

**Alexander Calder, "À Propos of Measuring a Mobile," manuscript, Calder Foundation archives, 1943.**

It was more or less directly as a result of my visit to Piet Mondrian's studio in 1930, and the sight of all his rectangles of color deployed on the wall, that my first work in the abstract was based on the concept of stellar relationships. Since then there have been variations from this theme, but I always seem to come back to it, in some form or other. For though the lightness of a pierced or serrated solid or surface is extremely interesting the still greater lack of weight of deployed nuclei is much more so.

I say nuclei, for to me whatever sphere, or other form, I use in these constructions does not necessarily mean a body of that size, shape or color, but may mean a more minute system of bodies, an atmospheric condition, or even a void. I.E. the idea that one can compose any things of which he can conceive.

To me the most important thing in composition is disparity. Thus black and white are the strong colors, with a spot of red to mark the other corner of a triangle which is by no means equilateral, isosceles, or right. To vary this still further use yellow, then, later, blue. Anything suggestive of symmetry is decidedly undesirable, except possibly where an approximate symmetry is used in a detail to enhance the inequality with the general scheme.

The admission of approximation is necessary, for one cannot hope to be absolute in his precision. He cannot see, or even conceive of a thing from all possible points of view, simultaneously. While he perfects the front, the side, or rear may be weak; then while he strengthens the other facade he may be weakening that originally the best. There is no end to this. To finish the work he must approximate.

In a way it is even desirable that one face be of finer quality than the others, for this gives a head and a tail to the object and makes it more alive.

A knowledge of, and sympathy with, the qualities of the materials used are essential to proper treatment.

Stone, the most ancient, should be kept massive, not cut into ribbons. The strength must be retained.

Bronze, cast, serves well for slender, attenuated shapes. It is strong even when very slender.

Wood has a grain which must be reckoned with. It can be slender in one direction only.

Wire, rods, sheet metal have strength, even in very attenuated forms, and respond quickly to whatever sort of work one may subject them to. Contrasts in mass or weight are feasible, too, according to the gauge, or to the kind of metal used, so that physical laws, as well as aesthetic concepts, can be held to. There is of course a close alliance between physics and aesthetics.

Strength and durability in sculpture are highly desirable. However, fineness and delicacy may be even more essential to the general concept, and it will then be necessary to decide which is to control the design.

Also there is the possibility of using motion in an object as part of the design and composition. The sculpture then becomes in one sense a machine, and as such it will be necessary to design it as a machine, so that the moving parts shall have a reasonable ruggedness. Even those sculptures designed to be propelled by the wind are still machines, and should be considered thus, as well as aesthetically.

However the mechanical element must never control the aesthetic. Much better a poor machine and a good sculpture.

So-called Industrial Design is not a fine art. Its motive is to instill "style," i.e. a yearly trend, be it up or be it down, in our daily commodities. There are certain makes of automobiles, whose body designs of a few years ago were simpler and much better than those of 1941-42. And after accustoming ourselves to the hardy simplicity of Army trucks and Jeeps for a few years we are threatened with being subjected to cars after the war whose design will be essentially that of the 1941-42 vintage.

As mobiles are so particularly my product I feel a word or two about their measuring and handling to be fitting.

A mobile in motion leaves an invisible wake behind it, or rather, each element leaves an individual wake behind its individual self. Sometimes these wakes are contracted within each other, and sometimes they are deployed. In this latter position the mobile occupies more space, and it is the diameter of this maximum trajectory that should be considered in measuring a mobile.

In their handling, i.e. setting them in motion by a touch of the hand, consideration should be had for the direction in which the object is designed to move, and for the inertia of the mass involved. Perhaps it is necessary to be fairly familiar with at least that type of mobile in order to decide upon the direction in which it will best move, but a simple glance should be sufficient to estimate the inertia of the various masses. A slow gentle impulse, as though one were moving a barge is almost infallible. In any case, gentle is the word.

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