

## ABSTRACTS AND TITLES OF STUDENT WORK

Department of City and Regional Planning,  
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### Ph.D. Dissertations

*Polluting Prosperity: Regional Development and Environmental Degradation in the Thane-Belapur Region (Western India)*

**Jumbi Edulbehram, 1997.**

This dissertation addresses the problem of industrial pollution in Thane-Belapur, which is one of the largest industrial regions in India. The study investigates the ways in which environmental concerns can be integrated with regional industrial development to provide the basis for policies and practices that adequately address the problem of regional industrial pollution.

The process of regional development is described to reveal the forces that contributed to industrialization, impacts of industrialization on the natural environment, the ways in which the natural environment has shaped patterns of urbanization and industrialization, and the social and political response to changes in the environment.

The extent of industrial water pollution in the region is described. It is argued that the regulatory and institutional framework has been largely incapable of dealing with industrial water pollution due to lack of material and informational resources, arbitrary granting of consents to pollute, inadequate regulatory enforcement and penalization, inefficient coordination between government agencies and discouragement or community participation.

It is shown that the region lacks effective solid and hazardous waste management. The disposal practices of five large firms are described. Incineration is discussed in light of controversy over its environmental impacts. It is argued that the planning of a common solid waste disposal facility is predicated on the centralization of collection and disposal, disregarding the extensive informal economy in solid waste recycling.

Small firms in the region lack the resources to deal with issues related to pollution. Large and small firms do not collaborate on pollution abatement. The effectiveness of the state's role in encouraging environmental management within small-scale units is

limited. It is argued that the World Bank sponsored common effluent treatment plant is contentious due to the lack of participation from regional actors, displacement of the resident population, inequities in charges for capital and operating costs, and unclear assignment of responsibility for the plant's operation.

It is argued that though industrial estates result in compounding the impacts of pollution, industrial agglomeration can foster collective action for addressing the problem of regional industrial pollution. Pragmatic solutions for an environmentally sustainable paradigm of regional industrial development are explored.

*The Imaginative Institution: Planning and Institutions in Madrid*  
**Michael Charles Neuman, 1997.**

Madrid's modern urban planning began in 1860 with Castro's expansion plan, which guided growth into the twentieth century. Every twenty years since 1920 Madrid has undergone a planning cycle in which a plan was prepared, adopted by law, and implemented by a new institution. This preparation-adoption-institutionalization sequence, the planning institution's structures, and technical-political processes have persisted – with some exceptions – despite frequent upheavals in society. The planning institution itself played a lead role in maintaining continuity, traumatic history notwithstanding. Why?

First Madrid's planners invented new images for the city and metro region. Images of physical space that were social constructs, the products of planning processes. planners also created social images which posited new identities for the growing metropolis: "Great Madrid", "Madrid Metropolitan Region", and "Great South". Images became cornerstones of the preparation–adoption–institutionalization cycle.

Second, images were tools that coordinated planning and urban policy. In a complex, fragmented institutional milieu in which scores of organized interests competed in overlapping policy arenas, images were a cohesive force around which plans and policies were shaped. Policy negotiation based on images complemented procedural coordination methods. Indeed images provided the basis for coordination.

Third, Madrid's politicians used urban planning as a political strategy to build institutions of planning and governance. this strategy inaugurated a shift in the mode of city planning. Formerly, planning was a process of government acting directly on the territory through master plans and regulations. Now planning is a process of

government acting on other governments, and organized interests, through image-based plan making.

Fourth, planners in Madrid used images to build new institutions. Images began as city or metro designs or as a metaphor capturing a new vision. New political regimes injected their values into the institution in images and metaphors. These images constituted the new institution helped realize the regime's goals.

Each plan or strategy and their images of the future marked a new period of Madrid's planning institution's history. These imagined metropolises were at the heart of the dialectic of institutional evolution: images had the dual capacity to sustain the institution across time and space and to provoke changes to it. In the dynamics of institutional change, images shaped individuals' cognition and the institution's structuration.

Our empirically-based life cycle theory of institutional evolution suggests that the constitutional image sustaining the institution undergoes a change or is replaced by a new image, leading to a new or reformed institution. A life cycle typology institutional transformation is formulated with four variables: type of change, stimulus for change, type of constitutional image, and outcome of the transformation.

Linking the life cycle hypothesis with cognitive theories of image formation and situate their synthesis within a frame of cognition as a means of structuring the institution, we arrive at a new theory of institutional evolution. The constitutional image represents the institution's content that is replicated over space and time via structures and processes. Changing the constitutional image in the minds of the institution's members yields a change in the institution.

*Employment and Housing Development and Their Impacts on Metropolitan Commuting: An Empirical Study of the Development of the Silicon Valley Region of the San Francisco Bay Area*

**Kang-li Wu, 1997.**

This dissertation investigates the relationships between employment and housing development and their impacts on metropolitan commuting in the Silicon Valley region. By employing descriptive analyses and statistical models, it demonstrates that Silicon Valley experienced continued growth in the 1980s, but concurrent with its development, the region also experienced several urban problems, including increasing traffic congestion and decreasing housing affordability.

Using regression models to estimate the spatial distribution of major industrial sectors, my empirical analysis reveals that accessibility to San Francisco and San Jose, local government expenditures, land availability, and the ethnic background of the communities are important determinants of the spatial distribution of employment in the Silicon Valley region. The study also finds the major industrial sectors tend to be located in areas with relatively low housing affordability. In addition, using descriptive statistics, push-pull gravity models, and discrete choice models, the study finds that housing affordability is an important consideration for residential location decisions, especially for low-income non-professional workers in the Silicon Valley region. Given an increasing gap in income distribution accompanying the development of the Silicon Valley region, this dissertation suggests that providing housing assistance to low- and middle-income workers is necessary to solve the housing problems associated with the rapid development of Silicon Valley.

My analysis of changes in commuting patterns reveals an increase in average commute time for Silicon Valley employees associated with rapid employment growth in the region. Fast-growing job centers in the Silicon Valley region are also found to have relatively low vehicle occupancy levels and a high per capita vehicle miles of travel for their employees. My gravity models and logit models also show that housing affordability and land use patterns (e.g., percent of commercial use and housing density) are important factors influencing commuting flow and residential location decisions. Given the importance of housing affordability and the land-use patterns found in this dissertation, future policy should emphasize these factors in managing the growth of the Silicon Valley region.

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