young parent, the business person, each has his or her own way of seeing, understanding and reacting to cues presented by the environment. It is those aspects of the perceptual worlds shared or held in common by groups which are of interest to the urban designer.

The communities inhabiting towns and cities are complex heterogeneous groups made up of diverse subcultures with differing values and aspirations. The understanding of an alien culture or subculture poses great difficulties. In our understanding of the world around us, we all start from our own cultural framework modified by a personal frame of reference. Such an analytical framework is deeply embedded in culture, and while it is necessary for structuring thought it can, in the process, limit understanding. Culture can be viewed as a filter, acting between the outside environment and the receiver.

While 'perceptual worlds' may differ, the process of perception and the formulation of a frame of reference are common. The stimuli which affect the senses of sight, hearing, touch, taste and smell are only a part of the energy emitted by the environment. There are limits to the ability of our senses to acquire information. For example, noises which are too high or too low in pitch are beyond the *threshold* of hearing. These thresholds can, however, change with experience: we filter background noise in a library so that we can work, or we do not notice the ticking of the clock. Our senses respond not simply to energy but to changes in energy levels. Once stimuli become familiar or non-threatening they stop being sensed. In the visual world we can become overloaded with stimuli in which case the senses cannot cope when editing or *perceptual selectivity* takes place. Information not required is filtered out. When this happens the attention as a general rule is drawn to stimuli that are:

large rather than *small*
bright rather than *dull*
loud rather than *quiet*
strong rather than *weak*
standing out from the surroundings rather than *merged with their surroundings*
moving rather than *stationary*
repeated (but not repetitive) rather than *one off*
(Buchanan and Huczynski, 1985)

Designers of advertisements, window display and road signs use this knowledge to attract and hold people's attention. They are important criteria for the urban designer in the consideration of decoration and ornament.

While the large will normally attract more attention than the small, the bright more than the dull, this general rule is frequently broken because these features or qualities do not appear on their own. A given stimulus will possess a *pattern* of features and it is to this pattern that our sensory faculties respond. The way these patterns are perceived also depends on the context. The setting for a precious stone is important for the full appreciation of the gem. So too the setting for a fine sculpture affects the way in which it is perceived. If set against a background of confusing shapes, colours and textures, even the greatest sculpture or fountain would be diminished: by contrast, however, a prestigious site adds importance and significance to the work.

Most of our perceiving can be described as categorization or classification. Classification systems for perception are complex. Objects may be classified as buildings, cars, etc. but those classifications are further refined so that buildings are further organized and structured in a number of different ways - by height, by use or by style for example. These categories or classifications are called *concepts*. The mental image formed for each concept enables the recognition of similar objects and their allocation within the individual's perceptual world. It is the image of the city which is of interest to the study of urban design; this text being particularly concerned with the strengthening of that image through ornament and decoration.

The retina of the human eye receives light on a two dimensional surface but we do not see simple mosaics of light and colour. For those with normal vision the world we see is organized into a three dimensional place. Incoming stimuli are organized and patterned in systematic and meaningful ways. There are a number of operations by which perceptual organization works. The eye, for example, tends to group together or classify stimuli that are physically close to each other, an operation called the *proximity principle* (Figure 1.8). The eye also tends to group together or classify stimuli that are similar to each other, an operation called the *similarity principle* (Figure 1.9). It is both of these tendencies which form the foundation of rhythm so apparent in the art of decoration.

There have been many experiments carried out to investigate the perceptual process of adults. It has been found that viewers are initially conscious that there is an object, something that stands out from and is different from the general background of the field of view. Next the object begins to assume a shape; first the outline is perceived, then the main interior features, then the colour and brightness. Then begins the process of classification and identification. There is a general tendency to perceive any shape with the maximum of simplicity, regularity and symmetry. If an observer is shown a shape which is almost circular, but slightly elliptical, he or she will categorize it and think of it as a circle. If shown an object which is slightly asymmetrical, the lack of symmetry will be overlooked and the shape simplified in the mind (Koffka, 1935). Gaps in incomplete or ambiguous patterns of stimuli are filled in ways which make them meaningful. This is called the *closure principle*: that is, we 'close' partial and confusing information to make it both intelligible and useful.

The forms perceived are in part determined by the actual physical shapes of objects in the field of view. There is, however, a tendency to modify the formal qualities of what is perceived, particularly if the information received is meaningless, that is,

1.8

1.9

comprising forms which do not represent anything else. Such shapeless shapes tend to be perceived in as 'good' a form as possible; the 'good' form being striking, easy to perceive and remember. Qualities of 'goodness' in formal terms are simplicity, regularity, symmetry and continuity (Vernon, 1962). Decoration can be used to enhance the primary shapes in a design by emphasizing the outline of an object, so clarifying its form against the general background. The centre of an object can be emphasized with decoration, so intensifying the symmetry of the figure. Some great art clearly sets out to confuse and confound the eye by decomposing and eliding forms. It is suggested here, however, that the main objective of urban design, is to reinforce the understanding of the environment by strengthening the image of the city: the opportunities for confusing and confounding the observer using decorative, or any other techniques, in the field of urban design should be strictly limited.

The process of perception is responsible for selecting stimuli and arranging them into meaningful patterns. This process is influenced by the internal factors of learning, motivation and personality. These internal factors give rise to expectations making the individual ready to respond to some stimuli and not ready to respond to other stimuli. The framework of response to sets of stimuli is called the *perceptual set* (Buchanan and Huczynski, 1985). Each individual has a personal perceptual set and with it a personal and unique vision of what is out there in the environment. To some extent we have our own *perceptual world*. Different people can look at the same thing and perceive it in

Figure 1.8 Proximity principle
Figure 1.9 Similarity principle