

Artă teatrală, coregrafică și multimedia

THE USE OF ADVANCED TECHNOLOGIES ON THE THEATRE STAGE IN THE LATE 20TH – EARLY 21ST CENTURIES

UTILIZAREA TEHNOLOGIILOR INOVATOARE PE SCENA TEATRALĂ LA SFÂRȘITUL SEC. XX – ÎNCEPUTUL SECOLULUI XXI

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New computer technologies began to penetrate the European stage in the middle of the 1990 s. The article focuses on the analysis of the process of introducing virtual and augmented reality into the structure of the stage work. The author points out the forms of interconnection of virtual scenographic elements with the traditional visual image at various stages of development of innovative technologies on the theatre stage.

Keywords: theatre, performance, technology, innovation, stage design

Noile tehnologii computerizate au început să apară pe scena europeană la mijlocul anilor 1990. În articolul ce urmează se acordă o atenție deosebită analizei procesului de transpunere a realității virtuale și complementare în structura operelor scenice. Autorul scoate în evidență formele de interacțiune a elementelor scenice virtuale cu imaginea vizual-tradițională la diferite etape de dezvoltare a tehnologiilor inovatoare pe scena teatrală.

Cuvinte-cheie: teatru, spectacol, tehnologie, inovație, scenografie

Introduction

Recently, it has not been uncommon to see action-embedded multimedia content in performances, which produces a brand-new world on the stage. Multimedia animates photos or landscapes, and creates moving fantasy creatures. There are already such interactive productions, where the spectator can influence the course of events with the help of a tablet or a smartphone. Today, the authors are gradually developing the use of virtual scenery, 3D glasses, head-mounted displays, and motion capture technologies. Virtual characters are also sometimes included in the productions. Increasingly, 3D mapping is being used, which helps project three-dimensional images onto an object – an interior, a building, a landscape or a person.

Characteristic features of the virtual stage environment

With all the diversity of virtual stage environment systems, they are united by the same technical basis – a computer programme and the effect of immersing the viewer into the action created by it. The essence of the phenomenon is that the audience ceases to feel like outside observers and starts joining the action.

The most important quality of the virtual environment is its immersiveness. Many contemporary stage directors are looking for an alternative space that would not only destroy the boundary between the auditorium and the stage, but also turn the viewer from a passive observer into a co-participant in events, provoking him to be active here and now. At any moment, the actors can begin a direct interaction with the spectators: for example, they can blindfold them and take them by the hand to another room and leave them there, they can hug or kiss, or just stare in the eye. The trendsetter is the London-

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based Punchdrunk Company, which emerged in 2000. Today's immersive theatre is also represented by the US company Third Rail Projects and the Danish group SIGNA.

To some extent, the use of such a theatrical model can be viewed as a way of returning to the origins of the theatre and updating its ritual basis. There is no coincidence then that as early as the 19th century theatrical figures raised the question of destroying the traditional order and developing the idea of connecting the auditorium with the stage at a new level. In particular, the German playwright and director Ludwig Tieck dreamed of a theatre where the audience could express their opinions and the actors would answer them. The German director Karl Immermann also theoretically talked about ways of engaging the viewer in action. Today, their ideas are being implemented partly owing to technology.

The theatre seeks to establish a direct connection between the actor and the audience, to drag the spectator into on-stage action. Indeed, one can characterise such a striving as immersiveness. And this is precisely the main feature of new computer technologies as an excellent tool for such experiments.

Such an approach can be justified not only aesthetically but also economically. Today, three-dimensional high-resolution graphics, which are projected onto an empty stage, may be cheaper than a traditional production design. The equipment for virtual scenery is extremely compact and mobile: such sets can be changed with the click of a mouse.

The introduction of advanced technology in theatre practice

Computer technology began to penetrate the dramatic art in the mid-1990s. The first theatrical production with computer technology playing a significant role took place in 1995. It was the play *The Adding Machine* by Elmer Rice staged by the Institute for the Exploration of Virtual Realities at the University of Kansas (directed by Ronald A. Willis, designer/technologist Mark Reaney) [1]. The American expressionist play focuses on the plight of a certain Mr Zero, who is trying to find happiness in a dehumanised and mechanised society. First released in 1923, decades before the advent of computer technology, the play contains grim predictions for the current information age. New technology was not used for the sake of entertainment, but as an exciting scenographic environment that served to develop the idea of the performance. The viewers were asked to wear 3D glasses to see a live actor interact with a video image [2].

The production of the play *Wings* by Arthur Kopit, which was staged by the same Institute for the Exploration of Virtual Realities in 1996, made use of head-mounted displays, instead of ordinary 3D glasses (directed by Ronald A. Willis, designer/technologist Mark Reaney). The translucent head-up display glasses helped to combine computer graphics with reality. During the performance, the audience watched the actors move on the stage alongside abstract compositions that were projected onto a big screen and the close-up images of the characters shown on the displays. This technique was used to convey the painful mental state of the lead character, Emily, who was paralyzed after a stroke and fought to regain her vital powers. The audience saw her memories and present life as if through the eyes of the lead character herself [3].

The *Dinosaurus* performance for children was released in 2001. It was a fantasy story about geologists discovering dinosaurs living deep underground in a cave these days (directed by Patrick Carriere, production designer Mark Reaney). Two oil company surveyors encounter a community of ten dinosaurs, which has survived in an underground cavern for centuries. The two prospectors are awestruck as they confront and disrupt the family of dinosaurs. In the end, one of the scientists decides to dynamite the cave entrance in order to save the dinosaurs from actual extinction. Originally written as a play for the shadow theatre, *Dinosaurus* has also been performed with puppets. This University of Kansas production is of particular significance because it was the first to use virtual characters, CGI dinosaurs. Close ensemble work between the on-stage actors and the off-stage dinosaurs operators ensured that the dinos and their human alter egos moved in unison [4].

As one can see, the authors of the first theatrical experiments in the field of computer technology used additional devices: 3D glasses and head-mounted displays. Such performances are still used today and are quite popular with the audience.

The multimedia environment in the contemporary theatre

There has been an increasing number of interesting experiments with the authors opting not to offer the viewer to use glasses or helmets. This way of including the public in action can be defined as immer-

sion in augmented reality (AR). While virtual reality (VR) consists only of programme-created unreal objects, using AR helps make unreal virtual objects in the user's perception part of a real picture of the world.

Projection mapping can, to some extent, be viewed as a type of augmented reality, in which a digital layer is added to the physical space. One can recall the Russian Engineering Theatre AKHE and its 2011 project *The Depot of Genius Delusions* (directed by Maxim Isaev and Pavel Semchenko), where videos appear as a multifunctional tool: they can give depth to a 2D object and texture to a flat surface. The most interesting effects occur on the border of the objective world and reflections. An actor can suddenly have two shadows that behave differently: one is obedient and real, while the other is a naughty and drawn one.

To some degree, the play *Situation Rooms*, a project by the German group Rimini Protokoll (2013), can be labelled as augmented reality. It portrays the stories of twenty people from different countries, who in one form or another, had to face the war. When the characters begin their stories, twenty viewers hear them through headphones, and also see moving images and go through a virtual maze using a tablet. Thus, while passing through various rooms, they turn from observers into participants, becoming part of what is happening, as they see the world through the eyes of prototype witnesses.

One of the most high-tech experiments was the play *The Tempest* by William Shakespeare, staged by the Royal Shakespeare Company (directed by Gregory Doran, 2017). To mark Shakespeare's birthday and the 400th anniversary of his death, the company surprised the audience with the use of motion capture technologies. For more than two years, the team had been working on creating a digital avatar of Ariel in all his incarnations, as well as on integrating technology into the performance in such a way that it could complement the capabilities of the theatre, rather than fill in all the stage action. Actor Mark Quartley plays Ariel in a special suit with motion sensors. Thanks to the projection, the performer was able to create various fantastic images, including a harpy – a mythical bird with huge claws and a female face.

Obviously, however, the problem does not lie so much in the method of using technologies, but in the way in which the authors perceive the multimedia element in the overall system of the performance, what function they assign to it, and whether they leave open the possibility to address the underlying issues of being in a language consistent with modern perception. Forms such as virtual theatre have not yet been applied on the Belarusian stage, as directors and stage designers still tend to choose more traditional ways of spatial arrangement of the performance. However, the contemporary period of the existence of scenic art is characterised by a special strengthening of the role of visualisation, which is greatly supported by the use of multimedia technologies.

From a technological point of view, the most interesting Belarusian project was the play *A Kupala Night's Dream* after William Shakespeare's *A Midsummer Night's Dream* (directed by Andrey Prikatenko, stage design by Olga Shaishmelashvili; the Yanka Kupala National Academic Theatre, 2018). The authors decided to mainstream the classic play at the expense of its form: indeed, the abundance of modern technology turns a funny and lyrical comedy into a kind of multimedia attraction. For the first time ever in the Belarusian theatre, generative media graphics are involved. Besides, the actors ride hoverboards, fly quadcopters, and an action camera is used, but the central visual element is the huge cube occupying the full height of the stage portal around which the spectators are located.

It is this cube that becomes the screen to which the projection of words, images and portraits of the characters is displayed. They are demonstrated on the walls of a transparent pavilion, including with the help of the main engine of the performance – the energetic forest spirit of Puck (Pavel Kharlanchuk). He spends most of his time taking photos and videos with a mobile phone camera. It is the smartphone that causes confusion and misunderstanding between the two couples in love, but it also reconciles them, which is perceived as a sign of the time. In addition, another camera is capturing the face of the mighty king of the elves, Puck's master Oberon (Aliaksandr Kazela), who accidentally confused everything in the lives of the young people. But the main purpose of Oberon was the punishment of his beloved Titania for his jealousy of her. A magnified image of the subtle Oberon's sad face continually appears on the surface of the pavilion. It seems to him that he is watching everyone and sees everything, but, after all, he too is in his own cube of illusions.

It was expected that the plastic cube would collapse, and thus release the energy of love and youth, cleanse the heroes from the spells and illusions, free the space from the domination of the form, but this never happened. The feeling of the dominating form persisted until the end of the performance. The play's twisted plot, the melody of words (translated by Ales Razanau) and the sincerity of the young people's feelings seemed to drown in the cubature of the pavilion and were swallowed by it, because, after all, it is not the multimedia itself that makes the stage act a contemporary statement.

Conclusions

Contemporary theatre is no longer attempting to imitate reality, by doubling it or reflecting everyday life. Reality is better addressed by cinema or photography. Instead, the theatre aims to create a special reality. Back in the early 20th century, the famous French director Antonin Artaud noted that the theatre gives us an „ephemeral but true world, the world tangential to the real”. On the other hand, there is an obvious need for a renewed artistic arsenal. The theatre, indeed, seeks to demonstrate a different reality, while technology offers a convenient way to solve this problem.

If we recall that the theatre aims to transfer new feelings and impressions, the potential of VR and AR is simply enormous, because the experience of augmented reality is the experience of the potential deception of one's own mind and body sensations. Perhaps, this is a new type of immersive theatre. On the other hand, the question arises: is not the theatre turning into an attraction, designed exclusively to entertain and surprise the public?

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