THE END OF THE ROAD?

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•ONE of the games that anthropologists and philosophers love to play is trying to identify that characteristic that clearly separates the boys from the beasts. Verbal communication, recognition of the significance of death, and the ability to laugh are among the contenders for this distinction.

Surely, the concept of aesthetics must be considered a clearly distinguishing characteristic of homo sapiens. It is true that many of our fellow creatures developed characteristics that we humans term "beautiful," but, to the best of my limited knowledge, the significance of a bird's plumage is, to another bird, solely of an aphrodisiac nature. The bird's "beauty" lies in the eye of the beholding man rather than in that of the bird friend.

I hope it is safe to assume that for the purpose of this effort in communication no definition of beauty is necessary. This is almost imperative, in fact, because I am not at all certain that I would be able to do this. Recognition of beauty is more visceral than cerebral. The philosophers and art critics, at best, rationalize what is intuitively felt by the average man who boasts that he knows what he likes.

Man had barely emerged from the cave before he decided, or felt, that he was not going to live by bread alone, that sheer survival was not enough for him, and that he would establish values over, above, and beyond that of simple utility. Thus, since the dawn of history, men have incorporated an element that we term beauty into the design of that that they require to sustain their existence. They clothed themselves not only so that they were protected from cold, heat, rain, or snow but also so that they presented a pleasing appearance to their fellow men. The earliest weapons were not only designed to kill or maim effectively but also shaped or ornamented so that they were pleasing to handle and to behold. Food was seasoned, combined, and cooked in ways such that it not only sustained life but also made eating an agreeable experience. The bowls and other artifacts in which or with which food was prepared and served were shaped and decorated to please the user. Houses were designed to do far more than shelter men from the elements.

In fact, before very long, as history goes, the aesthetic significance began, in many areas, to transcend the functional in terms of the amount of effort expended in the production of clothes, food, buildings, and the many other basic needs of man; far more was expended developing the aesthetic characteristics than the functional. Some philosphers hold that what is not beautiful cannot be functional, but I am still not inclined to spend too much aesthetic consideration on the design of the inside of a sewer.

At an early point, man started producing a multitude of objects that had no function whatsoever other than that of attracting attention or symbolizing power or wealth. Surely, the mass of the Great Pyramid was redundant in terms of its function of sheltering and protecting through eternity only one or a few human bodies no matter how sacred. In the applied arts, however, functional satisfaction was an obvious imperative, and the aesthetic character was properly derived from and inextricably related to the functional.

Before very long, some men, at least, found that they had a vast surplus of mental and physical energy over that needed to sustain life. The concept of recreation, which is functionally aesthetic in character, was born.

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Although man's recreation was designed to serve fun rather than function, because it provided mental and physical exercise, it indirectly and unintentionally improved his ability to function effectively. Like gourmet cooking, fashionable couture, and monumental architecture, his recreational activities stem largely from what were originally utilitarian pursuits. Many of the most popular forms of recreation are still, at least in part or at times, functional as well, e.g., walking or bicycling. Others such as swimming, mountain climbing and horseback riding are functionally archaic; swordsmanship and archery for other than fun are as vestigial as the vermiform appendix. Still other recreational pursuits, most of which are largely concerned with throwing, hitting, kicking, or pushing a ball or smaller object about, are probably a ritualization of personal combat or warfare.

The earliest motor cars bore to the horse and buggy the same sort of relationship that any form of recreation does to its functional antecedent. Initially, the automobile was less than an improved means of transportation, but, like some of the fruits of pure research, it was considered sufficient unto itself. People bought motor cars out of curiosity and drove them for the fun of it.

As roads and automotive technology improved and the functional significance of the automobile grew, it never lost its popularity as a recreational device. We still identify a passenger vehicle as a pleasure car. Our society spends more of its hours driving for pleasure than it does eating, buying clothes, or sitting in the shelter of its living rooms.

Roads that served our earliest motor cars turned out to be, with little conscious intent, surprisingly satisfying aesthetically. They were unobtrusive and fitted into a landscape that was still largely an ingratiating one. The occasional structure that bridged a stream or railroad was a thing unto itself, a work of engineering or architecture that was not looked on as an element in the highway.

Before very long, as the highway developed into a more significant element in our environment, the application of man's unvarying instinct toward conscious beautification was reflected in the development of the parkway concept, an artery with expanded and landscaped rights-of-way with alignment and gradients consciously developed for safe and efficient transport and also incorporating a sculptural beauty. The roadway was a slender ribbon with a sinuous beauty. Bridges and other related structures were conceived of as integral elements in the whole design and treated as works of architecture.

Recognition that the highway, like any other of man's works, should be a thing of beauty was by no means universal, but there were enough capable craftsmen around to ensure a continuation of the tradition of the highway as an appropriate subject for careful aesthetic design.

Following the war, the parkway concept began to make itself felt in the development of mixed traffic arteries, and much of our Interstate system, both rural and urban, has benefited from thoughtful, coherent design. In the better portions of the rural elements of the system, highway design showed a respect for terrain, logical line and grade, and exploitation of natural vistas and other features. In urban design, a dramatic and dynamic relationship between the highway and its urban environment was frequently achieved. Although it is true that a considerable amount of urban highway design was insensitively conceived and ended as a blight on the cityscape, there are enough examples of good design to demonstrate clearly that a highway can be a good neighbor as well as an efficient means of transportation.

In the last few years, however, a combination of circumstances that would seem to make the development of an aesthetically satisfying highway more and more difficult to achieve has become apparent. I refer to the unrestrained reflection of traffic demand, which has resulted in highways of Gargantuan and overwhelming cross section.

To combine in one restricted right-of-way, eight, 10, and even 12 or more parallel lanes of traffic, even on multiple roadways, presents a design problem that from an aesthetic viewpoint becomes nearly insoluble. At the very best, by expanding the right-of-way or by architectural treatment, we make the best of a bad thing, but few of these giants seem capable of being developed as truly handsome examples of either urban or rural engineering design. The once sinuous beauty is now layered with obscene fat, and our roads have all the grace of a slug.

Now by all the rules of the game, this should not be the case. The history of architecture shows us innumerable examples of the fact that scale itself is no impediment to architectural mastery. Great cathedrals, towering office structures, vast palaces, and public buildings are among our most distinguished architectural achievements. The Gardens of Versailles hardly suffer aesthetically because of their vast scale. The urbanism of Haussmann's Paris may not have the intimate quaintness of the medieval city that it in part displaced, but it is undeniably handsome withal. Our musical monuments consist of great symphonies and grand operas.

Why then should we have any more difficulty designing a beautiful large highway than we had designing those arteries of much more modest capacity? Faced with this problem on a number of projects with which I am involved, I have sought long and hard both for an explanation of why bigness seems in many cases to exclude the possibility of beauty and for some answer to a problem that I insist demands a solution if we are not to throw up our hands, give up, and admit that we have come to a dead end in the art of highway design.

I spoke earlier of the inextricability of beauty and function. The beauty of any useful object springs from a clear and coherent development of the functional characteristics of the object to be designed. If, in designing a tool, a garment, a plate, or a building, the function is subordinated too greatly to aesthetic demands, the result is likely to be decadent and superficial; similarly, if the functional character of the object of design is not rational, the design is no longer rational, and beauty of the design becomes meaningless or, rather, nonexistent.

Successful, applied design comes in large part from a logical and articulate expression of the function of what is to be designed. This principle is, of course, most clearly seen in the design of a bridge in which each part of the structure must express its function simply and clearly and in which the interrelationship of each part to the others must be clear and harmonious. Keats said, "Beauty is truth, truth beauty." Today we might put it "Tell it like it is." It is true that aesthetic achievement is not limited to the design of objects for physical use. Great paintings, plays, and music represent an entirely different area of artistic endeavor: the function of art in the communication of ideas. But just as the so-called pure arts are successful only to the extent that the idea behind them is imparted to the viewer or listener, so in the applied arts success is only achieved to the extent that function is expressed. The house, which does not reflect the way of life of the society for which it is designed, is meaningless. If an artifact does not function effectively, its beauty is overpriced.

Now with respect to our super superhighways, is it possible that the trouble we are having in achieving a satisfactory aesthetic solution to the problem derives from the fact that there is no valid and effective functional solution? Are we trying to find an answer to the unanswerable? Are we enhancing the fat lady by putting her in a miniskirt when we should be hiding her under a tent? Are we trying to make a silk purse out of a sow's ear? I guess that what I am asking is whether the highway is suffering from some sort of identity crisis.

Each of man's creations or contrivances must have, if it is to gain lasting acceptance, what the philosophers call an "essential property," i.e., a special distinguishing characteristic that sets it apart from other devices and one that is not possessed by the others or not possessed to the same degree.

Darwin's concept of natural selection had to do with the evolution of flora and fauna but is applicable generally if not invariably to the works of man. By a sort of reverse Gresham's law, efficient devices ultimately drive out the less efficient. In the competition of the marketplace, a better mousetrap will, on the whole, sell.

Railroads enjoyed their enormous popularity and growth because they had an essential property possessed by nothing theretofore devised. Despite the gross mismanagement and corruption from which they have suffered, they have survived and will probably ultimately improve because we have not yet found any potentially superior or even comparable means for moving masses of people and goods along relatively limited and defined routes economically, comfortably, and safely.

The essential property of the motor car on the other hand is a flexibility not offered by rail transport. It offers freedom from the limitations of fixed schedules and predetermined routes. The dune buggy is its ultimate personification.

When we use a knife blade as a screw driver, the results are often less than wholly satisfactory if not possibly disastrous. Are our efforts to make motor cars work as trains introducing a functional inefficiency that will inevitably be reflected in aesthetic decadence?

We know that lane efficiency diminishes as a roadway is widened above two lanes. In other words, there is a diminution in effective functioning. Is it unreasonable, then, that this should be reflected in a diminution of aesthetic achievement? Again, we come back to Keats's dictum that beauty is truth. As the lanes multiply and efficiency lessens, are we facing a law of diminishing aesthetic returns? Does aesthetic as well as functional good sense require that, as apparent traffic demand in a corridor approaches proportions that are unmanageable by conventional standards, we must reexamine our approach to seeking a solution?

One very obvious, almost cliché, answer is that, if automobiles are trying to do what trains can do better, it is time to turn back to trains. I will not labor this point here; enough is being said by others.

Another answer that lies more directly within our sphere of influence is to divide up the load into more efficient and, therefore, presumably more aesthetically manageable elements.

One of the most justifiably famous pieces of urban transport architecture is the three-level cantilever section of the Brooklyn-Queens Expressway in New York. Ten lanes of traffic are so subdivided that no driver is uncomfortably aware of the total traffic being carried. The highway's neighbors are effectively shielded from what might be an otherwise excessive impact.

On the other hand, a current proposal for a waterfront expressway in another large urban area would put eight moving lanes of traffic plus four shoulders and a median divider on one level, roofed and walled on the shore side. The innermost lane would be about 130 ft from a slit that is supposed to afford the driver a river view.

Like putting the tent over the fat lady, simply hiding the roadway is a less than happy solution although there are many who would put all urban and suburban vehicular traffic in tunnels. I for one cannot forget that drivers are also people. To consign them to the underground like a race of troglodytes seems less than humane. Tunnels are fine solutions to special transportation design problems, but one can get too much of a good thing.

Our best hope lies in bringing the highway back to manageable proportions. By either vertical or horizontal separation of roadway elements the impact of each element can be measurably reduced, and I am referring here to effective visual separation, not just a broad paved area striated with New Jersey type of barriers.

Obtaining adequate space, whether in terms of right-of-way or air space, has obvious economic and social costs, but the environmental game is worth the candle. Our potential solution lies in deliberately splitting our corridors horizontally. There are cases where two can do the job more efficiently than one.

A few years ago any suggestion that trust fund moneys might properly be used for public transit was considered heresy and constituted grounds for being drummed out of the regiment. Times have changed! Are we ready to reexamine the need to accommodate trucks and truck trians on all of our roads? Theirs is, of course, the major influence on highway size and structure. The parkway concept is not obsolete. Perhaps, if we all gave a little push, we could change the pendulum's direction.