The Case for Science-Drama: A Historiographic Perspective

1. Introduction

For understanding the Science and Drama interface, the critical term Science-Drama (SD) is introduced in this essay to provide better appreciation of a unique cultural domain that has not been recognized as an independent phenomenon. The essay is a result of my long-time preoccupation with research to locate plays on science themes, this search has been energized by first-hand observation of plays in India and the US. As postcolonial or postindependence Indian drama is the product of intense search for innovative theatre forms and contents, examples of Indian SD are identified and analysed. Before establishing the unique identity of SD, some important Science-Literature oriented studies are critiqued to strengthen the case for SD and at the same time pick up valuable conceptual or theoretical strands from them. It is proposed that the historiographic mapping would establish the significance of SD as a mode of public reflexivity.¹

2. Literature and Science:

Before the dominance of theory, science and literature were seen as two distinct and somewhat antagonistic “cultures”. Attempts to analyse this dialectics have been few and far between. The MLA published a bibliography titled, “The Relations of Literature and Science: An Annotated Bibliography of Scholarship, 1880-1980” in 1987 with clear statement of its limited mandate. The editors of this work pointed out that they had not included background studies that focus on broad or general issues of cultural history and
history of science but had instead concentrated on scholarly studies that dealt specifically with some aspect of the relation of literature and science. They pointed out that the relation between science and literature has existed in various forms. It is noteworthy that both science and literature have generated new concepts and forms but this bibliography, prepared in the pre-www phase, provides a useful backdrop and relevant directions for further analysis. The difficulties encountered by the editors of this bibliography point to the problems related to inclusion of diverse literary material with varied creative impulses and functions. In the words of the editors, the relation between the two domains is by no means self-evident. They worked out the following interlinks between Science or Natural Science and Literature: 1. Literature in Science: highlight the literary qualities of outstanding scientific papers 2. Literature and Science: focus on the similarities between these creative enterprises 3. Science in Literature: draw attention to a writer’s imaginative use of science in the language, thematic content, and structure of a poem, play or a novel.

These findings have been placed in historical stages. Significant information is provided about the specific branch of science that influenced each playwright. Another difficulty faced by the editors related to their Eurocentric position. They clearly stated that for the purpose of this bibliography the designation ‘literature’ included only Western imaginative literature, predominantly American, English, French, and German. On the definition of Science, however, there was less of a problem. They accepted George Sarton’s general understanding of science as systematized knowledge that is cumulative and progressive. In their words, “With some significant differences we followed the practice of the Isis Cumulative Bibliography…which includes among the sciences
physics, chemistry, geography, biology, botany, zoology, anatomy and natural
history…those pseudo sciences that practiced empirical, experimental methods and
achieved prominence as sciences in their own time, such as alchemy, astrology are
included”.  

With our focus on drama, we find that the interweaving of science and drama has been
subsumed within the category literature. The second half of the twentieth century has
been left out in this bibliography. In the face of deeper cultural permeation of
technoscientific issues since then, tracing the patterns of SD becomes even more
significant.

3. Science-Fiction (SF) and Science Drama (SD)

So far as other Science oriented art forms are concerned, Science-Fiction (SF) has moved
dramatically from its status as ‘para-literature’ to a stronger presence in popular
imagination as well as critical analysis. The most definitive study of SF was undertaken
by Darko Suvin in 1979, inspired by Brecht’s notion of “cognitive estrangement”( with
reference to his epic theatre). According to Suvin, “SF is…..a literary genre whose
necessary and sufficient conditions are the presence and interaction of estrangement and
cognition and whose main formal device is an imaginative framework alternative to the
authors empirical environment”.

Jameson, in his recent exploration ‘Archaeologies of
the Future: The Desire called Utopia and Other Science Fictions” has carried forward the
implications of Suvin’s postulate of utopia as a “socio-economic subset of Science
Fiction”. To quote. “…if one follows Darko Suvin, as I do, in believing Utopia to be a
socio-economic sub-genre of that broader literary form. Suvin’s principle of ‘cognitive estrangement’-an aesthetic which, building on the Russian Formalist notion of ‘making strange’ as well as the Brechtian Verfremdungseffekt, characterizes SF in terms of an essentially epistemological function (thereby excluding the more oneiric flights of generic fantasy)-thus posits one specific subset of this generic category specifically devoted to the imagination of alternative social and economic forms (xiv).” Jameson’s study is replete with analysis of 20th century (Western) SF from this perspective, examples of drama are discussed seamlessly-their performative nature is acknowledged but they are subsumed within the SF framework. In the essay titled “Longevity As Class Struggle” in which he analyses Shaw’s “Back to Methuselah (A Metabiological Pentateuch)”, he declares,”….there are genuinely science fictional pleasures coursing through the epic text of Shaw’s ‘metabiological pentateuch’ which some might still be tempted to identify with the canon (328)”. So then, can SF subsume SD? Although Jameson’s remarks evoke resonances, but the element of fantasy does separate the two genres. SD thrives on clearly discernible acts of historicization as opposed to Suvin’s identification of the main formal device of SF to offer “an alternative to the author’s empirical environment”. And yet, Jameson’s statements regarding SF apply to SD though without the proper appreciation of this genre. To quote Jameson,”…the unique new possibilities of this representational discourse-which has come to occupy something of the functions of the historical novel in the beginning of the bourgeois age-are social, political and historical far more than they are technological or narrowly scientific (339)”. SD is much more communicative in terms of the manner or variety of aesthetic methods.
through which cognitive observations are historicized with primacy on human presence. Historiographic mapping of SD will establish the difference vividly.

4. Science-Drama in India: 1940 to 2000

The chronological description of SD will establish the unabated flow of plays on the science theme. Considering the coexistence of multiple theatre traditions: classical/traditional; intermediary/folk; modern, this listing very clearly offers a representative sampling within these or their blends. Considering the presence of theatre performance in pre-literate groups more plays may be available and equally, many more performances may have occurred. In this listing, Indian translations and adaptations of Western texts are also included as they have been ‘Indianized’ and because they reflect the kinds of creative paradigms that have been selected in intercultural process by Indian theatre practitioners. When these selections are contrasted with premodern, modern and postmodern Western SD; the choices eloquently establish Indian aspirations and longings. However, in this essay, the focus is on historiographic mapping of Indian Science-Drama. For reasons of word limit only representative examples are listed, although many more plays have been identified as SD starting with plays performed in the 1940s.

The choice of the 1940s needs to be explained. It offers a period of transition from colonization to political freedom. During a protracted period of colonization, the theatre space had become politicized leading to the Dramatic Performances Control Act imposed on Indian drama by the British colonizers in 1876. Theatre historians have traced a pan-
Indian sense in theatre of this period. Adya Rangacharya went to the extent of stating, “The war of Independence of 1857 was lost on the battle field. But the victory was the peoples’ who, losing the war, won a nation. If, as is said, the police of the British Raj gave an administrative unity, the Indian theatre, without exaggeration, may be said to have forged national unity. How to explain, otherwise, a sudden spurt of theatre activities on similar lines all over India within almost a decade after 1857? “

Similar tendencies of politically charged theatre are noticed in the plays under consideration wherein theatre performance is seen as a vital space for historical reflection and action. For even within tendencies of political theatre, they contain differing audience ideology. In general, they exhibit the desire of Indian theatre practitioners to critique Science as an important but problematic facet of History. If we examine the broad varieties of theatre forms that are separable for further clarity, we will be able to understand the difference between SF and SD at least as a preliminary exercise.

**Historiographic Map of Indian Science Drama: Chronological Listing**

**TITLE OF THE PLAY:** YEH AMRIT HAI

**Playwright:** K. A. Abbas

**Year of Publication/Performance:** 1943-47

**Language:** Hindi

**Operational Theatre Tradition:** Modern theatre

**Thematic Focus:** Struggle between contending forces for the “Amrit”/Elixir discovered by a scientist. Contest between allegorical forces such as Beauty, John Bull, Religion, Hitler
Scientific Concepts or Concern: Generalized, mythic view of the scientific preoccupation with elixir without any reference to the myths, legends or concepts. The elixir as a metaphor of power for which there is contestation.

Many performances of original SD occurred in various regional centres of IPTA with varying degree of complexity.

TITLE OF THE PLAY: LIFE OF GALILEO (Translations)

Playwright: Bertolt Brecht

Year of Publication/Performance: 1969-70

Language: translated in many regional languages from English

Operational Theatre Tradition: Epic, Non-Illusionistic Theatres of Brecht inspired by Chinese and Indian Traditional Theatre.

Thematic Focus: Struggle of scientist to pursue science freely. Democratization of society through knowledge gained. The destructive potential of Modern Science.

Scientific Concepts or Concern: The scientific demonstration of the heliocentric as opposed to the geocentric world-view through models, cyclorama and reference to the use of the telescope.

TITLE OF THE PLAY: SURYA SHIKAR

Playwright: Utpal Dutt

Year of Publication/Performance: 1969-70

Language: Bengali
**Operational Theatre Tradition:** Jatra-Bengal. Intermediary/Folk Theatre tradition often responding to social and political issues. Melodramatic

**Thematic Focus:** ideal of scientific rationality emphasized by choosing an Indian historical situation, the Buddhist scientist Kalhan questions the Puranic geocentric world-view and establishes the heliocentric world-view

**Scientific Concepts or Concern:** Observable examples of the heliocentric world-view.

**TITLE OF THE PLAY:** SOLUTION X

**Playwright:** Badal Sircar

**Year of Publication/Performance:** 1965

**Language:** Bengali

**Operational Theatre Tradition:** Tradition of Comedy initiated by Bengali playwrights of the 19th century

**Thematic Focus:** A dig at scientific experiments for rejuvenation: A combination of fantasy and near fact.

**Scientific Concepts or Concern:** Anchored in scientific probabilities.

**TITLE OF THE PLAY:** TRINGSHA SHATABDI

**Playwright:** Badal Sircar

**Year of Publication/Performance:** 1968

**Language:** Bengali

**Operational Theatre Tradition:** Modern experimental theatre
Thematic Focus: Explication of Hiroshima to the Bengali/Indian middle-class which is largely indifferent to wider historical concerns

Scientific Concepts or Concern: Focus on the atom bomb as product of nuclear science and the participation of great scientists like Einstein in this dystopic enterprise.

TITLE OF THE PLAY: HIROSHIMA

Playwright: E. Alklazi

Year of Publication/Performance: 1970

Language: Hindi

Operational Theatre Tradition: Modern experimental theatre

Thematic Focus: focus on Hiroshima to carry forward the interventionist role of theatre

Scientific Concepts or Concern: Concepts are assessed; the destruction caused by nuclear energy is lamented.

TITLE OF THE PLAY: IN THE MATTER OF J. ROBERT OPPENHEIMER (Translations)

Playwright: Heinar Kipphardt

Year of Publication/Performance: 1970

Language: Translated in many regional languages from the English version

Operational Theatre Tradition: Modern Western documentary drama

Thematic Focus: Scientific Creativity vs. Power Politics

Scientific Concepts or Concern: Specifics concepts are not referred to, but the atomic energy establishment is critiqued and the scientist indicted.
TITLE OF THE PLAY: **LIBERATION**

**Theatre Group:** Kerala Sastra Sahitya Parishad

**Year of Publication/Performance:** 1985

**Language:** Malayalam

**Operational Theatre Tradition:** Intermediary/ “Theatre of Development”/ Street theatre using local folk forms

**Thematic Focus:** Educating the masses about various conceptual and institutional aspects of science

Similar groups thrived in different regions of the country with huge audience participation

**Scientific Concepts or Concern:** The plays were expected to inspire the audience to learn specific scientific concepts for which lectures were organized and reading material in the mother tongue circulated.

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TITLE OF THE PLAY: **EINSTEIN: A TRILOGY**

**Playwright:** Mohan Maharshi

**Year of Publication/Performance:** 1997

**Language:** Hindi

**Operational Theatre Tradition:** Modern experimental theatre

**Thematic Focus:** Explication of Einstein’s theory of relativity to a larger audience

**Scientific Concepts or Concern:** Theory of relativity explained, discursively.
TITLE OF THE PLAY: HARVEST

Playwright: Manjula Padmanabhan

Year of Publication/Performance: 1997

Language: English

Operational Theatre Tradition: Modern experimental theatre

Thematic Focus: Future technologies as a means of exploitation of the oppressed

Scientific Concepts or Concern: Scientific fictional probabilities are dramatized within known socio-economic conditions created by globalization.

TITLE OF THE PLAY: WATER

Playwright: Mahasweta Devi

Year of Publication/Performance: 1987

Language: Bengali

Operational Theatre Tradition: Modern experimental theatre

Thematic Focus: Exclusion of indigenous knowledge systems from modern science.

Inadequacy of modern science to solve people’s problem without concern for justice

Scientific Concepts or Concern: From intuitive indigenous knowledge base the Dome community moves to the idea of harnessing natural resources through building of a dam. Its infinite knowledge base remains unexamined.
5. Significant Findings:

In historiographic terms it can be claimed that there has been an unabated flow of plays/performances on the Science theme in India. Each representative example listed above examines Science as a demanding, new, constantly changing mode of knowledge, but there is a sharp focus on the links between science and political power. In Sircar’s classic, he indicts every historical character who contributed to the creation of nuclear energy in such a way that the audience also begins to see its responsibilities in shaping historical processes. Science is not valorised but problematized. In Utpal Dutt’s *Surya Shikar*, an important astronomer of the Buddhist period is chosen to articulate the significance of ‘objective’ knowledge which was being crushed by the Hindu rulers of that period. Instead of creating theatrical conditions of Brechtian ‘cognitive estrangement’, he exhorts his rural ‘jatra’ audience to embrace scientific knowledge (geocentric as opposed to the heliocentric world-view of Kalhan/Galileo) as a progressive ideal without going through the requisite perceptual/scientific education. KSSP’s *Liberation* presents Science as a force that has been shackled by various regressive economic forces for its benefits. Science needs to be free to become an emancipatory force. *Einstein* is much more hagiographic but Manjula Padmanabhan returns to technoscience as an instrument of power to coerce and exploit the weak.

6. Conclusions

As indicated earlier, in SD, scientific processes, concepts and concerns are grounded in the cultural, historical framework of the playwright/theatre group in a much more explicit manner. It examines the political and cultural conflicts that science as a modern
institution has posed. Unlike SF which has largely been produced in the West, SD has practitioners in India and other non-Western countries as well. SD overlaps with Indian political theatre, educational theatre and the theatre of development.\textsuperscript{6} In the West, more critical variations of SD developed in pre-modern, modern and postmodern theatre. In the intercultural process, the prominence of the Western historical, trial plays is conspicuous.

Multiple avatars of SD have existed since its earliest known examples in the medieval period. These have existed as theatre movements focussed on science or as specific science related thematic explorations by playwrights in their engagement with wider historical issues. Collation of creative work in the field of SD and its dissemination, critical analysis will lead to recognition of dialogic relationship between Science and Drama within the framework of public performance and reflexivity. It will reveal cultural and political issues that have been confronted in the liminal, vibrant ethos of theatre performances to question, understand, and transform the world. The genre demands closer scrutiny.

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