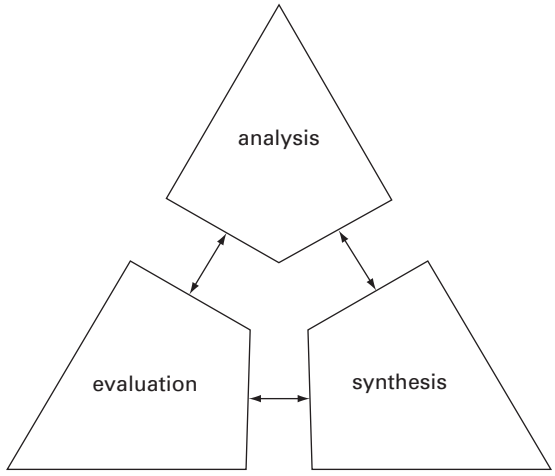

Figure 3.4
A more honest graphical representation of the design process

evaluation linked in an iterative cycle will no more enable you to design than knowing the movements of breaststroke will prevent you from sinking in a swimming pool. You will just have to put it all together for yourself.

Are these maps accurate?

We could continue to explore maps of the design process since a considerable number have been developed. Maps of the design process similar to those already discussed for architecture have been proposed for the engineering design process (Asimow 1962) and (Rosenstein, Rathbone and Schneerer 1964), the industrial design process (Archer 1969) and, even, town planning (Levin 1966). These rather abstract maps from such varying fields of design show a considerable degree of agreement, which suggests that perhaps Sydney Gregory was right all along, perhaps the design process is the same in all fields. Well unfortunately none of the writers quoted here offer any evidence that designers actually follow their maps, so we need to be cautious.

These maps, then, tend to be both theoretical and prescriptive. They seem to have been derived more by thinking about design than by experimentally observing it, and characteristically they are logical and systematic. There is a danger with this approach, since writers on design methodology do not necessarily always make the best designers. It seems reasonable to suppose that our best designers are more likely to spend their time designing than

writing about methodology. If this is true then it would be much more interesting to know how very good designers actually work than to know what a design methodologist thinks they should do! One compensating factor here is that most academic writers are also involved in teaching design, and thus have many years of experience of observing their students. However, that also begs the question as to whether students might design differently to the way experienced practitioners work.

Some empirical studies

All these questions suggest that some hard evidence is required rather than just relying on logical thought. In recent years we have indeed begun to study design in a more organised and scientific way. Studies in which designers are put under the microscope have been, and continue to be, conducted and from this research we are gradually learning something of the subtleties of design as it is actually practised. We next examine some of this work, but before we begin a word of caution is necessary. Conducting empirical work on the design process is notoriously difficult. The design process, by definition, takes place inside our heads. True we may see designers drawing while they think, but their drawings may not always reveal the whole of their thought process. That thought process is not always one which the designers themselves would be used to analysing and making explicit. There are many experimental techniques we can use to overcome these problems, but any one experiment on the nature of the design process is likely to be flawed in some way. By putting all this work together, however, a general picture of the way designers think is gradually emerging.

A laboratory study of design students

Some years ago I was interested in the general question of cognitive style in the design process and how it was acquired. As first a student of architecture and then a student of psychology I began to feel that my fellow students shared some common ways of thinking but that the architects seemed to think in distinctly different ways to the psychologists. Two very specific questions then developed out of this general interest. Were these differences real or not and, if real, did they reflect the different nature of people