



Retail Therapy

Dr. Orit Rotem Examines the Ecology of Urban Success

Rotem's current research, which is supported by a grant from the Israel Science Foundation, employs "Least Cost Modeling" – a quantitative technique used for making rational decisions about investments in transportation and other urban infrastructure projects by matching resources to the needs and socio-economic profile of a city's various residential populations. In addition, Rotem examines how the fragmentation of what she calls retail "habitats" – discrete physical areas devoted to commerce – render them successful. Or not.

"There are many factors that determine whether a mall will contribute to a city's well-being," Rotem explains. "A long, thin retail area increases points of entry, and boosts interaction with the surrounding areas. The size and the type of stores must be weighed against consumer habits, factors such as car ownership, and the presence of competing businesses. The total number of retail fragments, and the spacing between them, must also be taken into account."

This integrated approach has allowed Rotem to create something that has never existed before: a visual representation a city's existing retail-related resources, population mobility patterns, and accessibility trouble spots.

"We examined the city of Jerusalem and created a color-coded analysis of retail fragmentation, as well as the effect that this fragmentation has on residents' ability to reach the shopping

centers designed for their enjoyment," Rotem explains, adding that this urban "snapshot" reveals to what extent a planned urban area is functioning according to plan. "Now, we're gathering the data necessary to create the same sort of analysis in greater Tel Aviv."

This is not the first time that Rotem has demonstrated how, when planning a city, individual neighborhood "fragments" should be taken into account. "My Masters thesis – which became my first academic publication – criticized the long-held idea that urban density leads to lower energy consumption," Rotem recalls. "I reached my conclusions by not examining the city as a whole, but rather, as the sum of its different – and varying – parts."

Rotem believes that a greater awareness of the principles of urban ecology will someday lead to better planning – as well as a more sustainable, enjoyable living environment for city dwellers.

"Urban success goes beyond the calculation of tax revenue or population growth – it's about promoting human interaction and urban livability," she says. "People say that the 'village square' where townspeople used to gather has changed, or no longer exists. But today, shopping malls are where you see people who are not like you. The goal is to create cities that are worth living in – together."

When urban construction creeps into traditionally green areas and threatens animal migration routes, Israeli environmentalists are quick to raise their voices in protest. But when construction patterns prevent humans from traveling efficiently from point to point inside a city, the silence is deafening. One city dweller who is speaking up is Dr. Orit Rotem, who is applying quantitative tools from biology and environmental ecology to the promotion of people-friendly – and successful – urban design.

"My research focuses on how city planners strike a balance between residential and commercial space, and how the physical placement of retail centers affects residents' quality of life," says Rotem, a lecturer

in the Department of Geography and Environment who trained at the Hebrew University and joined the BIU faculty after completing post-doctoral research at Delft University of the Netherlands. "Like it or not, shopping centers have become an important factor in a city's success, because they draw individuals into the city and provide tax revenue. At the same time, real-estate pressures can lead to the construction of unsuccessful retail centers where businesses fail due to local competition, or because traffic patterns and limited public transportation makes accessibility difficult. Ecology-inspired modeling makes it possible to understand the factors involved, and to plan for better-functioning cities in the future."