**Categories**

Sociology must consider agents in collections. We will introduce here a way of describing such collections, the most general of which we shall call ‘categories’. Later we shall be able to adapt the method to describe special kinds of category.

***Categories***

Define a Category Characterization (CX) as a set of properties that may belong to agents. We write a CX as ** = {*P1*, *P2*, …, *Pn*}.

* For *x* an agent, write **(*x*) for (*Pi***)[*Pix*]

The set of agents *X* = {*x*: **(*x*)} is the Category characterized by **.

* Let *X* be the category characterized by *1*, *2* a CX such that *1*  *2*, *Y* the category characterized by *2*; then *Y* *X* is a Subcategory of *X*.

Let *X* be a set of agents and ** a CX. *X* is a Category Set characterized by **iff (*x**X*)**(*x*)

* Write **(*X*)
* There may be many category sets identically characterized. The point of talking about a category set is to make explicit the assumption that there is a set of properties common to the set of agents in question. What distinguishes that set of agents from another set with the same category characterization may be some set of properties that do not occur in every category characterization. ‘Rational bipeds,’ for example, characterizes many category sets, while ‘rational bipeds residing at this address’ has fewer possibilities, and ‘rational bipeds living here called by my name’ has just one.
* Let *X* be a category set characterized by the CX **, *Y* a category set characterized by **, and
*Y* *X*; then *Y* is a Category Subset of *X*.
* Let *X* be a category set characterized by the CX *1*, *2* a CX such that *1*  *2*, *Y* a category set characterized by *2*, and *Y* *X*; then *Y* is a Subcategory Subset of *X*.
* Note that any subcategory subset is also a category subset