THEATRICAL COLLOQUIA

The Experience of the Spaces for The Representation and Distances Required for Handling. Looks and Movements of Living Bodies - Puppets - Virtual or Electronic Objects and Bodies

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Abstract: Remembering the essential relationship that exists between the public and the stage in the time of the theatrical performance with traditional puppetry, and the triangulation of the relationship between the viewer and the actor with the puppet object, it is the experience space and distances of play and movement between the living and the inert which are revisited. The contribution of digital arts and the use of technologies in puppet works reveal new original and innovative forms that disturb the landmarks, the presence of living, virtual or robotic bodies. An intuitive text based on a curious need to question the connections between digital arts and the arts of puppetry.

Keywords: marionettes, living body, electronic body, actor, public

Introduction

In French-speaking Belgium, as everywhere else, over time, puppetry takes on new forms. If in its history there are large distances between the spectator and the presence of a double actor/puppet, with the help of technologies new perceptions of these gaps that separate the viewer and the player and create the fictitious space are created. Creators become multidisciplinary or are accompanied by artists from different backgrounds with broader and renewed skills. Thus, sometimes, puppet objects are freed from the traditional formats inherent in their history. These new proposals on puppet forms also lead to explorations and research that promote openness to technologies and digital arts with all their possibilities.

Nowadays, hybrid forms compete with writings that cross virtual images, shapes, or avatars, programmed motorized and robotic objects. With these performances, living bodies, puppets, images, and virtual bodies write new

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interdisciplinary scores for the emergence of innovative forms of the arts of puppetry and play from these distances between sight, real or virtual bodies, and manipulated objects. The question of the manipulator's power over the object is also raised with the digital tools and with the question of who's manipulating whom. And to understand better the challenges and transformations that result from the use of new technologies in the arts of puppetry at the Puppet Centre of Wallonia-Brussels Federation, in recent years, the connections between puppetry and digital arts are questioned and stimulated.

It is through projects such as Lumen #[1] and the European Project Numeric's Arts Puppetry Project[2] within the framework of Creative Europe (2017-2020) that some examples of the development of these new forms of multimedia writing have been revealed. The following lines are expressed in terms of variations in distances, spaces and looks in traditional performances and new forms.

Presences of living bodies and forms of puppet objects in the space of representation

According to Henryk Jurkowski (Jurkowski, 2008) "The puppet is an articulated figure, made according to the principles of the visual arts, endowed with the technical capacities to be brought into play, during a performance, in front of an audience, as a fictional subject."

In Belgium, traditional puppets are part of the history of the discipline of the puppetry arts and are still characterized by the presence of theatres and shows perpetuating the rod puppets as in Liège with Tchantchès[3], the popular character or Woltje with Toone[4] in Brussels. Each genre defending their distinct repertoires for nearly 200 years. In these systems of representation, the living bodies of puppeteers and manipulators remain hidden in their fixed castelets and respect from the distance the frontal relationship that is created with the audience seated in successive rows facing the stage. The secret of manipulation is well kept in its frame, and the playing space is reduced. Thanks to the inventiveness of Didier Balsaux[5], today, the Royal Puppets, in addition to leaving the theatres and also playing in the public space, the

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[1] N.A.P.P. European project around the meeting of puppetry arts and technology and digital arts.
[2] Lumen: event organized by the Puppet Center in collaboration with Transculture and supported by the Advisory Commission for Digital and Technological Arts of the Wallonia-Brussels Federation.
[3] Tchantchès, puppet from Liège, manipulated only by a rod fixed at the top of the head.
[4] Toone, Dynasty of puppeteers from Brussels.
[5] The Royal Puppets, professional puppet theater

frame opens, the manipulation of the rod puppets is visible, and the spectator sometimes turns into a manipulator for a few moments.

The living body of the actor, sometimes a character and sometimes a narrator, expresses the codes and distances of play and perception. Sometimes the puppet and the actor are only one entity sometimes revealed by the distance taken by the narrator that influences the distance of perception. The gaps are narrowing, and a relationship of proximity is established between the play and the one watching it. For many years, beyond this type of historical character, many companies addressed to the young public theatre and some companies addressed to the adult audience emancipate themselves from ancestral clichés to propose different formats in the theatre of shadows, tabletop puppets, mobile puppets, theatre of objects. Then, the acting and their presences in the scene space are drawn into functions of often open scenography that makes the frame burst by multiplying the depths and possibilities of the play. If the spectators are often kept at a distance in the frontal relationship, they are summoned in the intimacy of living bodies in relation to the manipulated puppet objects. Yet remains the real physical presence of the two entities: one living and the other inert.

The puppet designates a form given to the human representation intended to participate in the play of the performance in a tangible space and in a space/time. Inert, inanimate, it defines around itself its own space in representation. Motionless and visible, it provokes an interpretation of the spectator who receives the information of this frozen representation of anthropomorphic appearance. On the contrary, the actor remains a living body on the stage, embodying one or more characters. The puppet does not embody, it represents, it remains a simulation of an inseparable relationship with its manipulator. There is always a physical distinction between the two presences: the living body and the object body, even if in some cases the puppet and the actor seem to merge in the gaze of the spectator. The actor/puppet association widens the field of possible spaces: when the showman/wearer does not show himself, or when the showman/wearer enters the field of view of the spectator. In addition to giving action to the object, the actor can add a metaphorical dimension to the animation to make sense.

One of the values added to the puppet is undoubtedly also this wealth of possible multipliers of proportions and disproportions: between the object and the actor, between the object and the space, between the actor and the space of the object. A big puppet shown in a tiny frame or a tiny puppet on a huge theatre stage will give concrete feelings about the influence a space gives on meaning and sign. A

manipulative actor noticeable in the framed space of a small puppet can give a new meaning to this inseparable relationship between them. Today, any material, any object diverted from its ordinary use can become a puppet, it is then up to the director to draw each time a specific space for the play or situation that will bring new meanings to the stage writing. The life of a puppet is the one represented by its manipulator. By its nature it creates a space meant for itself. It is both meaningful and carried by. In addition to the exponential nature of physical spaces created by the puppet, the size of its visual resources makes it possible to exploit the new spatial field of the image. The puppet material is a rich ferment for the theatre of images. Not only in the sense of image in a screen, but above all the image of the play bearing reference, emotion and life. A multiple language tool, loaded with plastic expressiveness, reinvents species of spaces for (in) animated objects. This notion of a plastic object also provides new clues to the space of representation. The relationship between the puppet/actor/spectator establishes a triangular space. It is a first triangle of relationship. Another relationship triangle is added to the first, the one formed by the puppet/actor/role. As soon as it appears, the puppet reveals the important features of the role. When the puppet creates a space for bodily and sensitive dialogue with its manipulator, it composes a new scenic being. When the play is visual, the construction of the role and character is concrete and visible. In addition, the puppet sets up a space for silent dialogue between itself/its actor/and the audience. During the performance, the two triangles of relations and dialogues evolve in parallel. If the space from the Latin *spatium, is an indefinite space that contains and surrounds all objects,* the puppet, (in)animated object, appears as the midwife of space species: materialized visible spaces and disturbed and distressed species of mental spaces. During the representation, several mental universes have already been mobilized, we touch on the invisible mental space of man who seeks to give meaning and manage his emotions.

Measurements, gaps, distances, and axes determined by bodies, puppet objects and looks

The puppet is a tool in the hand of man, and it is this hand that handles, gives the axes and the measurement of the space of the play in all its dimensions.

At the theatre, a space is defined by distances, by puppets, relationships are designated by *distance.* For each relationship there is an elasticity of this *remote* phenomenon: each relationship such as the actor/puppet relationship, the scene/room relationship determine multiple possibilities of distances. The power of the puppet undoubtedly comes from these silent dialogs between the actor and the puppet,

stage/room that are built and deconstructed throughout the representation and that install extensive distances between poles that are living bodies and objects.

In the case of the actor, the gap between the character and himself is psychic. If we study the distances between the manipulator's body and his puppet, the differences that separate the two vary. The connecting tool being the hand that, together with the eyes, establishes the connection between the actor's body and the puppet's body. A glove puppet is attached to the hand, to the arm by the position of the fingers in the hollow of the head of the puppet whose body made of a sheath merge in the extension of the arm of the puppet.

The vertical axis shows the green sky. Thus, axes are drawn, wherever we are, on the stage or in the room. We find that this is often a vertical axis that the actor/manipulator/object relationship materializes: for the rod marionette, the rod puppet, the glove puppet, the large rod puppet. Hands aimed at the ground for rods and wires, hands pointed to the sky for glove or rod puppets. In the case of table puppets, or large rod puppet with articulated mouth, the relationship exists on a horizontal axis. In the space of the scene we can distinguish, a geometry in a three-dimensional space. Thus, axes are drawn, wherever we are, on the stage or in the room. From the room to the stage, most often the lines of horizontal axes are drawn, but sometimes it is a more complex geometry. In the field of puppet shows, theatre of objects and other hybrid forms in theatres, we are currently seeing infinite proposals of scenographic devices from the smallest scene for a spectator, to the largest in a huge stage opening. Thus, puppets impose in each place moving distances that touch the person who is moving.

Digital Arts: Technology and tools for entertainment

"In a world transformed by new technologies, increasingly assisted by artificial intelligence, the relationship between man and machine becomes an essential social debate and inspires all areas of creation."[6].

"Digital Art", "Computer based arts", "Net arts", "Electronic Arts", etc., there are many names for this sector which combines art, technology, and science. "The term "Digital Arts" includes different artistic disciplines that aim to create multimedia products using digital techniques. A multimedia product is a product that

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[6] in Artistes et Robots - Introduction de Sylvie Hubac - Catalogue de l'exposition Artistes et Robots, 2018 , Réunion des Musées Nationaux - Grand Palais, Paris.

combines diverse content (sound, text, image, 3D objects…) and is accessed or used interactively by the user."

In live performances and especially in puppet shows, several disciplines and instruments come on stage when exploring possible developments in the digital arts. From the keyboard, to the computer screen, from the camera to the sensors, on the stage there is a mixture of anticipatory video, movie in real time, the body of the actor or puppet object equipped with sensors that create images, light effects or sounds, puppets or objects equipped with engines whose movements are programmed or conducted live, animated movies, etc.…This non-exhaustive list of experiments installs new relationships and distances between the actor, the puppet object and the spectators and creates new narrative forms. If we talk about the relationship between digital arts and puppet arts, what about the distances and spaces that separate the manipulator from his puppet object. With the use of tools such as computers, code program, engines, the implementations of puppet robots on stage are induced by digital technological impulses and programming. The distance that separates the human from the non-human puppet is extended, the threads of manipulations are replaced by electric wires and electronic technology.

"The two artificial creatures that are the puppet and the robot have in common to question the idea of *alter ego* of the human subject. By disrupting the boundary between the other *(alter)* and the same *(ego)*, they raise a reflection on the gap between life and matter, as well as on the living and human status.[7]"

"Perhaps the living being should be completely removed from the scene. Is it not said that we will not thus return to an art from the very ancient centuries whose tragic Greek masks probably bear the last traces? Will this be a day of using sculpture, about which we will begin to ask ourselves strange questions? Will man be replaced by a shadow, a projection of symbolic forms, or a being that would look like living without being alive? I don't know but the absence of man seems indispensable".

Maurice Maeterlinck, Menus propos – le Théâtre, 1880.

The Belgian author and playwright Maeterlinck, such as Jarry in France, and Craig in England, were interested in effigy as a vector of the dramatic text to replace the actor. Manifesting the desire to change the actor's naturalistic presence on stage, he challenged and set aside the actor's "trivial body" by replacing it with a puppet as

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[7] Gabrielle Scarabino, Lutka, New technologies in the puppetry arts, Lutkovno Gledalisce Lubljana, 2020

mediator between the visible and the invisible, again and again in search of a new *appearance of living without being alive*. The virtual presence via a video projected by body or face or avatar and the image filmed live because of the simultaneous presence on the screen could give the idea of a response to Maurice Maeterlinck's utopian statements and vision. The duplication of bodies and real objects on the stage and their virtual images provoke multi-dimensional sensations and perceptions. Virtual images are formed in the expansion of light rays and propose new sensory perceptions and amplify the questions about the ambiguous relationship between illusion and reality. Between images and looks, computers make the dimensions between living bodies and virtual bodies more complex, and they also multiply the volumes in which they evolve. The opposition between the real and the virtual also changes the perception of the distances that separate the one who looks and the one who acts. Several types of video images interact on stages. The issue of the double approach and duplication dear to puppetry artists is settled. If we start from the simple processing by video projection of the actor and his puppet with previously filmed images, we give a flat impression on the screen of the real bodies in volume present on the stage.

The process adds perception and a disturbance to the spectator faced with this duplication. There is a sense of remoteness, which is further accentuated if the actor and his puppet have been filmed in another place, another playing space than the stage decor.

With the more technically complex process experienced in real time in live shooting format and simultaneous projections on the screen, there is the emergence of a mixed reality. This process gives the actor new possibilities for play and the presence of new puppets. As the screen adds a distance, the close-up image of the projected body of the actor or of the puppet causes the viewer's gaze to oscillate from the wide to the close-up plane. Other sensations of distance from the image, but in which we can perceive the approximation of the gaze. These live cinema technical devices also transposed into the theatre of objects also show the changing proportions of small, filmed objects that become large on the screen. It also plays with changes of axis and layouts of planes and elevations in the overall geometry of the scene. Another type of images with the stop motion allows the expression of the plastic arts by the choice of the technique of drawing, collage, or modelling of characters in three dimensions, and the shooting of frame by frame. This practice is associated in the live performance by playing transformations and displacements. Since the film made in stop motion mobilizes an artistic creation in the service of dramaturgy and the mixing of live

manipulation with a projected decor, or where the puppet character manipulated on the scene enters the image by cinematographic effect and continues to exist in the frame-by-frame motion, in the itinerary and extension of fiction. With different projection models, the developments of the programs allow the manipulation of images, the multiplicity of projection planes whether flat in volume or in motion. The scenographic elements, the bodies of an actor or of the puppet object also become projection supports and a medium of metamorphoses. Avatars, like pixel puppets, allow you to enter and interact in virtual spaces. In the world of games, they allow a player, to become the spectator of his own actions in real time. On screens stretched across the stage, their moving shapes stimulate the vision of another reality that disturbs the physical landmarks. *The avatar is based on a matrix sculpture, a 3D mesh model with a set of mechanisms that allow it to be manipulated to be put in place and thus have a potential for movement. This matrix sculpture is therefore equipped with a system of actuation of movements, whose sources can have several origins: a video game animator, a combination of motion capture, a genetic algorithm.* We need to develop new tools such as the Kinect, which can capture the depth of the body to create a 3D avatar.

"Robots are linked to form and therefore to art since humans invent fictions"[8]. Robotic puppets question the manipulation, the movement, and the appearance of a human nature. With the extremely sophisticated machinery, some androids have an outer shell that makes gestures, movements, with movable eyes, and even a voice that makes it a challenging artificial creature. The illusion of the setting in motion that is like reality causes either fascination or rejection. Virtual reality wants you to embody your avatar and to see through your eyes to integrate the virtual world or metaverses. We then become an internal actor of the virtual worlds. And we're almost one with the puppet we embody. As a result, great importance is given to the mirror in virtual worlds, because seeing yourself as your avatar becomes confusing and yet very interesting. To make a puppet, sculpture, modelling, collage, sewing, so many artistic and artisanal techniques come into play. The new tools that are 3D printers are also part of these manufacturing developments. The detailed reproduction capabilities, the fast execution of the machines allow new shapes and new materials. Nothing replaces the gesture of the hand that creates and shapes, the use of the machine brings a technological contribution to the manufacturing.

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[8] In Artistes et Robots - Introduction de Sylvie Hubac - Catalogue de l'exposition Artistes et Robots, 2018 , Réunion des Musées Nationaux - Grand Palais, Paris.

Digital Arts at the Puppet Centre of the Wallonia-Brussels Federation

"The Puppet Centre of the Wallonia-Brussels Federation lives in the rhythm of contemporary puppetry in all its forms (figurative puppets, theatre with objects, animated forms, shadows…) and which intersects the artistic disciplines of the performing arts and visual arts. It was therefore consistent that the intersection with new technologies and digital arts also became a field of exploration.

After the first approaches and events like Lumen# realized and supported by the Advisory Commission for Digital and Technological Arts of the Wallonia-Brussels Federation is the urgent need to bring together actors and operators identified as puppets and concerned about the same issues beyond our borders in Europe, which has proved indispensable. Thus Ljubjana Puppet Theatre in Slovenia, the Tony Boulandra Municipal Theatre in Romania and the Val de Lorraine Cultural Action in France have committed themselves under the coordination of the Puppet Centre to perform together this N.A.P.P.project from July 2017 to March 2020.

In 2019, the Worldwide Festival of Puppets Theatres de Charleville-Mézières joined the project, giving additional breath and increasing visibility. Our common ambition was to provoke meetings around research, experimentation, performance broadcasting, practice transmission, punctuated by artistic and philosophical reflection to better understand the stakes of such digital contributions in the metamorphoses of the puppetry arts.

To improve the technical or artistic skills in the mastery of new tools or technologies, to tame the emotion or the chilliness of the public with mixed scenic proposals where the new dramaturgies summon actors, puppeteers, dancers together with robots, machines, and or electronic images and sounds have been open and fertile paths of our adventure. Encouraging the public to be curious about these hybrid forms to open up and broaden perceptions of the ever-changing art of puppetry was also a vector for innovation. Being at the heart of our multiform art and technological developments has been extremely important, and our record is witnessing this."[9].

As part of this project, we have established residencies of artists with various partners, we have broadcasted sixteen innovative creations, round tables, café-philo, improvisations of labs, schools of spectators, round tables.

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[9] Françoise Flabat et Philippe Franck, When technology meets puppetry - Quand la technologie encontre la marionnette, 2020, Tournai, Editions du Centre de la Marionnette de la Fédération Wallonie-Bruxelles.

N.A.P.P. was a step in trying to tame these new generations of technological experiments. The experimentations of the artists have allowed the discovery of original works that have fed the collective reflection, the debates, and the appropriation of new practices. Many renowned and emerging artists have been welcomed in the programming of the six editions of Lumen# and N.A.P.P. Some of them have presented touching works in different fields of experimentation and research.

"Human Study" by Patrick Tresset, with a robot consisting of an articulated arm coupled to a motorized digital camera that draws in real time the object or the visitor on pause in front of the lens. Different experiences of time and space if you choose to sit in front of the camera as a model and see the lines that draw your portrait and after the time of shooting the drawing returns the image of your own identity, or if you choose to stay away to maintain the status of observer of the relationship between the room, pattern and drawing arm. With Zaven Paré, known for being a pioneer in the field of new media and noting that the puppets were at the centre of the avant-garde, several robotic installations were able to prove that he was one of the first who invented the electronic puppets. Many of these machines are inspired by texts or dramaturgies from theatrical literature such as the robot puppet Der Jasager 4.0, after the opera by Kurt Weill and Bertolt Brecht.

In «Robot Dreams» proposed by Iris Meinhardt & Krauss, objects, robotic programming and actors, dancers mix on stage where the boundaries between man, machine and object give the impression of melting completely.

With "ATLAS" by Yan Deval and Marie Ghislaine Losseau is a work situated between the digital arts and the plastic arts, that is presented in the form of a of a scenographic exhibition bringing together real models and interactive virtual worlds..
Marie-G. Losseau builds imaginary cities by hand, alone or with adults and children in workshops. Yann Deval scans the houses in 3D to immerse the audience via virtual experiences. Together, using augmented and mixed reality, they explore the new spaces from physical space to virtual reality, through all the layers in between.

At Créa-Théâtre, also driven by the curiosity of experimenting after mapping the essays for scenography and video drawing, in the performance of «Les main arc-en-ciel», the manipulation of images in the performance « Troublantes mains », in LLouise, our approach to robotics materializes by making a motorized spider that is the red thread of the show. Since 2020, Master Puppet, which brings together the two

fields of visual arts and space at the ESA Academy of Fine Arts in Tournai and the Arts of the word (Theatre) in Arts2 in Mons, with the Puppet Centre of the Wallonia-Brussels Federation as partner, placed at the heart of its study program the digital arts to convey a multiple and open approach to students.

To conclude

At the puppet theatre, the creators sometimes dream of breathing life into the inanimate matter of puppet objects. By trying to appropriate technologies in the service of creation, artists participate with intelligence and critical mind in the evolution of the world. On stage, a puppet filled with electric motors and wires sits alongside a traditional puppet, with images replacing, duplicating, or multiplying the actor. Interactive devices transform the spectator into a puppet animator. Filmed as real the face of the viewer projected on the puppet plays the metamorphosis. The image of the avatar can change consistency to become evanescent and ephemeral. In immersive experiments, real space merges with projection and creates ambiguous places that blur distances and feelings. With the digital arts, puppet theatre remains an art of live performance. Works that consist of actors, virtual objects or robots remain in the system of representation in front of or with a present audience. Whether the puppet has the appearance of a robot or a virtual avatar, it remains manufactured in the world of the show by a human. Here, in the performing arts, we have considered digital experiences in a cultural and artistic way, free from the notion of machine alienation and from the social changes imposed on us by the society of all digital. We are sensitive humans, and we are concerned by the evolution of the world and techniques, we will not become robots even if the illusion of certain connected and motorized objects sometimes let us believe in their superiority. Consider that new technologies require the development of tools and programs, these bring new breaths (ideas) on the scene. The new forms titillate our curious minds and make us experience sensations and modulate our emotions. The various technical and digital contributions in building bridges with scientific research multiply the field of possibilities at the heart of the experience: the relationship between the stage and the present audience.

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