social relations.This shift implies a revision of the design logics governing the configuration of the street section and the relationship between public space and the urban fabric.

Temporality in this context is not just a temporary condition but an operational tool that enables the introduction of progressive transformations and verification of their effects before stabilisation. Through light interventions, provisional signage, mobile furniture, temporary platforms, and tactical painting, it is possible to quickly modify surface distribution, redefining the balance between traffic, active mobility, and collective use.



Fig. 1. Paris, Réinventons nos places, Place du Panthéon. (A. Manca).

The case-studies of Paris, Barcelona, and Milan are particularly relevant because they allow for the observation of three distinct modes of integrating temporary experimentation into urban transformation processes.

These three cases are not treated as simple applications but as comparative devices. Paris demonstrates the integration of the temporary phase into a regulated governance process; Barcelona highlights experimentation's ability to impact the spatial structure of the existing city; Milan emphasises a more performative and anticipatory dimension, where the temporary tends to coincide with a rapid prefiguration of permanence.

The complexity of the contexts and the experiments required a cognitive process based on an analytical-critical approach. This process was aimed at investigating the dimensional, morphological, and typological aspects of the interventions, as well as the fundamental connections between form and use. The methodology was carried out by analysing the spatial and formal characteristics of the contexts and their modifications, before and after the experiments, across three distinct scales: urban, proximity, and site-specific.

The in-depth analysis of the threes cases aimed to illustrate the methods and processes by which public space transformations were initiated and maintained, enabling the evolution of temporary practices into permanent interventions. Furthermore, the research puts in evidence the connections between the various stakeholders involved and identifies the planning and design tools suitable for this transition, with a specific focus on safety and accessibility.



Fig. 2. Barcelona, Superilla di Sant Antoni. (S.Rossetti).

The comparison allows for a clarification of the operational potential of the street experiments, as well as the limits and ambiguities emerging in their relationship with the construction of urban form.

In Paris (Fig. 1), specifically the *Réinventons nos places!* (2016–2021) project, temporality is embedded from the outset within a structured governance framework. The distinction between a techno-administrative branch and one dedicated to *in situ* experimentation articulated in successive phases: observation, co-design, temporary activation, evaluation. Here, interventions modify the relationship between vehicular flows, pedestrian paths, and social spaces. However, these are not open-ended formal explorations, but regulated tools for verification aimed at stabilising strategically oriented layouts [32, 33].

In Barcelona (Fig. 2), the *Superilles* (Superblocks) project (est. 2016) introduces a model where temporality operates as a spatial reorganisation device capable of affecting the structure of the existing city. Intervening in the Cerdà grid without structural transformations, the project acts on the street section and hierarchy, redistributing surfaces between traffic and proximity uses. Through reversible devices, the street is reinterpreted as a "habitable space." However, the progressive extension of the model has produced heterogeneous results, highlighting the difficulty of translating a change of use into a coherent and recognisable urban form [34, 35].

In Milan (Fig. 3), the *Piazze Aperte* (Open Squares) program (est. 2018) introduces a third mode, where temporality takes on a predominantly performative and anticipatory character. Interventions act directly on the street surface, producing an immediate redistribution of space. While generating new practices of appropriation, the experimentation

often coincides with a prefiguration already oriented toward stabilisation, sometimes leaving the transition to a more structured morphological definition unresolved [36, 37].

3 The Historic City as a Laboratory: Temporary Experiments and Urban Evolution

This research highlights how specific urban contexts, characterised by unique territorial and socio-cultural features, can serve as ideal "laboratories" for testing high-quality transformations of public and street spaces [38, 39]. The historic urban landscape, and in particular the stratified and multifunctional urban context, which embodies historical and cultural values and meanings, is one of the privileged contexts for the temporary experimentation of effective and quality public and street spaces. In this framework, the historic city is not merely a past heritage but a dynamic environment where temporary interventions can trigger a transition toward permanent, sustainable modifications. Drawing from case studies in Barcelona, Paris, and Milan, the research allowed to explore the historic city's role as a fundamental catalyst for successful urban experimentation. The stratified urban fabric is characterised by a complex mosaic of historical signs, cultural values, and identity-forming elements and it provides a fertile ground for street experiments that aim to redefine the relationship between heritage and contemporary life.

The research seeks to clarify how temporary transformations can effectively address the modern crises facing historic centres, such as physical decay, social abandonment, and the pressures of gentrification and over tourism. These strategies can be used as tools to safeguard both material and immaterial heritage while simultaneously promoting social interaction and introducing new identity markers. At the same time, the study seeks to understand if the historic city can determinate the success of these experiments, facilitating the shift from ephemeral interventions to lasting urban features.

The historic centres represent significant documents of urban culture, even regardless of their intrinsic artistic or formal merit or their particular environmental appearance, which may further enrich or enhance their value, since not only architecture but also the urban structure possesses, in itself, meaning and value [40]. Therefore, interventions within these fabrics are aimed not only at ensuring the conservation of individual buildings, but also at preserving and passing on to future generations the values and collective specificities that characterise the historic center itself [41]. These include, for example, those defined by Article 2 of the Washington Charter (International Charter for the Conservation of Historic Towns and Urban Areas, 1987), such as: the urban form; the relationships between different urban spaces (built-up, open, and green spaces); the form and appearance of buildings; the relationships of the city with its natural or man-made environment; and, finally, the various functions and roles acquired by the city throughout its history [42].

Therefore, a "bell jar" approach to preservation is to be avoided: Safeguarding a historic center should not mean freezing it in time, but it means to adapt harmoniously to contemporary life [42]. In this perspective, the concept of city is to continue and to evolve by adding new layers of meaning. This is particularly essential in the current European



Fig. 3. Milan, Piazze Aperte (Open Squares), Piazza Via Val Lagarina. (A. Manca).

context: where the historic centres are often sites of conflict due to sustainability challenges, lack of accessibility, and rigid regulatory constraints, temporary experimentation emerges as a viable middle ground between administrative immobility, and unregulated speculation.

As the above cases demonstrate, temporary experiments are adeguate measures able to respond to the specificities of a place, meeting modern demands for safety, well-being, and inclusivity. These interventions improve the overall quality of urban life through the introduction of light mobility (reducing or eliminating vehicular traffic) and the creation of new green areas or social hubs.

The reversibility of such projects represents a key advantage. These approaches allow planners to monitor effects in real-time and correct flaws before any permanent changes are made. This process fosters a renewed sense of belonging among residents, as they witness the regeneration of their landscape in a way that is consistent with historical values but responsive to 21st-century needs.

Thus, as Salvatore Settis, the Italian scholar, states the historic city can be framed as a theatre of democracy [43], that is, considered as part of the historical landscapes that represent a map that reflects the relationship between society and its territory, then every intervention must be guided by the spirit of social justice [43].

In the same times, also the street experiments are inherently democratic; they use limited resources to generate significant improvements in public health, safety, and accessibility. Most importantly, as many research affirm, these experiments are most successful when they involve the community in the planning and design phases: Active public participation ensures that the projects are calibrated to the actual needs of the

diverse populations inhabiting the city. By transforming the "space of the street" into a "place for the people," these experiments strengthen the social fabric and ensure that the evolution of the historic city results in inclusive and accessible places.

4 Conclusions

In conclusion, the research, here proposed, is focused on application of temporary experimentation in the historic city, on their relationships, and the transition from ephemeral to permanent. The study introduces questions that go beyond reversibility, directly involving the nature of design in contexts of high morphological, symbolic, and relational density, such as the historical ones.

Indeed, European historic centres are stratified spatial systems where urban form is the result of long-term processes, that took in place over the centuries. Furthermore, these are places characterised by regulatory and strategic constraints for their protection and conservation. Public space here is not just a support for contemporary practices but a structural component of heritage. Intervening in these spaces requires the ability to operate within complex morphological structures, ensuring that transformation does not become a simple replacement of use or a superficial overlap of new devices.

In this framework, temporality plays a crucial role in testing the compatibility between new uses and consolidated spatial layouts. The street experiments intervene on spatial hierarchies, thresholds, and the relationships between solids and voids. In historic contexts, the public space is never configured neutrally; the street section and the proportion of open surfaces are elements through which it establishes the historic city recognisability. Therefore, material reversibility is not the only component able to guarantee compatibility: experimentation must be evaluated by its ability to respect or critically rework the morphological logic of the context.

Thus, the temporary experimentation establishes a knowledge-based dimension that exceeds functional verification, in order to observe how the historic space reacts to change, putting in evidence resistances and latent potentials. This is particularly relevant in "traffic evaporation" processes, where reorganisation affects fragile equilibrium between different users, accessibility, economic activity, and social practices.

However, a major limitation remains: the risk of a separation between use and structure, where the temporary reconfiguration of space does not find a full morphological translation in permanent layouts. This highlights the difficulty of governing the transition from temporary transformation to the construction of durable urban forms consistent with the historic context.

As the analysis shows, the street experiments are now main tools for reformulating public space. They allow for the initiation of flexible transformation processes, replacing deterministic logics with modes based on adaptation and progressive decision-making.

Furthermore, one of the most relevant aspects of the street experiments is capacity to function as collective and design learning devices. Temporary configurations allow the direct observation of usage patterns and the collection of empirical data, reducing uncertainty and guiding design choices with greater precision.

The comparison between the different case-studies shows that the transition from temporary to permanent is neither linear nor guaranteed, and it depends on diverse aspect such as:

- Urban Design Quality: Temporary experiments affect both use and spatial configuration, and they show greater consolidation potential.
- Strategic Framework: Integrating experiments into a broader vision to avoid isolated episodes.
- Community Engagement: Building legitimacy and stability for permanent solutions.

In the historic city, these conditions are even more vital. The temporal dimension is an integral part of the design process, where the form of public space is defined through successive cycles of testing and re-elaboration.

The central disciplinary knot lies in the relationship between use and form. It is not enough for experimentation to produce new uses; these must find a coherent translation within the spatial structure. Temporality does not replace the project; it redefines its operational conditions. Responsibility shifts to the "moment of translation where the temporary experience is transformed into a permanent urban asset.

Ultimately, the street experiments are not an alternative to urban design but a redefinition of it, acting as a transition device capable of transforming lived experience into urban form.

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