



## SECTION 4: ART AND MUSIC

# Heinz von Foerster in the art department. A collide-oscope in four parts

Heinz von  
Foerster in the  
art department

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### Abstract

**Purpose** – To provide illumination of how systems tend to produce an output nobody expected. It is in these moments that observers may learn something about their own expectations.

**Design/methodology/approach** – The paper discusses two cases in the history of art: faked Vermeer paintings and a test Heinz von Foerster did in the art department at the University of Illinois.

**Findings** – McLuhan's notion "collide-oscope" is applied to the way Heinz von Foerster (ab)uses images in his own texts; furthermore it is applied to the way the BCL was organized. The formal structure of the "collide-oscope" offers a model of perception.

**Originality/value** – Provides a discussion of a fundamental message of cybernetics – that we cannot escape collisions and disturbances. They are its essence.

**Keywords** Cybernetics, Perception, Arts, History

**Paper type** Conceptual paper

In the late 1960s Heinz von Foerster taught art historians a lesson that was hard to swallow indeed. No, this time he did not tell his usual joke about Picasso (von Foerster, 1995, p. 246). This time he gave a public lecture in the art department, University of Illinois. It turned into a disaster for most of the attending art historians.

### I.

Heinz had been invited to give a lecture on perception. Trying to make up his mind what to tell the audience, he was suddenly reminded of a famous case, which had taken place in a Dutch law court two decades ago. A man called Han van Meegeren had been accused of selling Vermeer paintings to the Nazis. One of the pictures ("Christ and the Adulteress") had been found in Goering's collection and there was overwhelming evidence that van Meegeren was involved. Since the whole affair was regarded as a case of national concern, he was accused of collaboration with the enemy.

In order to defend himself van Meegeren told the jury that the painting in question was no Vermeer at all but a fake painted by himself. It surely was a good laughter for the audience. Just have a look at this poor creature with "his exceptionally mediocre talents as an artist" (Jones, 1990, p. 237) – pretending to be able to paint like Vermeer!

Van Meegeren claimed to have painted some more Vermeers, including a "Christ in Emmaus", owned by the Boymans Museum Rotterdam. In fact this picture had only appeared on the market in 1937. Museums had checked its authenticity, doing X-Rays, chemical and microscopical tests. Most of the Dutch authorities had been involved. They finally declared it to be a true Vermeer painting from the 17th century. One of the



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experts, Jan de Vries, curator in the Amsterdam Rijksmuseum, had called it a miracle of art and a Vermeer masterpiece. Short time after the Boymans Museum had bought it – surprise, surprise – some more unknown Vermeers turned up. All these remarkable events took place before and during World War II.

When after the war van Meegeren was taken to court nobody would believe him of course. In order to prove his claim he asked for permission to do a fresh painting. Working under strict observation he finally produced a picture nobody in court was able to distinguish from a true Vermeer. It was a huge scandal and a shocking experience for all the experts involved.

Jan de Vries later told Heinz von Foerster that he and his colleagues had been completely mistaken and that none of them had been aware of a certain frame of perception, which in the end turned out to be a blind spot.

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## II.

Blind spots are something Heinz von Foerster was always interested in. Over and over again he did the famous physiological experiment with audiences all over the world. The recipe may be found in lots of his articles (von Foerster, 1993, p. 26; von Foerster and Broecker, 2002, p. 34), it is one of the basic experiments in constructivism. So when Heinz remembered the van Meegeren case he decided to do an experiment on blind spots and perception in his lecture.

He prepared 40 slides, 20 of them showing true Vermeer paintings while the rest presented fakes by Van Meegeren. The audience was asked to answer a questionnaire and to decide which of the pictures belonged to painter A and which of them to painter B. Each slide was shown for 15 s, No. 1 was declared to be by painter A. As it was a public lecture with people from different backgrounds everybody was asked to indicate whether (s)he was studying history of art or not.

The final result was amazing. Most of the people from outside the art department had fine results, whereas most of the art historians had got it all wrong. How on earth could it be possible that engineers, linguists, physicists etc. were clearly ahead of those people who were dealing with art all the time? The experts were shocked, and one of the professors asked Heinz von Foerster: “What are we doing wrong?” When Heinz later described the event (von Foerster, 1998, pp. 81-5) he admitted to still feel ashamed for his rude answer: “Everything!”

## III.

It is hard to go on when everything is wrong. Is there anything left to do for art historians? Can we learn anything from these two different disasters? What happened in the Dutch law court was dealing with the difficulty to “draw a distinction” (George Spencer Brown), while the Illinois lecture highlighted the problem of finding a “pattern which connects” (Gregory Bateson). We will have to talk about the observation of distinctions and connections.

Let us start with a confession: All of us are fond of kids telling us that the emperor is naked. And Heinz von Foerster has been on the side of these kids all the time. Whenever the output of a system completely differs from what was expected his interest is magnetically attracted. The system may be an Ashby box, the Dutch art market or a schoolboy telling his teacher: two times two equals green.

Whenever elements collide he is right there. His whole way of thinking may be regarded as a “collide-oscope” (to quote Marshall McLuhans wonderful expression)[1].

Collide-oscope to me is a perfect term to describe Heinz von Foerster’s way of thinking. This is underlined by the way he uses pictures in his writings. The number of these pictures is limited. In fact he has been using the same pictures again and again, often printed in poorest quality and without any information about material, location, measurements, year, etc. The absence of this data tells immediately that we are not looking into an art historian’s publication. It is a different discourse here. But what does it tell us?

Let us have a look for instance at Salvador Dalí’s “La Cité des tiroirs” (von Foerster, 1985, p. 96). It was used by Heinz von Foerster to illustrate some thoughts on cognition and artificial intelligence. The picture appears in reduced form. It is printed far too black and the margins were taken so very narrow, that on each side at least one centimetre is cut off. That is why the central figure’s toes are missing (Spies, 2002, p. 271). It would be hard to see anything at all, if the image was not well known. With some effort we detect a nude body lying on the floor with five drawers in its chest. Several versions of this idea may be found in Dalí’s work, for instance in the statue “Venus de Milo aux Tiroirs” (100 × 30 × 28 cm; 1936) which he did in collaboration with Marcel Duchamp; furthermore we have an oil-painting “Le Cabinet Anthropomorphique” (25.4 × 44.2 cm; 1936). The Heinz von Foerster illustration refers to an ink-drawing on copper-engraving-paper “La Cité des tiroirs” (32 × 41.5 cm; 1936).

The basic idea is a pun. Dalí mixes up two expressions: the “chest of drawers” being furniture, and the anatomical “chest”. So what we have here is language colliding with an image, thus producing a surrealist effect. That is exactly why Heinz von Foerster chose the image for his article about collisions of language and objects. And of course we normally would not expect a Dalí-drawing in a scientific paper. In all these collisions we learn something about ourselves, about our expectations – that is the whole point. In fact I learned something about my own expectation of that pictures should be properly printed. Although... although I do have to ask myself: Would properly printed images have helped in the Dutch law court or in Mr von Foerster’s Illinois lecture? Definitely not. We will have to look for something completely different on a completely different level.

Any more pieces of art to be found? Yes, on the cover of “Cybernetics of Cybernetics” (von Foerster, 1974) we have “Children’s Games” by Pieter Breughel the Elder (oil on wood; 118 × 161; 1559-560). It is owned by the Kunsthistorisches Museum in Vienna, and Heinz von Foerster most likely knew it from early childhood on. It is a very detailed image showing a true encyclopaedia of games. Kids in circles and all kinds of non-linear movements – that is why it was chosen for a book dealing with circularity (von Foerster and Broecker, 2002, 253f.). We may think of the game of cybernetics and the cybernetics of games. Forming these sentences we are suddenly aware that the collide-oscope is working again. The idea of this form is something we should keep in mind in order to discuss the interplay of distinctions and connections.

Apart from pieces of art three more classes of pictures may be found in Heinz von Foerster’s books. There are private photos, a lot of technical drawings explaining input-output-systems, feedback mechanisms, etc. Furthermore the art historian’s eye is pleased to find allegories from the 16th or 17th century. We see the devil playing the

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bagpipe on a monk's head and nose (von Foerster, 1985, p. 114) – a funny caricature from 1521 (Pilk, 1976, p. 27). In Heinz von Foerster's book it is printed in reduced form, part of the devil's hair is missing, as well as part of a second face between his legs, which is hardly recognizable. Medieval devils are often depicted with additional faces on knees, elbows, chests or genitals: they have more than one identity. (Have a look for instance at the wonderful multi-faced devils in Stefan Lochner's "Weltgericht", 1435, Wallraf-Richartz-Museum Cologne). Surprisingly enough Heinz von Foerster shows little interest in the devil's private parts – although the image is meant to illustrate an article on self-organizing systems.

There is a second allegory we often find in Foerster's texts: It is a snake forming a circle by swallowing its own tail. It is the so-called "Ouroboros" (sometimes spelled: Uroboros), an emblematic figure from alchemist prints. One of the finest examples of these baroque books is Michael Maier's "Atalanta Fugiens" (1618), showing an Ouroboros and telling us: "Hic est Draco caudam suam devorans" (Maier, 1618, p. 65). The allegory is meant to demonstrate the eternal circle of destruction and creation. In Heinz von Foerster's writings it illustrates circular processes like feedback loops, Eigen-Behaviour etc. So it perfectly communicates with technical drawings showing basic designs of feedback systems. At the same time these technical drawings start communicating with the old allegory. As they are printed side by side, a separation we normally would expect is withdrawn. The elements collide and form an almost surrealist group of technical symbols and symbolical technics. It is the same and it is different at the same time. And this is what I call the form of the collide-oscope.

#### IV.

Perception is nothing we should take for granted. It is based on an interplay of distinctions and connections we have to adjust again and again. The whole process is highly influenced by expectations. Not to be misled by one's own expectations is of vital importance as the Van Meegeren case clearly demonstrated. That is something art historians may learn from Heinz von Foerster: the rules of this game are formulated by ourselves and not by "the object".

It looks like the Dutch experts simply expected too much from technological research. They relied on X-rays, chemical and microscopical tests. That is exactly why it was so very easy for van Meegeren to fool the experts. "His most distinguished contribution to the forger's art was his inspired idea of using a medium made from phenolformaldehyde resin dissolved in benzene or turpentine. According to his son, van Meegeren first ground his pigments in oil of lilacs and then mixed them with his medium. When baked the resultant paint film exhibited all the surface characteristics of genuine 17th century Dutch pictures" (Jones, 1990, p. 237).

The experts were blindfolded with instruments of vision. Microscopes and stereoscopes stopped them from taking a fresh look at the ridiculous way, in which the eyelids of Christ had been painted by van Meegeren. It was only when they learned that they were blind, that they could see again. They had not been curious enough.

Curiosity on one's own specific blindness – that is something Heinz von Foerster has always been good at. How do things look like when we try to see them from different angles? Does their appearance change? Do we gain insights nobody ever expected? From 1957 till 1974 Heinz von Foerster's Biological Computer Laboratory (BCL) has been working in this spirit (Müller, 2001). It surely was a remarkable place

where devils and machines, Ouroboroi and diagrams would meet. A place where John Cage, John von Neumann or Humberto Maturana would show up. In short: it was a collide-oscope of many perspectives.

The message is a fundamental one of cybernetics: We cannot escape collisions, so let us implement them. Disturbances and collisions are the essence of the game. Without disturbances the very idea of feedback loops would be completely useless. So a possible strategy could be: Let us see how far we can get; let us increase possibilities! Heinz von Foerster's BCL was run in this rare spirit. Of course this is clearly opposed to what normally happens in universities. The normal scientific way is to reduce possibilities in order to construct an object, which is regarded as solid ground for a specific science and for nobody else. Wearing blinders in order to see – is there any better method for inviting forgers?

Heinz von Foerster's collision with the art department happened exactly on this level. It is here that a lesson may be learned: interdisciplinary research in the broader context of cultural sciences is absolutely necessary. There is no other way to deal with the iconic turn taking place almost everywhere. We have had these discussions in German universities for 10 years now. And we finally get the message: Let history of art be a collide-oscope of different media and perceptions, an interplay of distinctions and connections.

#### Note

1. "...a look-around to see what is happening. It is a collide-oscope of interfaced situations" (McLuhan and Fiore, 2001, p. 10).

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