

## **Information for Conscious Choice**

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### **Abstract**

Information can fulfill a new and essential purpose in our culture – serve as guidelines for making conscious choices (choices that are made with awareness of their consequences). In the article it is specified in what way the information for conscious choice can be created and what characteristics it needs to have. A model of the relationship between information and economic and political power called *power structure* is given and based on it the power-related obstacles to conscious choice are explained. It is shown that conscious choice may lead our preferences in a completely new direction. The so-called *two-step marketing* strategy is introduced by which the information for conscious choice can be put into practice. It is argued that conscious or informed choice may create revitalizing impulses in both economy and culture.

**Keywords:** marketing, advertising, social responsibility of information design, information design methodology, polyscopic modeling.

**Author's biography:** Dino Karabeg was born in Dubrovnik, Croatia, in 1954. Following a doctorate and a brief academic career in computer science (algorithm theory) in the United States, in 1992 he accepted an Associate Professor position at the University of Oslo. In 1993 his interest changed to basic issues in information and culture. Since then he has been developing a comprehensive system of ideas, techniques and results under the common name *information design by polyscopic modeling*.

# Information for Conscious Choice

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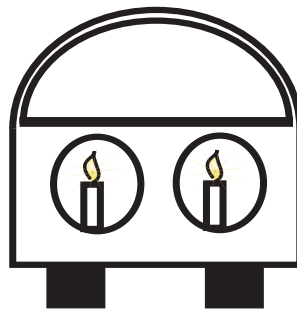
## Introduction

In (Karabeg, 2003) *information design* is introduced as a new approach to information, alternative to all *traditional* approaches (we write *information design* in italics in order to specify that we are giving this term a new meaning). Unlike physics, philosophy, journalism and all other *traditional* ways of creating information which follow the hereditary customs of traditional professions, the practice of *information design* is consciously designed in order to meet our changing needs, take advantage of modern information technology and accommodate the newest epistemological and methodological insights. Polyscopic Modeling methodology is proposed as a prototype or a design specification for this new informing. One of the truly exciting facets of *information design* is its promise to become a source of a new cultural vision and open up the way to large-scale cultural change (Karabeg, 2003). In this article we take a closer look at this promise and outline how it may be realized in practice. The key idea is to use specifically designed information as a basis for making choices *consciously* (with awareness of their consequences).

In addition to this introduction and the conclusion, the article has four sections. In the first, we survey some of the elements of the Polyscopic Modeling methodology which make it suitable for creating the information for conscious choice. In the second, we discuss the relationship between information and economic and political power and we point out that the new approach to information is necessary in order to make both choice and

information truly free. In the third, we outline an example of designed information which shows that conscious choice may lead to a radical change of the direction our choices tend to take. In the fourth, we explain how conscious choice may be put into practice through the *two-step marketing* strategy.

## 1. Designing information for conscious choice



***Caption:*** *The Information Design Challenge ideogram depicts modern culture as a bus and its traditional informing as the candle headlights of the bus.*

The Information Design Challenge ideogram both explains the motivation behind *information design* and serves as its succinct, visual definition. *Information design* means doing to information what one would naturally be inclined to do with the headlights of the bus in the ideogram, namely *designing* it to suit its purpose. As the ideogram suggests, *information design* is needed in order to give our culture the right vision and to allow us to use our powerful and fast-changing technology purposefully and safely.

Every design must benefit from the tradition by combining the elements that have proven to work well in practice. *Information design* is not an exception. In the design of the Polyscopic Modeling methodology the key techniques, criteria and insights from sciences, arts, advertising and other informing traditions have been generalized and combined to create a state-of-the-art general-purpose informing.

Reliability is the primary requirement that must be satisfied by information that serves for making choices. In our culture science serves as the trusted

information provider, for justifiable reasons. Science has not only proven its value in practice, but it has also established a standard of validity or “truth” which is suitable for our democratic, post-traditional culture, by giving provisions for rational and experimental verification. Science makes only those claims for which it can offer a verifiable proof. But science also has a serious disadvantage in its role of trusted information provider, since its organization in terms of traditional disciplines severely limits the range of subjects that science can cover. In the Polyscopic Modeling methodology the basic insights, techniques and criteria from science are generalized and made in principle applicable to all questions on which reliable information and agreed-upon facts may be needed. This approach is illustrated in (Karabeg, 2001) where it is shown how *patterns*, defined as “abstract relationships”, can assume the role of mathematical functions to create a completely general method for stating and *justifying* (or “proving”) results. To get an idea of this method think of the free fall equation  $h=gt^2/2$  as corresponding to a polyscopic modeling *result*. Then the mathematical function  $y = cx^2$  would correspond to the *pattern*, and the variables  $h$  and  $t$  to the *scope*. Like the mathematical functions, the *patterns* allow us to generalize insights from a particular, concrete domain, create abstract knowledge and ideas and formulate principles. But unlike mathematical functions, the polyscopic modeling *patterns* can be relationships of any kind. Furthermore, the *scopes* are not limited to concepts in physics or any other traditional science, but freely created or *designed*. Finally, it is not necessarily claimed that the given *scope* always and exactly fits the given *pattern*. It is often sufficient to show that a simple *pattern* is repeated again and again in distinct phenomena and issues, to create uniformity in the midst of diversity and order in the midst of chaos.

Unlike the scientific information which is created for a small elite audience, information that serves as a source of cultural vision must be understandable by everyone. Furthermore, the information for conscious choice must show us not only the visible things but also the global environment, economy, culture and other abstract entities which we both influence and depend on. In polyscopic modeling *ideograms* are used as a general information presentation tool (Karabeg, 2000). The ideograms bring to Polyscopic Modeling the

expressive ability and the language of art, advertising and other non-verbal and intuitive expression forms. The present-day ideograms are only a place holder for a variety of techniques that can be developed for this purpose by using the modern media technology.

Before our focus is turned to details (for example, what is the cheapest frozen pizza on the market) we need to make sure that we have chosen the right overall direction (perhaps our nutrition needs to be entirely different). We are, however, overloaded with information which makes us “lost amongst the trees” and unable to “see the forest”. In polyscopic modeling the basic credo is that every idea or issue has the right level of abstraction or detail on which it needs to be presented in order to be understood. Choosing the right way of looking (*scope*) is considered to be so important that the polyscopic modeling approach is defined as *information design by scope design*. Priority is given to the so-called *high-level information* which gives empowering general insights and brings us closer to knowledge and wisdom.

Information that serves for conscious choice must show us what is hidden. The *perspective* criterion of the Polyscopic Modeling methodology guides us to use *scope design* to “look into the dark” where both dangers and possibilities may be hidden, and to create an accurate idea of a subject as a whole (Karabeg, 2000 and 2002).

What makes Polyscopic Modeling particularly suitable as the basis for conscious choice is its written definition, which specifies the underlying principles and criteria (Karabeg, 2003b). This definition makes the Polyscopic Modeling methodology a *convention* which can be rationally verified and agreed upon. As a piece of information, the methodology serves as guidelines for *conscious choice of information*. In the justification of the Polyscopic Modeling definition it is shown that this methodology follows naturally from the so-called “new paradigm in science and philosophy” (Heisenberg, 1962 and Feynman, 1967).

The first principle of Polyscopic Modeling defines *information* as “recorded experience”. This convention allows us to rule out any traditional

preconceptions about the nature of reality, and to create rationally justified fact about any issue simply by referring to sufficient experiential evidence. At the same time, this definition gives us an intuitive idea of *information* as our evolutionary heritage. Without the experience of others, we would not be able to know, for example, that we should eat oysters and avoid poisonous mushrooms. In the same way, we need *information* in order to make favorable choices in our complex socio-cultural environment.

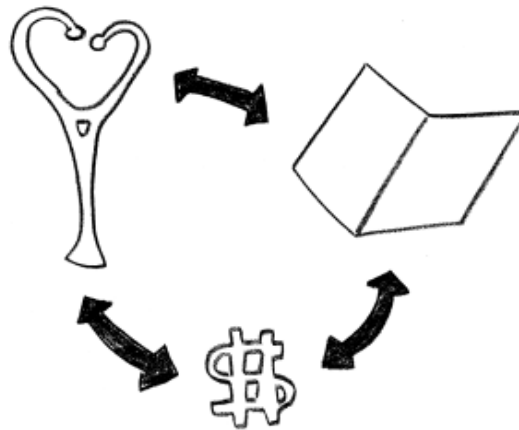
According to the Polyscopic Modeling epistemology, our concepts and theories are not a mirror image of reality but communication tools we ourselves have created. More precisely, they are the *scopes* through which we look at experience in order to organize it and communicate it. This allows us to create simple and precise concepts and theories about any subject. Simple theories are useful to the extent that they agree well enough with experience, and that give us useful new insights.

An example will allow us to clarify this approach. In polyscopic modeling “*traditional culture*” is an ideal concept which denotes a specific way in which a culture can accumulate experience and create *information*. By definition, the *traditional culture* accomplishes this task through spontaneous evolution, in a similar way in which the species in nature evolve according to Darwin’s theory. Simulation studies of the Darwinian paradigm in artificial life (Langton, 1995) and stochastic optimization (van Laarhoven and Aarts, 1985) give us solid evidence that a culture may indeed be able to evolve in that way. We may then look through this concept as *pattern* at the culture of our ancestors as *scope* and see to what degree the *scope* fits the *pattern*. We indeed find that many of that culture’s properties can be explained as necessary “cultural genes” or *memes* in the *traditional* “cultural genotype”. For example, the respect for the tradition and the demand to conform to its norms is a necessary *meme* because it gives the *traditional culture* the required inheritance mechanism. The choices in a *traditional culture* are not conscious but prescribed. The *information* that determines the choices in the *traditional culture* is not explicitly stated and rationally understood but *implicit* in the hereditary norms of the tradition. Since the *explicit* or written *information* that

is created by the *traditional culture* serves for completely different purposes (such as providing technical know-how and satisfying people's curiosity about distant countries and planets) that information is not suitable for making conscious choices.

It is easy to see that our *modern culture* cannot be considered as *traditional*. During the past century, science has altered the belief system of the tradition, and the technology has altered our lifestyle. We no longer believe in following the example of our ancestors, but in conscious choice. We are, however, lacking the *information* which could allow us to choose consciously.

## 2. Information and power



**Caption:** *The Power Structure ideogram depicts the power structure as consisting of visible entities that are joined together by invisible links.*

An objection may be made that our culture is consistently based upon free choice and that any attempt to regulate our manner of making choices would represent a step back and a danger for power abuse. We now present an argument to show that “free choice” is really a misnomer and that suitable information is needed in order to make our choice truly free.

To create a more accurate or holistic idea of power (understood as the ability to influence people, society and culture) and of a power holder (socio-political entity that can accumulate and possibly also abuse power), we introduce the *power structure* concept. The Power Structure ideogram depicts the *power*

*structure* as consisting of heterogeneous entities and dependence relationships between them. The entities can be concrete or abstract, ranging from people and organizations to values and ideas. By depicting the dependence relationships as dark and entities as bright, it is suggested that the entities are visible while the dependencies which connect them together are obscure. Because of that, we fail to perceive the power structure as a complex entity and we associate power only with individuals and organizations. The main message behind the *power structure* definition is that power is in general the property of complex structures. Single-entity power holders such as kings, lobby groups, political parties and monopolies are borderline and possibly also *marginal* examples of power holders.

To get an idea of the subtle relationships which bind a *power structure* together, assume that Fancy Cola is an attractively tasting soft drink concocted of mildly harmful chemicals. Consider the structure which consists of the business that markets Fancy Cola and the value judgment which favors soft drinks. These two entities influence one another in a variety of ways. The existence of the value which favors soft drinks makes it easier to market Fancy Cola and vice versa, the Fancy Cola Company can in various ways stimulate the appreciation of soft drinks. Already the presence of Fancy Cola in the supermarket has an effect. Advertising enhances that effect. The larger the Fancy Cola Company, the stronger its influence: It can make its logo visible in public places, hire the best advertising designers, buy TV time etc. The Fancy Cola employees may become a political lobby. By becoming common, Fancy Cola becomes an element of the culture. Its appreciation is then supported automatically, by its presence on the dinner table and on parties or gatherings. Unconsciously we may even associate pleasant moments with family and friends with the taste of Fancy Cola. All this may further increase the power of the Fancy Cola Company.

As this example illustrates, power does not need to be manifested as legal privilege or physical coercion. Power may well be a complex condition which, in its over-all effect, exerts a subtle influence over people, as a magnet orients the iron chips that are randomly scattered in its field and gently shaken.



As more and more people align themselves to accommodate the power, the power becomes stronger.

To complete our definition of the *power structure* we add dynamics to the above static picture. We once again use the insights from the studies of the Darwinian paradigm and we combine them with insights from stochastic optimization (van Laarhoven and Aarts, 1985) to show that complex structures which are optimal with respect to a certain “survival criterion” can develop completely spontaneously, through no more than random changes and “survival of the fittest”. Insights from artificial life and artificial intelligence may further be used to show that such spontaneously evolving structures can behave as if they were alive and intelligent beings. Those insights allow us not only to identify the power structures as socio-political entities, but also to attribute to them the ability to modify our ideas and habits according to their own “interests,” without anyone being responsible or even aware of that. This allows us to say, figuratively, that a certain value or condition has been *created* by a power structure, although it would be more accurate to say that this value or condition has evolved as one of the entities within the power structure.

A biological metaphor will help us clarify the notion of *power structure* and its relationship with culture. If we imagine the culture as an organism and the people as its cells, then a power abuser that is a *power structure* may be imagined as a malignant cancerous tissue. The ability of the culture to distinguish the malignant *power structures* from its healthy “cultural tissues” is then easily perceived as necessary for its well-being.

Since even the most beneficial “organs” of the “cultural organism” may with time develop some “malignant tissues”, it is best to assume that the *power structures* will tend to develop wherever we do not see them. If, for example, the health care system is allowed to evolve as a *power structure*, it will develop in a manner which yields the largest number of sick people and the highest cost of care, that being the strategy which maximizes its power. And indeed, the fact that our health-care is based on curing diseases and not on

caring for health (i.e. on repair and not on maintenance) seems to agree with this prediction.

If affected by *power structures*, our lifestyle (the net result of all our choices) would reflect the interests of consumer-goods manufacturers at the expense of our well-being. The results of Weston Price (Price, 1937) and Werner Kollath (Kollath, 1962) suggest that this indeed may be the case. The seemingly incredible fact that the work of these people has remained virtually unknown for half a century (what could be more relevant for us to know than that our lifestyle is making us ill) can also be easily explained with the help of the *power structure* concept. Not only our institutions and lifestyle, but also our awareness and ideas can be created by the *power structures*.

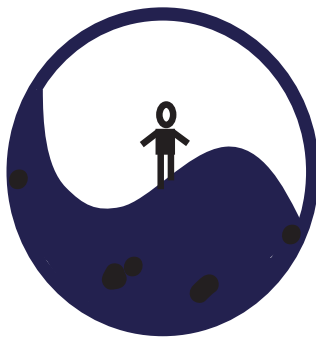
The *power structure* concept is of central interest for us because it allows us to understand the relationship between power and information. By the currently prevailing view, the “free press regulation” is sufficient to guarantee the freedom of information. But according to the *power structure* view, information is so intimately related to power that it is inaccurate and even dangerous to consider it as free. As the etymology of the word suggests, information has the capacity to put our thoughts and actions into a specific form. In other words, *information is power*.

The *power structure* concept also allows us to see the issue of choice in a new light. It is obviously unjustified to consider as “free” the choice which consists of responding to one’s inclinations and desires, as long as those inclinations and desires may be created by our political adversary. The Fancy Cola consumers are not necessarily aware that they are influenced by some external power source. If asked, they would probably say that they are buying Fancy Cola of their own free will. But in truth, they are not only influenced by the *power structure*, they are in fact a part of it. (As Walt Kelly’s cartoon hero Pogo said: “We have met the enemy, and he is us!”)

The *power structure* model allows us to understand still deeper why the information for conscious choice has become a necessity. While our *culture* no longer has the ability to evolve spontaneously, the malignant *power*

*structures* certainly do have that ability. The economy governed by the “survival of the fittest” and the political system in which the policies are determined as an equilibrium of “special interests” are ideal environments for the growth of *power structures*. But this means that, if allowed to evolve spontaneously, our culture will develop according to the interests of the *power structures* and not as it serves our well-being. Information for conscious choice is needed to give our culture a more desirable direction.

### 3. How to make choices



***Caption:*** *The Convenience Paradox ideogram depicts the situation where a more convenient choice leads to a less convenient condition.*

The question remains, what difference can the conscious choice make in practice? In this section we survey the *convenience paradox* result (Karabeg, 1999) which shows that suitably designed information can give us insights which can radically change the way we make choices.

The general theme of this study is the *perspective* of well-being, which is the necessary background for making choices. The *perspective* of well-being gives us the correct over-all picture of well-being, tells us about the hidden factors and main issues, and shows us the hidden possibilities for large improvement.

The focus of the *convenience paradox* result is the value of convenience (what is experienced as easy or pleasant), which is, according to the analysts of modern culture, our dominant criterion for making choices (Tierney, 1993). The main result of the study is that the *convenience paradox pattern* is

repeated so often that it is indeed a rule rather than exception, a true “natural law” in the arena of choice.

The Convenience Paradox ideogram in terms of which the *convenience paradox pattern* is defined is showing a human who is trying to decide which way to go. He wants to take the easier or more convenient way. The way going down seems easier, but it turns out to be the more difficult one. The ideogram depicts a situation where the seemingly more convenient direction leads to a less convenient condition.

The Yin-Yang symbol, which is used as the basis for this ideogram, signifies that the opposites (“Yin” and “Yang”, easy and difficult, pleasant and unpleasant) incessantly change into one another. (This can be seen by following the periphery of the ideogram in the counter-clockwise direction.) Therefore a meaningful choice of direction has to be based on the underlying law of change. Simply said, convenience is not any better policy for making choices than always going down because that is easier, instead of going where we really want to go.

The way on which the human in the ideogram is standing is shown in the ideogram as dark or obscure. It is suggested that information is needed in order to illuminate the dynamics of well-being and show us the right direction.

To perceive the *convenience paradox* as a *pattern* it is sufficient to think of simple examples such as physical exercise which, although perhaps the less convenient choice at the moment, obviously leads to a more convenient condition (“better shape”). The *convenience paradox* result (Karabeg, 1999), however, goes beyond such trivial examples by providing insights into the nature of well-being and the possibilities for its cultivation. Those insights are derived and justified by quoting sources from a whole spectrum of world traditions, ranging from scientific to spiritual. What makes such combination legitimate is the written Polyscopic Modeling epistemology, which defines *information* as recorded experience. While the world traditions uphold a variety of cosmologies and worldviews, they all reflect human experience. By separating that which is common in the experience of the traditions from the

less relevant belief structure, we arrive at a handful of very basic ideas and principles about the nature of well-being, its hindrances and its cultivation. We see that the same principles have been rediscovered within the traditions under different names, where they have given rise to a variety of customs, rituals and therapeutic schools and techniques. And we also see that the same principles are consistently ignored by our culture and violated by our lifestyle.

The *convenience paradox pattern* is like a window, or better said a *door* opening into another cultural reality. As long as we both make choices and evaluate their effects based on convenience, everything seems to be for the better in the best of all worlds. When, however, we realize that our favored criterion has a tendency to deceive us, we also realize that we may have been pursuing happiness in the wrong direction and that a far greater well-being may be available to us on today's level of development of technology.

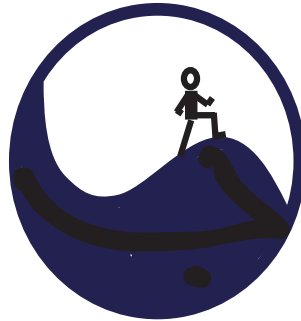
A different idea of freedom also follows from the *convenience paradox*. Instead of wanting to be "free" to choose "whatever we feel like," we want the information which can liberate us from the illusions created by our senses and the biases imposed on us by our culture.

The *convenience paradox* may change not only the way we handle well-being, but also other issues. As long as we mistake convenience for well-being, it may seem, for example, that we need to destroy our environment in order to live well. The *convenience paradox* shows that we may be damaging *both* our environment and our well-being, by using the same faulty judgment. And that both may improve if we improve our way of making choices.

It is not difficult to see how convenience became our culture's dominant value in spite of its obvious shortcomings. By requiring compliance to its customs, the *traditional culture* was able to overcome the *convenience paradox* and *cultivate* well-being. All too often, however, that same compulsion was used for no better reason than to support the interests of the traditional *power structures*. It has therefore been experienced as liberation when science brought us more "empirical" and "rational" values. Convenience created new

markets for new industrial products and political agendas, and added its attraction force to the power of the new *power structures*.

## 4. Two-step marketing



**Caption:** *The Two-step Marketing ideogram points to the possibility of opening up a whole new realm of profitable business opportunities by using information design as the first step in marketing.*

Our plan to incite the practice of conscious choice by designing information has a major obstacle, the *power structure*. As we have seen in Section 2, our manner of making choices is so intimately related with power, that changing it amounts to a silent revolution. But every revolution requires sufficient power to prevail over its opponents. How can the information for conscious choice acquire enough power to prevail over the existing *power structures*? One way in which this can be done is by using the information for conscious choice in marketing. This so-called *two-step marketing* strategy is proposed in this section as the more natural and more advanced alternative to common advertising.

The Two-step Marketing ideogram is a modification of the Convenience Paradox ideogram that was introduced in Section 2. Instead of standing and thinking, the human in the ideogram is taking a decisive step up. That brings him to the “top of the mountain” where all the available options and their relative merits become clearly visible. This characteristic *first step* of the two-step marketing strategy is *information design*. The ideogram suggests that a nonexhaustable realm of attractive business opportunities becomes accessible after this first step.

This suggestion needs to be evaluated against the conditions in business as background. The basic demand on business is to make profit and expand. But the *one-step* opportunities, the ones which cater to convenience, are limited and have largely been exploited. As Adrian Woolridge qualified it, “*Saturated markets and fewer new products tend to spell lower profits. Is there any way for firms to escape this trap?*” (Woolridge, 2002). If the *two-step marketing* can indeed open up new markets for new products, the business will naturally follow that direction.

Will not the existing *power structures* be able to obstruct this plan? The *two-step marketing* does not attempt to overthrow the structured power by using good information and ideas, as so many environmental and social initiatives do. The essence of the strategy is to create *beneficial power structures* which, by being more “fit”, ultimately win in competition over the *malignant power structures*.

As a stronger magnetic field can prevail over a weaker one and reorient the iron chips, so can a stronger power structure gradually cause the restructuring of power. All other factors being similar, the power balance between our power structures directly depends on the power balance between advertising and *information design*, the two kinds of information which they use to spread their influence.

To see that *information design* shares all the advantages of advertising, recall its ability to produce suggestive and visual *high-level information*. The polyscopic modeling *high-level information* shares the expressive capabilities of advertising and art.

Furthermore, *information design* can produce information where claims are explicitly stated and rationally justified. That distinguishes *information design* from advertising and art and brings it closer to science. Its ability to create verifiable *high-level* insights is an advantage that needs to be emphasized. The core element of every large change is a world-view change. As our examples suggest, *information design* can create insights which can lead to profound world-view changes.



The developments around tobacco advertising testify that scientific information can be used to combat economic power combined with convenience. Although smoking is convenient and tobacco sales are profitable, scientific evidence that nicotine is a health hazard made it possible to impose taxes and legal restrictions on tobacco smoking and marketing.

Another advantage of *information design* is its written definition, which allows us to put into practice the conscious choice of *information*. When that is done, the designed information will naturally become the information of choice. Advertising will acquire the status that tobacco advertising has today.

We may conclude that advertising is the first and rather crude attempt at using information in marketing. The reason why it is still so dominant and prolific is the lack real information which could tell us how to make choices. Another reason is the lack information about information, which would make us aware of the effects of advertising.

*Information design*, used within the *two-step marketing*, naturally opens up the path for a whole new approach to design. Instead of making small adjustments to the traditional objects, the new design will first investigate what is really involved in fulfilling a purpose, and then create objects which best suit that purpose. The understanding, fostered by *information design*, that the new designs truly fulfill the purpose better than the old ones, will give the new designs competitive advantage in the market.

The fact that a whole new approach to design is not only possible but also necessary has not remained unnoticed. As an illustration, we mention two designs by Victor Papanek. Perhaps the best known among Papanek's designs is his radio which costs less than one dollar to produce (Papanek, 1985, pp. 224-226). With it, Papanek made it clear that many of our designs are made for profit rather to fulfill a function in the most affordable way. Another well-known Papanek's design is a physiologically correct toilette seat. With it Papanek suggested that many of our common objects are designed for convenience, not as it suits our physiology. Although his ideas brought Papanek a world-wide recognition, his designs did not bring him a fortune.

Papanek was lacking suitable information that would make his designs marketable.

## **Conclusion**

We have presented a *high-level* view of the “information for conscious choice” issue in terms of four ideograms.

The Information Design Challenge ideogram defines the issue by stating that information needs to give us the vision which can allow us to make conscious choices, and in that way give a desirable and sustainable direction to our rapidly changing technological culture.

The following two ideograms point to fallacies associated with the presently common way of making choices, the so-called “free choice”. The Power Structure ideogram suggests that choice is never really free, but inevitably conditioned by a large number of known and unknown factors, which we have conceptualized as the power of the *power structure*. Since presently the *power structures* tend to evolve in the manner which maximizes their power and not our well-being, they must be considered as our political adversaries. Therefore our choice needs to be liberated from their influence before it can be considered as free.

The Convenience Paradox ideogram exposes the deceptiveness of our common way of making choices by direct experience (what we like or dislike). Since we are both making our choices and evaluating them by using such unreliable judgment, we may question whether the present trends in the development of technology and culture are bringing us closer to well-being or further away from it.

Conscious choice, put into practice through the *two-step marketing* strategy, is proposed as the natural solution to both of the above-mentioned problems. Conscious choice can create new markets for new products, the ones that are truly good for us. Such development may revitalize our economy and our culture, and join them into a synergistic relationship. The beneficial *power*

*structures* that can be created in that way may spontaneously guide the development of culture and technology in a favorable direction.

In sum, by producing the information that is suitable for conscious choice, and by putting it into practice through the *two-step marketing* strategy, we may expect a similar effect our culture, as *designing* the suitable headlights would have on the bus in the Information Design Challenge ideogram.

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