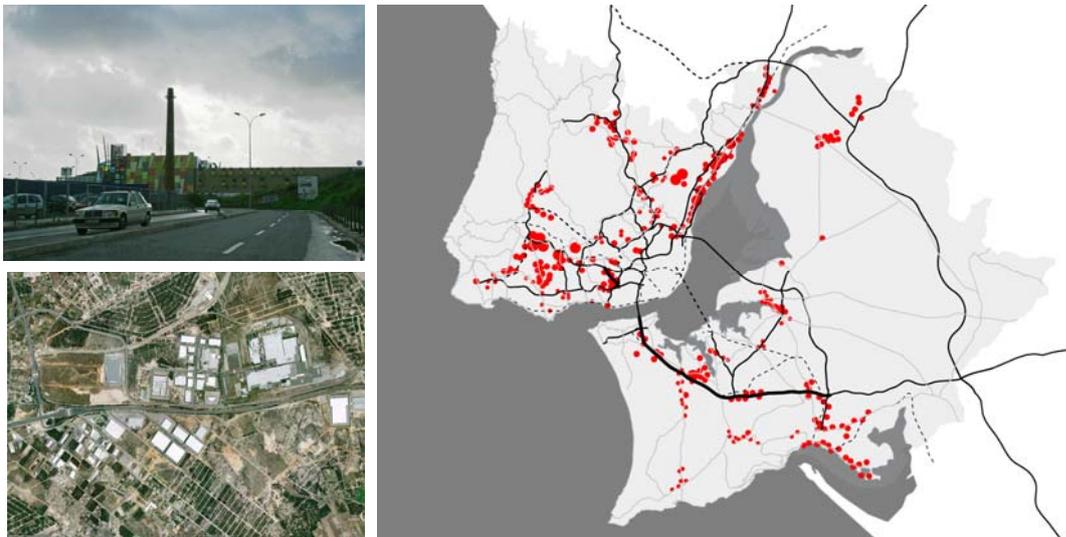


METROPOLITAN FILAMENTS

The impact of the increase of infrastructural connectivity in the morphology of the metropolitan territory of Lisbon



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ABSTRACT

The article proposes a reflection on the advances of the ongoing research, in the framework of the PhD in Urban Planning (FAUTL and ETSAB), which has as subject the recent morphological changes caused by the increase of the infrastructural connectivity (GRAHAM, [et al.] 2001) in Lisbon's metropolitan territory (MORGADO, 2005).

The increasing urban mobility, the consolidation of the infrastructural network and the resulting changes in the way of inhabiting the city, have contributed to a growing urban polarization in today's metropolitan areas. This process reveals the diverse and specialized nature of emerging clusters, with programs related to the tertiary sector, spontaneously generated and unrelated to the formally recognized logics, through self-organizing processes, developed in parallel, or earlier, to the planning tools. Moving away from the usual functional and formal logics, it follows the interaction between the market laws and the layout of the highways and freeways, which is designed independently of the surroundings and future urban developments, aiming to establish the fastest and most efficient connection between the points of the network (*tunnel effect*). Acting as the backbone for the new urban formations, the design of this network, its access and connections influence the process of urban growth, distant from the traditional, with morphologies directly related to the infrastructural connectivity.

Lisbon is no stranger to this process, revealing morphological changes in its territory, product of the past decades dynamics. The consolidation of the metropolitan high-speed-road network contributed to increase the mobility in the territory (GEORGE, [et al.], 2007) and allowed for the emergence of new *monoprogramatic poles* (ASCHER, 2008), dependent on the consolidated center for population, supplies and equipment. These specialized areas are deployed in peripheral areas, in strategic locations in the mobility network, with a high degree of functional specialization and filamentary morphologies (*metropolitan filaments*).

Currently, these territorial changes are globally transversal to cities, resulting from social and economic changes, the blurring of frontiers, the increased mobility and instantaneous flows of information and capital exchange (CASTELLS, 1999). Despite these universal conditions, the morphological changes in Lisbon's territory reveal local features associated with specific geographic, historical, social and economic conditions, which requires a dynamic approach to the new formations and to their relationship with the supporting infrastructure with a definition of time and space boundaries in the analysis of the study object.

The reading of the territory as a set of overlapped layers of information that correspond different to times and processes, allowed for the empirical identification of types of roads which support the development of different programs and urban morphologies. The analysis of the different stages of development and location of the emerging urban formations, and its associated road infrastructures, led to an identification of two anthropomorphic actions on the territory: *metamorphosis processes* and *addition processes*.

Thus, the *metamorphosis processes* (from the greek, *metamórphosis*, shape change) are understood as the result of processes where the roads interact with the urban fabric, undergoing joint changes over time. This leads to a transformation of the road from a character and profile that allowed the integration into the existing urban morphology (with programs directly related to and accessible by the road) to a high-speed profile as a connection element of the metropolitan road network. The *addition processes* (from the latin, *additio*, adding action) represent the result of a parallel development between the urban morphology and the road network, in which the dialogue is established only at the intersections between the two layers – the access points in physical terms, and the roadsides as *highway advertising* (VECSLIR, 2007), in visual terms.

The paper presents a territorial scale approach (Lisbon's metropolitan territory, with the 18 municipalities of AML, together with Benavente), followed by two representative case studies of *metamorphosis* and *addition processes* of the road infrastructure on the territory, and the resulting urban morphologies: filamentary developments along the northern edge of the EN117, and the A2 on the south bank of the Tagus, crossing a theoretical approach with an empirical field work with cartographic and document analysis.

The empiric reading and representation of the case studies results from the dialogue of a physical approach to the territory (natural landscape) as a conceptual framework, an anthropomorphic approach (built landscape) as a base-concept for the analysis, and the operating principle of formal and spatial decomposition and re-composition, in order to identify and characterize the urban transformations caused by the emerging clusters, through its formal, functional and infrastructural classification. The research aims the identification of the resulting morphologies and the processes (and their agents) of the territorial changes that evidence the structural relationship between the emergence of new urban centers and the consolidation of the high-speed-road infrastructure network. In this sense, it contributes to the increase of the readability of the territory, by describing, interpreting and operationalizing the spatial logic underlying its growth and consolidation, translated into principles of analysis exportable to similar situations.

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