

0. Following issue 1 concerning the various steps *From Body to Avatar*, anomalie wanted to face the notion of the interface within the frame of the reconfiguration digital technologies are bringing about in the field of artistic creativity. The initial project involved one sole issue on interfaces, which would both analyze interface applications in relation to performing arts and present a series of critical extensions and theoretical positions. After many months *under construction*, that ambitious research project will finally give rise to this second issue on DIGITAL PERFORMANCE and to the upcoming third issue on INTERFACE THEORY.

Exploring the consequences of the use of digital interfaces in the context of performances is at the heart of a wider research strategy, which has led anomos to the organization of numerous conferences – Danza & Nuove Tecnologie (Bolzano, 1999), Movimenti Sensibili (Roma, 2000), Nouvelles Interfaces pour la Danse (Paris, 2000) – and to a collective volume *La Scena Digitale* (Venezia Marsilio, 2000). The recent foundation of the MediaDanse Lab, realized thanks to a agreement between anomos and the Dance Department of the Paris 8 University, is also part of that strategy. q

1. New Interfaces for Dance

The first section of anomalie n.2 takes up the proceedings of the *New Interfaces for Dance* session that anomos organized within the frame of the ISEA 2000 (International Symposium on Electronic Art: <http://www.isea2000.com>). The purpose of that session was to present some examples of interactive digital devices opening up new perspectives for the world of dancing.

Motion Capture Systems are the main interfaces used in performance or dance. Thanks to them, the dancers' or the actors' movements are transformed into digital information and can be further applied in a variety of ways¹.

The first explorations of those interfaces make movement interact with sound events: the dancer's body becomes a kind of *hyperinstrument* (Machover); it activates sounds and sequences. Its historic model is probably David Rokeby's *Very Nervous System*. One of the most recent (and amusing) examples of that kind of movement-sound interface is the *Instrumented Footware for Interactive Dance* created by Joe Paradiso in the Medialab of MIT.

The Palindrome group has also developed with a number of hardware and software systems, which make it possible for the dancers to control and influence other media – music, video, lights – that they present during the performance/demonstration.

Flavia Sparacino, also working with the Medialab of MIT, has developed *DanceSpace*, an interactive platform for one dancer that is capable of synchronizing and coordinating movement to music and images that are being projected on a screen. "The purpose is to extend the range of the performer's expressive possibilities rather than to suggest modalities for the replacement of the dancer's body by a virtual one²". That is why she speaks of *Augmented Performance*.

The last example presented in the session might seem extreme. Stelarc thinks the human body is obsolete and not adapted to the new technological environments. He shows that technologies are no longer prostheses, extensions for human faculties or functions, but have become components of the human body. Interfaces actually put forward new body frontiers.

Last but not least in that first section comes Scott deLahunta, who has been doing research on the technologies' impact on dancing.

2. The Interface Stage

A body is designed to interface with its environment (STELARC)

2.1 Considering the body as the first interface between the world and ourselves, many new technology gurus, like Marvin Minsky or Hans Moravec, claim that in the (quite near) future corporeal interfaces will play an increasingly important role: the interface complex gradually takes over the perceptive system and therefore the body, as it is both a subject of perception and the first interface between the world and ourselves, becomes central again. The widespread use of Virtual or Augmented Technologies and of wearable computers leads us towards a state of immersion, which means towards a more complete perception: "the gesture channel added to those of vision and hearing opens up to kinesthetic exchange³⁹". As a result art as well is progressively directed towards the (digital) stage, an environment that has become sensitive through interfaces and is not merely the space surrounding a subject, but the entire complex of the physical and relational conditions within which the subject finds himself, acts and defines himself.

Both the actor and the spectator find themselves on a new stage: subjects of a new world, in which they are not just confronted with texts, objects or computer systems, but with other subjects as well.

2.2 At this point, I would like to present the definition of a very central concept for us: the digital stage. In brief, there are three models of "digital stage":

1/ the first model has to do with the real environment: the stage itself made sensitive and intelligent by being interfaced through Motion Capture systems. Various materializations stem from that model and implicate different degrees of interactivity and audience participation: they go from interactive installations such as *Reactive Environments* (for instance, *Very Nervous System* by David Rokeby, 1983-1995, or the Studio Azzurro's *Ambienti Sensibili*) to the *Intelligent Stage* (Robb Lovel), which is a true performance stage.

2/ the second model concerns Virtual Environments (Virtual Reality). The work of Yacov Sharir (*Dancing with the Virtual Dervish*, 1996) as far as dance is concerned as well as the research of Mark Reaney in the theatre have both explored that domain. There are also hybrid forms in between the first and the second model (called *Augmented Reality* or *Mixed Reality*).

3/ the third model refers to choreographies or to interactive dramatics that are entirely digitalized: from CD-ROMS (like Andrea Davidson's *La Morsure*, 1998-2001) and DVD-ROMs, to on-line video installations and creations.

"I say that the stage is a concrete and real space asking to be filled up and to have its concrete language spoken." Artaud

2.3 The second part explores the relations between performing arts (not only dance) and digital interfaces.

Nowadays we are accustomed to seeing screens and videos on stage used as parts of the stage design: the use of technology has become a must. However, that use is sometimes merely motivated by a fashion-effect.

That is perhaps the reason why we are still using terms such as *New Technologies Art*. Once the amazement concerning the new tools is over, we should simply go back to speaking of just *art*. There is, however, a different way, a more demanding one, in which new technologies and mainly interactive technologies are integrated not only into the stage system but also into the dramatics and choreography procedure, i.e. into the entire playwriting process (transition from the stage to the digital stage). Robert Lepage, Dumb Type, Giorgio Barberio Corsetti (with the Studio Azzurro), Societas Raffaello Sanzio are some of the best-known and already classic examples. Recently different

projects are developed, which exploit the Network (Verde, Atzori), Virtual Realities (Reaney), Interactive Video (Paci-Dalo) and Artificial Intelligence so as to establish new forms of digital performance.

In order to fully cover the perspective of integrating the new machines in the creativity and receptivity process as well as in the work of art, we have tried to multiply the approaches and the styles: interviews, critical texts, historical accounts, project and research presentations.

2.4 According to Walter Benjamin⁴, nothing is further away from the work of art of the technical era than theatre and the performing arts of the stage in general. Whereas the theatre offers the experience of immediacy, during which the performer and the spectator are both physically present to each other within the same space and time ("hic et nunc"), cinema -for instance- lets that presence occur through the mediation of a technical device.

Further analyzing Benjamin's views,

1/ the on-screen actor's performance is no longer presented in its entirety; spatial and temporal limits are set by editing;

2/ the actor loses the ability to adapt his/her interpretation to the audience.

Irreversibility of the technical object: in that case the loss of the aura does not only result in the transformation of the actor, who becomes a mere element amongst other elements of the representation machine, but above all in the disruption of the co-presence between actor and spectator. That occurs at such a high degree that, as Benjamin points out, the distinction between the two is no longer substantial; it becomes functional. Technical mediation is an obstacle in the way of physical immediacy.

Nonetheless, interactivity inverts that perspective: the work of art finds a form of immediacy again.

That transition actually contains a paradox. As Jean-Louis Weissberg suggests, "technological practices are not immediate {...} the more mediation feigns transparency, the more overwhelmingly its function is felt while the software and its materials become more complex and significant. {...} Contact always involves mediation; if it is transparency we are looking for, we will keep interposing more and more sophisticated interfaces to concretize that transparency⁵".

Essentially artists look for ways to use and even multiply the action of the media, to employ mediations so as to achieve a kind of immediacy: Immediacy of action, of interactive feedback, of interface transparency and body/environment relationships, which are not just the ones of the stage (performance, theatre or dance stage), but also those of life.

¹ Cf. DELAHUNTA's text, *Choreographing In Bits And Bytes: Motion Capture, Animation and Software For Making Dances*, in MENICACCI, QUINZ (ed.), *La Scena Digitale. Nuovi Media per la danza*, Venezia Marsilio 2001.

² F.SPACACINO, *La realtà aumentata nella danza e nel teatro*, in *La Scena Digitale*, op.cit.

³ J.L.WEISSBERG, *Présences à distance. Déplacement virtuel et réseaux numériques*, Paris L'Harmattan 1999, p. 20.

⁴ W.BENJAMIN, *Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit*, in *Ausgewählte Schriften 1*, Frankfurt a.M. Suhrkamp Verlag 1977, p.150-162.

⁵ WEISSBERG, op.cit., p. 53.