

Interactivity

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In 1990 the Prix Ars Electronica established a new category in addition to those for which prizes were already awarded: Computer Graphics, Computer Music and Computer Animation were now joined by the category of Interactive Art. In this way the organisers of the major international competition for computer-based art acknowledged the situation which had arisen — namely that an ever-increasing number of entries for this prize took the form of complex interactive systems. These, while comprising certain elements of computer graphics, animation and sound, do not, in the interplay of their various and disparate elements, amount to a one-dimensionally viewable or usable work of art, but rather to a complex system of opportunities for participation and activation which depends for its final effect on the interventions of the viewer/user.

In 1995, referring to the fields of video and installation, Hans Belting[1] remarked, "The history of art, as the official chronicle of a sensory development, has not yet got so much as a foothold in this area. One might say it has not yet even begun to get to grips with an event which is after all nearly thirty years old and which has undeniably taken place in the art scene." In Belting's view the reason for this lies above all in the changed structure of the work, the entirely different role of time. The art historian's remark and subsequent reflexions can be applied almost word for word to the situation of interactive installations. While these may not yet have been around for thirty years they have, depending on where one draws the line of definition, been so for about a decade; and yet to date there has been no systematic assessment in art-historical terms whatever. The most obvious reason for this is to be found in the extreme swiftness and diversity of technical development, offering each year a new range of possibilities and drawing the attention of the viewer, and naturally also of the working artist, to these new possibilities which — like any new tool — first have to be tried out.

It is clear however that there is no media art festival, and increasingly fewer video art festivals — both of which are proliferating throughout the world — which does not present any interactive installation at all. On the other hand the sometimes highly sophisticated technical requirements involved make the realisation and the quality of presentation of such an installation very frequently dependent on the availability of an appropriate level of funding. As a result the fundamental conception is often distorted through the form in which it actually appears. Equally, presentations of a longer duration are scarcely feasible for lack of long-term technical support in all but the most exceptional cases.

But what does the word "interactivity" actually mean in art-historical terms? The elevation of this term to the rank of a new category of art is constantly confronted with the objection that this so-called new category has in fact always existed, reference generally being made to the fact that the viewer of a picture or a sculpture can scrutinise the work from various angles and thus obtain different views of it. And that furthermore the complexity of high-quality works of art in any case demands a lengthy period of contemplation and a constant reviewing of this contemplation. We should point out at this juncture that the term "interactivity" includes the word "activity" — both that of the contemplator and that of the contemplated object — hence also the prefix "inter". A traditional work of art is either static — such as a picture — and is not fundamentally altered by virtue of its being contemplated [leaving aside very long-term biological-chemical reactions]. Or if a moving object, such as machines and films, the motion takes place within strict bounds which can only be influenced by the viewer through the switching on or off of the drive mechanism.

Interactive art by contrast makes possible, on the basis of the virtual reality of the computer, the establishment of an individual path of experience for the viewer. At its best it presents a very broad-based system consisting of a plethora of on-and-off switchings which do not — as is the case with films or other predetermined procedures — proceed in linear fashion, but function within an area or space.

"This art-form is only properly experienced in use. The viewer is transformed from a simple user into an interlocutor. People who talk to sculptures are viewed with suspicion. But when the sculpture answers back the situation is saved. You no longer just stand there looking silly. You and something are engaged in a dialogue, a unique and personal conversation which is quite different from the conversations that other people conduct with it, or those that you may conduct with it at some future point. You and your "opposite number" are both affected by the event." [2]

To stick to visual imagery: The viewer/user may be said to be putting together his own film. But interactive systems operate by no means exclusively with visual stimuli, even if up to now the dominance of the visual aspect is undeniable.

In his comparative consideration of new media and the traditions of art history, Hans Belting refers above all to the altered concept of time: More intensively than video art, interactive systems are defined primarily on the basis of the present, of the particular interactive situation. In art-historical terms there is therefore clearly a similarity with all situation-based art-forms — performances, happenings, improvisations and the like — although the interactive experience in fact develops from the dialogue between person[s] and machine[s]. These machine partners [computers] are complex control systems, and the [artistic] experience they offer relates in the first instance to the conceptual nature of their control programs — to conceptual art traditions, therefore, in their broad preoccupation with engagement with the environment, or context, of a work of art — and thus ultimately to Duchamp's question: "Can one create works which are not works of "art"?" [3] But how do interactive systems stand in relation to questions of contextualisation or — to use a somewhat older term — how do interactive systems function in relation to their environment?

Interface — Senses

Interactive systems are defined primarily as a user dialogue between a person and a computer-controlled system. The access to this system, the interface, constitutes the initial contact of the viewer with the system. At the same time it enables him to control his access. This access can only be achieved via an addressing of the senses. One quality criterion for interactive systems can therefore justifiably be the question of how precisely this access has been designed, and to what extent the interface is coherent in nature with the subsequent systemic procedures.

Precisely this question received little attention to begin with, since interest generally focused on the technical possibilities of the system itself. However as of recent date — and the entries for the Prix Ars Electronica 96 have again confirmed this — the artists are increasingly striving to elaborate a very complex and precise interface.

Naturally, in the design of this interface, the historical traditions of object art and of sculptural thinking are adopted as reference. It may indeed be postulated that these interfaces must be accorded a considerable degree of artistic attention, since not only do they constitute the frame of the work, but are an integrative component part of the work's overall conception. It

would be wrong to assume that even the computer-trained viewer would perceive only the digital system, and not the *mise en scène* of this system, the form of its access.

The less obviously technical the nature of this interface, the more directly it can address the sensory reality of the viewer. The so-called data helmets and gloves, which in the early years were almost always required for entry into virtual reality, set up a barrier between the sensory world of the viewer and the virtual world. They demanded of him the negation of certain sensory perceptions — even if only the ignoring of the gap between the eye as sensory organ and the twin monitors of the helmet, or the "switching out" of other parts of the body with the exception of the hand. Only the hand in its data-glove could be moved as an object in the virtual space.

Time

As we have seen, interactive systems transgress a linear concept of time in the viewing. They also transgress the experience situation arising when a single object — however complex its nature — is the focus of exclusive contemplation. Instead they offer, in the interaction of interface and computer system, a range of possibilities for self-confrontation via navigation in a system of perceptions which are not a priori accessible.

Generally however they also make it equally possible for an outside observer to see how an individual user acts in this system. The attention of the viewer is thus directed in equal measure to experiencing the system itself and to experiencing the individual's reaction to and handling of this system. However the inner structure of the observer's time perception is entirely dependent on the user's organisation of time in the system.

Furthermore interactive systems frequently set up several communication possibilities in the system, and the networking of systems additionally extends experience time and experience impulses. Several observers/users are able to communicate in and with the system. The individual variations both of access to the system and of interaction in it are generally so multifarious that a very long experience time would be needed to cover all variations of detail. In the case of linked systems, for example via the Internet, the breadth of variation of content is also dependent on factors outside of the system. The time required for the possible variations of content impulses is thus in all cases extremely long, in part only circumscribed by mechanical durability — in other words virtually infinite.

A reflexive attention of the observer/user will therefore always anticipate experience times and direct itself at the basic control concept of the installation. The complexity of possible variations of observation — in chronological terms too — thus represents a further art-historical criterion.

System — Limits

Every virtual reality makes possible the breaching of existing three-dimensional spatial limitations. On the one hand it can produce the visual impression of three-dimensionality through lines of perspective, but on the other it can present a fluid spatial continuum in no way confined by the bounds of three-dimensionality, since every spatial unit can move to any point in the space.

The artist designing forms in this spatial continuum sets boundaries to this spatial flux, defines his own new spatial units, defines the form of objects, which again [can] function as

separate spatial bodies. Where older virtual reality systems offered an ultimately rigid system of delimitations of this kind, current artistic work on this problem provides rather for independent extension of these limits by the user of the system. This extension can either be controlled by the user, or can be the result of independent processes in the system.

In each case however the experience space is determined as an all-embracing system of reference with which the user has consciously to interact, since no spatial element can not be previously conceived. The context of the observer/user is precisely calculated.

The "Large Glass" of Marcel Duchamp was exhibited for the first time in 1926. One journalist described his impression as follows: "... I was fascinated — not just by the work itself but by the numerous transformations which occurred to the composition depending on the random nature of the background, formed as it was by the viewers who were moving through the gallery behind the glass as seen from my position. The *Mariée mise à nue* [the title of the Large Glass] appeared to absorb some part of them all into her own cosmogony, and at the same time she tirelessly imbued them in return with something of her own form." [4]

Imitation

Even interactive installations cannot isolate themselves from the old familiar mimesis debate of art history — quite the contrary. Most of the conceptions hitherto have operated with the formation of quasi-real elements presenting a pictorial reality which, expanded by certain kinetic aspects, is familiar to the senses. Mirror effects, as for example on the surface of water, are old and well-tried design elements here which — if they are not anchored firmly in the conceptual construction — do no more than show off the technical possibilities for imitation.

However, since interactive installations frequently provide the observer/user with opportunities for adding-in his own realities to the system, they present reality as an open field of [artistic] possibilities, which can be re-formed or commented upon not simply in the mind of the viewer but actually in the work itself, without putting into question the latter's fundamental conception. Which is structurally comparable with Duchamp's moustache on a reproduction of the Mona Lisa.

Experience

The "art-historical" contemplation of an interactive installation is defined out of the subsequent conjoining of experience and reflexion on the overall concept of the communication. This contemplation must however always comprise the individual perspective. Interactive installations which, as we have seen, function in a kind of space-time continuum, already of themselves direct the attention of the attentive viewer/user to his perspective, to the communication situation presented. That is, they demand a clarification of the user's own receptive progress, since this itself becomes a part of the work-as-a-whole.

Whereas in the past, whatever the form and extent of the individual's participation, concepts of the work-as-a-whole, or of ephemeral artistic productions, confronted the entity of the viewer as a summary complex of perceptions, now the viewer's personal experience becomes a part of the work. In this way the viewer, in respect of his reflexive contemplation, is accorded the function of an interface.

For this reason we can conclude with another quotation from Marcel Duchamp, whose artistic philosophy has served as a point of reference for these — necessarily at this stage no more than fragmentary — notes on the term "interactivity":

"And this leads me to say that a work is completed by those who contemplate it or read it ...
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[1] Hans Belting, *Das Ende der Kunstgeschichte — eine Revision nach 10 Jahren*, München 1995

[2] Timothy Binkley, *Paradoxien der Interaktion*, in: *Im Netz der Systeme*, *Kunstforum intern.*, Band 103, September/Oktober 1989, p. 220

[3] in: Daniels Dieter: *Duchamp und die anderen*, Köln 1992

[4] in: Daniels, p.98