ANIMAT AND INTERACTIVE DESIGN

Jocelyne Kiss,
Université Marne La Vallée, LISAA, France.
kiss@univ-mlv.fr

Karim Abdeljelil
Université Marne La Vallée
Institut d'Esthétique et d'Arts Contemporain -
Université Paris I Panthéon Sorbonne, France.

1. Introduction

"The design is a creative activity which has a purpose of determining the formal qualities of the products items. By formal quality, we shouldn't understand only the external qualities, but mainly the structural and functional relationships that are the centre of a coherent unity»[1].

Following Thomas Maldonado conception from International Council of Industrial Design, the design won't be only a formalism trying to sketch an object outlines, an idea outlines but it will integrate equally a potentiality aiming to take care of a dynamic aspect that doesn't limit to the single « body » of the design object[2].

Concerning the use of a design object managed by the device bias suggesting an interactivity, in order to know "a relation type between two systems that determines the fact that a system behaviour changes another one's behaviour"[3], it is implied the idea that this interactivity appears as a change judging this particular situation.

From a practical point of view, this change reappears to start the registered media opening for example audio, video files, etc. It doesn't have any ambivalence and creates a unary report between the transmitter and the receiver[4].

This simple interactivity type presents a relatively stiff aesthetics[5] and doesn't allow almost any change, once the file is opened by the reading mode. The only possible changes are panoramic effects or filters that obtain an imprint of temporal management regarding the audio and video flow in real time[6].

We desired within this work to explore an interactive dimension that is related more to a temporal evolution, situated not at the level of the signal treatment but at the constitution one regarding even these objets. This point represents an important stage for the design notion use within the theatrical device, and especially for the contemporary musical theatre that uses this interactivity notion[7].

Because if one uses resonant or visual objets started by the audience, it is imperative that they can be used in a coherent environment with the dramatic art that can be even interactive. It is not about the pre-programming of possible paths but about suggesting well solutions adapted to this one. We come back to this adaptation notion which is closely related to the selforganisation notion[8].

We contemplate these concepts in order to obtain development potentialities that don't make these interactive interventions random according to the future context.

At first, we will present our study starting point in order to learn the interpretation of the animate notion as design object evolving during the time following the environment.

We will make inquiries about the conceivable techniques aiming to put into context «structural and functional relations» of this design activity for the musical theatre[9].

Following this view, we will take into account some methods that rise from a potentiality that makes reference to the prehensibles and shaping relations with difficulty. We will see that following the management of a virtual reality scene the design notion and its evolution-adaptation represents a fundamental theatrical art element[10].

Then, at last, we will be a part of some simple results and the outcome of these first experimental attempts.

2. The Issue of Reification and the Design

The exercise regarding the association between an object and an exposition, using it in a semantic meaning belongs to the reification effort which is not an exclusive particularity of the design and represents a definition technique of a contents that appears to be general to the computer sciences set (a licence for example: the oriented-objet programming) or of a more extended manner regarding the analytical philosophy [11].

This objective is followed to produce a pattern only, as K.Popper underlines «…our science is not a knowledge (episteme), it can never claim to have reached the truth […]. We do not know, we can only make suppositions »[12]. In this case, our suggestion we will stick to the fact of creating an application that refers to a real case, in order to use the potentialities of the animates within the interactive systems.
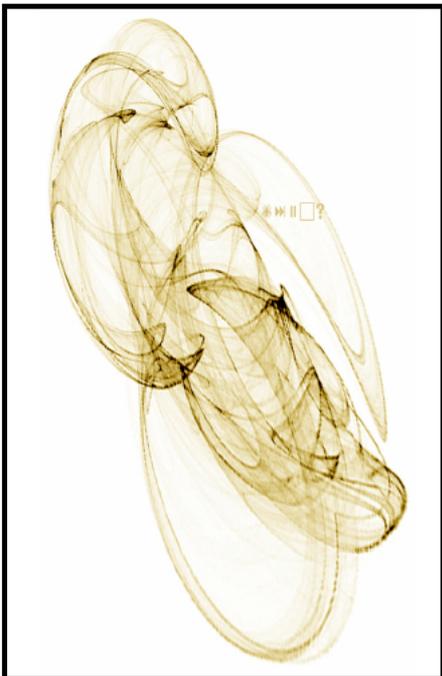
E-vannesII

The choosing issue, the definition of the objects has proved to be complex, often unsatisfying and has led in a strange manner to a relative opacity regarding the generalisation of this practice, entering voluntarily

in a scholarly atomism and combinative. Actually, it is impossible to make the network set work concerning the production of an artefact.

The explanatory temptation regarding the whole by an arrangement of meanings, to establish a theory about the «lowest common denominator», which in the art for a long time has identified with the art object itself, is not aware of the underlying complexity. Nevertheless when we try to use interactive devices, it appears that we are determined to apply this functionalist and pointillist method[13].

All the same, some persons have sensed that these elements are not pertinent but in their report between them. It is the first meaning of the definition belonging to Maldonado stated in the beginning. It is about exploring well what it could have been a way of considering the links between the elements representing a whole itself.

It rests a sort of general "intention" of the object in its hole. This issue of the intentionality is an open problem for the computer sciences[14].

One of the methodological suggestions that can be grabbed from this point on the one hand and the elements relations dynamics, internal to the structure causing unpredictable, invincible and stable events can be found in the emergency notion. Varela mentions this last point in theseterms:

"The global charts emergency or the configurations in interactive elements systems is not the feature of certains isolated cases or the privilege of neurotic systems. Actually, it seems difficult for any connections aggregate which is dense enough to escape the emergent characteristics, that explains the bridge that is made by such characteristics, between the different description levels and the natural and cognitive phenomena. "[15]

A phenomenon is thus emergent if it is like this, uniquely; it appears as a states manifestation and an entities dynamic manifestation regarding an interaction system. The observation of this phenomenon can spring either from the «exterior»

(weak meaning) or from the «interior» by the entities themselves (strong meaning) (for example the animates here) through a description system.

An emergency theory would be an inscription theory and an interpretation theory passing from one point of view to another one, following the stages and the position concerning the system. Thus, following the hypothesis according to which one designs an aid system software for this design type, one shouldn't suggest only the object creation, but conceive an interface capable to draw these macroscopic units. In this work, we have even called these units animates.

3. Interactive Animat and "Adaptive" Design

The animates appear as entities of a virtual universe, plastic or resonant, endowed with decision power (independently of any action related to an external agent) and moved by a gradual and continuous change.

At first we could compare them, approach one to the other, compare to the animation cinema characters[16].

Nevertheless it is a real functional frontier between the character of an animated cartoon and the one of the animate. As the cartoon rests stiff and irrespective of the number of times where the film will be rebroadcast its future will not be changed; the animate doesn't have this destiny, which can be changed.

The animate has inside a potential capacity that can develop, improve, using the field, its itinerary or other constraints. From an etymological point of view, the term "animate", derives from anima meaning "soul"[1] and the "t" suggests a technological note referring to the automatism.

So, an animate is defined as an entity manifesting attitudes that characterise the «personality» and that owns abilities to solve certain simple problems in order to adapt, to survive following the context.

Nevertheless it is not the realism of the behaviour reproduction that was initially searched but rather the exploration of a life evolution of a probable organism. It is not about nature's mimetism, copy of the live matter, as in painting for example, the still natures[17] even if this quality is searched[18]. Understanding perceptive mechanisms aiming to endow the animate development strategies deepens this exploration.

If the design methods are troubled, the applied representation strategies are focused on the possibilities of dynamic representation concerning the presented objects. In addition, in order to overcome the issues related to the occurrence of events in real time, the choice has embraced treatment methods concerning the information authorising the autonomy as decision making.

As far as the metaphor is concerned, we explore within this limited study, certain methods, questions and principles related to the aesthetic potentialities of the autonomy[19] and evolution[20] principles regarding the dynamic objects.

From the method point of view and very briefly, we elaborate an animate at first creating a susceptible unity to respect certains evolution rules that we use as an algorithm.

These evolutionary strategies are made to be combined with the behaviour manifestations. It is interesting to relate this report the body cover and to his behaviour. This animate notion is identified with the robot one sometimes, to know a machine able to interact with its environment presenting certain ability ofself-adaptation[21].

The difference stays in the fact that the animate belongs to a virtual world and the robot to the physical «real» one. But the management and organisation principles
are close.

---

[1] Here we refer to the classical distinction, appeared from the Ancient Greek philosophers' texts, between the '"Anima" notion (alogon), that is the soul as distinctive vital principle of the body, and the one of "Animus" (logikon), headquarters of the reason, of the intelligence.

The creation of a population, type «animate» is founded on the ambition of simulating certain behaviour traits of the live person. According to Wilson, «…the basic hypothesis of the animate approach is that by simulating and understanding systems similar to the animals to the most simple level we can climb gradually towards the human aspect. We hope to reach the human intelligence by the low aspect»[22].

This perspective oriented towards the sometimes-positive outlines is founded on the object development of an artificial life. According to Langton, «the ultimate aim of the artificial life would be to create the «life in another layer, ideally a virtual layer where the life essence would have been isolated of details regarding the development whatever the layers might be. We would like to build designs that are so similar to the living persons [life-like] that they will cease to be life simulations in order to become examples»[23].

Without entering this discussion about the living persons, we propose to exhibit some sketches of development of these animates within an interactive device.

4. Methodologies, Experimental Attempts and Perspectives

Starting with the simple or resonant graphic elements but non determined we have explored the use of the concepts stated below. We have used several points and a set of notes that have to develop in a synchronous manner. The sets of these separate units has to give the illusion of «coherence» and of a single animate in movement.[24]

The events starting up is produced by a sensor inclinometer type put on a participant. Following the positions given by the sensor and with the help of a connectionist filter, the system will «answer» playing, displaying generative elements.

The neurotic networks use allows to introduce an apprenticeship dimension. As we desire to use this device not only for recognising a position point of the

hand of the participant but rather the set of forms produced by the participant.

This orientation authorises equally the generation of events that are directly translated from these forms issued from the participant gesture[25]. The ideal would be to be able to cause relations between the gesture and this production.

5. Acknowledgement

6. References

[1] Thomas Maldonado, definition of design (http://www.icsid.org). ICSID, International Council of Industrial.

[2] Almiron M. & Lafon J. « Les Nouvelles Étendues du Corps : le Réseau numérique. » Maison des Sciences de l'Homme de l'Université de la Rochelle. 2000.[3] Barda J., Dusantes O., Notaise J., in, Dictionnaire du multimédia, AFNOR. 1995

[4] Benjamin W., "L'oeuvre d'art à l'époque de sa reproduction mécanisé, Nouveaux paralipo-mènes", in Ecrits français, Gallimard, 1991, p. 188.

[5] Paquelin D. Conception d'un environnement d'apprentissage interactif en fonction des attentes des usages, Université d'Avignon et des pays de Vaucluse, Avignon, 1999.

[6] Birringer J. Media & Performance, Along the Border, John Hopkins University Press, Baltimore, 1998.

[7] Aperghis, Georges, " Le théâtre musical ", in Georges Aperghis, le corps musical, textes rassemblés par Antoine Gindt, Avignon, Actes Sud, 1990, pp. 61-63.

[8] Rennard J-P Vie Artificielle, où la biologie rencontre l'informatique. Vuibert Informatique. 2001. p.175-214.

[9] Nahas M., Kiss J. & Huitric H. « Towards a rebirth of the baroque spirit through new technology: the machinery of virtual Opera », in News Platforms, Center for the Art and the New Technologies. Proceedings 5th Conférence internationale Art and Technology Festival Medi@terra, Athènes. 2002

[11] Meyer M. La Philosophie anglo-saxonne. PUF. Coll. premier cycle. Paris. 1994.

[12] Popper K. La Connaissance objective. Aubier éd. Paris. 1972.

[13] Manoury P. Le Stade pictographique de la musique électronique doit être dépassé. in « Interfaces homme-machine et création musicale » . op. cité. Ch. 11 - Ecriture et composition. p. 206.

[14] Dupuy J-P « L'obstacle de l'intentionalité », in, Aux origines des sciences cognitives. La découverte, Coll : Sciences Humaines et Sociales. Paris. 1999. p.96-101.

[15] Varela J.F. Connaître les sciences cognitives. Paris. Seuil.1989.p. 67

[16] Mikhal BAK (sous la direction de), Écrire l'animation, recueil de discours et d'informations pratiques sur le scénario du film d'animation, Paris, Association française du cinéma d'animation (AFCA), 2001.

[17] Georges Didi-Hubermann, La Peinture incarnée. Éditions de Minuit, 1985 [18] P. Richens. Beyond « Photorealism». Architect's journal, 12, June 1997.

[19] Varela F.J. Autonomie et connaissance. La Couleur des idées. Seuil. 1989.

[20] La Pensée hiérarchique et l'évolution, Paris, Aubier, 1983. work Coll. P. Tort (dir.)

[21] Bret M. Experimentation dans les arts du connexionnisme, Isea. 2000

[22] Feldman J. Et Ballard D. Connectionnist Models and their properties. Cognitive Science n°6. 1982.

[23] Wilson S.W. 1991 « The Animat Path to AI » From Animals to Animats : Proceedings of the first International Conference on the simulation of adaptative Behavior. MIT Pres. P- 259

[24] Cariani. P. « Emergence and Artificial Life », in, Artificial Life II. Langton (Ed.)Addison- Wesley.1992. p.790

[25] Nahas M., Huitric H. , Kiss J. Comme cela vous chante, Opéra de l'Equipe Image numérique et Réalité Virtuelle, INREV& CICEP. Cité des Sciences et de l'Industrie dans le cadre de l'exposition Villette numérique, Paris 19ème.