

**Parallel session 7: PCST as a performance: looking for new audiences**

**SCIENCE AND THEATRE: A MULTIFACETED RELATIONSHIP  
BETWEEN PEDAGOGICAL PURPOSE AND ARTISTIC  
EXPRESSION**

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**Abstract**

This paper offers an analysis of the relationship between science and theatre. Such a connection can be twofold: either theatre is used primarily as a means for conveying scientific concepts and ideas, or it borrows its contents from science while maintaining its own features as an artistic expression.

I will focus on the second form of "scientific theatre", i.e. when theatre preserves its artistic and aesthetic characteristics, thus enhancing the scientific imagination for the public.

**Key words:** science theatre, science communication, artistic expression

**Text**

Introduction

It is quite a evidence that, in the last few years, science has been winning more and more space on the stage. Even if the results are not always the best, this facts stimulate a reflection on the possible contact points between science and theatre. Since we deal with a problematic relationship, it would seem difficult to build a structured theory. Rather, thinking of ways in which the pair "science-theatre" might be analyzed would seem more appropriate<sup>1</sup>.

Starting from the assumption that theatre is, first of all, an encounter between the audience and the actors<sup>2</sup>, I would propose the following classification for performances combining science and theatre:

1. theatre as a set of performing techniques to support didactics
2. theatre deriving from the "scientific conferences" tradition
3. theatre posing ethical questions on the responsibility of science and scientists towards the society
4. theatre pointing to existential reflection
5. theatre staging either biographies of scientists or episodes from the history of science
6. theatre using certain sciences (such as neurobiology, anthropology, anatomy, cognitive sciences) as a support for the artistic creation

There is quite a marked difference between theatre used merely to communicate science (1. and 2.), and theatre maintaining its characteristic of an artistic expression, drawing elements from the scientific universe to create drama (3. to 6.).

Going through the proposed classification, I can summarize the following:

#### Theatre with pedagogical purpose

When theatre is used as a means of supporting didactics, the performing elements (the acting area, lights, sound, images, the “dramatic vocabulary” of movement, the body and verbal language), help to lower the barriers between an inexperienced public and scientific contents through the main strengths of theatre: emotional and sensory communication<sup>3</sup>. Thus, the pedagogical activity is reconciled with the entertainment, the aim being to excite curiosity towards the scientific world. This practice is often applied in the museums or scientific institutions<sup>4</sup>.

In the same context can be placed some performances deriving from the tradition of the “scientific conferences”<sup>5</sup>, which started in the XVII Century, coinciding with the origin of the first scientific Academies, and widely spread for the next two centuries, mostly emphasizing the facet of the “marvellous” in science and being warmly appreciated by the audience. The roots of the contemporary “science shows”, frequently put on in the science centres<sup>6</sup>, may be found in this tradition.

#### Theatre drawing up motif of inspiration from science

A different scenario comes when dramatic creation is inspired by science without any specific purpose of communicating its contents.

Within this framework, I propose the following classification: plays dealing with ethical issues generated by the scientific discoveries; plays portraying episodes of famous scientists’ lives; theatrical activities drawing on scientific ideas to support the creation of dramas.

Referring to the first class, the greatest example is “Galileo’s life” by Bertolt Brecht. Its first revision, after the atomic bomb was dropped, was strongly centred on the responsibility of scientists towards the humanity. This theme was amply debated in the German circles, and many plays, during the 50’s and the 60’s, were addressed to it<sup>7</sup>. Most of them are not staged anymore, but worth mentioning are “The physicist” by F. Dürrenmatt and “On the matter of Julius R. Oppenheimer”, by H. Kipphardt. Another theme posing ethical problems is pertaining to the creation of artificial beings similar to humans<sup>8</sup> (artificial intelligence and cloning are clearly evoked). In this sense RUR Rossum’s Universal Robots by K. Čapek (1920) is an example.

Another class is the portrayals, mainly based on a psychological introspection and historical reconstruction of facts (e.g. Copenhagen by Michael Frayn).

In the third class all the activities that take inspiration from some sciences (such as neurophysiology, psychology, cognitive sciences, anthropology, anatomy) to improve the actor’s technique<sup>9</sup> are included. Peter Brook, whose research is close to that area, created two performances where the “brain’s sciences” are the nucleus of the drama: “Je suis un phénomène” and “L’homme qui...”.

## Conclusions

Having briefly summarized different facets on how theatre relates to science, I would emphasize my interest, from the point of view of a theoretical reflection on science communication, in the second form of "scientific theatre", i.e. when theatre maintaining its artistic and aesthetic characteristics enhances an image of science as a human activity, an integral part of a culture in general.

## Notes

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- <sup>1</sup> For more details see: Silvana Barbacci, *Un caledoscopio magico: la scienza a teatro*, Dissertation of Master in Science Communication, 2001, Sissa-Isas, Trieste.
  - <sup>2</sup> See also: Peter Brook, *The empty space*, Mc Gibbon & Kee, London, 1968.
  - <sup>3</sup> Among others, *L'Oracle de Delphi* on Dirac's scientific adventure, by the "Mimescope", staged for the first time at Cern, Genève (1999), is a nice exemple that effectively applies body's techniques, musics and images.
  - <sup>4</sup> Catherine Hughes, *Museum Theatre: Communicating with visitors through drama*, Heineman, Porthsmouth, 1998.
  - <sup>5</sup> See also Daniel Raichvarg *Science et Spectacle. Figures d'une rencontre* Z'Editions, Nice, 1993
  - <sup>6</sup> The *Klara Sopptearer* in Stockholm gives contemporary examples, which can be linked to that tradition., having produced many plays where a scientist is on the stage with the actors.
  - <sup>7</sup> See also M.A. Orthofer, *The scientist on the stage: a survey*, in *Interdisciplinary science reviews*, v. 27, n. 3, Autumn 2002, Maney, London.
  - <sup>8</sup> Silvana Barbacci, *From the Golem to Artificial Intelligence: science in the theatre*, Jekyll.comm n.3, September 2002, [http://jekyll.comm.sissa.it/articoli/art03\\_04\\_eng.htm](http://jekyll.comm.sissa.it/articoli/art03_04_eng.htm)
  - <sup>9</sup> See Eugenio Barba– Nicola Savaese, *The secret art of the performer*, 1990, Centre for Performance Research, Cardiff, UK, and Jean Marie Pradier, *Ethnoscenology*, <http://www.artweb.univ-paris8.fr/theatre/ethnoscenology/ethnoscenology.htm>

