Ballet in Virtual Reality: On the Problem of Synthesizing "End-to-End" Technologies and Theatrical Stage Art

INTERACTIVE ARTICLE COVER

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Abstract

The article is devoted to the study of the problem of synthesizing "end-to-end" technologies and theatrical (stage) art. The author proceeds from the fact that in the era of industrialization, a person's perceptual practices are carried out through the prism of a new, generative reality, which, consequently, causes the transformation of the spatial-temporal model of aesthetic experience. However, the artist as the creator of a work of art, having a special sensitivity to reality, can see what may be inaccessible to his audience. The hypothesis is put forward that this ability is based on a simultaneous perception of time and space, the fundamentalization of which in the perceptual practice and aesthetic experience of the viewer is the main task of a modern artist. The verification of this hypothesis was carried out through the prism of the synthesis of virtual reality as an "end-to-end" digital technology and stage (choreographic) art, where time and space become the subject of artistic reflection. The methodological foundation of the research is based on a discursive analysis, which allows us to understand, firstly, how modern stage (choreographic) digital art offers the viewer to make a path on his own, with a "previously passed meaning" and with the help of his already existing perceptual experience; secondly, how the artist, as the creator of a work of digital art, builds and carries out a "conversation" with the viewer through the prism of the simultaneous communicative space initiated by him. The author emphasizes that a modern artist, regardless of his/her role in art, must have the skill of discursive analysis to be able to create a communicative space in which the viewer will be able to gain perceptual experience and independently "realize" the temporal-spatial mega-code, and understand the idea of the artist, regardless of how much it is hidden from the audience. In turn, the ability to discursive analysis of the viewer will allow you to collect and disperse meanings, transform them, return them to their original state and let them go back into the element of the game of signifiers, offering yourself to overcome the path in the semantic landscape of the work of theatrical (stage, choreographic) art.

Keywords: "end-to-end" technologies, theatrical art, choreographic art, virtual reality, perceptual practice, ballet, space, time.

Introduction

In the middle of the last century, the Canadian philosopher Herbert McLuhan managed to show the depth of the changes that the development of digital technologies would lead to; he believed that generative media would not only open access to huge amounts of information but also free a person from the habit of being content with monotonous sequential patterns and create the potential for full and deep involvement in the environment and in himself (*McLuhan, 1994*). In the XXI century, digital technologies as something created by a reasonable person for their comfort are conceived with a negative connotation, focusing on such problems of modern society as information pollution, scattered attention, fragmentary perception of a new reality, etc. Undoubtedly, this is true, however, a wide range of positive consequences of the development of generative media cannot be denied: they excite the imagination, initiate a deep sense of the current moment and, as G. himself believed. McEwen,

thanks to the discovery of multilevel relationships between different areas of human activity, helps to overcome linear thinking and develop the ability to grasp the world in its integrity and dynamics. A person is involved in the world, in a special [virtual] reality, where "everything at once", where everything resonates with everything. Such a reality turns consciousness into a flexible, complex, emotionally active structure capable of operating with a variety of space-time continuums.

The process of development of such consciousness can be traced in the art of the late XX–early XXI centuries; a modern artist as a creator has a special sensitivity to reality and therefore can see what is hidden from a potential viewer. Probably, this ability is based on a simultaneous perception of time and space, where the past, present and future, "here" and "not here", "I" and "not me" – everything is in a single integrity. Such a perception has always been characteristic of the artist, however, in the era of dematerialization, performance and paradigm shift of the [classical] work in favor of its adaptive interpretation (Berry, 2014; Bassett, 2015; Kirpichenkova, 2017; Shevlyakova & Fesenko, 2021), it should be the basis for perceptual practice and aesthetic experience that receives the spectator. It is proposed to test this hypothesis through the prism of the synthesis of "end-to-end" digital technologies (artificial intelligence, augmented and virtual reality, with an emphasis on the latter) and theatrical (stage) art, where time and space become the subject of artistic reflection, both declared and hidden. To do this, we have to answer questions about how to carry out a spatial-temporal measurement of a cultural product, under what conditions the perceptual practice of the viewer will be as close as possible to the artistic and aesthetic idea (primordial perception) of its creator to launch the process of their interaction in a single art-communicative space.

Review of literature

It is indisputable that the field of digital art as an autonomous institute of digital culture acts as a complex, multifaceted and poly-artefact phenomenon studied in the context of various research areas. This thesis is because the use of, including "end-to-end" digital technologies allowed art as a component institution to abandon the understanding of the work as a material object, as well as the recognition of uniqueness as an obligatory attribute of originality. At the same time, by refusing to objectify the work as a cultural product in material, digital art has managed to preserve and visualize the nature of socio-cultural communication. Digital technologies not only brought art to a qualitatively new level, radically transforming its structure, but also determined the need to rethink the place of art itself in culture, and art institutions in the art system as a whole. This thesis is visible in the mechanics of the visual and performing arts, where the use of digital technologies has had a significant impact on artistic thinking and perception, largely determining the possibility of constitutionalization within the framework of modern aesthetics of such areas as information aesthetics (M. Benze, P. Weibel, H. Frank), genetic aesthetics (M. Benze, K. Gilbert, G. Kuhn, R. May), agender aesthetics (J. Butler, V. Pitts, K. Heilbrunn, I. Hassen), algorithmic aesthetics (J. Gypsum, G. McWhinney, J. Steeney, N. Hiroe), computational aesthetics (R. Bod, P. Machado, R. Sha), emergent aesthetics (M. Nadin, V. Romos, P. Yagoda), simulation aesthetics (V. Galese, G. Greenfield, G. Kossu, V. Cuccio, B. McLaughlin), experimental aesthetics (M. Cobbert, K. Martindale, G. Fechner, M. Hassenzal), virtual aesthetics (T. Botz-Bornstein, D. Palmer, M. Heidegger).

Studies of the causes, processes and results of the technologization of art began in the 70s of the XX century, at the dawn of the digital revolution, which naturally began to generate

interest among representatives of the scientific community. However, generative art, being a relatively new problem field of modern aesthetics, has become the subject of research mainly by foreign authors who have attempted philosophical, artistic, aesthetic and socio-cultural understanding of it. At the same time, one should agree with the Russian scientist S.V. Yerokhin says that at the present stage, the contribution that domestic authors have made to the process of digital art formation remains underestimated (*Yerokhin, 2011*). Nevertheless, in the last decade, the scientific research basis of the phenomenon under study has been actively scaled, which is proved in particular by the conceptual diversity of its elements; for example, the works of M. Adzhert, V. Bonin, D.V. Galkin, A.D. Grigoriev, T.Y. Zakharchenko, P. Christian, R.V. Lukichev, J. V. Lukichev are devoted to the study of the evolution of generative art. Knight, J. Reichard, D. Renka, D.P. Hanolainen, etc.; its separate forms and directions – the works of B. B. Bant, G. Bely, B. Borevich, N. Genova, O. Goryunov, L. Yung, H. Candeira, J. Cox, F. Kramer, P. Thayer, F. Walsh, N. Hilko, E. Huhtamo, etc., generative and evolutionary art – the development of F. Galenter, V. Latham, G. Nesa, M. Mohr, K. Sims, etc., fractal artworks of J. Briggs, K. Busi-Glucksmann, A.V. Voloshinov, M. Turner, etc., traditionally digital art – the works of L. Vray, D. Krause, B. Lotka, etc. The interdisciplinary approach to the consideration of digital art is represented by the works of L. Bertalanfi, I.V. Blauberg, N. Wiener, M. Mesarovich, Ya. Takahara, I.A. Pragishvili, V.I. Sadovsky, Yu.A. Urmantsev, Yu.A. Schneider, etc. The undeniable novelty of the research field of generative art, despite the rapidly increasing number of publications and fundamental works, determines a lot of gaps, collisions, inaccuracies and ambiguities. Thus, the concept of theatrical (stage)digital art as a fairly large component of it has not been practically studied, which, in our opinion, is due, on the one hand, to its versatility, on the other hand, to the complexity of the components synthesized with each other contained in it. For example, ballet, being a synthetic genre of scenic art, absorbs painting, theatre, literature and opens up the prospect of penetration into the music of current trends from related arts (*Kiseeva, 2012*) and it is very difficult to understand with which particular genre one or another digital technology correlates more strongly. Conceptiongesamtkunstwerk (germ. "united work of art", the concept of "unity of the arts") *(Fornoff, 2004)*, implemented in the first productions of S.P. enterprise. Diaghilev (1908-1929), was based on the ideas of a worldly synthesis, remaining inside art and recognizing its self-worth and self-purpose.

The issues of synthesizing digital technologies and theatrical art, in general, have been studied in the works of such famous authors as T.V. Astafyeva, R. Barth, V. Benjamin, D. Bodriyar, V.V. Borzenko, J. Wiemann, J. Gigel, N.I. Dvorko, S. Dixon, D. Jindt, Ya. Ioskevich, E.V. Levshina, E.V. Melnikova, D. Nielsen, A. Nielsen, I. Ovchinnikov, V. Pavlyuk, S. Pingri, F. Popper, A.A. Salamatov, D. Salts, I.A. Tretyakov, D. Trubochkin, F. Hawkins, V.M. Shepovalov, M. Shvepp, S. Shternin, etc. So, With. Dixon studied the history of the development and peculiarities of the influence of digital media on "live" theatre and dance, new forms of interactive performance that arose in installations, on media and the Internet. In his work "Digital Performance" he considered the evolution of these practices, giving a detailed description of the main performers and performances, and analyzed the theoretical, artistic and technological contexts of this form of new media art. The problematic of the phenomenon of digital performance in the context of theatrical activity is also considered in the works of H. Varley-Jamison, S. Broadhart, M. Causey, G. Giannachi, D. J. Bolter and R. Grusin, P. Levi, K.L. Salter, etc. Of particular interest is H.V. Valton's dissertation research "Technology; Theaters, Plays and Performance", in which the author explores three formats of digital technology in the theatre: "Digital Technologies and theatres", which examines the influence of the Internet on the theatre from the point of view of marketing, and its participation in art, analyzes specific

theatre sites, platforms "Digital Theater" and "National Theatre Live"; "Technologies and the Internet in modern plays" tells about Tim Fontana's play "Sex Addicts", where the global network is used as an online communication tool with the viewer (life), about the projects that modern playwrights have developed to implement in their work (*Walton, 2011*).

Results

The hybridization of art and technology is one of the aspects of the more complex and general processes of cultural hybridization or implosion in the modern world – the mixing of spheres and objects that previously existed separately and autonomously (*Stocker & Sommerer, 2005*). The human body, and consequently the human [self-] consciousness, is increasingly turning, as D.V. Galkin put it, "into a cyber hybrid of flesh and various machines that move, tone, structure and guide it. Economics is mixed with aesthetics, politics with economics, politics and economics with technology, the pressure of hybridization under the auspices of interdisciplinarity is increasing in the sciences" (Galkin, 2008, p. 52). Different cultures, as well as cultural (near-cultural) phenomena and processes, begin to penetrate each other and at the same time, to be unified in the global process of homogenization, while the cultural heritage of the past is remixed, transformed and integrated using digital technologies into the most unpredictable contexts of modern life, often remaining to exist in digital (virtual) space. In this connection, or consequently, there is a breakdown of the individual's linear understanding of time and space, presenting them as a whole, where the past, present and future, "here" and "not here" are perceived in unity. Such a simultaneous perception of time and space, as a result, becomes a priority mental tool for experiencing and cognizing reality, including the one created by the artist (*Petrov, 2010*). Thus, by dividing time into the past, present and future, the individual condemns himself to chase the future, to try to look into it, and this desire only moves him away from the goal, since it turns out, metaphorically speaking, to be the Achilles of Zeno's Aporias, who will never catch up with the turtle. This paradox is embedded in the model of circles of time (*Cottle& Klineberg, 1974*): the past should be remembered, the present should be experienced, and the future should be planned, predicted, and guessed.

Existing in this model, a person leaves the future beyond his understanding, because all his forecasts and plans are a combination of experience. In other words, a person projects the past into the future, thereby excluding the possibility of the latter. The simultaneous perception of time and space tells us that the future is not what should happen, but what is now, the place (point of being) is not somewhere there, but here, and a person can recognize and understand it. In this case, the knowledge of the future does not require going beyond the present, but on the contrary, it calls for immersion in the present. There is no need to predict the future, it can be anticipated by recognizing what is hidden and giving it a form by determining the point of its location. As noted by Professor of Theater and Visual Arts D.M. Levin, to think of time and space as a whole means to have perceptual experience or to be capable of it; it is important to be attentive to your location in the present, to question it, to actively engage in it, to think critically. Staying in it, the author emphasizes,

> We better understand both him and ourselves, grasp intuitive meanings that need transformation. Only in this case, it is possible to take an open, experimental position, change and understand yourself and the world. (Levin, 1988, p. 31).

Thus, the sense of time and space in unity allows you to see the future in the present. Following the logic of G. McLuhan, it is given to the artist as the creator of a work of art to grasp hidden meanings and give them a form, being different in models or "navigation maps" of the future, and it does not matter how it happens – rationally or intuitively, methodically or spontaneously. Even relying on insight, he is involved in working with meanings and cannot be free from conceptual processing of his intuitions; it is no coincidence that during the last century of the history of stage (choreographic) art, the desire for conceptuality is so obvious, which, in general, is explained by the desire of society of the XX century. as soon as possible to go beyond the confining limits in the field of art (namely, to leave aside classical ballet) (Reynolds & McCormick, 2003). As a result of these, several directions were formulated – modern dance, free plastic dance, modern dance, and postmodern dance, the elements of each of which, it should be said, were subsequently laid down in the basis of modern ballet. Thus, contemporary dance, which emerged in the first half of the last century, was formulated as a direction, mostly focused on the physicality of the performer, conscious possession of the body, and the study of their physical capabilities. As his main task, the dancer (choreographer) saw a demonstration to the viewer not only of his physical data, but also of his individuality, his worldview, attitude, and view of art. Modern dance is a synthesis of philosophy and movement (Zafeiroudi, 2021).

We can safely say that contemporary dance is still one of the most popularized styles because the lack of clear boundaries allows it to be accessible in terms of perception to most people, both visually and in its execution (Chatterjea, 2020; Kuzian, 2021). This thesis is proved by the active practice of using modern dance in testing its synthesis with "end-to-end" technologies. As an example, the show "Mr and Mrs. Dream. Dance in the Heart of Virtual Reality" was staged by famous French dancers Marie-Claude Pietragalla and Julien Derois in 2013. They are the only artists involved in the show. In the language of modern ballet, two characters in a series of scenes try to convey ideas inspired by the plays of Eugene Ionesco, a French playwright of Romanian origin, a recognized classic of the theatrical avant-garde of the XX century. There are no decorations on the stage, the figurative series is reproduced using virtual reality. At the press conference preceding the show, Mehdi Taiobi, DS Vice president for Digital and empirical strategies, noted that these virtual images become the third full participant of the show - dancers live in them and interact with them, virtual reality follows the drama of dance, and dance adapts to its changes. "This is a kind of window into the world of Eugene Ionesco, into the world created with the help of our virtual reality technologies", said the Vice President (Dubova, 2013).

Later, a free plastic dance appears – a direction, the founder of which was the famous Isadora Duncan. It was thanks to her innovation that the dance began to be given to the public. I. Duncan associated her system with ancient Greek dance; for example, she walked barefoot and in a chiton, which caused some indignation on the part of the viewer. In her creative search, the dancer turned for inspiration to the works of thinkers, poets, and choreographers, including W. Whitman, R. Wagner, and F. Nietzsche, under the influence of whose philosophy, it is worth saying, she thought about creating a new person for whom dance should become more than natural (Mackey, 2018). This concept, which can be called in the image and likeness of a "super-dancer", I. Duncan laid the basis for her book "Dance of the Future", where she presented the main idea that dance should become the only continuation of human movement, a reflection of the emotions and character of performers. The impulse for appearance, at the same time, should be the language of the soul. I. Duncan (1908) wrote:

> I fled Europe from art, which is closely connected with commerce. To the flirtatious, graceful, but affected gesture of a beautiful woman, I preferred the movement of being hunchbacked, but inspired by an inner idea. No pose, movement or gesture would be beautiful in itself. Every movement will be beautiful only when it truthfully and sincerely expresses feelings and thoughts. The phrase "the beauty of lines" in itself is absurd. A line is only beautiful when it is directed to a beautiful goal.

As a result, her work did not create any specific dance system or technique, but her experience was used by the innovators of modern dance.

Modern dance is one of the directions of modern dance art, the formation of which took place in the period from the end of the XIX to the beginning of the XX centuries in the USA and Germany. The very concept of "modern dance" was used in America to denote a new choreographic style, whose representatives denied all forms and standards of classical ballet and sought to express their emotions and feelings through non-traditional movements for that time and convey them to the viewer. The main goal of modernity was the naturalness of forms and the organicity of movements (Romanenkovaetal., 2021). Its leading representatives were Doris Humphrey, Charles Weidman, Mary Wingman, Hania Holm, Jose Lemon, Lester Horton, Eric Hawkins, Anna Sokolof, Loi Fuller, Martha Graham, Ruth Saint Denis, and Ted Shawn. Many of them were engaged in the development of the author's techniques in the Art Nouveau style, which only increased the number of their followers; it is worth saying that many of their developments are used to this day. Many outstanding choreographers of our time have managed to develop a kind of synthetic system where elements of classical exercise are combined, only interpreted in a new technique, coupled with other, author's components.

Postmodern dance is a modern trend, which origin is described in the book, *Terpsichore in Sneakers* (1980). Its author, dance critic and historian Sally Baines believes that this term was coined by American dancer, choreographer, and performance artist Yvonne Rainer to somehow separate the new concept of dance from the modern dance that monopolized the whole of New York. This, in turn, led to the creation of the manifesto of postmodern dance – "No manifesto":

> No spectacle, no virtuosity, no transformation and magic, and fantasies, no glamour and the superiority of the star image, no heroics, no anti-gay, no stupid images, no participation of the performer and the viewer, no style, no camp, there is no seduction of the viewer by the tricks of the performer, there is no eccentricity, there is no active and passive movement" (Banes, 2018, p. 207).

In general, postmodern choreographers can safely be called radical rebels - they zealously refused everything that was somehow connected with modernity: heroes, myths, philosophy, music, costumes, psychology, and concepts. They were not much interested in the opinion of the public, and therefore there were not many spectators at their performances. The stage platform could be lofts, forests, roofs, streets, churches and so on, i.e., in modern terms, postmodern dance can be called one of the directions of the immersive stage (choreographic) art.

> Thus, light, music, costumes, props, disappear from the new dance: light is the sun, music is the rhythmic beat of a construction site, the horns of New York taxis or the rustle of leaves in Central Park, costumes are everyday comfortable clothes, and props are what is around the artist" (Cunningham, 1952, p. 150).

Any framework was removed from the performers, any person – a professional dancer or an ordinary worker, can participate in the performances of postmodernists. As M. wrote Cunningham, "a kind of unofficial slogans of postmodern dance can be considered: "Any person is a dancer", "Any movement is a dance", and so on. "Due to their independence, literally from "time" and "space", choreographers adhering to this direction, began to actively arrange performances.

If we give an example from modern times, in the context of our topic, then we can safely call the theatrical and choreographic project Commonwealth Shakespeare Company, dedicated to the work of Shakespeare, together with Google showed a new reading of the classics, creating the play Hamlet 360: Thy Father's Spirit (2019). In this production, the viewer, wearing virtual reality glasses, becomes the deceased father of Hamlet, with whom the main character interacts. In Russia, immersive productions based on communication with the viewer using virtual reality glasses are also gradually being popularized. For example, in 2019, as part of the Platonov Festival in the large rehearsal hall of the Chamber Theater (Voronezh, Russia) the audience was able to see the choreographic performance while immersed in the virtual world. This performance called "VR_I" is a joint project of Gilles Jobain, one of the leading choreographers in Europe, and the Artanim Foundation (Switzerland, Geneva), which deals with motion capture technologies, including developments in the field of virtual reality. Quite definitely, this unique and unprecedented dance in virtual reality was created because Gilles Jobain, according to VR operator Camilo De Martino, has always been interested in movements in 3D space, and he is attracted by the research side of everything new, i.e. it is not enough for him, figuratively speaking, to watch the fish from the side, with the surface of the water surface, and I want to put on a spacesuit, dive into the water and be among them. A viewer placed in virtual immersive reality feels like the same researcher (Mironova, 2019).

In the second half of the XX century, changes began to affect the principles of creativity in general. Priority among them was the expansion of the boundaries of artistic creativity and the integration of elements of ready-made reality into the work, the assertion of the primacy of the artistic idea over the object of art and the process of creating an essay over the finished opus, interest in "living" art" and the inclusion of the viewer in the composition process. Due to the changes that have taken place in the field of the stage, in particular, art, performance is becoming a universal form for the implementation of the author's ideas and concepts. The reformers here were the composers and choreographers of New York, who had a very negative attitude to the European tradition in art and defended its universal renewal. A significant role in the development of new trends in choreography was played by the concept of J. Cage, which was based on the departure of music and choreography from modernism, consisting of a non-purposeful act of creativity, the method of accidents and the principle of uncertainty. And the most important thing in the performance was the experiment. J. Cage

This is just an action, the result of which cannot be foreseen <...> Among those actions, the result of which cannot be foreseen, actions arising from random operations are useful", wrote (Cage, 1994, p. 204).

The ideas of avant-garde theatre also began to be actively used at the venues. In their works, choreographers abandoned the principles of linear dramaturgy, actively used improvisation and tried to involve the viewer in any way. Rarely, when the choreography was precisely calculated and scrupulously staged, the basis of the performances was artificially created situations where the performers directly confronted the recipient and together resolved the conflict that arose, while everyone acquired the appropriate perceptual

experience. From the point of view of choreography, as it was already noted earlier, there were practically no set movements, the idea of bodily "being" was important for performers, which was to a certain extent facilitated by improvisation, the purpose of which was to be and work in a continuous stream. As an illustrative example reflecting the thought of the choreographers of the second half of the XX century, we can cite the performance "The Fleeing Atalanta" staged in August 2020 by Maxim Didenko. The play is based on a book by the medieval alchemist Michael Mayer. The audience will be presented with a parallel reality of the world of Atalanta. Actors, choreography and scenery will be shown through a smartphone camera using IMMERSE augmented reality technology. The choreographer of the Mariinsky Theatre Vladimir Varnava is responsible for the choreography of the performance. For the music – the composer of Didenko's previous works – was Ivan Kushnir and Alexander Karpov. The author of the artistic component was Ilya Starilov, a video artist of the AXE Theater, an artist of performances of the Stanislavsky Electrotheater and the Theater of Nations. Playwright – Evgeny Mandelstam (Yusina, 2020).

For our research, it is important to emphasize that in addition to experimenting with the body and movements, some choreographers, in particular M. Cunningham, saw sense in the different use (and interpretation) of time and space in choreography: if

> … the main structure is to make the space of time in which anything can happen in any sequence <…> and any amount of time movement can be absent, then counting in such a structure becomes the key to freedom. (Kiseeva, 2015, p. 32).

The principle of randomness was also actively used by choreographers and composers, for example, to determine the number of movements or their location, M. Cunningham cast lots or guessed from the "Book of Changes". The same method could also be used in music when the finished composition could be cut into pieces and swapped so that the resulting work fully reflected the idea.

In general, it is obvious that the artist (choreographer, dancer as initiator) of the XX– early XXI centuries began to look at the world as a creator-researcher, and creator-experimenter; he strives to comprehend and systematize what he sees and transpose it in his work. In general, everything remains the same for modern stage (choreographic) art. It should be noted here that the conceptual approach in a particular case is considered exclusively as a methodically structured work with meaning, the idea that in the field of scenic (choreographic) art has its specifics, because an artist anticipating the future does not state meanings – he gives meanings to what is revealed to him. The artist always listens to the world and grasps changes in meanings hidden from others. However, if earlier he turned to the natural world, the natural cosmos, now, rather in the specific social world, obviously in contact with the reality of digital. As quite rightly noted by R. Bart, everything that is given to man is already imbued with the human principle, and today a person

> listens to the natural voice of culture and all the time hears in it not so much the sound of stable, complete, "true" meanings, as the vibration of that giant machine, which is humanity, which is in the process of relentless creation of meaning, without which it would lose its human appearance" (Bart, 1994, p. 260).

And the artist still makes absolute the development of a special sensitivity to the world, the ability to recognize what is still hidden and to formalize his vision in a work of art. Of course, digital culture gives the artist, as a creator, qualitatively new opportunities to solve these

problems. Transmedia, linear reading, and the formation of a moving text allow him to see the world and represent it in unity and dynamics. From the position of L. Manovich, digital media actualize digital representation, modularity, variability and transcoding. As a result of modularity, media objects are fundamentally incomplete and can exist in potentially infinite versions (Manovich, 2001).

As a result, digital technologies, as conductors of the artist's "message", transform time and space, dividing it into internal spaces and temporalities, presenting their version of the present (Gromova, 2018), thanks to which the artist has a new freedom that allows him not only to anticipate the future but also to control it himself. The hybridity, heterogeneity and poly code system of the creations of modern choreographers creates new information and visual worlds, which complicates the possibility of distinguishing the intention of anticipating the future from the desire to invent it. It is necessary to agree with S. Wilson that the creation of fictional worlds has always been a challenge for the artist and served as a source of inspiration for him. The idea of intellectual experiments, "useful" fiction, modeling of multi-sensitive and poly perceptive in the stage art of the XXI century has received a new impetus (Wilson, 2010).

In general, we can make a preliminary conclusion that the speculative approach suggests the creation of a kind of game situation in which fantasy, free search, and risky hypotheses become the main tools of stage action. However, as rightly noted by E. Dune and F. Rabi, speculative design more sharply opposes the possible to the impossible, it is more appropriate to call it a form of artistic dissent expressed through alternative ideas. The most incredible and even unproductive, meaningless results of the artist are considered valuable because they undermine the foundations of "official" reality (Dunne & Raby, 2013). It may seem that the intention of anticipating the future is close to the speculative approach with its call for an experimental, free vision of the world, however, this is not entirely true. The artist, as a creator who sees his mission in grasping and designing the future, activates not so much fantasy as conceptual work with his intuitions, because he is not interested in multiplying fictional objects and environments but in awareness and transformation of the real world, which will be broadcast through digital technology.

However, seeing the future and presenting it in his work is by no means the only task of the artist; he needs to place the viewer in his own time and space and involve him in a journey in a specific virtual world temporarily created especially for him. If a work of scenic art is created as a single communicative space, accordingly, its creator, the artist, must from the very beginning see it through the eyes of others, and anticipate their expectations and reactions. In other words, the choreographer must take care of dance communication in the format of his work. The form in which he "faces" what he sees must be speaking or discursive. This form should not complete the work, or give it final structural certainty, in this case, the viewer will lose perceptual experience, but on the contrary, its purpose is to convey the "message" contained in the work of scenic art, in its deployment, in the process of its production and transformation, depending on the changing context. Thus, we are talking about a discursive communicative format, where the discourse, i.e. "language–in–action" is not a tool for expressing the previous state, but actively participates in the formation of current states. At the same time, following O.I. Matiyash et al., it should be emphasized that discourse, defined as the situational use of language in certain contexts, is always a dynamic form of social practice, a mode of social action (Matiyashetal., 2011). And if the artist's goal is a communicative event, he will not only have to think about the viewer, his reactions and the

correctness of the perception of the author's idea, but also design a range of such reactions. This is the specificity of the discursive format – it allows you to create a communicative situation that allows you to give an incentive not so much for the interpretation of a work of scenic art, but for improvisations in which another will find himself a co-author of the experienced meaning.

It is worth noting that the concept of a discursive communicative format is not new and from a methodological point of view is based on the neo-pragmatist paradigm of social action (Berger & Luckmann, 1966). Within its framework, communication is presented as the activity of individuals, which allows creation of a common semantic reality. In contrast to the individualistic approach, which explains such activity with predetermined goals and plans, the neo-pragmatist approach suggests focusing on the dynamic process of production and reproduction of meanings (Matiyash et al., 2011). The idea of the processality of social reality clarifies the understanding of communication as a process of transferring to each other a gradual generalization of private experiences, ideas, and values. At the same time, the situation in which the interaction takes place is by no means reduced to the sum of circumstances but appears to be a horizon of possibilities that is constantly changing. Thus, the communicative situation is considered by us as a dynamic, in a particular case, virtual environment.

Subjective motives of action in this environment can change, the plan is not only refined but also transformed. In other words, the communicative situation initiated within the framework of the synthesis of digital technology and a work of scenic art will be characterized by instability, fluidity, and mobility and, as a result, the result of communication will not be considered pre-planned. In the context of such an understanding of communication, the communicative format of the broadcast (or retransmitted) performance should substitute a flexible movable structure that will activate the viewer's imagination and allow him to choose his way of comprehending meaning through a specific new perceptual practice. Thinking over the communicative format of his work, the choreographer must operate with the nonlinear logic of practice. Such logic, as P. Bourdieu notes, will be intermittent, and paradoxical; it will appear not so much in the form of consistent conclusions as hypotheses, "guessing" the necessary solutions (*Bourdieu, 1990*). In general, the communicative format of his work, thought out by the artist as the creator, will allow the viewer to get involved in the process of meaning formation that initiates this work. To trace the dynamic process of creating a communicative format allows social semiotics, which sees language not as a set of rules, but as a resource, a practice that produces socially significant texts (Thiboult, 1991).

The process of the meaning-generating mechanism is well described by U. Eco; he identifies such stages as the recipient's choice of a fundamental code that helps him "highlight" the meanings contained in the message, formatting the selected code of the process of understanding the message, endowing it with knowledge, and the emergence of new meanings in the dynamic process of comprehension. The transformation of a message into a text is carried out in such a way as recognition, grasping the boundaries of content in which a sequence of signifiers becomes a semantic formation.

> Suggest a code, notes U. Eco means to put forward a hypothesis and figure out what will come of it. The proposed code reveals certain meanings, but note that it is compared with other codes, lexicodes and polexicodes to make sure that all connotative possibilities of the message are exhausted" (Eco, 2019, pp. 367-368).

Because the communicative format is designed to activate this process, the artist needs, first of all, to think over the repertoire of codes from which the viewer will be able to choose his fundamental code for "reading" the message; also, the creator must lay down the boundaries of the content, or a contextual frame in which the viewer could move, choosing their trajectories and creating their version of the message, i.e. where the author's idea will begin to be perceived as an image in space with its unique relief and structure. The semantic landscape created by the artist helps the viewer to commit the act of sketching the framework of the content because it already includes the perspective of connections that allow to give greater certainty to the thought. In the semantic landscape, the intuition and guesses of the viewer are connected into a single "picture", forming an ensemble, which, in turn, generates new meanings. Thus, the artist's awareness of his work as a semantic landscape allows the viewer to collect disparate sensations, impressions, and ideas into a single whole, establishing connections between them that would otherwise be impossible or invisible.

In general, it can be concluded that the communicative format of a work of scenic (choreographic) art will solve the problem of involving the viewer and obtaining a unique perceptual experience only if the artist creates it as a landscape with its relief, deformations and curvature, in which meanings arise not as a result of logical constructions, but in the process of grasping the situation in as a whole. In such a virtual space, everyone will become participants in a joint stage action, which will require them not only to constantly adjust their original intentions but also quick reactions, intuition, and improvisation. However, it is known that most often the process of thinking through both the idea of the work itself and the way the artist as creator communicates with the viewer is hidden. At the same time, it is also known that in modern stage art, the conceptual approach still dominates, which means that the basis of artistic intentions is a plan that is sufficiently structured and usually voiced by the artist, revealing this meaning "from the sides" sometimes becomes a difficult task. For the most part, this is because a work of scenic art is always more of an idea than an idea that is not outside the work, but permeates it, transforms it and with it. It follows from this that there is a need for a specific approach to understanding and explaining a particular piece of stage art, which resembles solving rather than analysis. And if we proceed from the fact that the choreographer conceives his production as a discourse and accordingly sets him a discursive communicative format, broadcast using digital technology, then the method of analysis should also be discursive. This means that the researcher (viewer) should treat a particular performance or performance as a moving space in which semantic ensembles arise, disappear, and transform. Thus, the discursive communicative format of the performance eliminates the alienating distance between the viewer and the work, setting the former not to a "critical look" and not to "dissolve" in the work, but not to be freely included in the polylogue. Applying the discursive method of cognition allows the viewer to reveal the key codes contained in a particular work and communicate semantic energy to him.

Because we are interested in only two codes – this "time" and "space", for the presentation of the above, we chose such a genre of scenic art as ballet. Ballet is a special kind of stage art, in which spatiality and temporality are carried a priori in an explicit or hidden form. In modern ballets, the desire of the artist as a creator to overcome the usual linearity and go beyond the "horizon of events", where time, according to G. Deleuze, is "completeness, that is, an unfamiliar form filled with a change in the <...> visual stock of events in their accuracy" (Deleuze, 2019, p. 257). So, it is known that the pioneer in the use of digital technologies in choreography was M. Cunningham, the first artist who used a computer

program – LifeForms for a ballet production. He sought to expand the boundaries of the creative process and challenge human nature, changing the perception of time and space. This example allows us to consider the performance as a form of execution of a single concept, which is based on a certain understanding of these codes. The choreographer himself, through the practice of generative technology, declares that his aspirations are based on scientific ideas about space and time, and in his art, he tries to overcome the traditional understanding of space as something stable and abstract.

The program allowed experimenting with dance forms an infinite number of times – as many as the choreographer considered necessary, and bothering the dancers at the same time. In addition, it made it possible to explore any variants of the movement of the human body in 3D format, without referring to the specifics of coordination. For M. Cunningham, a true fan of broken abstract dance, this was a real find; he made the members of his troupe move exactly as if they were graphic elements on a monitor screen. Of course, his productions shocked the audience with their complex rhythmics and "pixel" plasticity: the troupe's artists danced so plastically that they created a feeling of incoherent parts of their bodies. It is interesting to note that the author of LifeForms, Tekla Shiphorst, gave up her career as a software developer for dancing at the age of twenty. However, as a result, it turned out that she simply combined her knowledge, skills, abilities and desires to create a generator of "ideas" for the movements of the human body. Her program offered only those options that are feasible from the point of view of anatomy and showed what a person who is not bound by emotions, knowledge and experience is capable of. Developed today. Shiphorst is widely used not only in choreography but also in animation, computer game design and special effects. And an improved version of the program, DanceForms, was developed especially for dance teachers and choreographers.

Being a fan of choreographic performance, M. Cunningham never attached much importance to music. The musical accompaniment in his productions was always created in parallel with the work and served as a background for the dance. In 2006, San Francisco Ballet prima Muriel Maffre and engineer Ken Goldberg took a different path, also using digital technologies. In honour of the 100th anniversary of the earthquake in San Francisco, which took the lives of 3,000 people, they came up with an improvisational project Ballet Mori: a ballerina danced on stage to the sounds of seismic vibrations in real-time. For this purpose, a special acoustic installation was created, which received digital seismograph signals from the Hayward Fault geological zone and transmitted them to the hall via the Internet during the performance. Ballet Mori later received the Isadora Duncan Award for Best Musical Score. In this example, the thesis that a work of art is always more than an idea becomes clearer and more revealing, and the codes that the artist "represents" in a particular case will be exclusively subjective: everyone will see their own, but we must give M. Maffre and K. Credit to Goldberg – they made it so that there was a choice. However, the viewer must also be attentive and be able to get a perceptual experience to choose his code and use it to read the artist's message. The installation of these codes, or semantic units, allows you to recreate the functional structure of the temporal and spatial meaning of the statement. It is worth noting that San Francisco Ballet did not stop there: in 2014, the company's soloists explored new opportunities to document dance on video. Engineer Tyreek Abdel-Gawad designed a robot that uses a special program to read human movements, synchronize with them and continuously shoot the whole process from all sides with one camera. Since that time, shooting ballet productions, as well as any dynamic scenes, does not require a team of operators, a huge amount of equipment and complex editing.

The possibilities of modern "end-to-end" digital technologies were explored by the National Ballet of the Netherlands. In August 2016, he presented the world's first cyber ballet using virtual reality instruments, which allowed the viewer to become part of the production. The classic white act called Night Fall lasts 6 minutes, and to get into the virtual shelf space created by the artist, the viewer just had to open the video on Youtube and put on special Samsung glasses or homemade Cardboard. So the viewer got directly to the centre of the stage, where the whole action took place, and living it as if he were a member of a ballet troupe. Later, thanks to the development of LED technologies, the light became a full-fledged participant in ballet performances. Now theaters hire not just lighting directors, but designers who use computer programs to design the lighting design of a performance and work on it in tandem with a choreographer. Moreover, they turn lighting into an alternative form of choreography. Lucy Carter, one of the most famous designers in the world, who collaborates with British choreographers, says that modern digital technologies have intelligence and can solve their problems. For example, to change the colour, or adjusting the video projection, as in the work of Wayne McGregor's Atomos.

Conclusion

In this study, we set the task to attempt to comprehend the "turning points" of the paradigm of modern choreographic art, the conductor of which is a digital technology and its reflection in the practice of theatrical (stage) art, to revise the ideas of perception in the context of choreographic techno-hybrid genres, as well as to clarify their ability to preserve communication and transfer simultaneous perception of time and space by the viewer in the way the artist intended it as the creator of a particular work. In general, it seems that this attempt turned out to be successful, however, conceptually, the topic of synthesizing digital technologies and theatrical (stage) art is still at the stage of the study, which is due to the insufficient practice of testing this synthesis by cultural and art figures in general. However, we are confident that the existing experience can already be considered.

Our research allows us to conclude that the discursive analysis of specific works of art does not give an unambiguous answer to the question of what a specific performance, ballet or performance is, because art, as R. Barth put it, speaking of literature, is "a questioning answer and answering question". In his opinion, "the artist and the analyst follow the path previously traversed by meaning; they do not need to point to it: their function, in Hegel's words, is manteia; like the ancient soothsayers, they proclaim the place of meaning, but do not name it" (Bart, 1994, p. 260). Modern stage (choreographic) art offers the viewer to independently make a path, "previously passed by the meaning" and through the perceptual experience that already exists in him. The communicative format of the production, created with the help of VR or any other "end-to-end" digital technology, helps to make this journey more fruitful. The artist can sketch it or methodically design it, however, in any case, he cares about no, i.e. the communicative format provides not only the interactivity and immersiveness of the performance – the ability to talk to the audience, but also the very existence of this performance, which, outside of such a "conversation", outside of discourse, will remain a "thing in itself".

We are sure that discursive analysis is the necessary skill that should be formed in performers – future actors, dancers, and musicians even in the process of obtaining an appropriate education, i.e. its acquisition should become a mandatory competence result, and

therefore one of the priority tasks of the teacher. In this case, the performer will be able, being a participant in a cyber performance or a "live" action, to create a communicative space in which the viewer will be able to gain perceptual experience and independently "realize" the temporal-spatial mega-code, understanding the artist's idea, regardless of how much it is hidden from the audience. In turn, the ability to the discursive analysis of the viewer will allow you to collect and disperse meanings, transform them, return them to their original state and let them go back into the element of the game of signifiers, offering yourself to overcome the path in the semantic landscape of the work of theatrical (stage, choreographic) art.

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