St. Kliment Ohridski University of Sofia
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"Exploring the Potential of Sofia University for Creating a Center for Scientific Theatre"

AUTHOR'S ABSTRACT

of a dissertation for awarding the educational and scientific degree "doctor" in the professional field 3.1. Sociology, Anthropology, and Culture Sciences, doctoral program "Cultural Studies" (Cultural connections between science and the arts. Scientific theatre as an intersection of science, art and education)

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The dissertation consists of 214 pages, including an introduction, five chapters, a conclusion, and a bibliography, with 42 images and 24 graphics presented. The work includes twelve appendices, totaling 195 pages.

Contents of the abstract:

Contents of the dissertation:

Appendix 14 – Interview with Assoc. Prof. Dr. Georgi Valchev, Vice-Rector of St. Kliment Ohridski University of Sofia, lecturer in the Department of History and Theory of Culture

Subject and Relevance of the Study

The dissertation undertakes the task of exploring the initiatives linking science and art over the last two decades, focusing on the form of "science theatre" and its potential for sustainable development in Bulgaria.

The **main motive** for the choice of the research topic is the dissertant's interest in practices linking science and art, and in particular those linking theatre and science, as well as his personal experience as an artist and producer in this field. The contemporary practice called "science theatre" is a relatively new and lesser-known field, and the present work represents a significant contribution to its exploration and systematic description. The **historiography** on this topic is extremely limited, in-depth research and debate on the subject is non-existent, only sporadic publications on the practice or on specific productions can be found. This makes it necessary **to explore the topic through description and analysis of examples from practice**.

This dissertation has as its **object** the scientific theatre and the study of the possibility of stimulating the development of this kind of artistic practice in Bulgaria in line with examples of the development of similar trends in Europe. The **main task** of the dissertation is to explore the possibility of creating a sustainable production centre for this kind of initiatives, where there will be a fruitful interaction between science, art and education for the benefit of the society, by exploring the potential of Sofia University "St. Kliment Ohridski" as a base for such a centre. In developing the concept of the management model for the operation of the proposed centre, the PhD student's practical experience in the field of production and his knowledge of the real conditions and prerequisites for the establishment and sustainable functioning of a creative organisation were used.

The methodological framework of the research is based on the review of existing diverse practices and their development and perception among experts and the general public. It includes a variety of approaches depending on the specific segment of the field of study. The following methods and tools were used:

Autoethnography - description, research and analysis of own works in the field of scientific theatre, two of them created during the PhD and two created before the beginning of the dissertation.

Online source research - exploration of online websites of institutions, organisations, pictures, video recordings of productions in the field of scientific theatre, online publications related to the dissertation topic, structuring and analysis of information, comparison with relevant described examples.

Interviews - Individual interviews with university stakeholders (5 pcs). For the research on the impact of the science theatre, four structured individual interviews with audience members and three group interviews with focus groups of two to four respondents were conducted. The total number of interviewees was 21.

Surveys in two parts with viewers of the two works, completed by approximately 284 viewers.

On-site observation - observing audience behaviour as the productions were happening, and attending public productions in the science theatre field.

Participation in a training workshop on creating a work in the field of scientific theatre, held online by Andrea Brunello.

Helding and participation in a public discussion with potential partners and stakeholders.

The **sources** of the research are mainly of five types: field materials, empirical work created within the thesis, internet sources, archival materials from different events, printed materials.

The dissertation's **working hypothesis** focuses on the potential of scientific theatre as an artistic practice with high added value, whose manifestations in Bulgaria show a development synchronous with that in Europe. In this context, the question arises: what is the potential of Bulgaria, and Sofia University in particular, to develop this practice and become one of the leaders in this field.

The study begins with an overview of practices in the 1990s and early 21st century, when interdisciplinary art projects began to gain more and more popularity and their results became more and more impressive. It is noted that the teams of these projects often include artists, scientists and people involved in high technology. At the same time, there is a growing awareness on the part of the sciences that the results of their research need to be successfully communicated to the general public, and that some of them need public discussion, acceptance and engagement. The sciences have begun in recent years to develop their communication strategies intensively and have found in the arts an extremely valuable partner. Educational

institutions are also actively involved in this trend, as it concerns them directly. Many universities, academies and research centres in Europe and worldwide are opening small centres for interdisciplinary projects or developing and offering similar programmes. It turns out that contemporary art and contemporary science can communicate and work together very well.

Theatre, as a synthetic art, is proving to be particularly well suited to involving a multidisciplinary team in its work, and is establishing itself as a particularly suitable partner for science, especially in the development of its communication strategies with the public and policy makers. The theatre can easily vary in its use of different means of expression and forms of communicating with the public, and it has a wealth of experience in reaching out to different age and social groups and sufficient popularity with the public. Communicators of science consistently study and use basic theatrical and dramaturgical techniques, but they also find ample reason to seek a closer partnership with the theatre. The theatre has also shown an increasing interest in topics related to science and technology development, although compared to science it seems to be much more reserved towards such cross-sectoral collaborations, especially at the institutional level. But there too, especially in the independent scene, there is a distinct interest on the part of artists and an awareness of the high added value that such collaborative initiatives bring, both to the theatre and to society. In this way, collaborations that today we call scientific theatre were born. This kind of productions and initiatives are gaining more and more popularity in the last two decades in Europe, but unfortunately in Bulgaria such initiatives do not have enough sustainability, which leaves unrealized an important and needed potential of high social and educational value for society.

The particular value of science theatre for the academic and research communities, as well as for institutions engaged in science communication such as science museums, science festivals, etc., is that in the short term it manages to present different scientific concepts, research and ideas in an accessible, attractive and emotionally engaging way and thus to introduce the untrained public to the meaning and usefulness of the work of scientists. In the longer term, such initiatives often succeed in inspiring children and young people to take an interest in science and start studying it. For universities, these initiatives also have the function of showcasing different faculties or fields of study, thereby attracting prospective students and public attention. On the other hand, the presentations themselves can feature students, teachers and researchers from the universities and research centres concerned. The long-term development of such an initiative creates the conditions for building a sustainable and growing audience, for educating the public, for developing the educational function of the university and

beyond the professors and students assigned to it, and for promoting its positive image in the public sphere. This is why universities are at the heart of most of the sustainable initiatives for the development of scientific-artistic collaborations in Europe and worldwide.

In the context of Bulgaria, the need to promote science and to affirm its value for the development of society is particularly serious. Compared to other European countries, the levels of scepticism, ignorance and lack of interest in science in Bulgaria are alarmingly high and this directly affects the mass behavioural attitudes. The Covid-19 pandemic has shown that this can be life-threatening and is a clear symptom that many measures need to be taken to increase confidence in science and its outreach. As evidence of this, we can point to part of the Eurobarometer 516 survey with a specific focus on science topics, conducted in 2021. According to it, 36% of the Bulgarians in the sample strongly agreed with the statement "Science is so complicated that I do not understand much of it". Almost 30% of respondents (compared to an EU average of 10%) strongly agree that "they do not need to know about science in their everyday life". Only 9% regularly watch documentaries or read science publications and 40% cite "lack of interest" as the main reason for not being informed. When asked about conspiracy theories about science, 41% of Bulgarians surveyed believe that "there is a cure for cancer, but they hide it because of commercial interests" (EU - 21%), and 52% believe that "viruses are created in government laboratories to control people's freedom" (EU - 28%).

In the light of these data, Bulgaria's scores on the science component of the PISA tests are more than 50 points lower than the EU average. The 2022 tests show that the share of Bulgarian students below the critical threshold of achievement in the three areas tested is alarmingly high: 54% in maths, 53% in reading and 48% in science. The data show that the cognitive competences of more than half of the students are not sufficient to solve everyday problems.

As part of the response to these serious contemporary deficits and challenges, this dissertation aims to explore the potential for establishing a Centre for Science Theatre in Bulgaria that would serve as an intersection of science, art and education by identifying Sofia University as the most appropriate location for its base. The primary task it should perform is not an extension of the pedagogical mission, nor a PR for science; it should contribute to **the third mission of the university** by contributing to informed choice, engagement, and debate in society and the territory in which it is located on issues affecting the development of science, technology, and ecology also to support the so called **social impact of the university**. It examines the European

and local context in this field and traces a number of initiatives that have already taken place in the direction of scientific theatre. The analysis of the model of the initiatives, their sustainability and their effect on the environment and audiences provides information on the necessary parameters for the realisation of such a centre and the possibility to identify potential partners.

The main question that the research addresses is: does Sofia University have the potential to create a sustainable initiative in the field of scientific theatre or in the field of interdisciplinary projects where science meets art? In order to approach this question the dissertation research goes through the following preliminary questions:

- What do we call "science theatre"?
- What examples of such centres exist in Europe and what are successful models?
- What examples of initiatives in this field can be found in Bulgaria and what is the context of their creation and perception by the public and experts?
- How is a piece of scientific theatre created, how might its actual effect on audiences be measured, and can the measured effect serve as an argument for creating a sustainable structure that develops interdisciplinary initiatives between scientists and artists?
- What is the appropriate model for a Centre for Science Theatre in Bulgaria, what is needed and where is it best located?
- What are the attitudes of the management of Sofia University and potential partners in its structures towards the idea of creating the first in the country Centre for Science Theatre?

These questions are important because in addition to positioning the country on the European map in relation to the development of interdisciplinary initiatives linking science and art, their answers provide practical guidelines for action, methodological tools, define the term "science theatre" and the main types of science theatre, measure the direct short, medium and long-term effects of science theatre works on audiences. Furthermore, they implicitly raise the question to what extent the conditions in the country allow the most renowned university to take a leadership role in opening up territories for knowledge and science, and to what extent the university has the ability, will and freedom to invest strategically in innovative initiatives alongside other European and worldwide universities and to open up to the public and cultural life at regional, national and international levels.

Brief outline of the thesis

INTRODUCTION: This thesis outlines contemporary trends in the development of research-creation collaborations, interdisciplinary initiatives and the basis on which they develop. Special attention is given to performance-lecture, artistic research and science communication as agents for the development of contemporary science theatre. The important role of universities, research and educational centres in the development of the relationship between science and art is outlined.

Chapter I: What do we call "scientific theatre"?

The first chapter presents existing descriptions of what we call "science theatre" in terms of science communication and in terms of the history of theatre, giving numerous examples. The methodologies of creation are analysed in detail and a general definition and methodology of creation is developed, which describes each phase of the working process and the participants involved in them, as well as the main activities required to create a qualitative production and present it to an audience. Attention is paid to the timeframe and resources required to create such a work, as well as the necessary capacity and professional training that the participants must have.

This is followed by a description of the main forms of scientific theatre, which can be combined with various other theatre forms and performance techniques. Some of these can be seen at science festivals and in science museums, while others can be seen in theatre halls, university auditoriums, schools, galleries or even on the street. What unites them all is that they present verified scientific information, verified by the scientific method, and they involve professional scientists who are specialists in the field of the production. The following forms are described:

- Performance-lecture;
- Installation;
- Theatrical production in the tradition of dramatic (text-based) theatre with the participation of scientists as consultants or performers;
- Science show, science stand-up.

For each of the basic forms of science theatre there is a link to a video of a sample production to exemplify the forms.

Chapter II: Description of Science-Art Interaction Centres in Europe

Examples of sustainable initiatives in Europe that bring science and art together are explored, with a particular focus on initiatives involving universities and higher education institutions. There are six initiatives that are explored, described and analysed, and the reasons for focusing on them are twofold: on the one hand, to what extent they are relevant to the whole field of art-science dialogue, and on the other hand, to what extent their model of operation (or part of it) is proven to be sustainable, successful, innovative and applicable to Bulgarian context.

The criteria used to describe the initiatives are:

1. Creation - who creates the initiative, when, in what context it is created;

2. Main mission and with what means it plans to implement it;

3. Functioning structure and operational team;

4. Main objectives and focus of the activity;

5. Recent projects or projects of particular interest;

6. Infrastructure - where the initiative and team are based, where public appearances take place, resources available to the team;

7. Funding structure and annual budget - not all initiatives provide information on their financial resources, so only publicly available data is described and analysed;

8. Key partners - here we looked at both permanent partners and partnerships that are sustainable and significant to the initiative;

9. Context in which the initiatives operate - how they fit into the artistic, scientific, social and urban environment; what is their impact and what responses do they provoke.

10. Research / publications / archive - a description of whether the initiatives have publicly available material about the projects, structured in an archive, website or blog;

11. Contacts - physical and/or email address of the initiative, contact person.

On the basis of the description created, the main characteristics of the initiatives, the content of the tasks they set themselves and perform, the way they function and have an impact can be compared, all without the scale of functioning and differences in the principle of operation having an undue influence.

The following initiatives have been analysed:

- Scientific Theatre Freiburg
- Jet Propulsion Theatre (JPT)
- Nexus Experiments
- University of Applied Arts Vienna
- Ars Electronica Futurelab
- experimenta
- Science Gallery

Based on the description of the initiatives, an analysis is made of the successful models and common good practices they apply to reach a high quality of offered events, sustainability in their development and good communication with audiences and partners. Particular attention is paid to the analysis of how science and art are linked as equal partners, without instrumentalising the participation of either party. Other important features such as networking, residency programmes and the common debate about the future and the involvement of scientists, artists and the public are also examined. Individual initiatives are compared, pointing out similarities and differences between them in the way they implement collaborations and function in the public space.

The last part of the chapter is devoted to the choice of sustainable partnerships, which are a crucial part for the functioning of each initiative and can guarantee its existence and development.

Chapter III: Examples of practices in Bulgaria connecting scientists and science with the public and the arts

This chapter explores the context of science theatre in Bulgaria and the relatively sustained manifestations in the country that have linked science and art over the last fifteen years. It examines initiatives aimed at promoting science and scientific knowledge and creative initiatives that engage with or are based on scientific content. Comparisons are drawn with the

European examples discussed in Chapter Two. Described and analysed is the work of the FameLab, the Sofia Science Festival, Ratio, the project "Faces of Science" of the Cultural Centre at Sofia University, the activities of the Forum Democrit Association, DA Fest, Festival of Wonders, the theatre productions "The Long Way to the Stars", "Eva Bechstein - Night of the Bats", "The Time of the Quarks". The production "In the Little Big World of Bats" created within the PhD is described in detail, which due to the pandemic was first realized as a video project and after a year its continuation was created - the interactive installation "In the Little Big World of Bats with Antonia Hubancheva".

The last part of chapter three describes the discussion called "Horror and Reason" held on the occasion of the online premiere of the above production, with the participation of researchers from different fields of science. The discussion was organised by the Cultural Centre of Sofia University and the project team led by the author of the thesis. The moderator is prof. Alexander Kyosev, lecturer in the history of modern culture at the Department of Cultural Studies and director of the Centre. Guests are prof. Prof. Leander Litov from the Department of Atomic Physics (SU), head of the team of Bulgarian scientists at CERN; Assoc. Nikolay Simov, entomologist from the National Museum of Natural History at BAS; Ivaylo Milenkov, physicist and composer; head as. Kiril Vassilev from the Department of Cultural Studies (Sofia University), an expert in the field of visual arts and the authors of the film Antonia Khubancheva and Gergana Dimitrova. The discussion lasts about 90 minutes and includes a short presentation of the authors and questions about their collaboration and what constitutes the meeting between art and science, followed by statements by each of the discussants on what they have seen and on the topics set by the moderator for discussion. The main topics discussed after watching "In the Little Big World of Bats" were: 1. How scientific knowledge about bats coexists with the image that mythologies, prejudices, superstitions, art and cultural accumulations in human history have built for it; 2. The extent to which modern science is able to change human mindsets based on irrational beliefs and intuitions and to counter mythologies and conspiracy theories with its scientific truth; 3. What can we expect from the collaboration between science and art.

Chapter IV: Exploring the Effects on Audiences

Chapter four presents three studies of the effect of initiatives linking science and art on audiences, undertaken specifically for the purposes of this PhD. The research project was supervised by the graduate student, and funding for the production of the video project and the

interactive installation "In the Little Big World of Bats" and the research into their immediate effects was secured following successful submission to a competitive funding programme. The research was conducted on productions that the PhD student and research team had direct access to at the time they happened, or on productions that had already happened and with whose audiences there was communication access. Works of scientific theatre, in the creation of which the PhD student was involved, were used as the object of the research, also due to the fact that in these works the author's conception and the goals set by the team could be compared with the results achieved in the audience - to what extent the messages reached the audience, whether they changed their attitudes and degree of awareness, what was successfully communicated and what was not, which of the aesthetic and theatrical approaches used had a greater impact than others.

The studies are conducted in partnership with Interculture Consult in April 2021, February-March 2022 and May 2022, together with sociologists and cultural researchers Dr. Petya Koleva and Milena Berbenkova. The first study measures the long-term effect of science theatre productions, the second measures the short-term effect of a digital work, an outcome of collaboration between scientists and theatre-makers, among a student audience, and the third measures the short- and medium-term effect of a science theatre type interactive installation on organized student and free-attendance audiences. All of the productions on which the audience impact studies were conducted were previously presented in Chapter III of this thesis.

Research findings record important short-, medium-, and long-term impacts of this type of science-meets-art event on a diverse audience, with two of the measurements predominantly using high school student audiences as the primary target group. In addition, the studies show how different artistic approaches affect audiences and which approaches have a more powerful and lasting impact. As a conclusion, all three studies of the effect clearly register a positive impact on audience attitudes towards science and the work of scientists, and for some of them towards theatre. The high level of activity in completing the surveys testifies to a high level of interest and engagement in interdisciplinary and science-themed events, including among student audiences**. This highlights science theatre as a discipline with particularly high potential that can be developed under the right conditions**. The collected data provide sufficient arguments and motivation to explore the possibility of establishing a Science Theatre Centre that would work in favour of public awareness of the development of modern science and positively influence the image of scientific work and science education.

Chapter V: Exploring the Potential of Sofia University to Establish a Science Theatre Centre

Chapter 5 is devoted to the analysis of the possibility of establishing a Science Theatre Centre in Bulgaria. From the examples discussed in the previous chapters, it is clear that there is enough potential in the country to create quality events at the intersection of science and art, as well as enough public interest. This chapter examines the institutional context in which interdisciplinary events where science and art meet take place and concludes that national and regional cultural and educational institutions, as well as municipalities, are particularly important for the sustainability of such initiatives, but in Bulgaria they demonstrate a lack of engagement in this area.

The dissertation describes the necessary starting conditions of the environment, the competences and the size of the core team needed to create a pilot model for a Centre for Scientific Theatre and argues for the choice of Sofia University "St. Kli Ohridski" as the most appropriate institution within which to situate such a centre. The second part of the chapter presents the results of interviews conducted with the university management and potential partners in the university structures. The respondents share their opinion on the following issues:

- What do you think about the idea of creating a centre for science theatre in Bulgaria where science and art, and more specifically science and theatre, could meet?
- Do you think there would be interest in such a center in Sofia? Who would be interested in it?
- Do you think that SU is an appropriate institution to initiate such an initiative and why?
- What would be the biggest challenge to such an initiative in your opinion?
- How would you personally support an initiative to establish a Center for Science Theatre?

Interviews were conducted with the Rector of the University at that time - prof. Gerdzhikov, with prof. Biolchev, who is a member of the Academic Council, former Rector of the University and founder of the University Theatre, with the heads of the University Theatre and the educational program "Author's Theatre" Dr. Petya Yosifova and Nikolay Georgiev, with the Director of the Cultural Center prof. Alexander Kyosev, with the Vice Rector of the University Prof. Dr. Valchev, who is the current Rector. The analysis of the results shows that Sofia

University has enough potential to support the idea of creating a Centre for Scientific Theatre, but also inevitably perceives insurmountable obstacles to launching such an initiative, in which to invest its own resources. The following main difficulties emerge:

- The University management, in the person of the Academic Council, does not want to open new units at the University if they are associated with financial costs (regardless of their size) - This means that the core team of the Centre cannot be engaged on a long-term basis, and without such a team there can be no regular activity, development and sustainability.

- Lack of equipped space for theatre events - The only room equipped for the needs of a theatre performance is that of the University Theatre, which is actively used by the theatre and which they are unwilling and unable to sub-let.

- Possible existence of opponents to the idea within the University itself - None were identified during the interviews despite the warnings and concerns of several respondents. The dissertation follows with an analysis of the problems defined by the respondents, identifying objective challenges and suggestions for overcoming or avoiding them.

CONCLUSION: The conclusion summarizes the research and its findings and provides guidance on the possibilities for creating a center for collaboration between science and art despite the obstacles identified by the research.

Key conclusions and guidelines for future research

This study examines what we mean by the term science theatre/scientific theatre, what its development has been so far and what tasks it sets itself. It traces its genealogy and draws from existing descriptions of it a definition of the qualities it needs to have and a methodology by which it needs to happen in order to meet the definition of 'science theatre' and achieve the expected outcomes. The main types of science theatre are described as formats, each with their respective specificities and a concrete example given to illustrate the form. Such a systematization of this form of theatre has not been done before that we are aware of, so it would be of great use to anyone interested in this kind of practice that meets theatre with science.

Based on the PhD student's long experience as a creator of productions in the field of scientific theatre, two productions in the field of scientific theatre were planned and successfully created

within the framework of this PhD - one video project and one installation, whose impacts on the audience were directly studied during their presentation. Research was also done on the long-term impact of science theatre on audiences based on productions involving the PhD student that occurred over ten years ago. There was an opportunity to compare the authors' intentions and goals with a given work and the effect it actually achieved. This measured the actual effect of the science theatre in the short, medium and long term. To the best of our knowledge, no such measurement has been done before, and publication of its results would be of particular interest and value to the scientific community. The analysis of the results shows that indeed science theatre brings great added value and potential in communicating science to an extremely wide range of age and social groups. Not only do the messages conveyed through science theatre reach audiences, they engage more than half of them emotionally and intellectually and succeed in changing their attitudes in the long term. Moreover, the study of the long-term and medium-term effect proves that science theatre succeeds in making some of the audience change their behaviour. This study has shown that science theatre also brings great added value to the art of theatre, as it is able to attract new audiences, expand audiences, engage artists emotionally with a cause and open up new themes and problem areas for them to explore and present. Particularly important is that through such cross-sector collaborations, new partnerships are also created that could be developed.

Another part of this PhD is the realization of the expert online discussion on the occasion of the premiere of the video project "In the small big world of bats", which showed the attitudes of scientists and artists from different fields towards collaborations between science and art. It became clear that the ability of science theatre to connect science with the general public, to be an intersection point between education, arts and science, to raise for discussion topical issues and themes of scientific knowledge, and to explore public opinion and attitudes in ethical cases related to the development of science and technology, is highly valued by experts, and this is what allows for multiple and diverse opportunities for the application of this interdisciplinary form. During the conversation, several different views on the potential and direction for the development of science theatre emerged, as well as several important opportunities for long-term partnerships on the creation of similar projects in Bulgaria - with the Cultural Centre, with the National Museum of Natural History at BAS, with the Faculty of Physics at Sofia University, with individual scientists and science communicators from the natural sciences and humanities.

One of the main focuses of the scientific theatre is on its educational function, which is why universities, research centres, educational institutions or specially created museums are often at the heart of more sustainable initiatives in this direction. As the examples in Chapter 2 show, it is the institutional 'backbone' of these initiatives that allows them to develop and be sustainable. The scientific community sees this type of theatre as an opportunity to promote its ideas and achievements, while the academic community sees it as an opportunity to motivate students to be more creative and work more deeply on a given topic. This is motivation enough for some universities to invest in practices that meet science with art. Science theatre for children and students is also rapidly gaining momentum, as it often succeeds in awakening children's curiosity about different sciences and also about the way we study the world around us.

Taking into account the examples of several emblematic centres of science and art encounters in Europe and reviewing some of the most sustainable initiatives in this direction from Bulgaria and their perception in the professional environment and among audiences, it is concluded that in Bulgaria there is a potential to develop much more successfully the form of scientific theatre, the main thing that is missing is a sustainable environment for this and a long-term institutional commitment to support. Given the right conditions, our country could become one of the leaders in this field within 5-10 years. The study found that in Bulgaria very few public institutions are involved in such initiatives, and the initiators are almost always civil society organisations or foreign ones. Audiences accept such events very well, with the impression that non-theatre audiences predominate. The participants in these initiatives in Bulgaria are an active part of the international community (both the scholars and the artists, and most often the producers), so that the scientific theatre created in Bulgaria will not have to overcome a kind of peripherality and isolation from the rest of Europe, a problem that traditional drama theatre and contemporary dance have to a large extent in this country.

Following the experience of the European and Bulgarian examples reviewed, the thesis outlines the following model for the establishment of a Centre for Science Theatre as the most realistic and adequate for the context - a small production team within an educational institution that has access to specialists from all scientific fields, spends a minimum of resources for its maintenance, has an annual production budget and can generate additional project funding to complement its programme. For each of its initiatives, it could bring in a variety of scholars and artists - from within and/or outside the institution. This model is the most flexible and open in terms of content and form. The artists and scientists brought in could be from a variety of fields, and activities could range from performing arts productions, to exhibitions, installations, online

content, concerts, discussions, workshops and residencies. Focusing on the most suitable institution that could host such a Centre for Scientific Theatre and derive the most positives from its activities, the research focuses on Sofia University "St. Kliment Ohridski", which has, in addition to a full range of university courses, a university theatre, a cultural centre and membership in the UNICA network. After interviews with members of the university's management and potential partners and supporters of the initiative, several serious obstacles to the creation of a Centre for Scientific Theatre within Sofia University that could exist and develop sustainably emerged. The main one is the categorical lack of willingness to invest any of the University's financial resources in engaging a core management team for the Centre. This challenge could be overcome if the Centre were started on a project basis, with funding secured for one or more initiatives from an external organisation in partnership with the already institutionalised units of the University Cultural Centre and the University Theatre, and why not one of the three museums at the University or a University Library. If, after the end of the project, enough supporters from the university community (lecturers, members of the Academic Council, students) can be attracted and the project team manages to convince the university management to invest in its existence, perhaps the creation of a Centre for Science Theatre at Sofia University could be achieved. This could only happen if the project is of a larger scale and duration to make it sufficiently visible to the public and the university, and support for such cultural and educational projects is almost non-existent nationally. European funding that supports two- and three-year projects should therefore be considered. However, such an endeavour still requires a rather large investment of labour and time (writing the project, attracting partners, applying) from a group of people with an uncertain future outcome. For this reason, the likelihood of overcoming this difficulty with enthusiasm alone is not very high; a favourable coincidence is needed to support the initiative and its core of supporters. This could be the implementation of a major university research project that includes a module on the dissemination of results or an expression of interest from one of the university's faculties or research centres.

The next step in this research should be to explore the possibility of funding through projects supported by the European Union and the possibility of the initiative being funded by the Ministry of Education and Science or the Council of Ministers. Another alternative and perhaps parallel step would be to explore the possibility of locating the Science Theatre Centre in another higher education institution or launching it as an initiative between several partner institutions.

Contribution of the dissertation work

Theoretical and methodological contributions

Creation of a definition of the concept of scientific theatre and systematization of this form of theatre and its main forms of manifestation.

Developing a detailed methodology for creating productions in the field of scientific theatre.

Contribution to the study of the field of scientific theatre

Creating a methodology for measuring the impact of science theatre on audiences.

Measuring and analysing the impact of science theatre on audiences in the short, medium and long term.

Demonstrate the actual impact on audience and participant attitudes and compare the impact of different artistic approaches to the translation of scientific information.

Contribution to the study of the impact of digital cultural products on audiences

This dissertation outlines basic differences in the creation and perception of a cultural product through digital media and its live performance.

Contribution to the field of cultural management

Develop a conceptual model for the basic structure and organization of an operational unit to launch the work of a Center for Scholarly Theatre with the possibility of expansion.

Contribution to the study of scientific theatre in Bulgaria

A first description of sustainable initiatives in Bulgaria developing the field of cross-sectoral partnerships between science and art and the promotion of scientific knowledge and examples of science theatre.

Contribution to the study of science-art collaboration centres in Europe

Creation of an original methodology to describe centres for interdisciplinary initiatives and cross-sectoral partnerships. Description and comparison of six initiatives from Europe that develop collaborations between scientists and artists.

Contribution to the research on the manifestations of contemporary theatre

Defining scientific theatre as a part of the manifestations of theatre art with its own specificity and variations of the forms of presentation.

Enriching the field of scientific theatre in Bulgaria

Two productions in the field of science theatre were planned and successfully created within the framework of this PhD - one video project and one installation, whose impacts on the audience were directly studied during their presentation and afterwards.

Interdisciplinary contribution

The dissertation describes a number of interdisciplinary projects and sustainable initiatives in Europe and Bulgaria, compares them and outlines their impact on audiences and participants, thereby affirming the particular value that these types of projects bring.

Publications

Publications on the research topic:

"What we call 'scientific theatre'", journal Problems of Art, vol. 3, 2024.

ISSN: 0032 - 9371

ISSN: 2738-7852 (online)

"Problems of Art" is referenced in the European Reference Index for the Humanities and Social Sciences

"The Dramatic Potential of Science. Key characteristics and forms of science theatre", journal PIRON, vol.24. The Hybrid: Forms in Crisis, ISSN 2367-7031 (Online)

"PIRON" is an online journal of the Cultural Centre of Sofia University with ISSN 2367-7031, included in the National Reference List of Contemporary Bulgarian Scientific Publications (NACID) with ID No. 2994, with the electronic address https://piron.culturecenter-su.org/.

Publications on the scientific field:

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Quoted literature in the abstract

Special Eurobarometer 516 : European citizens' knowledge and attitudes towards science and technology, Directorate-General for Communication at data.europa.eu, last accessed 27.01.2022, https://data.europa.eu/data/datasets/s2237_95_2_516_eng?locale=en