

The product designer Richard Seymour considers good design results from 'the unexpectedly relevant solution not wackiness parading as originality' (Lawson 1994a). The famous architect, Robert Venturi has said, for a designer, 'it is better to be good than to be original' (Lawson 1994a). Hertzberger, Seymour and Venturi all seem to be cautioning us against the recent trend to value the purely original-looking design without testing it to see if it really can fulfil the demands placed on it.

So we are beginning to get a picture of the creative process in design. It probably follows the phases of creativity outlined earlier, it involves periods of very intense, fast working rather like juggling, and the relating of many, often incompatible or at least conflicting demands. We have seen at the very beginning of this book how good design is often a matter of integration. George Sturt's cartwheels relied on the single idea of dishing to solve many totally different problems. This idea however is rarely easily found and often comes in a moment of 'illumination' after a long struggle.

It is hardly surprising then, that good designers tend to be at ease with the lack of resolution of their ideas for most of the design process. Things often only come together late on towards the end of the process. Those who prefer a more ordered and certain world may find themselves uncomfortable in the creative three-dimensional design fields. Characteristically designers seem to cope with this lack of resolution in two main ways: by the generation of alternatives and by using 'parallel lines of thought'.

Some designers seem to work deliberately to generate a series of alternative solutions early on, followed by a progressive refinement, testing and selection process. Others prefer to work on a single idea but accept that it may undergo revolution as well as evolution. Either way round, simply waiting for one idea to appear seems unlikely to prove very successful. It often seems to be the case that our thought processes have a will of their own. Once we have had an idea or started to look at a problem in a particular way it requires real effort to change direction. Creative thinkers in general and designers in particular seem to have the ability to change the direction of their thinking thus generating more ideas. We will discuss techniques for doing this as part of the design process in Chapter 12.

It is also clear that good designers characteristically have incomplete and possibly conflicting ideas as a matter of course, and allow these ideas to coexist without attempting to resolve them too early

in the process. These 'parallel lines of thought' will also be discussed in detail in Chapter 12.

Education for creativity

In design at least, we have seen that there are a number of skills which experienced designers seem to have acquired that assist in releasing their creative potential. True, we have also seen that designers judged to be creative seem to share some common personality characteristics. The evidence is thus confusing, as it often is in psychology. Are we creative because we are born that way, or are we creative because we have learnt to be? We simply do not have a reliable answer to such a question, which in any case is not really the business of this book. Suffice it to say here that there is enough evidence that we can improve our creativity to warrant careful attention to the educational system through which designers pass.

In particular an issue here is the extent to which we should make design students aware of previous design work. One school of thought may suggest that students should be allowed a free and open-ended regime in which free expression is encouraged. Another might argue that designers have to solve real-world problems and they should pay attention to the acquisition of knowledge and experience.

Certainly there is much evidence on the side of the open, free and expressive school of thought. Many studies have, for example, demonstrated the mechanising effect of experience. Quite simply, once we have seen something done in a certain way, or done it ourselves, this experience tends to reinforce the idea in our minds and may block out other alternatives. In one of the most dramatic demonstrations of this phenomenon subjects were asked to perform simple arithmetic by pouring water between three jugs of different capacities. For each problem the actual size of the three jugs was varied, but for several problems in sequence the solution remained essentially the same. Later, a problem with an alternative and much simpler solution was presented, the subjects typically failed to notice and continued to use the more complex answer (Luchins and Luchins 1950).

An engineering lecturer once told me that he enjoyed teaching undergraduates because 'they didn't know certain things were difficult'. Consequently he found students occasionally came up with