Art and (Multi)media

Art is always to some extent a product of the environment; it is a response to the challenges on the part of its cultural and social, as well as its technological milieu. The state of a civilization's development of the environment has a great impact on the social awareness, and thus it shapes artistic practices, as we are permanently and thoroughly changed by our own inventions (de Kerckhove, 1995). Processes of transformation resulting from technological development nowadays, create a completely new and widened human environment, where biosphere is united into one with techno-sphere. In the scope of the latter we are now witnessing a gigantic and immediate development of digital information and communication technologies. Together with a number of other phenomena – results of dynamic changes in the bio-techno-sphere – they form a complex foundation, from which cyberculture springs. (Multi)media art plays here a prominent part. It can, more than anything else, serve as an experimental laboratory, not only for new technologies, but even more for studies on new social relationships created or provoked by these technologies (compare Wark, 1995).

Besides the obvious social benefits, the development of media and multimedia technologies brings along with it a variety of problems, skepticism, and even a sense of anxiety. Art – especially that with critical aspirations – aims to study and to grasp the nature of the new world appearing as a result of technological development, or the phenomenon, which due to its high complication, is sometimes referred to as a post-biological syndrome (Ascott, 1997). Therefore, artists not only use the technologies, but analyze them as well. From this perspective one can say that the new (multi)media art,
or at least its most valuable part, is a continuation of the avant-garde. The characteristic trace of avant-garde has always been the dialectic mixture of artistic discourses and discourses on art itself (meta-discourses), (Kluszczynski, 1997). Since (multi)media technologies are usually communication tools, the reflection on artistic multimedia is naturally transformed and broadened to a reflection on the processes of social communication as well as on new communities resulting from these processes. Expressing their doubts and anxieties, the artists address such issues as the influence of (multi)media technologies on social communication, or on systems of social roles and identities. They also ponder the consequences of the virtual worlds. By surpassing the social fear of the technological world, their works address the issue of the Utopia of the Electronic Eden.

Modern (multi)media art, both materialized in real spaces (as installations for instance), and the virtual, localized in the cyberspace of the Internet, with significant frequency gives rise to issues of power, control, domination and sub-ordination. This tendency has logically sprung up from the above-mentioned reflection on the electronic media and the analysis of the nature of communication technology. The analysis of the qualities of the media whose basic function is to indicate the communication processes, has unavoidably led to a closer scrutiny of its social conditioning and their consequences. This is naturally an analysis of a wide spectrum of reference, since a technological platform is common to such versatile phenomena as interactive (multi)media art, commercial television, and electronic systems of surveillance. In this reference, a number of art works point to the fact that electronic technologies, while used in art as new means of creation and perceived as a warrant of freedom of expression and communication, may equally well serve as a very effective apparatus of surveillance, repression, and subordination.

The interest in the nature of the medium used in a piece, or in other words, the metadiscourse approach, which is characteristic for radical artistic movements, makes artists more sensitive to various aspects of this dualistic (that is, liberalizing and subordinating) nature of electronic media. Scrutinizing the ambivalent status of the media, artists draw our attention to both the promises and the threats imported to our lives by media. They also notice that the (multi)media become kinds of mirrors that
reflect the world, and as a result, various phenomena and processes are transferred into the world of the visible. They aren’t any phenomena except those, which by their nature, reflect the character of the media, as their relationship allows media to make them truly visible. For instance, voyeurism, together with a large complex of its accompanying social issues, or the problem of the asymmetry of human relationships, are touched by the (multi)media. Artists such as Simon Biggs, Vera Frenkel, Lynn Hershmann, or Antonio Muntadas and their works, may serve for interesting examples of various, self-analytical references to (multi)media and their complex relationship to axiology and ethics.

Among the great number of issues, themes and problems addressed by (multi)media artists in their works is the problem of control, which is materialized in a multiple of works. The following quote concerns one of the most frequently raised aspects of control linked to art: the artist’s control of the creation process and its result – the artwork; the control of the viewer of his/her perception and over the artistic phenomenon being perceived; the control of the work of art itself over the receiver/participant/interactor of the communication process; the control of the artistic system and its institutions (museums, gallery, art market, etc.) over artist and his/her creation. As it was stated earlier, the issues of all the forms of control in the scope of human communities, the relationship between power and citizens, are natural continuation of the inner-artistic problems. Such artistic practice is a response to our crucial needs – everyone wants, for his/her own good, to know which authorities and for which purposes use (or may use) media technologies to satisfy their needs, which do not necessarily are also ours (Wark, 1995). In 1991, Ars Electronica Festival pointed to the problem of the media being out of our control. Since then it has become very obvious that if it is very easy to lose control over electronic media technologies, it is much more difficult to get away from their control.

At this moment, among the various types of (multi)media art, interactive art presents the most interesting examples of pieces addressing the issues of power and control. Most probably the reason is that in fact interactivity in itself means control. Interactive art offers its recipients the possibility of control over their perception of the piece, over the process of creation of the forms, and over their senses. And since the artist also
wishes to retain (at least to some extent) the control over these processes, the interactive artistic communication seems to be a very serious game; the aim of which is to gain, lose or regain control. In this way, power and control, thematically or structurally presented in media art, becomes one of the most important qualities of interactive art, while the syndrome: art-media-power becomes one of the most important aspects of modern art.

Interactive works of art quite often place the recipient as a participant in a game with the artwork, or the system shaping it. In this game usually, domination seems to be the award for the winner, and subservience the sign of failure. The effort to gain control seems the main purpose of this game. The recipient involved in the game can, however, chose the path leading to deeper self-knowledge, where his/her identity can be re-defined or re-thought once again, and as a result, s/he can make a decision to abandon the above mentioned area of the game. Except for a complex awareness of cultural and social implications of the development of electronic technologies, the experience I have just described may be perceived as the final and, frequently, the most significant level of aesthetic experience offered by interactive (multi)media art. In this way, the identity becomes involved in the game. It is subjective but it is conditioned by the social context. That is to say it enters into relationships with media technologies as communication tools between individuals as well as between communities. Here an individual is again confronted with the issue of control which s/he exerts, or much more often, s/he is under. Quite often authority in various institutional disguises plays the role of an individual’s communication partner. In some situations it may harass him/her. In communicative and creative human behaviors, dangers of state authority may take a form of censorship, for instance. As a manifestation of the state’s control and exerted on art, censorship is at the same time the institutionalized form of violence.

The problems described above, along with many others in the sphere of (multi)media, transgress the areas traditionally linked with art and are in fact closer to social issues. This means the elimination of the borders of art, revealing that art’s scope is equal to the whole world – there are no art or nor-art issues – and we can only speak of artistic approaches. Social issues become therefore aesthetic issues. They can be political, racial, and/or feminist. This transgression entails the questioning of another border: between
the public and the private. That border is to a larger and larger extent an illusion. It is equally illusionary as is autonomy and subjectivity of subjective identity, which seems more and more to be a media product.

**From Painting to Video**

In the areas of art fashioned as a result of the above-described processes presently on the art scene, Mirosław Rogala’s art gains increasing importance. During the last several years the artist has shown a group of artworks which raise the most important issues of cyberculture and have taken them to the highest artistic level. It is worth looking at his artistic past to understand better the origins, the complexities, and the objective of his recent art tendencies.

Rogala studied painting at the Academy of Fine Arts in Cracow under Andrzej Strumiłło, graduating in 1979. Previously he had finished a musical high school. He published his poetry in “Poezja Monthly” (*Poetry*), “Nowy Wyraz” (*New Expression*) and *Student* magazines. I quote Rogala’s biography in detail as these points would soon turn out to be extremely important for his art.

Around mid-seventies Rogala exhibited a work entitled *Pulso-functors*, where paintings were connected to neon light tubes. It would have been nothing of special interest, (as in his earlier works Rogala mixed the media of painting, drawing, photography and pulsating light, as well as sound), if he hadn’t added special switches which allowed the artist, as well as the visitors, to change the light set and to form various variants of the artwork. Although the scope of visitor’s interference possibilities was not especially wide, the very fact of visitors’ activity in the piece’s structure, allows us to call it pre-interactive. Except for multimedia characteristics already present in the early Rogala’s works, interactivity would in the future become the main quality of his art. For this reason I have chosen to describe *Pulso-functors* at the beginning of the analysis of Rogala’s art.

After graduating from Cracow Academy, Rogala left to the USA and he began postgraduate studies at the School of the Art Institute in Chicago (1981-83) in video and
performance. It was a significant choice. On the one hand it proved the increasing importance of both audio-visual technologies and performance in Rogala’s art, and on the other, it revealed integration of various media. As an intermedium (see Kluszczyński, 1999), video was a stage on his journey to an even more complex and integrated area, i.e. the hypermedia art (Kluszczyński, 1997a).

Rogala had already made his first videotape in the US, in 1980. *Polish Dance* is a videoperformance. It is also an example of a very interesting relationship between the performer (Rogala), the camera and the dynamics of space resulting from that relationship. The cameraman follows the performer’s movements with the camera trying to record his face. Since the performer continuously and unexpectedly moves in different sides, the cameraman has to anticipate his moves. The source of the energy, of the image dynamics is the tension between the two related to each other but also autonomous movement centers: the performer and the camera. This tension initiates the discourse on the position of the individuals in the social context. The landscape and the horizon (seen in full circle) in relation to permanent movement and changing cadres makes for the dynamics of space. The melody, played on harmony, accompanies the image adding to the dynamics of the tape in relationship to the pictures of the city (counterpoint).

In subsequent video works such as *Four Simultaneous Provocations*, *Laser Tape*, *Speech* (all from 1982), *Questions to Another Nation* (four-channel installation 1983, tape 1985), *Remote Faces: Outerpretation* (seven-channel installation, 1986), Rogala gradually enriched both the repertoire of the problems addressed and the complication of the structures built. Sound gains more and more importance, words (both as speech and graphic signs) enter relationships with the image, bilingual abilities of the artist are exploited. Rogala has created a discourse between abandoned Poland and the America he inhabits, he settled his accounts with the past. The past appears also as intertextual cross-references, for instance to Tadeusz Kantor’s happening where Edward Krasinski directed the sea waves, in *Questions to Another Nation*.

In *QTAN* he steps behind his personal references and sources of inspirations. He transforms images and sounds with a computer to broaden the scope of perceived
structures. He analyses the structure of perception through placing the audience of the
installation against the necessity of perceiving several different audiovisual phenomena
simultaneously. He studies the communication possibilities searching for the
interpersonal dialogue, for a common system of symbols and images, etc.). He wonders
how many transmissions one can take simultaneously and where the end of the pleasure
derived from the perception of complex multimedia form may be found.

In that period, Rogala’s art attitude took shape and formed, characteristic qualities of his
art became visible. It is first of all an attitude of an artist working with the versatility of
media. In this case multimedia take various guises: first of all Rogala at the same time
works in many different art disciplines: video, photography, performance. He uses laser
techniques, but also paints, draws, makes graphics, composes music and writes texts. He
is by no means an artist who is still looking for a medium of expression suitable for him,
or who cannot concentrate on one of the disciplines and will always skip on the surface
from one to another. Characteristic for his attitude is an attempt to make relationships
between those different media. From this tendency the other incarnation of
multimediality characteristic for Rogala’s work springs, i.e. his intermedialism.
Intermedialism – this is the right word – takes up various forms. At one case it is various
media loosely lined in a theatre play, at another used media form a tight structure of an
installation, or an environment. Still at another is results from a way of using a “natural”
video art’s predilection to intermediality. For instance, in Love Among Machines (a video
tape from 1986) a live dance is introduced into an artistic dialogue with digitally
generated images, poetry, music and drawings. Multimedia art was to become another
incarnation of multimedialism shortly, and this was soon to develop into interactive
hypermedia art.

Theatrical Contexts

An exceptionally interesting chapter in the history of multimedia experimentation by
Miroslaw Rogala are his theatre (para-theatre) works. These endeavors have been
undertaken together with other artists and actors or are very personal video-theatre,
but realized with the co-operation of numerous staff. Sunday in the Park with George (in
collaboration with the Goodman Theatre, 1986), and Macbeth (1988) with The Byrne
Piven Theater are examples of the former. A remarkable example of the latter is the multimedia performance (video/theatre/opera) *Nature is Leaving Us* (1989).

For the play in The Goodman Theater, Rogala built a video wall which became a part of a computer operated multimedia object, which united gigantic slide projection, video pictures, electronic music and light effects. Video images took the form of a particular electronic equivalent of the painterly pointillist techniques. For the needs of Byrne Piven’s adaptation of *Macbeth* Rogala realized videotape *The Witches Scenes* and composed music for it. Piven located his play in the 24th century. Witches, which in Shakespeare’s masterpiece were spirits, here are television transmission. To create the scenes with the witches, Rogala used versatile electronic media, i.e. video recording, computer animations, computer painted pictures (Paintbrush) and visualized sound waves. In the scene of future telling the witches encircle a computer (a magical ball!) and talk to their own image on the screen. Rogala differentiates protagonists by point of watching: Macbeth is always seen from above, the witches from below, and by color: Macbeth in cool color, blue, witches – in warm browns. Both parameters are here important, as they define the emotional attitude towards protagonists. Rogala’s video takes the form of a nightmare, post-capitalistic world product (King, 1994). Rogala’s work has significantly helped to transform Piven’s theatre performance into a multimedia show, which takes place in more than one space dimension, using changing rhythms and versatile media.

Miroslaw Rogala’s art philosophy seemed to be clearly shaped at that moment. He believes that art comes from the internal need and it is a result of a non-compromised creative attitude. He places his art on the verge of other disciplines. Its complex nature and communicative complication is meant to reflex the heterogeneous and dynamic nature of reality. The experimentalism characteristic of Rogala’s art is work which is on the verge of communication and chaos – it is studying the technology of representation and the boundaries of human perception. Rogala discloses in his art his conviction of the fluent nature of the boundaries between the various media. Drawbacks of one medium turn out to be advantages of the other, and here lies the source of transgression and multimedia integration. A creative process beginning in one medium and continued in the second or third becomes an especially attractive creative strategy for Rogala. That
approach leads to creating versions of one art work realized in various media (Lovers Leap for instance) or a series of versatile (both structurally and medially) works on the same group of problems (Electronic Garden/NatuRealization, 1996; Divided We Speak, 1997), or finally it gives birth to complex, multimedia achievements, where the discourse is developing through activating following media, as it takes place in Nature is Leaving Us.

The premiere show of a video opera Nature Is Leaving Us in Chicago in 13. 10. 1989 turned out to be an unusual art event followed by the equivocal and full recognition, if not admiration, of the critics (see e.g. Christiansen, 1989, Voedisch, 1989). Lasting more than an hour, this fourteen part performance has again, and to a larger extent than ever before in Rogala's work – united several media. The central part of the realization is a three channel video wall made of 48 monitors in three parts. Additional two channels are provided by the remote controlled monitor and a moving camera, which transfers its images into the video-wall so that people in the audience can see themselves on the monitors. Visual structure is completed additionally by slide projection and two neon sculptures. Sound space is made of five channels forming sound-surround system and completed by electronic music, piano played live and singing. Dance and theatre spectacle are the remaining elements.

Although there have been multiple attempts to read it in this way, Rogala's video opera is not a lamentation on the devastation of nature. The problem which centralizes its structure is the inevitable transformation of the modern world, where the technosphere completes and in many cases exchanges nature, together with the consequences of that process for the human life. Attitudes toward nature, which do change, presently confronted with its traditional role in culture and forms of artistic representation form a metaphysical portrait of the world at the brink of the 21st century, the world which no longer gives us the feeling of continuation. Nature is Leaving Us speaks of the shaping of the new electronic landscape. It also speaks about us building that landscape in our minds.

The structure of Nature Is Leaving Us is equally complex and multi-facial as its media characteristics. Rogala uses many different scales, continually changing tempo and
rhythm. Because of the multimedia used to form so many parts of the work, the above parameters are often appearing in counter-point multiplication: for instance, in the first part of the piece, *Accelerating World*, the accelerated image on the screens is paralleled by the reduced speed of the actors' moves on the stage. A characteristic structural leitmotiv in Rogala's work is searching for or finding formal parallels between components of the work carried out in different media and different materials. However, the artist equally often uses the composers' trick, i.e. he hampers the float of the narration by adding an element which destroys the balance and harmony. Urszula Dudziak's singing quite often has the role of destroying the order. The above-mentioned experience of lack of continuation is felt at perceiving the images, while the performance is a permanently undertaken attempt to regain the order.

One may notice the open attitude of the artist, or his readiness to accept surprising events. Employing a little child as an actor, in itself is a special way of incorporating chance in the structure of the opera – his actions one can never be sure about. From this point of view, the history of the 12th part of the opera, entitled *The Electronic City*, may also be interesting. The breakdown of the machine generating images during the preparatory process has led to producing electronic noise, which after some changes, have been incorporated into the work, becoming a representation and a symbol of a new city.

The endeavors undertaken by Rogala have led here, as it is usual in his work, to the shaping of a dynamic, changing space. In *Nature Is Leaving Us* we can observe the continuous transformation of the perspective, leading up to the total turning or exchange of the space of the scene with the space of the audience when the movable camera takes the images of the audience to the screens of the video-wall. The final result is a kind of evading of the opera, which in its complexity evades our perception. We encounter here another example of pre-interactivity in Rogala's work, which in this opera is achieved through structural complexity, which makes a break through from linear narration (Kluszczynski, 1997b). A viewer left alone against a multiplication of phenomena composing the work and deprived of any possibility of grasping the whole of it, is "condemned" to her/his own choice of the path through its universe. It is unnecessary to add that such a quality of the work composition is not only defining the
structure of its perception, but its semantics as well.

In the hypermedia spaces

*Lovers Leap*, Rogala’s work completed during his stay at the Center for Art and Media Technologies (ZKM) in Karlsruhe between 1994 - 95 exists in two versions realized in two different multimedia: as an interactive real-time large-scale environment installation, and as an interactive CD-ROM.

*Lovers Leap* – installation marks a dynamic, monitored space in the scope of which an interacting visitor with headphones and a transmitter on her/his head is located. Thanks to the headphones as the only one of the audience s/he may experience both the visual part and the sound of the piece. The person’s movement induces changes in the images (of the video projection) as well as brings about changes in the acoustic sphere. Had more people moved- in the area, they would be confined to the changes caused by the individual singled out by the transmitter. The recipient-interactor is observing changes of perspective in the projection (in the Chicago sequences, which are animated 12-dimensional photographs), is experiencing sudden appearances of the images from another level (Jamaica video sequences) and thus is gradually becoming aware that it is her/his movement that causes the transformations. The question, however, how it happens, what is the rule, may remain unanswered. Therefore awareness of having the controlling and navigating function does not entail exerting real control. The asymmetry may obviously motivate the interacting person to attempt to grasp full knowledge of the situation, the knowledge of the relationship between one's physical behavior and installation functioning. One may feel motivated to turn this knowledge into actions which allow her/him to grasp full control over the situation. Full control means full domination. The awareness of these consequences may push the recipient to make another choice, namely to concentrate on one’s aesthetic experience and to ignore the actions leading to mastery, control and domination (and to rethink the possibility of such a choice, the possibility of separating the aesthetic from the social). Aesthetic choice is in this case conditioned by the previous ethic choice (it is a question of philosophy of life). No doubt another thing results from the interaction, namely one realizes that in the complex situations both in terms of structure and material, full
domination is in fact impossible to reach. Still another consequence of using *Lovers Leap* is the awareness of control mechanisms also in the art. As Timothy Druckrey remarked at analysis of *Lovers Leap*, imaging is a process, where the subject is united with the object with a system of representation (Druckrey, 1995).

We can see here the co-existence of spatial behaviors (changes of location in space) and mental behaviors (changes of perspective in the image) with parallel and unintentional – initiated by the very structure of the work – reflection on the whole of experience. Therefore the navigation through the maze of *Lovers Leap* structure unifies all the work's aspects, i.e. sensual, perceptive, spatial, temporal, emotional, intellectual, esthetical and ethical. While interactive gestures on the part of the user reveal the structure of the work and thus gain the meta-artistic function, they simultaneously become a way of forming, that is recognizing, or reshaping of one's identity. At the same time, however, Rogala's work gives an opportunity to discover the Other in the world, who at one moment for one reason or another becomes dependent on our behaviors and thus becomes our hostage in our struggle with the world. Together with the Other, the problem of responsibility appears. The above theme will be repeated in the following Rogala's endeavors where relations between individual users as a part of interaction initiated by the piece would play larger and larger roles. And as the personalization of the Other grows and its participation in collective creation rises, freedom, which up to date was one interactor's quality, becomes a subject of negotiation (Shanken, 1997).

The above complexity of recipient experience of *Lovers Leap* correlates both intricate spaces of the work (dynamic unity of the real space of the installation with the space showed in the transformed photo images and video sequences) as well as multi-layered connotations of the piece. The title itself takes the artistic and philosophical discourse into existential domain: "Traveling from Chicago to Jamaica," he writes, "I visited a place called 'Lovers Leap' (a legendary location of tragic lovers – such places exist all over the world): there was a military radar scanning the sky. This physical surprise created a conceptual leap as well." (Rogala, 1995).

*Lovers Leap* encompasses all the areas discussed in the introductory part of this essay. The multimedia structure provides perspective, through which we can have a better
view on art, existence and power: “Power and authority depend on that where we place ourselves in the scope of our environment. The viewer’s power grows in proportion to his awareness of the mechanisms of control. Each of the viewers creates a new and different art work dependent on the extent of his engagement, understanding and participation in power. Many leave without any demands of power. It happens in love, too.” (Rogala 1995).

*Lovers Leap* – CD-ROM being at first sight the same work, gives a totally different experience. A completely different scale and a different interface transfer together the piece from the public space to the private. Physical, full-body engaging experience of the installation has been replaced by the visual and tactile experience of the CD-ROM. Here, the user gets the possibility of choosing between two versions of the interface (a moving or stable eye). The difference of perception between the two versions, apart from multiple common qualities, such as imagery (although CD-ROM version includes more photographs), interactivity, similar organization of the audio-visual structure, and subject, make us realize how important a role in art is played by characteristics of the medium used.

Another work of Rogala’s, an interactive installation *Electronic Garden/NatuRealization* (1996) located in the public space of Washington Square Park in Chicago raises issues of freedom of speech. Rogala referred here to the history of Bughouse Square, the part of the park where the installation was located He built a metal construction with speakers in the part of the park famed for the freedom of speech practiced there. In the hard disc of a computer a number of speeches by various well-known people (both historical and contemporary) in various ways related to the past of the chosen place. Sensors sensitive to the body temperature activated the computer while someone appeared in the area controlled by them, and from now on the person could navigate between the prepared speeches. In such a way the interaction between the work and the audience could possibly be continued in the dialogues/interactions between the listeners themselves. Rogala’s installation reminded us that the freedom of speech is a profit especially for those who speak in public.

Because of its references to a concrete place *Electronic Garden* combined the qualities of
a public space art and site-specific installation. Here again Rogala emphasized the role of the physical body as an interface in the artistic interaction, especially in the work exhibited in a public space. He also underlined the immense importance for contemporary art of the transformations in the current aesthetic paradigm, especially of the aesthetic situation model as well as resulting changes of the role and status of the artist and recipient in the processes of artistic communication. While the author's responsibility for the actual course of the artistic event declines, the activity of the recipient and her/his influence on the constructing their (author's and recipient's) work rise. It also means that artistic interaction may happen not only between the recipient/participant and the system of the piece (through the interface constructed by the artist) but between the interactors themselves and the interactor and the artist as well. Initiating such processes of dialogue becomes currently one of the most important qualities of the projects carried out by Rogala.

In one of the interviews given at the occasion of exhibiting *Electronic Garden* Rogala said among others, "A modern artist tries to re-define his role. Aesthetics transforms from the passive to the active. It is reflected in that aspect of my work which plans participation of more than person. My work does not exist without co-operation on the part of the people looking and listening." (Artner, 1996)

Similar to *Lovers Leap, Electronic Garden* also is produced in another form, as the Internet installation, as WWW pages. The global context has caused the fact that subsequent people, also having something in common with Chicago but being in the same time international people as Laurie Anderson appeared between the speakers.

In 1997 Rogala started working for exhibiting in the Museum of Contemporary Art in Chicago (MCA) *Divided We Stand*, "an interactive media symphony in six parts with the participation of the audience". Recipients, sitting in three parts of the room became a large virtual orchestra in this project. Sensors placed in the room would react to every move of the audience, so that they would be able influence the sound structure of the work and become its co-performers. Two of the six parts of the symphony would be performed in the above way. The visual sphere of the piece, i.e. image and text projections, remain the object of the interactive influence of the recipients as well. In the
whole of the piece, participation of musicians, dancers and singers is also scheduled, besides the activity of the audience. The planned endeavor shows clearly to what extent the relationship between all participants of the aesthetic situation, became important to Rogala and to what extent the interactive audience may influence the shape of the work. In comparison to the previous works, which also demanded activity on the part of the viewers, the audience of Divided We Stand has a larger and subtler possibilities of participation.

Rogala is supported at the work on Divided We Stand by a whole group of co-operators: visual artists, musicians, programmers. It is by no means a new characteristic of his work – he has always eagerly co-operated – but in the recent works the creative participation of co-operating people is even larger. It also is not merely a result of the growing complexity of his works, but also of developing attitudes of openness: besides the audience there exist people who participate in the creation of the works initiated, planned and directed by Rogala.

Complexity and technological complication of Divided We Stand do not allow for its immediate accomplishment. The artist gave it the form of museum art workshop, a sort of laboratory, in the scope of which, together with a group of co-operators, he carries out a subsequent element of the project and creates works, which has a status of an introduction, a prologue, or a sketch for the final ‘proper’ symphony. (It is unnecessary to add that the final version may have little in common with the planned piece). Divided We Speak exhibition – interactive art laboratory – showed from September to November 1997 in Chicago is a specific rehearsal, preparation for a full accomplishment of the above project. Works presented in the exhibition however are at the same time fully valuable art works. Rogala uses up the transformations in art of the last decades, where the artwork loses its physicality and becomes a process finally. The artist gives the laboratory status giving priority to the essence of the undertaken art phenomena.

Divided We Speak exhibition is composed of two parts. The first is interactive, dynamic empty space, where texts sung or spoken by several performers had been ‘located’. Using specially designed transmitters/controllers (on ultra-violet rays) the recipient may activate the system (GAMS – Gesture And Media System) and directing the space
s/he can build her/his own concretization – a montage of fragments of the texts. Visual interaction is also planned. The piece is a kind of choreography of words in space, where the user plays the role of performer or dancer thanks to whose actions the potential may take one of multiple possible forms. Through the movement in monitored space and her/his psychological involvement the user through activation of audio-samples may carry out an experiment. As a result s/he is meant to create her/his own ‘private space’ in a public space of a museum (Warren, 1997). S/he can also begin a dialogue with another interactor and their co-operation may bring results unreachable for an individual recipient. That is how the piece refers to another antinomy of media, which bringing people closer to each other, separating them simultaneously.

The second part of the exhibition was made of three spatial objects – lit up containers sheltering very exceptional visual forms, in other words PHScolograms, produced as a result of unification of photography, holography, sculpture and computer graphics technical and impression means. They give the illusion of three dimensionality and an impression of movement, which appears in PHScolograms when we start to move in space. These objects have their counterparts in the invisible universe of sounds. Moving with our hand drowned in an illusionary virtual space of a PHScologram we can direct various words and sounds recorded in it.

No doubt that Divided We Speak exhibition, as well as all the other similar presentations, compose indeed a specific laboratory, where Miroslaw Rogala works on the following art projects. It is however also autonomic performance. Art understood as work in progress in all its stages presents various phenomena to us. Each of them, in a paradoxical way, is both a final, ready object and a continuous process of creative transformation.

The above-described works represent aptly the present stage of development of Miroslaw Rogala’s art. A group of qualities which become presently the most important attributes of art employing media technology bring one’s attention here:

• Multimedia character of relationship multiplying relations between the recipient-interacting person and the work of art;
• Interactivity, which makes the recipient interactor and makes him/her the responsible for the shape of experience and very frequently for the work of art itself;
• Rising de-materialisation of the art work which finally transforms into a dynamic, empty space, where an interactive performance by the interacting person takes place;
• Tendency to use the interacting person's body as an interface;
• Search for the possibilities of links between the individual experiences of many interacting people and making them mutually dependant on each other, with the simultaneous emphasis on their autonomy;
• Rallying of the private space of experiencing of the work with the public space of its context.

Contemporary art in Rogala's approach becomes the space where the recipient recognises and defines (and sometimes transgresses) her/his individual and social identity in the dialogue with other interacting people.

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When editing a text, and dynamic-spaces-mode is enabled, text separated by more than one space doesn't move, if possible. Concretely, end-of-line comments stay in place when you edit the code and you can edit a field in a table without affecting other fields. For example, this is the content of a buffer before an edit (where * represents the cursor):
alpha*gamma delta one two three. When inserting "beta" without dynam...

Most literature equates space dynamics with the kinematics of a problem, while astrodynamics covers both the kinetics and the kinematics. From an engineering perspective, think of this as space dynamics dealing with the right-hand-side of $F = ma$, while astrodynamics develops the left-hand-side and (attempts to) finds a solution to the overall system.

1: Vallado, David A. Fundamentals of Astrodynamics and Applications, 3rd Ed. 2007. However the definition of astrodynamics is frequently used as a coverall for the dynamics of orbiting bodies (at least my experience). So I would suggest the following definition: Astrodynamics: The study of interactions between bodies at motion in space. Space dynamics: The study of bodies at motion in space.