

GLANVILLE, Ranulph. Try again. Fail Again. Fail better: the cybernetics in design and the design in cybernetics. Kybernetes: The International Journal of Systems, Cybernetics and management Science. Emerald.

Objetivo: explorar esses dois temas [cibernética e design] demonstrando a relação entre eles, podendo ser entendidos como complementares.

Metodologia: caracterização dos dois temas, a partir de uma análise comparativa entre eles.

Resultados / Conclusões: a cibernética se apresenta como a forma teórica do design, o design como a prática da cibernética.

## 1. Introdução

Uma breve introdução sobre cada tema [design e cibernética]

Algumas definições sobre Design:

Simon (1969): ações mecânicas complexas e essenciais, uma série de alternativas escolhidas através de critério.

Rittel e Webber (1984): “wicked problems”

Gedenryd (1998): relação entre design e cognição, seu interesse está menos em o que os designers deveriam fazer e mais em o que eles fazem.

Cibernética:

Wiener (1948): controle, feedback, comunicação, circularidade.

Von Foerster (1974): Cibernética de Segunda Ordem, de sistemas observadores.

### 1.1 Design

[página 1174] “[...] act of designing is a worthwhile act in its own right, and a proper focus for research. [...] Design is a way of acting, a way of thinking [...]”

## 1.2 Cybernetics

[página 1175] “[...] way of thinking that bridges perception, cognition and living-in-the-stream-of-experience (the involvement of the observer), which gives important value to interaction and what we hold between ourselves and others – whether animate or inanimate.”

## 1.3 A sketch of the argument

Pretende mostrar uma série de analogias que mostram como design e cibernética estão proximamente ligados. A cibernética pode agir como suporte teórico do design e o design como atividade prática da Cibernética.

## 2. Cybernetics and design: introduction

Ponto em comum entre cibernética e design – inescapável presença do observador.

Primeiro a propor essa relação foi Gordon Pask na década de sessenta. Trabalhos junto com Cedric Price e na escola de arquitetura de Londres, a *London's Architectural Association School*. Trabalho de arte: “Colloquy of Mobiles” no Cybernetic Serendipity Exhibition de 1968.

[página 1178]: “Design, in this paper, is an activity that is often carried out in the face of very complex (and conflicting) requirements. We may deal with many of these requirements (functions to be accommodated and other factors) through logical procedures: for instance, an optimal sequence of rooms in the layout of a building may be created using simple network theory.”

“[...] Sometimes the process of bringing all the requirements that transcends traditional logical procedure at which point a novel type of arrangement may appear.”

“[...] design as a verb, not as a noun. The verb, design, indicates particular process that constitutes the design activity, a particular and relatively little studied process which I maintain is at the heart of design[...].”

O processo tradicional de design tem como questão central as ações do designer. Essas ações começam com um traço no papel, e então percebendo o que este traço sugere, modificando o desenho, em um processo circular. Dessa maneira, o processo inclui o designer, pois é impossível entender esse caminho sem a explicação do designer.

[página 1179] “In this process of conversation, primarily held with the self (but also with others for instance, in the Office), that indicates a cybernetic process of work: for conversation perhaps the epitome of second order cybernetic system. And, like any conversation, it is open and can take us to places we did not expect to be, thus introducing novelty. [...] an exploratory and constructive act.”

[página 1180] “Design always involves the designer. That is, of course, nothing more than an assertion of a grammatical rule: verbs have subjects. But it is important because it shows in another way that design, with its active agent, the designer, fits in with cybernetics (particularly of the second order), which considers circular systems in which the observer is understood to be both present and active.”

Partindo da origem da palavra design, que vem sendo usado no inglês recentemente, vem do italiano *disegno*, ou seja, desenhar. Mas também tem outro sentido forte vem do latim: designar.

Já cibernética tem origem no grego antigo, porém seu uso moderno teve origem com Norbert Wiener, em seu livro de 1948, *Cybernetics*.

A palavra controle é geralmente usada em seu sentido restritivo, onde um controlador limita o controlado, com um significado essencialmente destrutivo e agressivo. Porém, também pode ser entendido como possibilidade de controle, de guia para uma melhor performance.

[página 1183] “[...] we become observers in when we live in experience rather than describing it. For a designer this may be summarised as experiencing total involvement in the act, often thought of as being lost in it.”

“Cybernetics talk of structure and form, leaving emotion and meaning to the observer’s interpretation and insertion. It may be thought of as providing structures within which it is possible to construct the individual meaning and emotions we chose.”

O paradigma da Cibernética de Segunda Ordem: Pask’s conversation.

“Conversation involves us listening and talking to each other, in an essentially circular form.”

“Conversation is the fourth essential circular cybernetic system that embodies the features of second order cybernetics. As Pask describes it, the conversation is the basic form of genuine interaction: and it is this which makes it so important, such a good model for design.”

### 3. Body of argument

[página 1186] “Cybernetics was seen as a major weapon in the arsenal used in the attempt to produce a rational design process, within a determinist framework. This was not surprising, for cybernetics was correctly understood to be concerned with mechanism as seen (Wiener’s metaphor of the animal as the machine has in some respects reversed in second order cybernetics so that the machine is often seen through the metaphor of the animal).”

[página 1189] “Research in design can be seen to fall into two categories (Gedenryd, 1998). The first and largest is that in which design is investigated through perspectives and methods imported from or associated with other subjects. [...] the history of design examines the outcome of designing through the perspectives and values of history; while this may give interesting insights, it can be argued that this research issue misses the central concerns of design, treating design as material to be

subjected to investigation by and according to the aims and values of the imported discipline. [...]

The second category is research that searches for the presence of a design approach in designing. [...] I believe design is a way of acting which has great power and potential, and that researching this will tell us not only a lot about design, but will also give us insights into different ways of acting, and can cast a different light on other fields.”

[página 1191] “It has been said of design that the most important ability of a designer is to throw away an old idea that is not working, and start again. This is a regular experience for the designer.”

[página 1193] “[...] what we do is, to design an explanation that makes our activity seem purposive and logically directed: we use the word design in its meaning as intentional, as a goal orientated, and therefore as cybernetic.”

[página 1194] A diferença fundamental entre cibernética de primeira e segunda ordem está na posição do objetivo do sistema. Na cibernética de primeira ordem, o objetivo se apresenta como algo externo ao sistema, servindo como motivação para tal, assim como o observador também se encontra externamente.

Processo cibernético de design:

[página 1196] “[...] The outcome of an iteration has the same value as the outcome of the previous (and the next) iteration repeatedly carrying out the process on the output, leading to the generation of the same output (the value of one output is the same as the value of the following output). In design terms, the next iteration of the design conversation leads to no change in the form. When this occurs, the designer has reached a stable outcome, but not necessarily the ‘best’: the criterion Best has no relevance in this way of thinking. In practice, designers learn to know when to stop: they develop an intuition that recognises when they have reached a good enough place [...]”

[página 1197] “Consider the natural of the design conversation: for it to operate there has to be a listener (viewer). To listen requires an open mind and generosity. Without these, we cannot listen (as a creative act) and we do not participate. To design means to be able to see the possibilities not that we already have in mind, but that appear given to us by the other.”

#### 4. Conclusions

[página 1201] “The crucial analogy of this paper is drawn around the centrality to each subject or circularity, in the guise of a conversation (usually held with the self). The central analogy between cybernetics and design is argued to exist in circularity as embodied in a conversation.”