

Benedit : Phitotron

Author

Museum of Modern Art (New York, N.Y.)

Date

1972

Publisher

The Museum of Modern Art; Centro de
Arte y Comunicación

Exhibition URL

www.moma.org/calendar/exhibitions/2550

The Museum of Modern Art's exhibition history—
from our founding in 1929 to the present—is
available online. It includes exhibition catalogues,
primary documents, installation views, and an
index of participating artists.

benedit phitotron

museum of modern art

new york

1972

centro de arte y comunicación

buenos aires

1973-1975

LUIS BENEDIT'S BOTANICAL EXPERIENCES

In order to understand a work of art one should study processes, transformations, systems which leave behind the material surfaces or volumes, which function as mechanisms of production.

For that reason we want to sketch here an approach to the works of Benedit by means of two models: one cybernetic and the other linguistic.

"Cybernetics is the science of control and information in animals and machines", for the father of this science, Norbert Wiener, who back in 1948 had already published his "Cybernetics or Control and Communication in Animal and Machine."

R. Ashby, one of his followers, explains for his part that "a machine is any system—natural, vegetable or animal—which can be predicted, that is, whose behavior can be predicted with anticipation."

Cybernetics is the Science of machines and, according to this first definition which we have quoted above, it studies how information is translated into control and regulation within a system, which can be vegetable, animal or human.

When Benedit explains the growth process of vegetables, his variable is photophilia (the need of light in order to produce photosynthesis). This is a machine in the cybernetic sense, because one can predict that the plant will incline towards the light.

Knowing the variables of a certain vegetable, one can deduce the amount of water which its leaves take in and evaporate; this is a machine from the viewpoint of cybernetics, due to the fact that the phenomenon repeats itself and can be predicted; the same thing happens if one provokes an artificial growth in an hydra-ponic (phitotron) receptacle. In the first case one observes the machine (the plant); in the second one of the conditions of the machine.

One can investigate a determined behavior by altering the natural conditions of this machine-plant, that is, transforming—for cybernetics—the conditions of the machine, in this case the vegetable process.

By means of the vegetable evaporators or the hydra-ponic receptacles, Benedit studies the self-regulation of a process, of a system, changing the conditions of its production.

It is a development based on artificial modifications and programs of production conditions which take into account the self-regulation and permanence of the system.

These alterations can be taken as information variables. When there is an external modification, the organism "informs itself about it" and adequates its functioning in accordance to its substance. They are machines, that is, predictable processes; this shapes them as cybernetic objects. It is a typical mechanism of self-regulation by means of feed-back, as in any method of experiment and error: a system of constant feed-back, a repeated feed-back.

The process which the animal, the vegetable or the human being follows can be predicted, because in terms of given artificial conditions, the subject of the experiment is a machine in the cybernetic sense, because the information which is accumulated in terms of successful or unsuccessful experiments, regulates its behavior for the achievement of its aims.

It constitutes an identical situation to put a subject (animal or human) in a labyrinth as to submit a plant to artificial conditions.

Thus we see how the machines (plants, animals, men) self-regulate themselves, that is, develop their behavior in terms of stored information and as a consequence they are cybernetic objects.

In addition to this cybernetic model it is possible to utilize the elemental model of semiology, that is, sign = significance/meaning.

The maps which the architect-artist Benedit draws simultaneously with his botanical experiments are, for the linguist, the formal organization of **significance**.

The diagrams of living places are the forms of the significances and the material realizations (when without the plants) are the substance of the **significance**.

When one includes a system of behavior (vegetable, animal or human) we enter into the area of **content**. The form of this content (according to Hjelmslev's model) is the process of adequation and resolution of the problem, and the substance of the content is the material register of the cybernetic behavior or object (vegetable, animal or human).

HYDRAPONICAL SYSTEMS

The possibility of cultivating plants and flowers without earth was studied back in 1969, when Woodward made what he called "the good grass" grow in water. Woodward's experiment was to make his good grass grow in different kinds of water, and in that way he managed to prove that the best development of his plants took place in those waters which contained the highest percentage of earth. This first hydra-ponic experiment, that is, cultivation without earth, consisted in providing the plants with the food matter which they need for their growth, by means of mineral salts dissolved in water.

Nevertheless, the word *hydra*ponics is quite recent and was in fact invented by a professor of vegetable physiology at the University of California, who carried out large cultivations in 1938 without earth (Gerike).

Benedict shows how every plant constitutes by itself a laboratory. By means of a process of osmosis their roots obtain the possibility of elaborating the food substances which could be either in the earth or in the inert substances in which they arrive: a nutritive solution. Furthermore, the roots separate out the acids which help out in the dissolution of the minerals existents in the earth or in the plastic material. The roots also serve as deposits of the assimilated products. The stem and the branches act as a system to transport the liquids, and the fibrovasculars work like small channels. It isn't until the food substances which have been absorbed by the roots and converted into sap (solutions which circulate inside the plants) get into the leaves can be utilized, by means of a process called chlorophyllous synthesis, in which by utilizing solar light the plant obtains the energy which it needs for its subsistence and reproduction.

In the works of Benedict the plants find the same environmental conditions which nature offers them and the artificial nutritive solution is the basis of his experiment, due to the fact that with that system the artist models along with the scientist the conditions which the earth offers to the vegetables.

The botanical experiments of Benedict, architect and painter, who studied the drawing of landscapes with the Italian master Francesco Fariello, are surely a result of the lessons he was allowed to enjoy from the European gardens. The elements of landscape painting are precisely the plants, the birds, water and the sun, all of which are elements which Benedict utilizes in his investigations: the presentation of the natural facts, their representation, the relation between the works of art and the animals, their functions; without a scientific explanation, but simply showing what is observable.

From "Biotron", his most important work with animals, which he presented in the Vienna biennial of 1972 (an experiment with 4,000 bees), Benedict goes on to present the behavior of plants, varying the parameters and conditioning them in accordance to scientific experiments, such as *hydra*ponics.

In the "Phytotron" Benedict puts the spectators in front of a natural system of live organisms which develops, and modifies, allowing in addition a direct observation of the growth and change, during a determined length of time.

The proposal is not a direct scientific observation of the phenomenon, but rather the developments which could grow out of his proposal. Adhering to and developing the ideas of Duchamp, Benedict thinks that the observation of these natural phenomenon, in terms of the different context in which he proposes them, produce a different effect in the spectator.

SOCIAL MODEL

Every science not only uses models of other sciences, but uses them on distinct levels of abstraction in order to anticipate kinds of happenings or realities. The models serve as objects of representation, as constructions which reproduce phenomenon in such a way as to make them more accessible or more easy to investigate.

Starting with concrete situations, one utilizes the process of model making in order to point out systems of relations, in order to study theoretical structures, in order to find formal systems which conserve the isomorphic relations with the concrete data of what is real.

That is, thanks to the process of model making the operator—in this case the artist—can make a precise analysis of a system, establish the correspondencies and relations between a model and the empirical facts.

In the case of Benedict's botanical experiments, the mark of reference elected are the investigations by means of vegetable models, a kind of scientific laboratory where the collective behavior in a vegetable community are studied. Benedict operates as a social anthropologist: he has elaborated a series of interested models which, although exhibited as artistic facts, go way beyond the pure descriptive or documental study.

In the course of his work Benedict discovers problems or comes upon knowledge which he did not seek.

It is his capacity to observe, his alert position, as an artist, which discovers the lateral problems, sometimes more important than the fundamental problem.

Serendipity—that is the way it is referred to in the Social Sciences—is not an accident, it is a path in which the investigator does not blindly concentrate on the object of his study, but rather is alert and sensible to any accidental fact which should appear during the course of his work.

In August of 1968 Benedict makes his first "Animal Habitat" in the Buenos Aires Fine Arts Museum, and in December of that year, in the Rubbers Gallery, he works painstakingly with cats, lizards, fish, turtles, birds, a panel of bees in full activity and botanical experiments in fecundation and germination. The objects of his studies are not industrial or folkloric structures, as are the ob-





jects of Marcel Duchamp, rather they are located at a level in which the object nearly tends to disappear due to its being used, something like an object which carries its presence to the limit of perception.

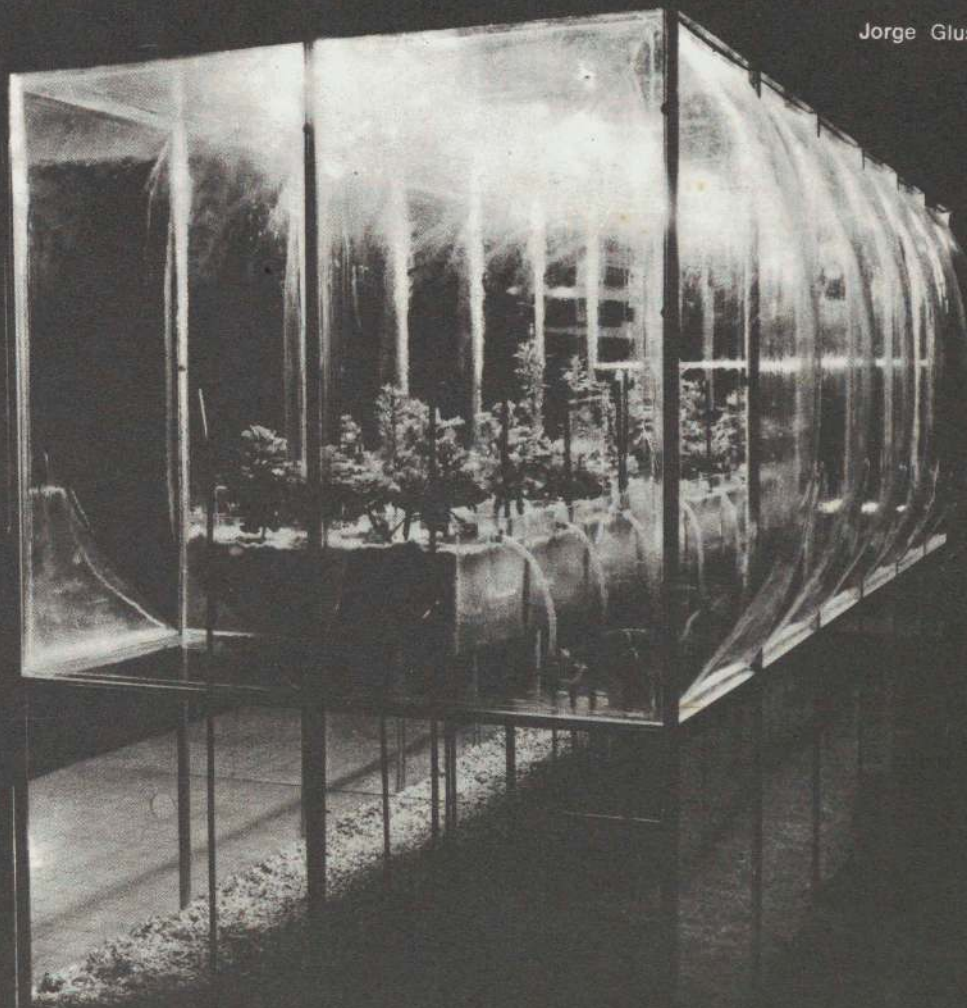
Benedit does not exalt the urban industrial folklore, but rather studies the consumer society through the living places of its participants, and attempts to occupy the space which the sculptors of Minimum Art or Antiform attempt to occupy, but with different means.

The models of Benedit tend towards a pre-iconographic regression of the elements which make up the image; it is a return to the primitive, to the free reply of beings to the world, a liberation which wants to reinvent the inventions, and identify man with nature, to whom the traditional theological principles no longer are of any use.

He does not establish a cultural dialogue with the spectator, but rather liberates activity and existence in the animal and vegetable world, in a process in which every possible intellectual intervention is reduced. He puts in the forefront the elements of reality and makes them react among themselves, in order to investigate their own expressive charges.

He attempts to strip artistic language of all historical or symbolical super-structure, exalting the empirical character of the work of art, and the non-speculative nature of the investigation.

Jorge Glusberg



cayc