the customer, preferences, attitudes, and many clues that help you to understand why the
customer did what he did. Some static characteristics are certainly related to the attrition
decision, but they tell only a part of the story. To see the other half of the story, we must
add variables that express this development of the decision to leave the company. This is
a very organic view of customer behavior similar to the way biologists view the comple-
mentary effects of intrinsic (organism-based) and extrinsic (environmental) influences on
organism response. This viewpoint represents a dramatic shift in mindset from the tradi-
tional way that many companies view their data.

How Can Human Nature as Viewed Through Plato Help Us in Modeling
Customer Response?

If human nature is a common basis for human action, then to predict the action of cus-
tomer response, we must model human nature. We must focus on variables available to
us in our databases that reflect some aspect of human nature that leads to the response.
These variables might include

- Historical customer care data
- Historical use of company services
- Historical billing revenue data
- Historical contract data
- Selected demographic data

How Can We Reorganize Our Data to Reflect Motives and Attitudes?

The key to successful customer response modeling is to associate with each customer a
historical time-series of fields (selected from those listed in the preceding section) that in
some way reflect motives and attitudes that caused the customer decision. These motives
and attitudes flowing out of our human nature are the reality behind the “shadows” of
the action. To see the deeper reality of what causes these shadows, we must turn around,
so to speak (like those in Plato’s cave), and look at the data in a different way. We must
abstract information from the time-series of customer response in a form that is related to
the customer action to be modeled. These abstractions are called temporal abstractions.

The use of temporal abstractions has attracted widespread interest in medical and phar-
maceutical informatics for predicting patient responses (Kahn et al., 1991; Haimowitz and
Kohane, 1996; Kattan et al., 1997). Temporal abstractions are one type of data abstraction
used to map data elements to some context environment. Data abstractions can be classified
into four groups (Lavrac et al., 2000):

- **Qualitative abstraction**: A numeric expression is mapped to a qualitative expression. For
  example, in an analysis of teenage customer demand, compared to that of others,
  customers with ages between 13 and 19 could be abstracted as a value of 1 to a variable
  “teenager,” while others are abstracted to a value of 0.