We contend that our linear programing model is just such a planning tool. It is directly useful as a rational, disciplined merchanism for detailed planning in terms of empirical data and requirements. It has immense indirect value because it provides an ideal junction through which general theory may be used to shape detailed and specific plans. The linkage between theories and plans is through the parameters of the linear programing model.

To expand on this point and relate it specifically to the analysis in this paper we shall sketch juxtaposed, stereotyped "before and after" views of the general planning process as altered by the use of linear programing. Informal planning methods, however competently and effectively employed, typically do not separate questions of fact, value, and logical implication. For the outsider, at least, it is frequently difficult to distinguish analysis and intuition, objective and subjective information, personal and general value judgments. This does not mean that informal planning is necessarily chaotic or irrational; we only contend that it is generally incomprehensible to outsiders and only partially understood by many insiders. Moreover, planning efforts on problems that involve considerable intrinsic complication are frequently accomplished by circumscribing the problem to a point where attention may be confined to a small manageable subset of the potentially relevant variables and relations.

Programing methods lead to several important changes as the result of a new division of labor. Analytical manipulations are relegated to a computer-executed algorithm. This greatly increases the planners' ability to deal with large and complex problems. Freed from the burden of analysis, the planners' judgment is focused on specification of the parameters for the programing model. Thus, one large, complex, and somewhat ill-defined problem is transformed into a list of individual, comparatively precise questions. Answering these questions, by providing specific values for the parameters of the programing model, supplies the essential information and judgments needed to specify a plan.

The simplification of the planning problem and the shift of attention to parameter specification should have two important effects. A more efficient allocation of the planners' effort in estimating the important unknowns in the problem should result. A more portentous result is that application of general theories (economic, statistical, sociological, etc.) to the problems of parameter specification is quite immediate, while the application of such theory in informal planning procedures is much less direct and obvious. Thus, by adopting programing methods, the planners achieve significant gains in potential access to an immense reservoir of useful knowledge.

The parameters of the linear program model in section IV require demographic and economic predictions, relative valuations on providing various cohorts smaller benefits than the interest-weighted value of their contributions, relative valuations on providing various cohorts a less than socially adequate retirement benefit, and relative valuations on increases in the future tax rate. Problems of this sort can be and have been dealt with by social scientists. It is particularly important to note that theory from the social sciences may not completely determine a parameter but will frequently limit the range of a param-