This race of warrior women devoted themselves to all activities normally reserved for men, beginning with hunting and war, in which they conducted themselves with exceptional ferocity. Conversely, they despised housework and horticulture. They represented a "world upside down," a common theme in the popular literature and art of the sixteenth century. Here too, Thevet contributed to the tangled web of mythology by which the New World was depicted.

In chapter 5, "Cartographics: An Experience of the World and an Experiment on the World," Lestringant discusses the various cartographic projects of Thevet, noting that "Thevet, like Münster or Postel before him, considered himself as much a cartographer as a geographer." Maps are the part of his work that have been most consistently cited, particularly his famous, but unfortunately no longer extant, map of France. The "use value" of the maps decayed much more slowly than that of his text, which quickly became passé and outmoded. His largest cartographic project, the *Grand Insulaire et Pilotage*, a great pilot book and atlas of the world's islands, was unfinished and unpublished. All that remains of this huge project, modeled on the *isolarios* of Cristoforo Buondelmonti, Bartolommeo dalli Sonetti, Benedetto Bordone, and Tommaso Porcacchi, are two manuscript volumes with eighty-four individual copperplate maps inserted at the corresponding chapter headings. These manuscripts have been preserved in the Bibliothèque Nationale, Paris. Another manuscript, the *Description des plusiers Isles* (1588), also in the Bibliothèque Nationale, is a partial ordering of the *Grand Insulaire* dealing with islands in the North Sea, English Channel, and Atlantic.

The maps are a curious blend of the navigator's art and the cosmographer's science. Ostensibly geometrically projected, and graduated carefully in longitude and latitude, they nevertheless bear rhumb lines conventionally superimposed without regard for cardinal direction as though as to confirm–at least symbolically–the dual value of the maps for both navigator and cosmographer. In one example, illustrated as plate 9 in the book, the island of Newfoundland is depicted back to front, with the Newfoundland mainland to the north and Anticosti Island (proudly named "Isle de Thevet") and Nova Scotia ("partie de la Nouvelle France") to the east.

Thevet's brand of cosmography soon came to an end. The overarching encyclopedic goal was seen to be arrogant and–to the extent that the cosmographer took a "God's-eye view" of the world– even blasphemous. It gave way to a splintering of the sciences–"the partial knowledges of the topographer, the historian, the botanist, the military engineer, and soon also the statistician." What was lost was a suitable general framework into which the *bricolage* of anthropological data–some outright mythological, some empirical–could be placed. Consequently, as Lestringant eloquently states, "it was only in the twentieth century that the cosmogony of the Tupinamba Indians or that of the ancient Mexicans, carefully tucked away in Thevet's *Cosmographie universelle*, would at last find adequate readers, in the persons of Alfred Métraux or Claude Lévi-Strauss . . ." It is here that Thevet can be seen to have been ahead of his time and where his work provides a fertile field for students of early modern history, anthropology, and Renaissance literature. ❏

BOOK REVIEW

Mapping Hidden Dimensions of the Urban Scene.
J. Szegö. Swedish Council for Building Research. Stockholm, Sweden: Ljunghlöfs. 1994. 266 pages. Paper. (ISBN 91-540-5651-9)

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Mapping opens by lifting the reader on a balloon ride at night over an unidentified city. The balloon uses a remote sensing device which monitors the movements of the residents of the city below. The device is sensitive enough to monitor minute levels human activity on the street and in buildings (it is even able to detect the birth of a baby in an ambulance). Fortunately, the device and the balloon ride are fictional; however, the questions Szegö poses are not. Szegö is interested in the daily movements of the city, particularly the daily flows of the city as its residents move from home to work and back home again. His primary questions are: What is the model of the city as it flows from day to evening and back again? How has this model of the city changed over time? How does this model help us plan our communities better? In exploring these questions Szegö's study focuses on the Swedish cities of Malmö and Lund and the surrounding communities.

Szegö models these cities using the concept of structural density (SD). He defines SD as a type of map algebra that adds together the density of residents (dweller density [DD]) and workers (worker density [WD]) in the city to create a three-dimensional model of a city. The usefulness of the model, Szegö suggests, is that

SD expresses the requirements for land, describes the 3-dimensional structure of the city, and indicates the intensity of activity in a city.

Szegö suggests that representing a city in terms of SD provides a clearer picture of urban use during a 24 hour period. He argues that combining WD and DD provides a more complete picture of urban use than either aspect alone would. And, he demonstrates that, by superimposing WD and DD on top of each other, a new previously hidden pattern of the city (SD) is revealed.

Szegö calculates the structural density in his study area over the past few decades in order to examine and illustrate the development of the towns. He presents WD, DD, and SD cross-sections of the cities and plots their growth on three-dimensional graphs. The graphs are effective at showing the patterns of growth in the cities studied.

To demonstrate the usefulness of SD, Szegö relates this concept to three specific applications: influence calculations, city planning, and estimating the built-up volume of Sweden. An influence calculation is the measurement of an internal or external force that acts upon the density (population, worker, or structural) of a city. Szegö's primary example is air pollution, which can be measured and its density mapped. Szegö provides examples that vary pollution concentrations over space and time. When the influence maps are combined with maps of structural density, the map reader sees a new pattern that shows the pollution and the influence it has on the structural density of a city. Szegö creates a number of effective surface models that illustrate these concepts. In his diagrams, a problem like pollution is examined as the spread of pollution concentrations over an area and over the various concentrations of persons. The

mapped effect allows the reader to see the levels of pollution and their effects on the human population. Szegö suggests that planners will want to use this information to increase the population's exposure to positive influences and reduce exposure to negative influences.

Pollution is an areal problem, but Szegö reminds the reader that other influences may be in the form of a point, line, or area which may be mobile or stationary. Szegö explores the possibilities of using map algebra in a number of contexts to visualize a variety of problems such pollution, geologic phenomena, transportation networks, and nuclear disaster.

Szegö discusses how the planning of the expansion Lund and the surrounding communities were completed by estimating and planning the area required for each person. He also describes a method for the estimating the built-up volume of Sweden to determine heating requirements for the country.

Mapping is as much a visual book as it is a written one. At least one-third of the book is composed of maps and graphs. Most of these are well done, but many are difficult to read because they represent the abstractions he presents in the text. Some of the maps need better geographical reference points. For example, sometimes the reader needs to return to one of the reference maps to understand what a particular map means. In addition, some of the color plates are misregistered (the author encloses an apology for these). The color density maps are difficult to read because the colors chosen do not follow a progression which would imply increasing density. The map reader is forced to return to the legend each time to determine the density of a region.

The work is a little antiseptic and avoids controversy. The balloon ride hints that the author may begin to analyze data which

may be sensitive or semi-private. He mentions that the method would apply to nuclear disaster, but does not discuss this possibility extensively. The book avoids the analysis of population data other than density and the physical built volume, but the author suggests that examining "the web of life" is a valuable pursuit. Those who use population data (census, etc.) should be able to use and expand on Szegö's work.

In short, despite the book's flaws, Szegö's concept of structural density gives us another way of looking population density. Another value of this work is that it gives students and researchers a sense of what map algebra can accomplish in practical applications. Szegö's examples provide a starting point from which others can locate their own data and begin to imagine it in creative ways by combining it with other data about the human and physical environment. This work reminds us that our new computer tools allow us to map many things easily, including moving away from traditional 2-D maps and into the world of 3-D maps. ❑