Urban Taxidermy: Mapping La Subterranea

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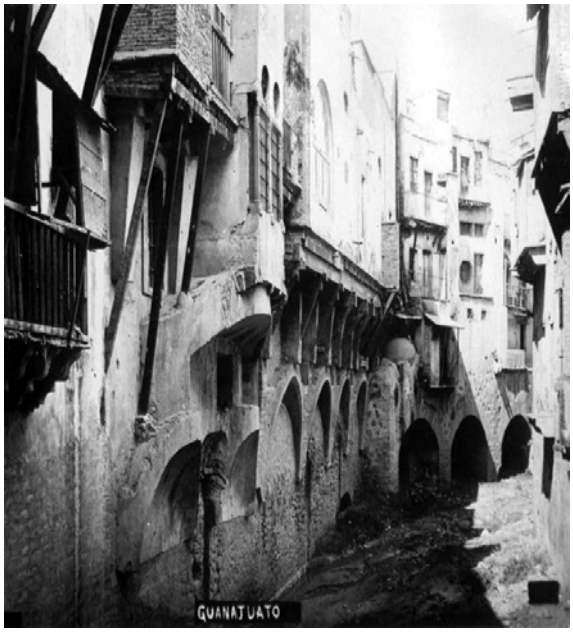
Introduction

This paper presents preliminary results from *La Subterranea*, an ongoing research project, which takes its name from a tunnel and viaduct system that runs underneath and through the city of Guanajuato, Mexico. As riverbed, vehicular thoroughfare, and the historical back alley to the city, La Subterranea has evolved in a state of tension with the city above. Its use, form, and place in the cities imagination has shifted over time, registering changing attitudes towards hygene, shifts in transportation, and alterations to the natural topography. At present, La Subterranea is embraced as uniquely embedded cultural capitol—contributing to the city's designation as a World Heritage Site in 1988—and as a practical solution to the transportation problems in the city center.

Our research attempts to tease out the explicitly spatial and geographical tensions that lend La Subterranea a resistance to simplistic formal descriptions. La Subterranea is at once a natural topographical feature, a conditioning infrastructure, and a contingent interstice that exists in a dialectical relationship with the city above. Following a simple description of methods and scope, we will discuss these ambiguities from two directions: 1. a view of urban structuring that recognizes that the "architecture of the city" and urban infrastructures are coproduced and co-evolve, resulting in a complex artifact irreducible to its parts; and 2. a view of the role of surface contiguity and discontinuity in highlighting the ambiguous relationship between La Subterranea and the city above. We conclude with a discussion of the relevance of taxidermy as a means of understanding the conceptual problems posed by the surfaces of La Subterranea.

History / Natural / Artificial Forces

From its founding in the 17th century until the 20th century, the city of Guanajuato has beeen plagued by regular and catastrophic floods due to its siting in a steep, narrow river valley. Built reaction to these floods, however, reveals the environmental and cultural morphology of a city whose history has been intimately shaped by the geographic constraints of an extreme urban topography. As such, La Subterranea can be seen as the crystallization of the relationship between natural constraints and manmade responses in the development of the city's form. Between 1950 and 1960, efforts were begun to canalize the *Rio Guanajuato* and to pave a street over the riverbed. The Belaunzarán Viaduct was the first stretch completed and was eventually expanded to include what is today known as Calle Miguel Hidalgo. In this history, it is apparent that the construction of the Subterranean is a continuous effort, a process of the city's modernization.



Method and Scope

The length of *La Subterranea* running through Guanajuato's historic city center was the focus of the study and comprises a length of approximately 2.5 kilometers. A preliminary study was carried out in the field in the form of a series of sketches made to document relevant site information such as connections of *La Subterranea* to the city, structures spanning the street, sidewalk widths and openings of the system to the sky above. From these sketches, stations were located from which High Definition Surveying (HDS) equipment was employed.

The scans collect data points in the form of xyz coordinates which we then assembled to generate a scaled, three-dimensional model which allowed a more accessible and comprehensive visualization than was possible in the field. This method of mapping puts a specific emphasis on the surfaces that define the space of *La Subterranea*. As a result, surface contiguity between spaces normally disassociated with each other is mapped and can be visualized in three dimensions. Scans were performed primarily in the subterranean street itself; in the cases of connections with the city above, additional scans were taken. 89 Scans were performed by the authors in early August, 2006.

Goals

Aerial photographs of the city do not easily confess the presence of the system underneath and within.
La Subterranea defies simple diagrammatic conjecture, especially when such conjecture is based on strategy of a separation of parts; rather, it is at once a whole and its parts. It is an inherently a three-dimensional object lodged within Guanajuato's historic city center. As a subject for a surveying endeavor, the system is complex: *La Subterranea* experiences constant dimensional variation, making accurate drawings extremely elusive (and heretofore nonexistent). Therefore, the project had the primary goal of introducing *La Subterranea* as a body itself in which its entire length could be measured accurately and visualized at once in its entirety, something inaccessible to normal experience.

Infrastructure and the City; or the Study of a Specific Urban Artifact

It may be necessary to contemplate the urban pieces whose invention have been necessary to Guanajuato's urban morphology. For example, we can discern the original bridges which crossed the Rio Guanajuato before the city grew up around it. We can discern newer bridges as well as the buildings which once clung like parasites to the edges of bridges and were gradually included as connective tissue between blocks. We can also discern the old embankments of the river, built to protect the urban river course from excessive erosion during floods. These embankments tended to be necessary at the outer edge of turns. One level below the street, we can find buildings that were buried in the effort to lift the city above flood waters. These buildings, comprising a zone around the subterranean system, create the impression of a forgotten and inaccessible urban origin to the city's

current form. In addition, the mining heritage of the city provided ample means for the creation new tunnels. As an example, we offer a photograph taken in the subterranean system of a 1:1 chalk-line elevation marking the location of a tunnel slated to intersect La Subterranea.

Aldo Rossi, in his seminal text *The Architecture of the City*, develops the idea of the "urban artifact" to delineate a unit of study from which the structure and morphology of a particular city can be understood. For Rossi, an urban artifact is a "complicated entity which has developed in
both space and time" and which has embedded in its form the "richness of its own history" that serves as one of many "permanences" in the development and growth of a particular city.[i] For our study, we consider *La Subterranea* as the defining artifact structuring the city.

Uneven Morphology

While Guanajuato and *La Subterranea* co-evolved into the interwoven system it is today, their contingent development has produced spaces of uncertain allegiance—neither wholly of the subterranean nor wholly of the city proper. The result is an uneven morphology, a subtle incongruity of form and fabric, where moments of correspondence give way to moments of complete misalignment. The result is an interference pattern in which the overlay of the two systems at times show correspondences of alignment and access and at times a counter patterning of seemingly misregistered street axes and criss-crossing vectors. The answer to the question of "why?" this misregister of upper and lower cities, of course, lies in the incremental and geographically contingent growth of the city and its subterranean other.

Yet the surfaces gathered and observed in this project indicate that the two systems interact in such a way that their substance can in fact be eroded. The primacy of the plan is eroded by the necessity of these systems to slide over one another, to displace each other. The skewed development of the city over *La Subterranea* gives the impression of an urbanism that has its own mind, even if a river course must be altered, even if building mass completely envelopes the former river course. Both systems then—the city and its subterranean counterpart—display a certain degree of freedom and malleability.

Spatial Continuities

In this erosion and misalignment, then, lies the fundamental ambiguity of this system. La Subterranea is simultaneously an artifact and a void, a presence and an absence.
The obvious, inevitable question emerges: What exactly is this? We have tried unsuccessfully to determine La Subterranea as belonging to known species of urban forms. Its surface moves fluidly from tunnel to viaduct to connector of public space. A key link in our understanding of this is the argument that it is in the continuity and discontinuity of *surfaces*—ground-plane, facades, and tunnel walls—where this ambiguity is played out and made apparent to inhabitants of the city.

First hand experience of La Subterranea reveals a high degree of surface continuity and enclosure. This surface, however, continually breaches the confines of the tunnels and folds into the plazas of the city above. Across all levels of this surface, pedestrians, vehicles, and vendors occupy a limited area of overlapping territories, rendering this surface a quilt of uses and movements. By bringing the city and La Subterranea into repeated contact, the cross-programming of this urban surface compels a recognition of the infrastructural space as an active agent in the architecture of the city. La Subterranea, with its various connections to the city above, introduces a new unit of analysis that considers buildings, roads, plazas, and the subterranean level as one continuous surface. The result is a hybrid urban space—at once civic and infrastructural.

A Provisional Anatomy

To gain some certainty about the constitutive elements of this system, we attempt a taxonomy of the spatial and topological types found in La Subterranea. Our particular method of documentation focuses on surfaces and excludes information about what lies beyond--in this, we have likened our process to a *skinning* of sorts. Within this skin, we have isolated three types of "surface events" that occur repeatedly and which isolate constituent parts of the system:

1. The tube: an enclosed tunnel.

2. The viaduct: a tunnel cut open to above.
3. The connector: tunnel intersects with pedestrian or vehicular access to above.

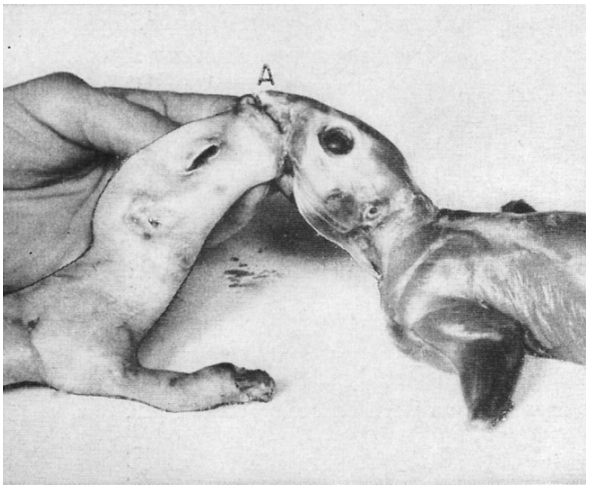
As may be imagined, these three types of spaces correspond to what is happening in the adjacent urban context: In the case of the tube, the city spans the La Subterranea with streets, buildings and public spaces; in the case of the viaduct, it leaves the subterranean open to above. In the case of connectors, the system branches under the city and following those branches, it surfaces and eventually expands, defining outdoor public spaces above, such as plazas and streets.

Topological Inconsistencies

These three types of spaces, which constituted a provisional anatomy of the system, introduced problems; specifically, the difficulty of finding surface consistency among the three characteristic pieces. For instance, the tube and the viaduct operate as surfaces in two fundamentally different ways: The tube is a space which is topologically consistent, while the viaduct tears the subterranean surface as it opens to above. In the case of connections to the city above, the surfaces turn inside out, are torn at edges, and the boundaries of the system become difficult to discern. In these cases, the notion of surface contiguity (which we so strongly observed first hand) becomes unwieldy and bears multiple problematic readings. La Subterranea, a relatively discreet entity in the scan data, begins to constitute both an inside and an outside; the surfaces are topologically inconsistent and thus conceptually problematic.

Urban Taxidermy

Furthermore, the scans contribute to the sense of spatial ambiguity by dissassociating the surfaces of the subterranean from their material support—a conceptual skinning of the subterranean body. This act of separation and observation can be likened to the art of taxidermy as a way of isolating and seeing complex surface characteristics. The measurement of the skin of a beached whale, for instance, is based in observation of specific features of the surface of that animal. While the whale can be measured fairly conventionally in its length and girth, other more pliable parts of the body necessitate closer attention: Since the weight of the whale on land compresses and folds the skin around the jaw, measurements taken must account for this anastomosis, or branching, of the resulting folds. We argue here that taxidermy, though a somewhat outmoded, marginalized art form, conveys some of the tensions and descriptive gaps native to architectural production. Far from “stuffing”, as it is often derogatorily identified, taxidermy involves a careful study of complex surfaces, a process of cutting and separating parts, and a sort of earnestly duplicitous re-framing of the object.



The practice of taxidermy concentrates not only on the preservation of hides (in other words the preservation of surface features), etc., but also concerns itself with exceptions to contiguous surfaces.

Surface features such as eyes, nose, feet, various orifices, etc. require special attention; glass eyes are a common replacement for the perishable biological original, hooves and claws require painting etc. A possible approach to dealing with La Subterranea is to treat its non-conforming surface features as similar to predictable irregularities on an animal skin.

Consider the nose as a special topic in taxidermy: The nose belongs to both the skin and the body beneath and is the last part of the skin to be detached from the body. The process of skinning therefore requires the hide to be inverted until only the nose remains as the last point of contact. Connections between public spaces can be understood as analogues to noses on a skinned mammal.

And yet, this urban taxidermy is actually a taxidermy of both interior and exterior surfaces. In normal taxidermy, an animal is killed, skinned and reassembled in a controlled context in a way that recreates its outward visual presence. In the case of La Subterranea however, the tunnel system becomes visible for the first time from the outside, and presents itself as an object. The latent potential in a project like this, then, is an active re-mounting of the surfaces. This remounting would benefit from the manipulation of the surface events identified earlier, coupled with an equally active and flexible substrate.

Conclusion

This intersection of topographic constraints, infrastructural systems, and urban surfaces In La Subterranea structure a complex urban artifact. This paper has attempted to explore the underlying ambiguities in the analysis of this artifact as a discrete formal entity. As has been shown, La Subterranea does not fit easily into normative analytical categories. Instead, it suggests the possibility of a contingent work—one in which complexity of form and concept are not divorced from the tensions of the history and architecture of the city.

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Endnote

[i] Rossi, *The Architecture of the City*, 29.