Distributed Theatre: Connecting (with) Remote Audiences

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Abstract

In September 2014, Miracle Theatre performed "the Tempest" simultaneously at two different locations to two separate audiences. Both audiences were linked together using an advanced video system, where several cameras captured the play. This is just one example of the radical shift in performing arts, where small theatre companies can use the Internet and a range of digital tools for reaching a wider remote audience. During the last years, we have explored how tele-presence has an effect on the performing arts, on the artists, and on the audiences. This position paper describes our journey, posing a number of questions.

Introduction

One-Way delivery of live theatre performances to other cinemas or theatres is a relatively recent phenomenon, as well as still relatively small scale. However, it has already been a commercial success for well-funded companies using expensive and not readily available infrastructure (e.g. satellite communication). The long-term vision is that over the next years smaller companies will follow suit reaching wider audiences than their local community. In addition, we foresee accelerated technology development to enable remote audiences to play a much bigger role during live performances by providing audience interactivity with

Figure 1: The Tempest by Miracle Theatre (open air)

and feedback to the theatre of origin and to remote audiences elsewhere promoting a large scale sense of audience community. This paper represents a step in such direction by exploring, together with a commercial theatre company a number of alternatives for making distributed theatre and distributed audiences a reality. In particular, we describe a number of theatre plays, in which we have been involved in during the last couple of years:

- *Waiting for Godot*: a first production between Vilnius (Vladimir) and Falmouth (Estragon)

- *The Tempest*: a second production between two locations in Falmouth

Figure 2: The Tempest by Miracle Theatre (distributed); Photos by Kirstin Prisk

We discuss as well about a number of experiments that have further guided our understanding of audience engagement modeling, with the final goal of linking remote audiences back to the stage. The first one focused on local audiences, while the second one compared remote and local ones.

The following two sections summarize our efforts on using tele-presence as a new medium for connecting actors (and actors) and audiences (and audiences). Apart from the artistic reasons behind exploring a new medium, there are the more economic ones which can wide the reach of small production companies.

DISTRIBUTED STAGES
Our interest is on exploring the potential of low cost technologies to support innovation in performing arts. We used consumer-grade broadband for connecting two different spaces with actors: distributed stage. The goal was to explore this setting for more traditional theatre plays. The end-to-end system included relatively expensive cameras (Sony EVI-HD1 videoconferencing cameras), but the network and display portions were off-the-shelf consumer items.

In the first experiment (see Figure 3), the theatre company Miracle showed a fragment of "Waiting for Godot". The performance was distributed, with one stage – Estragon - in Falmouth (Cornwall, UK) and the other one – Vladimir – in Vilnius, Lithuania. The actors could remotely interact with each other using a number of software modules developed by us. Moreover, through so-called "home clients", implemented in standard Web browsers, the theatre play could be watched remotely from anywhere in the world.

Figure 3: Waiting for Godot

For the second experiment, Shakespeare's The Tempest, we connected two spaces, each with their own audiences. The Tempest is set on an island and some of the action was played out in one location (set on one part of the island) and some of the action on another part of the island, with actors communicating via screens and microphones to each other. In addition there was a live a stream to a home audience.

SENSING AUDIENCE

UK's National Theatre has taken a groundbreaking initiative to broadcast live performances of plays onto cinema screens around the world. However, research on the response of distributed audience members is still in its infancy, and major challenges remain: how can we monitor and model audience engagement? How can we visualize feedback from remote audiences? In other words: how can we go beyond one-way streaming of performances and make the experience more interactive?

During the last years we have explored these issues. In particular, we have developed our own sensor technology for synchronously gathering physiological data from audiences. When compared to previous works, our approach is more precise and valid. Typically, subjective measurements like surveys are the most common methodology applied when trying to understand audience response to an event. These have several limitations, since the responses cannot be aligned to the specific parts of the event. In contrast, our methodology, to use Galvanic Skin Response (GSR) sensors, is more precise and it is not based on the post-memory of the audience member.

For the first experiment, performers devised a 28-minute long comedy play that was aimed at audience participation. The performers devised a comedy play, with five different acts. The performers were particular interested in investigating whether there would be a different audience response between an interactive play and a passive play, and whether there would be a difference between a trumpet play and a juggling act.

For the second experiment, there were audiences at two locations (it was streamed in real-time to the second location). The first performance was a solo play - learning to sing a song, called "Styx Boat on the River", where the interaction between the actor and the two locations included smog and (vacuum) sound effects. The second performance was a conceptual play – a guiding tour to Falmouth, during which there was no interaction or special effects considered. The main performance was peeling off the skin of a crab with the recorded instruction as the background.

Our solution, based on physiological sensors, seems to be valid and precise, allowing us to determine the effect of different strategies and acts during a theatre play. This is certainly only a first step in this direction, where a number of questions still remain unanswered (e.g., how to model the responses of the audience for non-engaging plays?), but opening a number of research paths. For example, based on our modeling work, we can create a real-time monitoring system that visualizes the reactions from the (remote) audience for actors in the stage.

Conclusion

During the last years we have extensively explored the convergence of tele-presence and performing arts. We have concentrated on two key aspects of the performance: the audience and the stage. In this journey we have learned important lessons about how to plan, stage, and test connected performances. We have discovered how essential it is the development of adequate operational protocols and the benefits (and nightmares) of managing a truly cross-disciplinary team. We have as well made core technical achievements and obtained significant results.

The most important research finding, though is that this research area of networked performing arts is still in its infancy. There are still many issues to be explored and learned. In this direction, it is essential that focal points, like CultureHub or SeoulArts, are created. They should act as centers, where professionals from different disciplines can connect and converse.

If we are to highlight a number of existing research challenges, we would select the following: how to provide virtual stages that are distributed across locations? How to monitor and represent the responses from the remote audience? How to increase audience participation? What new tools are needed by performing artists in order to take full advantage of the tele-presence systems?

The final objective should be the development of a set of novel productions that make use of the existing technology, thus initiating a new art form. For this to happen, there should be a provision of sufficiently robust environments that allow artists to explore uncharted territories, and thus that truly marry tele-presence and performing arts.

Acknowledgements

Related Videos

https://www.youtube.com/watch?v=KkTy-5aT1aI: about Waiting for Godot and our efforts on distributed theatre

https://www.youtube.com/watch?v=GXEcJX1LIbq: The Tempest, a distributed performance

https://www.youtube.com/watch?v=O-VJPvrm4-8: interview with Miracle Theatre about the distributed performance of The Tempest

https://www.youtube.com/watch?v=dUM-qqRsTx8: Galvanic Skin Response as a an indicator of audience engagement

http://howlround.com/staging-the-network-a-discussion-about-telecommunications-for-performance: a panel about telecommunications for and performing arts