

to be considered more thoroughly than the direct needs of people themselves. Serving the machines indirectly serves humans.

The concept of functionalism that emerges from this line of thought is much more complex than that of the Modernists. It is also clear that defining the functions that an urban design complex or set of urban design policies is to achieve is a *wicked* problem not a *simple* one. A wicked problem is one in which it is impossible to know, given the limits of human rationality and comprehensiveness of knowledge, whether one has defined the problem wholly or not (Rittel 1971, 1984; Bazjanac 1974; Rittel and Webber 1984). Almost certainly it has not been completely defined.

Given the limits of human knowledge and rationality, urban design problems can only be partially defined (see Cartwright 1973). The functions to be served can only be partially defined; the definition is fuller than in the past. *Function* has been thought of in simple terms—in terms of a limited and completely defined set of variables. Kidding ourselves by having a simple model of the human being or by using ourselves as the model of the human being for urban designing is not helpful in attaining rich and satisfying urban designs for the broad range of people likely to use the places we design.

Human needs as the basis for concepts of functionalism

Listing all the functions that are to occur in a proposed development by type of activity is one way of organizing one's thoughts for urban designing (see Chapin and Kaiser 1979). It is a very pragmatic way of considering urban design problems and is the basis for the planning and design guidebooks that cut through the process of dealing with recurring problems by presenting design standards. The information in these books (e.g., DeChiara and Koppelman 1975, 1978) enables one to ascertain the spatial needs of many activities, and the configuration of the built environment required to make them possible. These guides enable urban designers to make decisions on matters with which they are unfamiliar and on which they have neither time nor need to do the basic research. The research has already been done. These books deal effectively with such fundamental functional requirements as the turning radii of various automobiles but not effectively with the philosophical issues of what goals should be established. They are not set within an intellectual framework for asking

serious questions about life and human problems and desires. Christopher Alexander and his colleagues recognized these limitations in the design of their pattern language (1977), which outlines not only the patterns of solutions but the problems they solve as well as the empirical and/or other evidence for the connection between problem and solution. The language, however, prematurely assumes that nature of a good world.

If the built environment is to serve human purposes one must have a good model of human needs to use as the basis for asking questions about what should be done—what functions should be served—in a specific circumstance (see Krupat 1985). The Rationalists among Modernists certainly recognized that a model of human needs was necessary to guide their thinking. For instance, in order to focus his thinking about the functions of architecture, Hannes Meyer used such a model (Meyer 1928; Wingler 1969). Meyer, who headed the Bauhaus for a short period in the 1930s until his radical political stance led to his replacement by the more politically conservative Mies van der Rohe, was particularly concerned with improving the residential habitat of people. Meyer identified the following human needs as the basis for design:

- sex life
- sleeping habits
- gardening
- personal hygiene
- protection against the weather
- hygiene in the home
- car maintenance
- cooking
- heating
- insulation
- service

Housing design, in this model, is reduced to the provision of shelter and the provision for a number of activities.

Le Corbusier's Radiant City is based on the human need for light, sunlight, and access to clean open air as well as the provision of a number of services, such as shopping, child care, and recreation (Le Corbusier 1934). Important as these functions are, his is largely an *organismic* model of the human being. Issues of territoriality, privacy, security, social action, and symbolic aesthetics, for example, fall outside the scope of such a model. Le Corbusier's design for the Unité d'habitation in Marseilles (Le Corbusier 1953), which came much later in his intellectual development, is