

1. COMMON RESEARCH PLAN

1.1 SUMMARY OF THE RESEARCH PLAN

With the emergence of new technologies our culture is undergoing changes – the manner and ways in which we perceive space, how we experience our body, how we communicate, how we produce sense and meaning. History has proved time and again that technological innovation leads to new cultural practices, new ways of communicating, new ways of sense-making, and new ways in which we see and perceive the world.

Traditionally one of the prominent cultural sites where the impact of technological invention is reflected is the theater. The theater, as a metaphor and microcosm of reality, has always made use of other media and technological tools; even the development of new cultural techniques (as with the 16th century ›discovery‹ of perspective) went into the realization and aesthetics of the theatre. Or, more recently, the pioneering work of the Swiss scenographer and theatre reformer Adolphe Appia dealt with the questions posed by the potentials of technological innovation as no other theatre artist of his time had done.

Recently, however, with the digital revolution the gap has gradually widened between increasingly complex and specialized technology on the one hand, and artistic practices in theatre on the other. The few advancements in the use of technology in theatre that we experience today were principally initiated by artists, and were primarily cross-applications and adaptations of technologies originally developed for other fields and in other settings. Accordingly, these technological applications have typically been unique, one-of-a-kind, project-specific solutions that generally fail to push the boundaries of the technological, aesthetic, and cultural envelope. This situation has undermined true experimentation and innovation, capable of mutually enriching the performing arts and processes of scientific and technological progress. It has made it difficult for the performing arts to explore novel possibilities of expression, and deprived science of a potentially exciting opportunity for experimentation and progress.

To overcome this situation, it has become necessary to organize a process that facilitates systematic encounters between theatre artists and scientists, and that encourages scientific and technological research that is in tune with the needs and constraints of the performing arts. The success will depend upon our capability to create a true alliance between performing arts and technology, which will allow us to advance theatre, and to reconsider in this digital age our understanding of sense-making, expression, communication, perception, and the relationship between our bodies and space. Perhaps the new narratives that will emerge, desperately needed by a society longing for sense and meaning, will empower us and enhance our capability to express ourselves and question our own modernity.

THE OBJECTIVES OF THIS PROJECT ARE

- To fundamentally challenge and renew existing means of expression, and put them at disposition for live experimentation in the theater.
- To offer science and technology a new field of experimentation and a new market
- To foster a critical discourse on the uses of new media in the performing arts, and open up new forms of theatre
- To create a tradition of cooperation between scientific and arts-oriented universities and gradually build centers of competencies at a national and international level
- To sensitize future generations of artists and researchers in education and research, and create a sustainable process for bringing the universe of science and technology, and that of performing arts closer together.

The project takes – from a contemporary perspective – the thematic constellation ›performance, stage and technology‹, aiming at systematic research and debate on scenography that takes into account cur-

rent developments in the arts and sciences. One of the project's main tasks will be a systematic exploration of the variability of scenic space under the conditions of new technologies.

THE KEY RESEARCH QUESTIONS ARE:

- How can machines and humans converge to co-produce sense and sensations (not produce »side-by-side« or »against«, but »with«)?
- Can the theatrical stage become a site for observing, experimenting with and anticipating future mutations in the relationship between humans and machines?
- What new forms of theatres will emerge? What will be the future roles of the stage and the audience? How will the traditional profiles of theatre makers change?

We consider the theatre stage as a platform for interdisciplinary and transdisciplinary research and as a discursive vehicle for understanding the role of art and technology within society. Participants in this project include technology developers, artists, theatre studies experts, dramaturges, cultural scientists as well as representatives of the theatre universities. As institutions, the following schools and universities will be involved: École Polytechnique Fédérale de Lausanne (EPFL), the Zurich University of the Arts (ZHdK); the HETSR-Haute École de Théâtre de Suisse Romande–La Manufacture, Lausanne; and the Institute of Theatre Studies (TWM), LMU-Ludwig Maximilians-University Munich (D).

1.2 CURRENT STATE OF RESEARCH IN THE FIELD

With the emergence of new technologies our culture is undergoing changes in the ways we perceive space, experience our body and communicate. Technological innovation – history has proved this time and again – leads to new cultural practices, new ways of communicating, and new ways in which we see and perceive the world. History has also shown that the cultural effect of technological innovation is also designable and formable. In other words, when something new is developed, its impact on subsequent innovation is based in large part on the social and creative processes that bring it to life, and whose influence extends far beyond the developer's laboratories. Even more decisive than the new technologies themselves are the cultural technologies developed from these; thus, at a very early stage of technological development it is necessary to initiate a discourse at an interdisciplinary level between theory and practice.

Traditionally one of the prominent locations where the impact of technological invention becomes a topic is the theatre. Theatre is not thinkable without other media as well as technological tools. Many new cultural techniques (such as the 16th century ›discovery‹ of perspective) were integrated into the realization and aesthetics of the theatre. The reflections of the theatre on media begin, on the other hand, with the 20th century. From the beginning of the last century, theatre was confronted with cinema, radio, television as well as video and finally, at the turn of the millennium, with digital media. The intermedial theatre that to date has interacted (at times affirmatively, at times critically) with these media has at the end of the century developed into a cultural platform that is exploring new developments, commenting on these, and also making these changes perceptible for the audience. Theatre – seen in this light – is a place of research that, on the one hand, takes on technical innovations and develops new artistic forms of presentation and portrayal. Theatre can also be a discursive platform that, in a sensuous and discursive manner, tests new technologies and usages on a meta level and competently inspires a creative and critical discussion.

The idea for the project is based on historical premises – namely on the legacy and the still great significance of the pioneer work of the Swiss scenographer and theatre reformer Adolphe Appia. As no other theatre artist of his time, Appia dealt with the questions posed by the potentials of technological innovation in the 1910's: The experience of increased mobility through new means of transportation and, above all, the invention of electricity were all included in his work. Appia is regarded as the pioneer of modern scenography: he was one of the first who rejected the concept of the proscenium, perspective-focused stage in favour of an open, kinetic space. Especially electric lighting was made into a key innovation: instead of serving as a mere technical tool, light for the first time in theatre history was assi-

igned an ›active role‹ capable of altering the density, the energy and atmosphere of spaces. The music, the actions of the performers and the changing of the lights turned the stage and its material elements into temporal, ›rhythmic spaces‹, composed of ›scenic modules‹. Appia influenced numerous artists of the time including Max Reinhardt and the protagonists of the Bauhaus. As a theatre reformer he committed to an open art conception of theatre, the catalyst for which was modern technology: »I shall bear in mind all the different possibilities for expansion and transformation that modern technology can supply« (cf. Beacham 1994: 285f.).

Up to the present, practitioners and theorists of the theatre have discussed – often with considerable controversy – how theatre should confront the challenges of the new technologies. There is one tendency that wants to keep theatre ›pure‹ and that reduces theatre to its materiality and the physical configuration of the participants: the ›here and now‹. In contrast to this, there is the approach taken by Appia since the start of the century that pinpointed and defined not only the other theatric elements (such as space, the objects contained therein) but also light (that was now available as electric light) as a »co-player«. Theatre, when closely observed, has always made use of other media, and at the start of the 20th century, a mediatization with technical means (light technology, sound technology etc.) set in. Appia did not negate or renounce this, but rather made out of this an artistic design principle (and was one of the first to do so). In the Theatre Festival House of Dresden-Hellerau, where he worked at the time with contemporaries that shared his vision (artists, technicians, architects, students), he operated a very early interdisciplinary as well as applied research which is exemplary to date with regard to its approach as well as its systematic procedures.

The theatre history of the 20th and 21st century has seen a variety of debates on the topic of ›theatre and technology‹. One remembers Erwin Piscator and the »Total Theatre« conceived by Walter Gropius at the Bauhaus (but never built): Gropius envisioned a theatre with a comprehensible 180 degree moveable stage design which also envisaged film projections and which united performers and audience in a rich pluralistic synthesis that would have produced an almost immersive effect. The Neo-Avantgarde and Performance Art (with John Cage, Robert Rauschenberg and others) took up modern attempts to reduce the barrier between scenery and real life, between the actors and the audience; early multimedia experiments, e.g. with electroacoustics, also date back to this time. Later, with Robert Wilson and other protagonists of the so-called ›postdramatic‹ (non text-based) theatre, it became sound, body and prominently the image that now were theatrically explored. Without doubt it was the increasing dissemination of the computer and digital media that led to the fact that the text-based, linear set storytelling theatre is being more and more criticized in favour of more open forms as well as multi- and inter-media experiments.

What is still controversial and heavily debated is the relationship between the ›live‹ character of the theatre and the mediatized phenomena that have emerged. The following focal areas of work are being set within the respective relevant discourse: music and acoustics; visual concepts (theatre image/digital image); virtualization (theatricality, performativity and electronics); (dis)embodiment and (post)human bodies (including robotics); web theatre and networked performance; interactivity and new modes of perception.

In the last few decades numerous institutions (mainly in Europe and the US) have supported research taking place with regard to the already mentioned fields. One can name the ZKM Centre for Art and Media Karlsruhe here that has at its disposal, apart from an Institute for Basic Research, an Institute for Music and Acoustic as well as an Institute for Image Media. In addition there is a »media theatre« (used as a location for events); however, research in the field of theatre and media is only undertaken as a sideline (www.zkm.de). One should also mention the IRCAM in Paris (Institut de Recherche et Coordination Acoustique/Musique), which is concentrating on sound/acoustic art (www.ircam.fr) as well as the STEIM Amsterdam (www.steim.nl). In addition, there are institutions as well as festivals that provide platforms – in form residency programs as well as presentation and staging possibilities; e.g. the Gertrude Stein Repertory Theatre in New York (www.gertstein.org), the Futurelab of Ars Electronica in Linz (www.aec.at), the Centre des écritures contemporaines et numeriques in Mons, Belgium (www.cecn.com), the Centre National des Écritures du Spectacle at La Chartreuse/ Avignon (www.chartreuse.org), the Muffathalle Munich (D) (www.muffathalle.de) and, at a more modest level, Le Laboratoire in Paris

(www.laboratoire.org) and L'atelier arts-sciences du Théâtre hexagone at Grenoble (www.theatre-hexagone.eu). Online networks for knowledge transfer (e.g. www.dance-tech.net) can also be mentioned. On this basis, a variety of artistic approaches has emerged, but still, the initiatives – with regard to our chosen topic – hereto have been rarely systematic and more on a selective basis.

The artistic as well as social relevance of this research field between theatre and technology has been demonstrated during the last years (in dance, music theatre, (post)dramatic theatre, performance as well as performative installation and online projects, cf. works by Merce Cunningham, Laurie Anderson, the Wooster Group, Diller+Scofidio, Dumb Type, The Builder's Association, Troika Ranch, Hotel Pro Forma, John Jesurun and Robert Lepage, William Forsythe, Pablo Ventura, Richard Siegal as well as Blast Theory, Rimini Protokoll or Gob Quad). Still, many of these artistic research works remain singular phenomena. With our project, we aim to build a new competence network and platform that will become a basis for the next level research in this field.

To push technological development, as part of a new art practice, is one of the main tasks of our proposed project. Some of the tools that are used currently were developed back in the 1980s, e.g. Max, as well as the related objects libraries Max/MSP for audio developed by IRCAM and Jitter for video. Pure Data is a similar product but distributed in open source. Processing is a programming and development language built on the graphics features of Java. Isadora is more convivial and mainly used in dance performances. Those tools are commonly used, but the available software is more the result of opportunistic developments than a deep and systematic dialog between the arts and sciences. Other technology fields are involved in the project: media design, robotics, acoustics, brain computer interfaces. All these fields are challenged by the scenic arts requirements. Translated into research goals or specifications, they will allow relevant scientific results to be achieved, many of them jointly developed between the research groups, as briefly mentioned in the common research plan.

New developments in technology and theatre art practices also pose a challenge for the human sciences and especially theater studies. Within the new technically-augmented environments, new kinds of artistic practices emerge. Visual and acoustic interfaces, artificial intelligence, networked communication, sophisticated modes of interactivity and tracking, to mention just a few – all of these new options provided by technology will require new kinds of forms and dramaturgies. Also, they demand new forms of acting: onstage, the actor here is no longer the only ›intelligent agent‹, but interacts with intelligent systems. Last but not least, the audience also becomes involved: unlike traditional theatre, the new formats invite their viewers to become active and challenge their habits of perception and thinking. Not anymore limited to physical embodiment and the frames of the ›here and now‹, the stage – reconceptualized as ›augmented environment‹ – opens up new fields of theatre practice and research. In theatre studies and connected disciplines (media studies, urban studies, anthropology), the research work and discourse on this has just started during the last years, and much remains to be done in the future (cf. Dixon 2007, Schoenmakers et al. 2008, Balme 2008, Brandstetter, Wiens 2010).

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