2.4.3 Property Hierarchies

We saw that hierarchical relationships between classes can be defined. The same can be done for properties. For example, "rents" is a *subproperty* of "resides at." If a person p rents a residential unit r, then p also resides at r. The converse is not necessarily true. For example, p may be a child living with a family and not paying rent or a person may be just visiting.

In general, if some property P is a subproperty of Q if $Q(x, y)$ whenever $P(x, y)$.

2.4.4 RDF versus RDFS Layers

As a final point, we illustrate the different layers involved in RDF and RDFS using a simple example. Consider the RDF statement

> Jeff Meyer rents the Baron Way Apartment.

The schema for this statement may contain classes such as person, apartments, houses, units, and properties such as rents, resides at, or address. Figure 2.6 illustrates the layers of RDF and RDF Schema for this example. In this figure, blocks are properties, bubbles above the dashed line are classes, and bubbles below the dashed line are instances.

The schema in figure 2.6 is itself written in a formal language, RDF Schema, that can express its ingredients: subClassOf, Class, Property, subPropertyOf, Resource, and so on. Next we describe the language of RDF Schema in more detail.

2.5 RDF Schema: The Language

RDF Schema provides modeling primitives for expressing the information described in section 2.5. One decision that must be made is what formal language to use. It should not be surprising that RDF itself will be used: the modeling primitives of RDF Schema are defined using resources and properties. This choice can be justified by looking