

## Design Is Invisible (1980)

Design objects? Of course we can see them: the whole gamut of designs and devices, from a building to a can opener. The designer gives them a logical, ready-to-use form, premised on certain external parameters: in the case of the can opener, on the structure of a can. The designer of cans, for his part, considers how a can opener functions. That is his external parameter.

So we can perceive the world as a realm of objects and divide these, for example, into houses, streets, traffic lights, kiosks, coffee makers, washing-up bowls, tableware or table linen. Such classification is not without consequences: it leads namely to that concept of design which isolates a certain device—a coffee maker, let's say—acknowledges its external parameters, and sets itself the goal of making a better, or more attractive one; that is, of producing the type of thing likely to have been described in the 1950s as “Good Form.”<sup>1</sup>

But we can divide the world up in other ways too—and, if I have understood *A Pattern Language*<sup>2</sup> correctly, that is what Christopher Alexander strives to do. He does not isolate a house, a street or a newsstand in order to perfect its design and construction; instead,

- 1 Max Bill's book *Die Gute Form* (1957) decisively shaped the criteria propounded at the time, for functional yet aesthetically pleasing “timeless” design. The German Ministry of Economics and Technology awarded the “Federal Prize for Good Form” for the first time in 1969. Since 2006, it has been presented annually under the name “Design Award of the Federal Republic of Germany.”
- 2 Christopher Alexander, *A Pattern Language. Towns, Buildings, Construction*, Oxford University Press, New York 1977.

he distinguishes an integral composite such as the street corner from other urban composites; for the newsstand thrives on the fact that my bus has not yet arrived, and so I buy a newspaper; and the bus happens to stop here because this is an intersection where passengers can change to other lines. “Street corner” simply tags a phenomenon that encompasses, above and beyond the visible dimension, elements of an organizational system comprised of bus routes, timetables, magazine sales, traffic light sequences and so on.

This way of dividing up our environment also triggers a design impulse—yet one that takes account of the system’s invisible components. What we need, perhaps, so that I won’t miss my bus while scrabbling for change, or because the newsagent is serving another customer, is a simplified method of paying for a newspaper. Some people instantly dream up a new invention—an automatic magazine dispenser with an electric hum—while we imagine intervening somehow in the system: selling magazines for a round sum, or introducing a subscription card that we can simply flash at the newsagent—in any case, some kind of ruling to tackle magazine distribution and that institution “the morning paper.”

What are institutions? Let us forget Christopher Alexander’s street corner in favor of a clearly identifiable institution, the hospital. What is a hospital? Well, a building with long corridors, polished floors, glossy white furniture and little trolleys loaded with tableware for mealtimes.

This view of the hospital takes us back to the traditional design brief: the architect and the designer are called upon to plan hospitals with shorter corridors, more convivial atmospheres and more practical trolleys. As everybody knows however hospitals are now bigger, their corridors longer, the catering service more anonymous and patient care less caring. That is because neither the architect nor the designer were allowed to intervene in the institution *per se*,

but only to improve existing designs and devices within set external parameters.

So, let's describe the hospital as an institution. Despite all its visible features, it is first and foremost a system of interpersonal relationships. Interpersonal systems are also designed and planned, in part by history and tradition yet also in response to the people alive today. When the Ministry of Health decrees that hospital catering is not the responsibility of medical staff but a management issue—or vice versa—this ruling is part and parcel of the institution's design.

The hospital owes its existence above all to the three traditional roles of doctor, nurse and patient. The nurse's role evokes a myriad of associations, from the Virgin Mary through to Ingrid Bergman, and appears to be clear-cut. In reality it is far from clear-cut, as it incorporates a great number of more or less vital activities. The doctor, historically only a minor figure on the hospital stage, shot to the top in the nineteenth century, on a wave of scientific claims swallowed whole with religious fervor, and perpetuated to this day by TV and trashy novels, with the result that a formidable whiff of heart transplants now permeates even the most backwoods county hospital. And what about the patient? He has no role to play at all, you say? He simply falls ill, through no fault of his own?—*Come now, please make up your mind whether you want to be sick or healthy!*—Evidently there is an element of choice in the matter. We can—and must—decide one way or the other, otherwise we will irritate our boss—our boss at work, or the hospital boss. A patient lies down—in Chodowiecki's day he used to sit—or ambles gratefully around the park, convalescing. He resigns himself in any case to the three-role spiel, although it has long been due for an overhaul; but more of that later.

Do other similar institutions exist? Yes, indeed: the night. Yet night is a natural phenomenon, you say? The sun is shining on the

Antipodes and so it is dark in our neck of the woods? Anne Cauquelin was the first to posit that the night is artificial. And there is no disputing that human behavior shapes the night one way or another, in line with various man-made institutions. In Switzerland I can work undisturbed after 9 p.m. then go to bed. To give someone a call at that hour is considered impolite. In Germany my telephone is quiet all evening then springs to life at 11 p.m.—for the cheap-rate period begins at 10 p.m., whereupon all international lines are immediately overloaded, and it takes around an hour to get a connection.

Thus the night, which evidently originally had something to do with the dark, is a man-made construct, comprised of opening hours, closing times, price scales, timetables, habits and streetlamps. The night, like the hospital, is in urgent need of redesign. Why does public transport cease to run at precisely the moment people drain their last glass in a wine bar, leaving them no option but to take the wheel? Might not a rethink of opening hours make the streets safer for women obliged to return home on foot, late at night? Are we going to live to see the day also in these climes, when car ownership is the sole guarantee of a measure of safety?

Let's take another institution, the private household. For the traditional designer, the household is a treasure trove of appliances clamoring to be planned. There are endless things here to invent or improve: coffee makers, food mixers, and dishwashers, to name only a few. The planner deploys novel means to ensure everything stays the same. Moves to reform the household were made around 1900: early mechanization fostered collectivization as well as untold experiments with canteens, public laundries and built-in, centralized vacuum cleaners. Thanks to the invention of small motors these amenities were reinstated later in the private household. Kitchen appliances save housewives' time, you say? Don't make me laugh!

The war on dirt is a subsystem within the institution, private household. What is dirt? Why do we fight it? And where does it go after we emerge supposedly victorious? We all know the answer. We just don't like to admit it. The dirt we fight along with the detergents we use to do so is simply environmental pollution by another name. But dirt is unhygienic, you say, and one cannot avoid a spot of cleaning? Strange! Because people used to clean, even before they knew about hygiene. And besides, the filters used in vacuum cleaners are not fine enough to contain bacteria effectively. Which means that vacuum cleaners merely keep bacteria in circulation. What a shame for the vacuum cleaner, the designers' favorite brainchild!

Then how do people clean in hospitals, where hygiene is truly vital? Hygiene in hospitals rests as far as I can see on three pillars. The first pillar is purely symbolic—for sparkling white surfaces and the shine on polished (which is to say, wax-smearred) floors are considered the epitome of cleanliness. The second is antiseptics—toxins, in other words: an endless flow of new disinfectants designed to kill bacteria. Any success in these stakes is unfortunately short-lived however, for resistant strains never cease to develop, and are engendered selectively in fact, by these very toxins. And the third pillar is vacuum cleaning. In contrast to the domestic vacuum cleaner that releases dust back into the same room it was captured, hospitals' centralized air conditioning and vacuum-cleaning systems spread dangerous spores all over the place. Is there a remedy for such unpropitious circumstances? Of course—but it falls neither in the designer's brief nor within his external parameters! The key to the problem is to redesign the health care system, above all by promoting decentralization.

Let's name one last institution: the production site. A lot could be said on this topic but let us stick to one point only: workplaces—by which we mean jobs—are also man-made design objects. We're

not talking here about making chairs at work more comfortable, or about cheering the place up a little, with fresh wallpaper and a few potted plants. The object of design in this context is that particular part of the production process assigned to each individual laborer, and the degree of energy, knowledge and skill, respectively of ignorance, boredom or mindlessness that must be invested at any particular point in the production process. This applies not only to production sites in the narrower sense of the word, i.e. to factory jobs, but also to administrative and clerical work. Workplaces—jobs—are designed ostensibly for productivity; yet productivity of a sort akin to counter-productivity. Automation, as it is called, destroys jobs that have hitherto been a source of satisfaction while other jobs in the manual sector, which could and should most urgently be rationalized, remain unchanged. Here we can touch only briefly on the problem, without offering concrete evidence of our claim. Yet the main point is this: jobs are also designed; not only in the traditional sense of design but in terms of the way the production process is broken down into various types of task, which actively demand or render redundant the laborers' skills range, and foster or hinder cooperation.

The previous comments were intended to show that design has an invisible component, namely an organizational-institutional dimension over which the designer always exercises a certain influence yet which, given the way we classify our environment in terms of objects, tends to remain hidden. Insofar as the world is divided into object categories, and the invisible dimension acknowledged only marginally as an external parameter, the world too is designed. Furthermore, institutions' resistance to change—especially given the wealth of technological objects now under development—is also a form of design: radiology equipment is designed for the use of *nurses in radiology*.

In the following we wish to consider whether these insights are of any use to us, or simply sad proof of the fact that the world is badly designed.

Whenever we think about design, we must address two phases: the phase of actual design or planning through to production; and the consumption phase, up to and including an object's disposal on the trash heap, or in a museum. Let us take a look first at the established hypothesis on each:

- On design: the objective is a functional object, whereby one might discuss endlessly whether functionality per se is identical with beauty, or whether the designer must add beauty as an extra.
- And on consumption: technology and technical devices are neutral; their misuse stems from people's villainy. The *Werkbund Almanach* (Almanac) from 1914 featured warships as design objects while the journal *Werk* from April 1976 described the cooling towers of nuclear power stations as an appealing venture for architects.

And now, two contrary viewpoints, as a possible premise for a new way of describing the two processes, design and consumption:

- On design: objects owe their form to the interactions inherent to the design process.
- And on consumption: such objects in turn exert influence on social interaction; objects are not neutral; *Tools for Conviviality*<sup>3</sup> exist (asserts Illich!), as do their opposite, objects that impede social interaction.

3 Ivan Illich, *Tools for Conviviality*, Harper & Row, New York 1973.

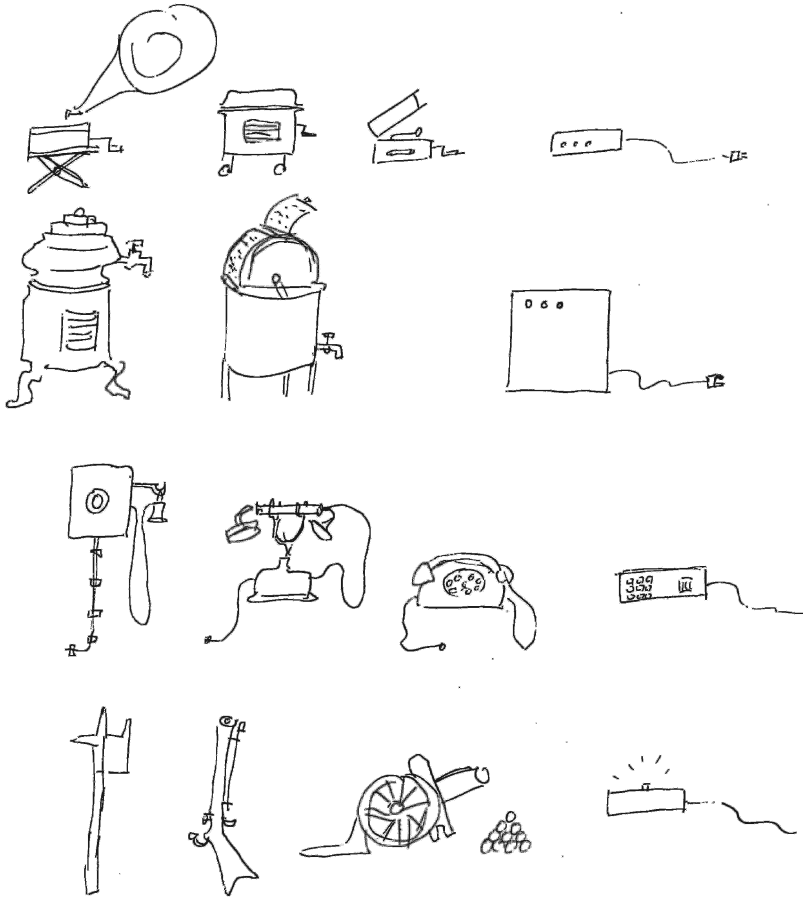
And let us test a third hypothesis while we are at it, a hypothesis on counter-productivity:

- Every new invention that is put to use effects change, and such change in turn necessitates new inventions. If all the problems that successively arise are dealt with conventionally, namely one by one, as isolated phenomena, the outcome is counter-productivity. Here is a brief example: a central heating system serving several apartments allegedly gave rise to the need to monitor each individual tenant's energy consumption. Gauges based on the evaporation of liquid were installed and, as a result, each tenant now turns off his radiators whenever he goes out. However, each tenant also wants his apartment to be warm the minute he turns the radiators back on. Consequently, water in the heating system is kept at such a high temperature that every tenant, even the most thrifty, ultimately pays more for heating now than when heating costs were split between tenants, without individual monitoring.

Let's begin therefore with the design process. Here, as we observed in our opening remarks, the designer classifies the world in terms of object categories rather than problem categories. This rests on linguistic determination, for to name a problem is simultaneously to identify the appliance that can remedy it. When I complain that my electric onion chopper may indeed save me a moment's work but then takes ten minutes to clean, what springs to mind is not so much a return to the simple kitchen knife but a design for an appliance able to clean my onion chopper. The objective, once named, becomes an instant remedy, and supersedes any general endeavor on my part, to cook more efficiently when time is limited.

A further effect of this direct link between naming and remedy is the suppression of secondary considerations: with the exception





The Triumph of Good Form. Drawing: Lucius Burckhardt

of the appliance to be designed, no technical or organizational changes should be necessary. Whatever can be integrated in existing systems, however overloaded these may be, is considered successful: a waste disposal unit built into the sink drainage, an oven

that self-cleans through pyrolysis, etc. This type of troubleshooting is rooted in the designer's position within policymaking bodies: his job is to deliver ideas—but he bears zero liability.

In the late 1950s, the Ulm School of Design was the first professional institution to recognize that industrial design is counter-productive—yet the solutions it proposed were technocratic. They were based on a radical analysis of the desired outcome but failed to consider that outcome in its broader context. Students in Ulm were hence likely to submit papers that began something like this: “The exercise consists in raising ten to twenty gram portions of semi-solid substances from a dish circa thirty centimeters in diameter then transferring them horizontally to an open mouth, where a movement of the upper lip relieves the supporting structure of its load...” The result is not Charlie Chaplin's eating machine but a fork with a Modernist profile.

In the meantime, of course, it has been recognized that objects that have great symbolic value yet require only minimal inventiveness—cutlery, for example—do not fall into the design field. Conversely, those things yet to be invented, or at least their technical aspects, are too complex for designers. So design must broaden its scope and embrace socio-design: a way of thinking about resolving problems that results from coordinated changes made both to roles and to objects. One example may be to design a kitchen so inviting, it inspires guests to help the host chop onions...

Before leaving the field of design to consider aspects of consumption, I want to slip in a comment or two on shopping and its “hidden persuaders.”<sup>4</sup> Of course, the marketing and advertising

4 Vance Packard's book *The Hidden Persuaders* (David McKay Co., New York 1957) was a pioneering and prescient work that revealed how advertisers use

professionals who use depth psychology to sell either soap powder or instant cake mix designed to make a mother feel she is breast-feeding the whole family, have not yet thrown in the towel. But the hype in the design field has pretty much died down: I now buy a new refrigerator when the old one breaks down, not simply because I want one with rounded contours. Rearguard action continues on the car market, where revivals are a flourishing trade, and the avant-garde has already discovered the flea market for other retail sectors. The flea market will be the place dwindling numbers of throwaway consumers meet the swelling ranks of post-industrial society.

This is not to say that progress—in its positive as well as its counter-productive guise—has come to a standstill. But the sector in which progress is still being made is straightforward. Progress holds sway in production for the white (official) market but gray market trading, moonlighting, self-sufficiency, barter systems and informal mutual aid are on the rise too. White trading is still scoring points also in these areas: DIY hobby products have slipped onto the shelves among the detergent battalions. Yet these might be fleeting epiphenomena on the road to greater self-sufficiency. Whether we should welcome all this wholeheartedly remains uncertain: it panders to lower middle-class aspirations, and harbors a threat of social isolation; but perhaps a retrograde step or two is the price society must pay for a springboard to new realms of experience.

With regard to usage and consumption, we wanted to point out that objects are not neutral. Is there such a thing as *evil* objects? Goods are harmful when they foster our dependence on systems

psychological methods to tap into unconscious desires in order to “persuade” the consumer to buy promoted products.

that ultimately pillage our resources, or desert us. Without doubt we are all attached to such systems, and this makes us liable to blackmail. However we can still influence the extent of our dependency. We should avoid those objects that compel us to buy more accessories. We should distrust media that provide a one-way flow of information, even though we can no longer do without them. We should exercise restraint in buying and using any goods that isolate us. The car is a major case in point, especially as it tends also to foster inconsiderate behavior in its user.

The car has destroyed not only our cities but also our society. One can commission as much research as one likes as to why juvenile delinquency is on the rise, why more women are attacked, why districts are becoming derelict, or slums, or no-go areas by night. As long as the defense against motorized crime is a motorized police force, as long as the pedestrian is advised to use his car, the solution can be named without any need for further research: motorization based on private car ownership has abandoned the non-motorized populace to greater insecurity, and to an increasingly uncompetitive mass transit system.

This leads to our last remark: on counter-productivity. We already mentioned the example of monitoring heating costs. That is only a minor aspect of the outrageous counter-productivity of the central heating system, every failure of which has been countered by a new remedy that subsequently proved to be a failure, to the point where we now use our electronically controlled, overheated and, in terms of air hygiene, unhealthy central heating system in devastatingly wasteful fashion, as a boiler; and the central heating system is being superseded now by an even greater evil, air conditioning. Counter-productivity, as we have said, arises when inventions are used in such a way as to cause a break in the overall system, a break that is patched up in turn by a further isolated invention. The sum

of these successor-inventions equals the counter-productivity of the overall system.

To return to the car: since the average inner-city speed for cars has been lowered to match that of cyclists, or pedestrians even, automobile manufacturers are pursuing research into the automobile's successor. And what are they developing? A car fitted with an additional gadget that allows the car to be steered to its destination by an electronic short-wave remote control system, whenever it enters the city limits. Or to return to the vacuum cleaner: since the public has grown aware that vacuum cleaners are all the more damaging the more efficient they are, i.e. the more powerfully they can whizz bacteria through the filter, the industry is looking at a successor gadget—and guess what that may be? You're right: a vacuum cleaner with a built-in bacteria filter!

Invisible design. Today, this implies conventional design that is oblivious to its social impact. Yet it might also imply the design of tomorrow—design that consciously takes into account the *invisible* overall system comprised of objects and interpersonal relationships.

Jesko Fezer · Martin Schmitz (Eds.)

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Is a realistic simulation of nature the very best art can do? Photo: Annemarie Burckhardt

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