

# Cybersyn

Foundings and convergence between art,  
science and the technology in Chile



“...If we don't support digital art and media cultur,  
our cultural life will be lost trough the dominance of the machines...”

Monika Fleischmann

The Historical context of this project was reviewed by Mr. Raul Espejo

## INTRODUCTION

During the administration of Salvador Allende in Chile, in the early 70s, a most visionary project about the use of information and communications in government was undertaken.

The project was called CyberSyn, and contemplated the transmission of information in real time to support the management of the country's industrial economy. At its core was an Operations Room constantly receiving information and transmitting decisions. A network of about 500 telex machines linking the country from north to south supported all this. Its futurist design offered the hope of a more participative and less bureaucratic society

Its creator was the British scientist Stafford Beer, father of organisational cybernetics and creator of the Viable System Model, today in use in enterprises of all kinds and part of the curriculum of universities worldwide.

The project had the participation of a multidisciplinary group of national and international scientists. Their task was to build a system for distributed decision-making supported by relevant information. But their efforts were interrupted by the coup d'etat of 1973, just when the Operations Room was going to be transformed from a prototype into a fully fledged operational centre for the government in the presidential palace.



operation room ( opsroom )

After 30 years, we want to revisit this visionary creation with the support of a documentary, an interactive installation and a web site, to inform and involve today's spectators and visitors in a noteworthy story. These three technologies should give us the opportunity to transmit a rich vision of a multilayered project.

## METHODOLOGY OF INVESTIGATION/ACTION/DEVELOPMENT (I+A+D)

This project is intended as a point of dynamic convergence of information, which will portray through different representational devices the social, technical, conceptual and political contexts of CyberSyn.

Stafford Beer was the scientific force behind the project. He was its conceptual and aesthetic designer. Fernando Flores, at the time general technical manager of the National Development Corporation (CORFO) conceived the project and gave political support to its development. Raul Espejo was the day-to-day manager. Gui Bonsiepe and his colleagues from Technological Institute of Chile (INTEC) were the designers and implementers of the Operations Room.

Our investigation will be based on the testimonies of participants in the project and also on the views of people who were related to Stafford Beer in later projects. Testimonies and views will be recorded in a documentary and serve as the platform for the construction of an audio-visual exhibit and an Internet site.

Our construction will have two phases; a linear narrative or documentary and an interactive presentation that will use an Internet site to develop its content.



### Linear

An audio-visual documentary that will contain reports about the CyberSyn project, by interviews of participants and connoisseurs of the project, and a 3D documentary will be made to represent its technical devices.

### Interactive

We will construct a chair similar to those originally designed for the Operations Room. It will serve as a control centre to share information through an interactive menu in its right arm.

This menu will be made up of four links:

- Documentary
- Time line
- Semantic Map
- Technical Context through animation 3D of equipment and devices.

The documentary and the exhibit will be complemented by a website, which will contain all the compiled information that will be made available to interested people.

## FUNDAMENTS

We want to rescue this project, which lives in the memory of multiple actors, who embody until today several aspects about what was its routine character and contingency.

Chile's geography and social conditions offer a great laboratory for social, economic and cultural experimentation. Chileans, we believe, are willing to experience new forms of development and the CyberSyn experience, whose conceptual underpinnings today represent a viable construction of information and communication systems all over the world, we believe can positively affect new generations.

Little has been known in Chile about CyberSyn for the last 30 years. Thanks to the efforts of foreign researchers, like Edén Medina from the University of Indiana in the USA and exhibitions such as "Making Things Public" at the ZKM, an institute of art and new media at Karlsruhe, Germany, that new interest has arisen in Chile about its documentation.

Also, different people have developed economic and social management models based on this experience, of which it is possible to point at the group "Team Syntegrity" created by Stafford Beer in Canada, Raul Espejo's work through the company SYNCHO Ltd. in the UK, and Leonid Ototsky's project of information management at the "SIM chair of the MIPT" in Russia.

Our project of investigation, action and development is a Chilean enterprise being implemented by a multidisciplinary group (without leaving aside possible international contribution for its correct development). The idea is to turn the CyberSyn project into something more than an anecdote; we want to make it an example of a transdisciplinary art, science and technology, with possibilities of implementation in governmental, industrial and cultural organisations.

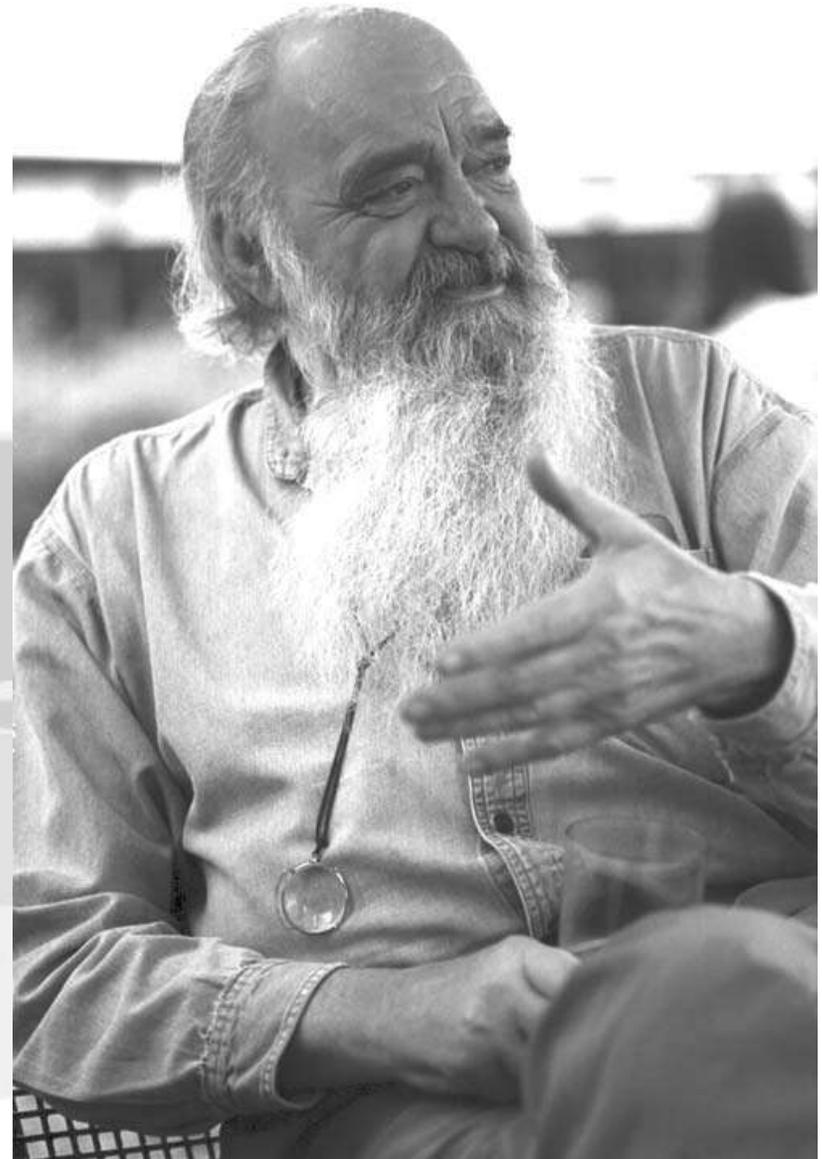
Important to this project is the configuration of innovation projects that are sustained by the cross fertilization of the arts, science and technology in a world that respects nature.

The construction of an interactive installation wants to give the visitor the option to manage the information from the origins of the CyberSyn project. This action is imagined as an active synergetic act, in which the visitor is both the engine and receiver of the work.

We give much value to the cross fertilization of concepts and exercises, sustained by facts that happened in Chile 30 years ago.

## OBJECTIVES

- To investigate, locate and compile existing information about the CyberSyn project, and make with all this material a documentary and an interactive installation.
- To inform about a project that happened in Chile, which at least conceptually, anticipated developments of communication and information systems worldwide.
- To stimulate the use of the arts in the development of new technologies, through an interactive installation, with a content of high complexity and easy usability.
- To disseminate the works of Stafford Beer, one of the great cyberneticians of recent times .



Stafford Beer  
CyberSyn main director

# EXECUTION

## *General production*

Our project contemplates 2 steps for his accomplishment:

*Pre-project design.* Contemplates building up international alliances with groups and institutions interested in the subject, which could provide necessary resources for its accomplishment.

*Obtaining of resources and general investigation.* HolonLAB will implement the project. We are working to obtain resources from audio-visual sources of the Chilean government (Fondart), private foundations related to cybernetics, cultural institutions sponsored by European countries and private companies. Contributions will be asked for the technical work (equipment) and for its dissemination.

## Aesthetic proposal

The aesthetic proposal is based on the work of the CyberSyn project, which was oriented to the practical usability of futurist objects/ resources.

## Recording

Audio-visual orientation: these aesthetic resources will be aligned to the techniques used by Stanley Kubric in "2001 odyssey in the space", using slow movements, angular, flat lenses great closeness that emulate scientific documentaries and simple but concrete narrations.

## Edition

Editing will give preference to the relevant concepts more than to personalities. It will travel freely through the concepts leading to the stories offered by the interviewed people, supporting it technically by the compiled images in file.

The documentary will be constructed on the bases of the experience of different participants in the CyberSyn project and of experts from different areas:

Collaborators of Stafford Beer and participants in the project (preliminary):

Jorge Barrientos, Isaquino Bedanov, Simon Beer, Guy Bonsiepe, Raul Espejo, Fernando Flores, Mario Grandi, Tomas Kohn and Gabriel Ramirez will be interviewed.

To contextualise the CyberSyn project in Chile, we will make visual analogies related to the following images:

Neuronal Networks, Communication networks of the Seventies, Images of file of companies and society, Places in which the system was installed, Masses of people moving in the city, Nature images (transference of information between animals, insects and vegetables), telepathy, algorithmic ecolocation.

## DOCUMENTAL

*Location of participants of the project.* The location of the producers and participants of the project is one of the important stages of this project.  
We contemplate to obtain permissions so that these participants use appropriate locations.

*Compilation of material written, graphical and of testimonies.* This compilation will be based on the recovery of graphical material and testimonies written about the CyberSyn project.

*Recording of interviews.* The recordings will be made in the natural environments of the interviewed persons (their place of work, factory or study). In the case of the persons who live abroad, like Raul Espejo in England, Guy Bonsiepe in Germany, or of Stafford Beer's archives at the University John Moore Liverpool in England, we contemplate resources to travel to interview/visit them. Otherwise, the interviews could be made via video conference, nevertheless we considered of great importance to make these captures in situ for the aesthetic continuity of the documentary and its correct narrative development

*Creation of 3D animations.* The animations in 3D will complement the technical explanation on the different devices used for the construction of the CyberSyn project and will be based on testimonies of the participants and resources conserved by different institutions and people.

*Semantic map.* The semantic map will explain the different concepts that involved the development of the CyberSyn project.

*Time Line.* This line of time will be constructed on the basis of the different chronological historical landmarks.

*Film material view.* The view of the material will be made from the beginning of the process of recording in the occasion to select the material and complementing with graphical images the stories of the different interviewed people.

*Edition and post production of the material.* The edition of the documentary will have two stages:

1. Documentary edition. This edition will have around 1 hour of duration.

2. Documentary edition made for the interactive installation. This edition will be subdivided in different points:

- Interviews and historical context: The spectator will be able to build up his/her own story.
- Time line: It will explain the chronological process and the main landmarks that were developed before during and after the CyberSyn project.
- Semantic Map: interactive thesaurus of concepts related to the CyberSyn project. This space will allow the visitor to identify the concepts related to this project.
- Technical Analysis of devices in 3D: Animations of the different computers and telex machines used for the development from the project.

## INTERACTIVE INSTALATION

*Projection and design of chair.* This stage will be made supported by the testimonies of participants in the project and the documents archived at the University John Moore in Liverpool/England. Additionally, the new requirements for the optimization for the interactive installation will be implemented.

*Construction of chair.* The construction of the chair will be made in a factory or storeroom, with similar materials to those used by the CyberSyn project. In this construction the implementation of a computer supported interactive menu will be contemplated.

*Programming for interactive menu.* This menu will be made in 'director' or 'max jitter' (softwares oriented to the programming of objects and the handling external controllers).

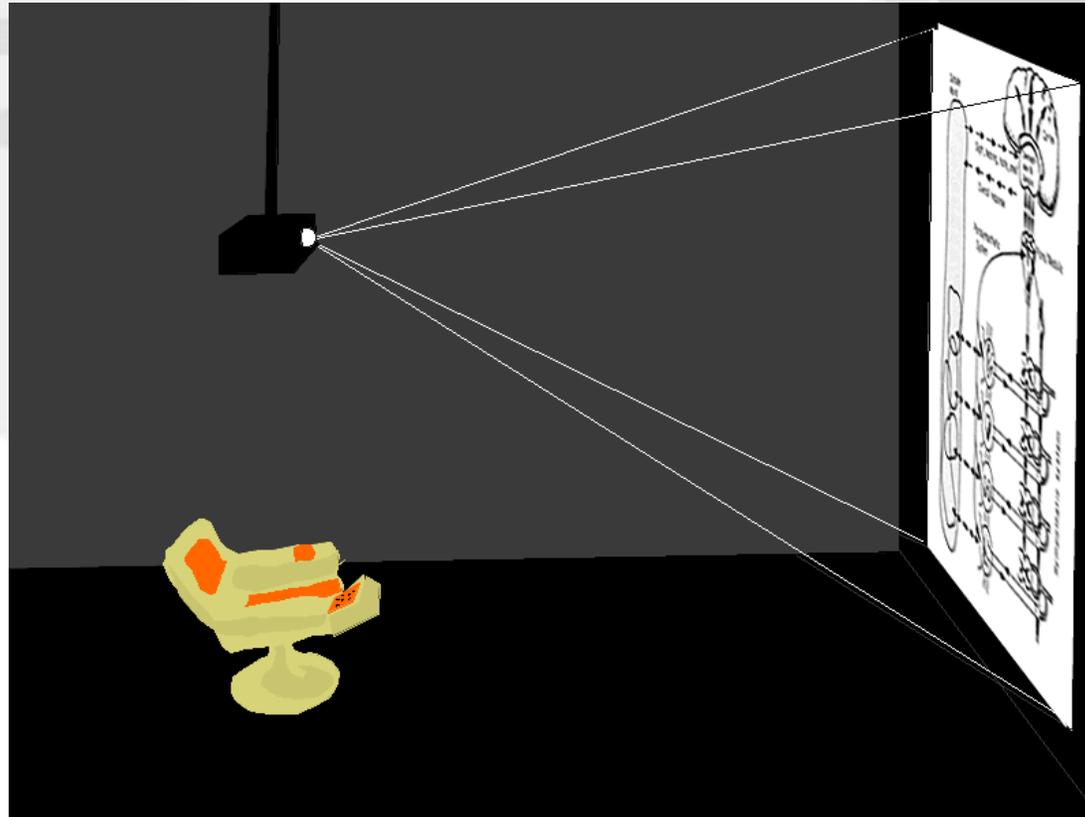
*Internet site.* The Internet site will contain the important parts of the project, and it will be presented as an information space in which the visitors will be able to offer comments and suggestions.

Tree of the site: - Beginning - Historical Context - Related Texts - Semantic Map - Line of time - Related Bonds - Contact Exhibition

## Exhibition

In addition to a permanent exhibition based on the Internet site, we contemplate making different exhibitions.

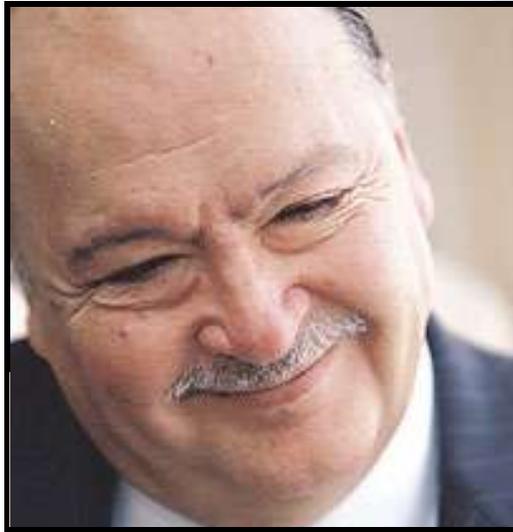
One of the proposed places is the cultural centre at La Moneda Palace (the Presidential Palace in Chile), since it represents a symbolic historical place for this exhibit. We also contemplate an itinerant exhibition, exhibiting the chair in different art and new media museums and galleries.



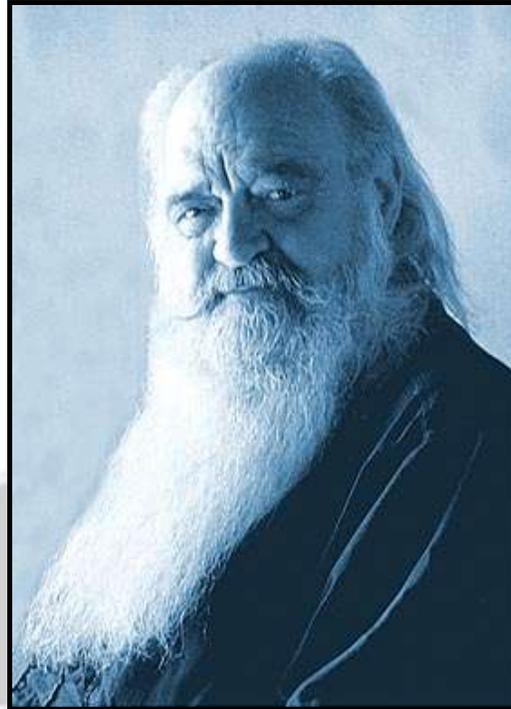
## HISTORICAL CONTEXT

During the government of Salvador Allende in Chile, in the early 70s, was undertaken one of the most ambitious and creative projects about the use of information and communication technologies in the world; the CyberSyn Project or the Synco Project as it was called in Chile.

Fernando Flores  
CORFO technical manager (1970-1973)



Fernando Flores, whom in 1970 became the technical general manager of CORFO, was responsible for the management of the State owned enterprises. Managing the newly nationalised enterprises, together with the ones that traditionally had been in CORFO's hands, required creating a flexible and transparent information system. He was well informed about the



theories and solutions proposed by the British scientist Stafford Beer since his days as an engineering student and in collaboration with Raul Espejo, who also worked at CORFO, wrote a letter full of the revolutionary spirit that Chile lived in those days.

Beer not only gave quick attention to Flores' call, but also saw in that request an important opportunity to put in practice his scientific work, which British companies had disregarded as perhaps too advanced for the time. He then adjusted his professional priorities and started to travel

to Chile, where he began to work with a group of engineers, designers, scientists and technicians, in one of the most innovative projects about information and communications in the world, considering that the Arpanet project, the first computer based communications network developed by the military in the United States, had just begun in 1969.

The Allende's government, after his first visit, in a bold decision, gave Stafford Beer the green light to proceed with a technological experiment at national level, which he called CyberSyn. The name in Chile was 'Proyecto Synco'.



Salvador Allende  
Chilean president (1970-1973)

Beer described this project like the design of a nervous system, through which important administrative, economic and social decisions would run. This reference to the neurosciences, a characteristic of cybernetic thinking, linked the project to the biological concept of autopoiesis, created by the Chilean scientists Humberto Maturana and the deceased Francisco Varela, and made the project accessible to President Allende, thanks to his medical studies. Formally, an autopoietic system is operationally closed, structurally determined and self-regulated, fundamental characteristics of the Synco project.

The Synco Project was focused on the development of communications (i.e. the Telex network), information to support management (i.e. a system of indices of performance), which required of



Raúl Espejo  
Chilean manager of the Project CyberSync

computational resources (provided by the National Computing Enterprise- ECOM) and a decision node to display information and make decisions (The Operations Room). Raul Espejo was responsible for the day-to-day management of these activities and Stafford Beer was the scientific director throughout.

The design and construction of the Operations Room required the technical contribution of a group of designers and technicians, who recently were identified by the architect Hugo Palmarola in his study of the evolution of the design in Chile, where he offers an extensive reference to this project. In 1971 the newly created Group for Industrial Design at the Technological Institute of Chile (INTEC) started the design of the Operations Room, under the supervision of Gui Bonsiepe, becoming an important point of convergence between the arts, science, technology and the systemic thinking of cybernetics.

The key problem addressed by this project was the transmission of relevant information in real time to support decision-making. This was a deficiency in private enterprises as much as in government throughout the world. Delays of months, if not years, were common. In those years the development of information systems not only lacked adequate technology compared with that is available today, but most significantly of good models to understand the complexity of organisational processes. The model

proposed by Beer for this project was his Viable System Model, which allowed modelling the complexity of the Chilean State without the need of great volumes of information. The design of a limited number of key indicators for management, fed daily by data coming from companies of the social sector, allowed the system to provide managers at all structural levels with reports in almost real time about significant changes in the industrial economy.



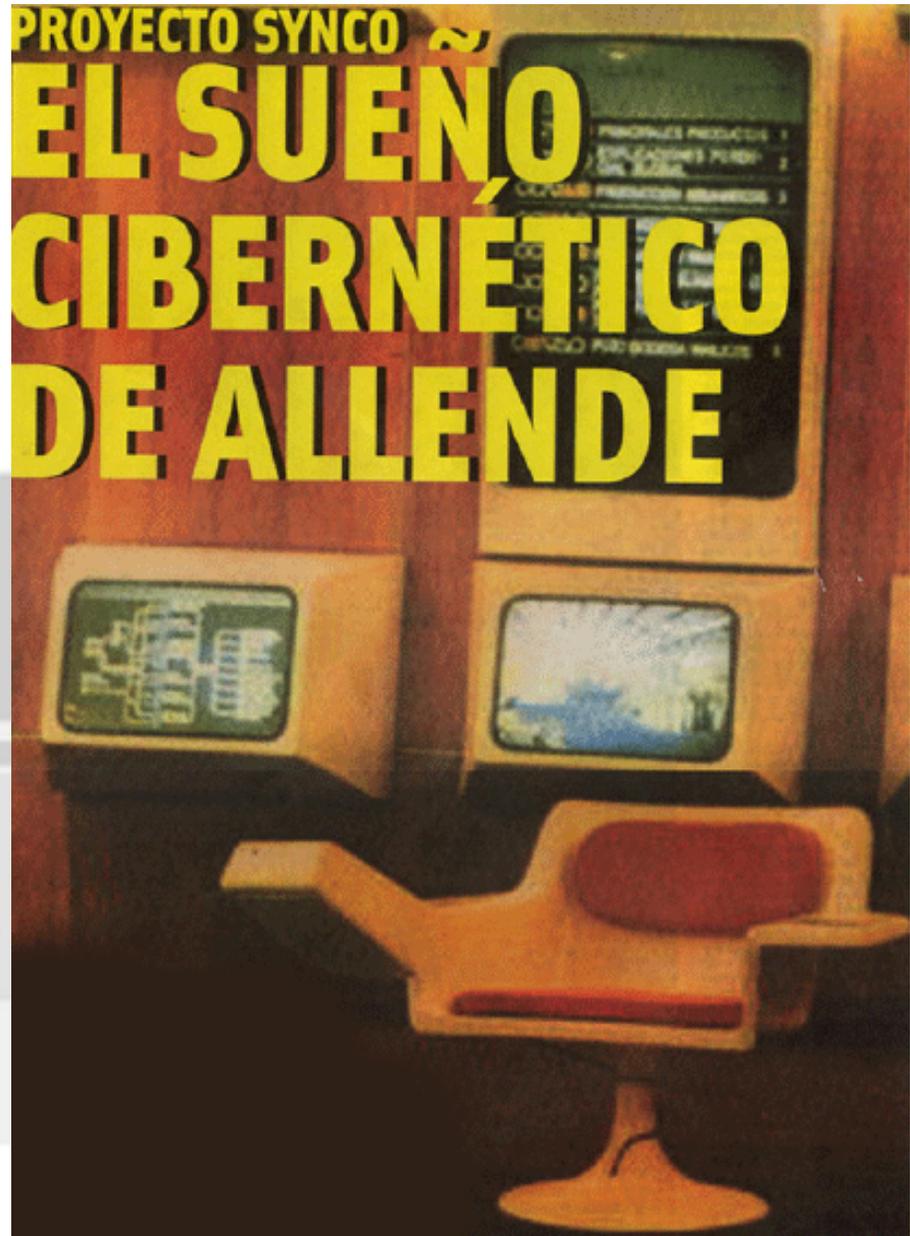
Gui Bonsiepe  
Design coordinator INTEC

This system was implemented in two computers located in Santiago, and the flow of data was supported by about 500 Telex located in different points of the country. This meant a great advance in the construction of a society based on information technology, and it would have meant a great advance for Chile should have it evolved without the interruption of the 11 of September of 1973 coup d'etat.

Actually, the system had limited use for multiple technical and political reasons. However, some people granted that one of its products was coordinating the flow of trucks from and towards the state owned companies during the transport strike of October 1972, organized by right wing groups and financed by the CIA.

CyberSyn should have had a wider use from September 1973; Presidente Allende had asked to move the Operations Room to the Presidential Palace. Unfortunately, even before the military coup, there were speculations in the press that this was a sinister system to support repression. The project was seen as the “great socialist brother”. After the coup, the developments and equipment of the Synco project were destroyed irremediably.

For Stafford Beer this project, in spite of its sudden end, meant a great contribution to his experience, as he reflected in one of his great works "The Brain of the Firm (second edition)", which still today is an important point of reference to understand communication and information structures in the economy.





**This art project is an action research investigation of or\_am.**

**or\_am is Catalina Ossa, multimedia artist, and Enrique Rivera, filmmaker and audiovisual artist. If you want to help us to develop it or learn more about the cybersyn project, we encourage you to contact us:**

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