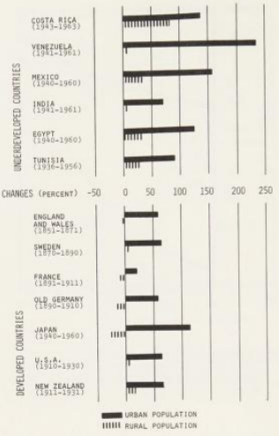

Figure 2-48 Patterns of urbanization in industrialized and nonindustrialized areas
Source: From "The Urbanization of the Human Population" by Kingsley Davis. Copyright © 1965 by Scientific American, Inc. All rights reserved.

The numerical relationship we chose to generate the fraction of population urban FPU as a function of total population POP is shown in Figure 2-49 and is expressed by the following equations:

```
FPU.K=TABHL(FPUT,POP.K,0,1E9,2E9)                    26, A
FPUT=0/.2/.4/.5/.58/.65/.72/.78/.80                  26.1, T
     FPU    - FRACTION OF POPULATION URBAN
              (DIMENSIONLESS)
     TABHL  - A FUNCTION WITH VALUES SPECIFIED BY A TABLE
     FPUT   - FPU TABLE
     POP    - POPULATION (PERSONS)
```


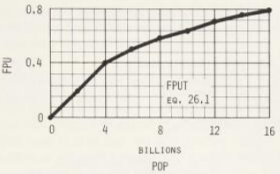

Figure 2-49 Fraction of population urban table

Figure 2-50 shows the same relationship, including United Nations estimates and projections for total and urban populations from 1950 to 2000.

The fraction of population urban FPU indicates the proportion of the human population that is exposed to the effects of crowding on health. The magnitude of these effects depends, directly or indirectly, on the level of industrialization. We assumed that this dependence is linear, with a variable slope, as shown in Figure 2-51. The slope, called the crowding multiplier from industrialization CMI, is a

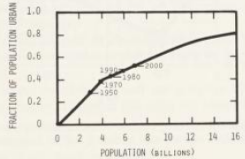

Figure 2-50 Fraction of population urban versus population, historical and estimated
Source: U.N. 1970, p. 24.

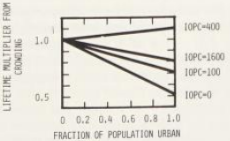

Figure 2-51 Lifetime multiplier from crowding versus fraction of population urban