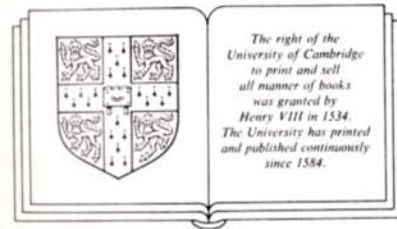


# The nature and art of workmanship

David Pye

*Formerly Professor of Furniture Design  
Royal College of Art, London*



Cambridge University Press

Cambridge

London New York New Rochelle

Melbourne Sydney

## The workmanship of risk and the workmanship of certainty

Workmanship of the better sort is called, in an honorific way, craftsmanship. Nobody, however, is prepared to say where craftsmanship ends and ordinary manufacture begins. It is impossible to find a generally satisfactory definition for it in face of all the strange shibboleths and prejudices about it which are acrimoniously maintained. It is a word to start an argument with.

There are people who say they would like to see the last of craftsmanship because, as they conceive of it, it is essentially backward-looking and opposed to the new technology which the world must now depend on. For these people craftsmanship is at best an affair of hobbies in garden sheds; just as for them art is an affair of things in galleries. There are many people who see craftsmanship as the source of a valuable ingredient of civilization. There are also people who tend to believe that craftsmanship has a deep spiritual value of a somewhat mystical kind.

If I must ascribe a meaning to the word craftsmanship, I shall say as a first approximation that it means simply workmanship using any kind of technique or apparatus, in which the quality of the result is not predetermined, but depends on the judgement, dexterity and care which the maker exercises as he works. The essential idea is that the quality of the result is continually at risk during the process of making; and so I shall call this kind of workmanship 'The workmanship of risk': an uncouth phrase, but at least descriptive.

It may be mentioned in passing that in workmanship the care counts for more than the judgement and dexterity; though care may well become habitual and unconscious.

With the workmanship of risk we may contrast the workmanship of certainty, always to be found in quantity production, and found in its pure state in full automation. In workmanship of this sort the quality of the result is exactly predetermined before a single saleable thing is made. In less devel-

oped forms of it the result of each operation done during production is predetermined.

The workmanship of certainty has been in occasional use in undeveloped and embryonic forms since the Middle Ages and I should suppose from much earlier times, but all the works of men which have been most admired since the beginning of history have been made by the workmanship of risk, the last three or four generations only excepted. The techniques to which the workmanship of certainty can be economically applied are not nearly so diverse as those used by the workmanship of risk. It is certain that when the workmanship of certainty remakes our whole environment, as it is bound now to do, it will also change the visible quality of it. In some of the following chapters I shall discuss what may be lost and gained.

The most typical and familiar example of the workmanship of risk is writing with a pen, and of the workmanship of certainty, modern printing. The first thing to be observed about printing, or any other representative example of the workmanship of certainty, is that it originally involves more of judgement, dexterity, and care than writing does, not less: for the type had to be carved out of metal by hand in the first instance before any could be cast; and the compositor of all people has to work carefully: and so on. But all this judgement, dexterity and care has been concentrated and stored up before the actual printing starts. Once it does start, the stored-up capital is drawn on and the newspapers come pouring out in an absolutely predetermined form with no possibility of variation between them, by virtue of the exacting work put in beforehand in making and preparing the plant which does the work: and making not only the plant but the tools, patterns, prototypes and jigs which enabled the plant to be built, and all of which had to be made by the workmanship of risk.

Typewriting represents an intermediate form of workmanship, that of limited risk. You can spoil the page in innumerable ways, but the N's will never look like U's, and, however ugly the typing, it will almost necessarily be legible. All workmen using the workmanship of risk are constantly devising ways to limit the risk by using such things as jigs and templates. If you want to draw a straight line with your pen, you do not go at it freehand, but use a ruler, that is to say, a jig. There is still a risk of blots and kinks, but less risk. You could even do your writing with a stencil, a more exacting jig, but it would be slow.

Speed in production is usually the purpose of the workmanship of certainty but it is not always. Machine tools, which, once set up, perform one operation, such for instance as cutting a slot, in an absolutely predetermined form, are often used simply for the sake of accuracy, and not at all to save time or labour. Thus in the course of doing a job by the workmanship of risk a workman will be working freehand with a hand tool at one moment and will resort to a machine tool a few minutes later.

In fact the workmanship of risk in most trades is hardly ever seen, and has hardly ever been known, in a pure form, considering the ancient use of templates, jigs, machines and other shape-determining systems,\* which reduce risk. Yet in principle the distinction between the two different kinds of workmanship is clear and turns on the question: 'is the result predetermined and unalterable once production begins?'

Bolts can be made by an automatic machine which when fed with blanks repeatedly performs a set sequence of operations and turns out hundreds of finished bolts without anyone even having to look at it. In full automation much the same can be said of more complex products, substituting the words 'automated factory' for 'automatic machine'. But the workmanship of certainty is still often applied in a less developed form where the product is made by a planned sequence of operations, each of which has to be started and stopped by the operative, but with the result of each one predetermined and outside his control. There are also hybrid forms of production where some of the operations have predetermined results and some are performed by the workmanship of risk. The craft-based industries, so called, work like this.

Yet it is not difficult to decide which category any given piece of work falls into. An operative, applying the workmanship of certainty, cannot spoil the job. A workman using the workmanship of risk assisted by no matter what machine-tools and jigs, can do so at almost any minute. That is the essential difference. The risk is real.

But there is much more in workmanship than not spoiling the job, just as there is more in music than playing the right notes.

There is something about the workmanship of risk, or its results; or

\* Shape-determining systems are discussed in my book *The Nature and Aesthetics of Design* (Barrie and Jenkins, 1978), especially in the chapters on Techniques and on 'Useless work'.

something associated with it; which has been long and widely valued. What is it, and how can it be continued? That is one of the principal questions which I hope this book may answer: and answer factually rather than with a series of emotive noises such as protagonists of craftsmanship have too often made instead of answering it.

It is obvious that the workmanship of risk is not always or necessarily valuable. In many contexts it is an utter waste of time. It can produce things of the worst imaginable quality. It is often expensive. From time to time it had doubtless been practised effectively by people of the utmost depravity.

It is equally obvious that not all of it is in jeopardy: for the whole range of modern technics is based on it. Nothing can be made in quantity unless tools, jigs, and prototypes, both of the product and the plant to produce it, have been made first and made singly.

It is fairly certain that the workmanship of risk will seldom or never again be used for producing things in quantity as distinct from making the apparatus for doing so; the apparatus which predetermines the quality of the product. But it is just as certain that a few things will continue to be specially made simply because people will continue to demand individuality in their possessions and will not be content with standardization everywhere. The danger is not that the workmanship of risk will die out altogether but rather that, from want of theory, and thence lack of standards, its possibilities will be neglected and inferior forms of it will be taken for granted and accepted.

There was once a time when the workmanship of certainty, in the form colloquially called 'mass-production', generally made things of worse quality than the best that could be done by the workmanship of risk—colloquially called 'hand-made'. That is far from true now. The workmanship of a standard bolt or nut, or a glass or polythene bottle, a tobacco-tin or an electric-light bulb, is as good as it could possibly be. The workmanship of risk has no exclusive prerogative of quality. What it has exclusively is an immensely various range of qualities, without which at its command the art of design becomes arid and impoverished.

A fair measure of the aesthetic richness, delicacy and subtlety of the workmanship of risk, as against that of certainty, is given by comparing the contents of, say, the British Museum with those of a good department store.

Nearly everything in the Museum has been made by the workmanship of risk, most things in the store by the workmanship of certainty. Yet if the two were compared in respect of the ingenuity and variety of the devices represented in them the Museum would seem infantile. At the present moment we are more fond of the ingenuity than the qualities. But without losing the ingenuity we could, in places, still have the qualities if we really wanted them.

because it was rare, difficult, and exceptional, that situation is now completely reversed, and we might well try to make ourselves an environment which had more concord with our natural one.

(3) Good workmanship, whether free or regulated, produces and exploits the quality I have called diversity, and by means of it makes an extension of aesthetic experience beyond the domain controlled by design, down to the smallest scale of formal elements which the eye can distinguish at the shortest range. Diversity on the small scale is particularly delightful in regulated workmanship because there it maintains a kind of pleasantly disrespectful opposition to the regulation and precision of the piece seen in the large: as when, for instance, the wild figure of the wood sets off the precision of the cabinet-work. Diversity imports into our man-made environment something which is akin to the natural environment we have abandoned; and something which begins to tell, moreover, at those short distances at which we most often see the things we use.

What changes can one foresee? Is there for instance any reason for the productive part of the workmanship of risk to continue doing highly regulated work? Why should it, when the workmanship of certainty is capable of higher regulation than ever was seen? Why, in particular, should it, considering that high regulation by the workmanship of risk is usually very expensive even where the best and most ingenious use is made of machine tools? Imagination boggles at the thought of what it might cost to build any standard family car from scratch by the workmanship of risk. How many weeks would it take to make the carburettor, for instance, or one of the head-lamps?

It should continue simply because the workmanship of risk in its highly regulated forms can produce a range of specific aesthetic qualities which the workmanship of certainty, always ruled by price, will never achieve. The British Museum, or any other like it, gives convincing evidence of that. And one need not copy the past in order to perpetuate those qualities. People still use oil-paint, but they do not imitate Titian.

There is of course no danger that high regulation will die out in the preparatory branch of the workmanship of risk. Beyond that, the prevalence and immense capability of the workmanship of certainty will ensure that highly regulated workmanship continues and increases. Indeed there is

## The aesthetic importance of workmanship, and its future

In the foregoing chapters it has been suggested that the importance of good workmanship in its aesthetic aspect rests on three things:

(1) Highly regulated workmanship shows us a thing done in style: an evident intention achieved with evident success. It is anti-sordid, anti-squalid and contributes to our morale.

To do a thing in style is to set oneself standards of behaviour in the belief that the manner of doing anything has a certain aesthetic importance of its own independent of the importance of what is done. This belief is the basis of ordinary decent behaviour according to the customs of any society. It is the principle on which one keeps one's house and one's person clean and neat, and so on. Regulation which, in general, the workmanship of risk can only achieve by taking a good deal of avoidable trouble, used undoubtedly to be a part of this idea of behaviour.

With the workmanship of certainty it is becoming easier to achieve high regulation and less determination is needed to do it; but still the quality of the result is clear evidence of competence and assurance, and it is an ingredient of civilization to be continually faced with that evidence, even if it is taken for granted and goes unremarked.

(2) Free workmanship shows that, while design is a matter of imposing order on things, the intended results of design can often be achieved perfectly well without the workman being denied spontaneity and unstudied improvisation. This perhaps has special importance because our natural environment, and all naturally formed or grown things, show a similar spontaneity and individuality on a basis of order and uniformity. This characteristic aspect of nature, order permeated by individuality, was the aesthetic broth in which the human sensibility grew. Whereas in the early days of civilization highly regulated workmanship seemed admirable