Science theater on stage: Review of the play The Right Way

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MEDIA REVIEW

Science theater on stage: Review of the play *The Right Way*, written by Torbjörn Lindberg, produced by Teater Sagohuset (www.sagohuset.nu), 2019-2020.

Karl Palmås

ABSTRACT
This text reviews a science play that has emerged from a collaboration between performing artists and scientists based in Lund, Sweden. It argues that the play, titled *The Right Way*, can productively be understood as 'science metatheater'. Thus, it belongs to a genre which knowingly and self-ironically brings the viewer's attention to the staged nature of the theater performance. As such, science metatheater moves beyond placing 'science on stage'. Instead, it seeks to place science theater *itself* on stage. By doing so, it front-stages the challenges of 'Sci-Arts' collaborations between scientists and artists, in which competing concerns – aesthetic, epistemological and communicational – may come into conflict with each other.

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Introduction

It is a crisp winter morning at a high school in the north of Sweden. Nevertheless, something out of the ordinary is on the curriculum. A team of scientists from Lund University's Department of Chemistry is visiting, running a workshop on nano-plastics in the human and natural environment. During the opening lecture, a member of the team provides a broad-brushstrokes introduction to the environmental problems to be covered in today's session. Speaking over a PowerPoint presentation, the man tells the high school students that the contemporary world is in dire straits, and that one may wonder whether politics really can cope with the grand environmental challenges facing humanity. Luckily, he suggests, we can still shape our destiny through science and technology.

The Lund University team member seems to be a man of conviction, speaking passionately about the 'right path' towards the future. Still, as the address progresses, the tonality of his speech seems to change. Conviction turns to passion, and passion to agitation. This is a man on a mission – a proselytizer for whom evidence-based science provides humanity with clear guidelines

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for personal action. Clearly, he uncompromisingly judges himself – and others – on the basis of this doctrine.

As the man on stage hectors on about the right path towards the future, he suddenly stops mid-sentence. His PowerPoint has stalled. He hunches over the laptop to reset the ever-erratic presentation software, but bungles the tapping-and-clicking operation, and instead sets off a projection of personal images and videos on the screen behind him. A woman appears in a video recording projected onto the screen. As the presenter turns his back to the audience and instead starts an agitated conversation with the woman in the video recording, most students start to suspect that they are not sitting in on a science lecture. In fact, they are watching a theater performance (Figure 1).

From this point on, this performance progresses with a 'fourth wall' erected between the stage and the audience. This imaginary wall is a standard convention in theater and film productions, implying that the protagonists are ignorant of the existence of an audience that watches the performance. Thus, the man on stage turns his back to the students and instead interacts exclusively with the videoed woman on the screen. From the exchange between the two, the audience learns more about the man on stage: He is a person who possesses a punishing super-ego, seeks total certitude in science, and judges every action uncompromisingly.

At this juncture, all students have realized that they are indeed watching a theater performance. The person whom they thought was a Lund University researcher is in fact a stage actor playing a 'mere' concerned member of the lay public. Taking clues from his agitative conversation with the woman, as a partner or close friend, he must be impossible to live with. Indeed, *he* seems

Figure 1. Torbjörn Lindberg performing *The Right Way*.

unable to live with *himself*. Having gone from agitation to despair, the exasperated protagonist steps off the stage and leaves the room.

Theorizing science on stage

Some twenty years ago, not one but two monographs titled *Science on Stage* were published, both setting out to discuss the relation between science and theater. Each of them went on to become influential, though in different scholarly communities. Published in 2000, Stephen Hilgartner's *Science on Stage* described the enactment of science in public affairs as a theatrical drama. Six years on, Kirsten Shepherd-Barr's *Science on Stage* explored actual theatrical dramas that enact the practice of science. (2006)

Thus, Hilgartner and Shepherd-Barr laid out two different accounts of science dramas, either performed on the metaphorical public stage, or on the literal stage. This division of scholarly labor remains largely intact. STS scholars tend to focus on theatricality (Gluzman, 2021) and performance (Salter, Burri & Dumit, 2017) in the abstract, whereas scholars in communication and literary studies examine actual theatrical plays that feature scientists and scientific concepts (Shepherd-Barr, 2006). The latter approach also tends to be shared by a community of scholars within science communication and public understanding of science (Dowell & Weitkamp, 2012).

This does not imply that one approach is solely interested in theater as abstraction, and the other is solely interested in actual theater productions. Hilgartner's and subsequent STSers' work does of course reference plays such as *Hamlet* (Hilgartner, 2000: 12). Likewise, Shepherd-Barr (2006: 6) pays close attention to the metaphorics of science, stating that what is commonly referred to as science plays are characterized by plots that make use of scientific metaphors. Nevertheless, there seems to be a dearth of cross-referencing between the respective work of STS and communication scholars.

Deployed in tandem, both of these approaches are promising to analyze the science play introduced above, titled *The Right Way* – a co-production by scientists and performing artists based in Lund, Sweden – through the lens of metatheater. Specifically, the play in question can be understood as 'science metatheater' – a genre which knowingly and self-ironically brings the viewer's attention to the staged nature of the science theater performance. As such, science metatheater front-stages the challenges of 'Sci-Arts' collaborations between scientists and artists, where competing concerns – aesthetic, epistemological and communicational – may come into conflict with each other.

Theater as science communication and knowledge-making

As suggested above, Kirsten Shepherd-Barr's 2006 *Science on Stage* is a foundational reference for communication scholars interested in science and theater. In describing this underexplored genre of theater, Shepherd-Barr introduced

the notion of the 'science play' (p. 1). The list of such theater productions is long. Commentators tend to cite classic plays like Bertold Brecht's *Life of Galilei* (1943), Friedrich Dürrenmatt's *Physicists* (1962), Heiner Kipphardt's *The Case of J. Robert Oppenheimer* (1964), Tom Stoppard's *Arcadia* (1993) and Michael Frayn's *Copenhagen* (1998). These productions all fit into Shepherd-Barr's definition of science plays, inasmuch as they are 'interdisciplinary' productions that 'take science as their subject matter and scientists as their protagonists' (Shepherd-Barr, 2006: 1).

Still, as Emma Weitkamp and Carla Almeida argue in their recent volume *Science & Theatre: Communicating Science and Technology with Performing Arts*, the study of science and theater has 'expanded and diversified' considerably since the publication of Shepherd-Barr's 'landmark text' (Weitkamp & Almeida, 2022, p. 15). In the 2010s, communication scholars branched out from discussing plays written about scientists or science by established playwrights. Gradually, they started to explore science theater as a collaborative encounter between scientists and performing artists. Given the disciplinary orientation of these scholars, this Sci-Arts phenomenon was naturally conceptualized as a mode of science communication (Dowell & Weitkamp, 2012, p. 891). As such, these researchers moved towards evaluating such projects from a science communications perspective, studying audience responses as well as the experiences of the participants, be they scientists or artists (Amaral *et al.*, 2017; Weitkamp, 2021; Fraaije *et al.*, 2022).

As a part of this development, the science theater has also become used as a tool in the ever-expanding toolbox of Responsible Research and Innovation. Usually abbreviated as RRI, this European Commission-endorsed framework seeks to ensure that the work of scientists and engineers is in alignment with social and environmental objectives. In the context of this framework, science theater may be employed as a tool to further the inclusion of broader publics in anticipating technoscientific futures. In his study of one such theater project, Michael Reinsborough (2020) insists that the science communication benefits of such projects should be understood as merely one 'distinct aspect' of Sci-Arts endeavors. Otherwise, 'aesthetic, scientific or social science/philosophical research agendas' may be 'subsumed to the assumption that the primary or only value of art-science collaborations is as a form of public engagement or science communication'. (p. 100-101) A one-eyed focus on communicational aspects may eliminate the opportunities for new insights – epistemological, as well as aesthetic – in the encounter between scientists and artists. Reinsborough further suggests that power differentials between scientists and artists may cause the latter to curb their ambitions for the collaboration – artistic objectives tend to be the first ones to be sacrificed at the altar of science communication.

This concern regarding instrumentalization is central to recent work in STS, specifically the development of the new sub-field of Art, Science and

Technology Studies (ASTS). In the introduction to the *Routledge Handbook of Art, Science and Technology Studies* (2021), Hannah Star Rogers and Megan K. Halpern suggest that the instrumentalization of art for science-specific purposes is a re-occurring theme of Sci-Arts collaborations (p. 8). As stated on the back cover of this near 700-page tome, STS scholars have resisted such communication-centric instrumentalization, which in part explains the above-mentioned disjunction between STS and communication scholars.

This, however, is not the sole ambition of ASTS. As mentioned above in the description of Hilgartner's *Science on Stage*, STS has tended to engage with theater as a resource to understand epistemic practices. For Hilgartner, the stage metaphor was primarily a way to describe the doing of science. The same can be said for more recent work in the ASTS field: In her contribution to the ASTS handbook, Gluzman (2021) is not interested in theatricality in the sense of 'related to theatre' but in the more abstract sense of performances 'marked by pretense or artificiality' (p. 251). Similarly, when Chris Salter, Regula Valérie Burri and Joseph Dumit (2017) discuss the notion of performance in relation to art and STS, they focus on how the term has been adopted by STS scholars studying the work of scientists.

In STS, then, theater has been mobilized for new models of describing epistemological practice – indeed, as a variation on the grand project of studying science as culture. As a recent extension of this longstanding endeavor, ASTS seeks to deploy the canon of STS ideas and practices in order to study artistic practice. Put bluntly, ASTS proposes that the science-as-culture toolbox can be reused for the study of culture-as-science. Crucially, this ambition hinges on the idea that art can be construed as a knowledge-creating practice. Thus, Rogers and Halpern (2021) call for a generalized symmetry that treats 'both the products of art and science as knowledge products', which also implies 'treating art and science as knowledge systems whose practices can be followed and as communities whose dynamics can be examined' (p. 14). In other words, ASTS implies that STS scholars can conceive of 'art as a comparative knowledge-making community' (Rogers, 2022: 8) – such as the play *The Right Way*.

The right way: the Lecture that Wasn't

The Lund University science theater project is a collaborative effort between scientists at the Department of Chemistry and the Lund-based theater production company Sagohuset. The performer on stage, Torbjörn Lindberg, also wrote the script for the play. In describing the early phase of the collaboration with the Lund scientists, he does recall being wary of the general problem of artistic creation becoming instrumentalized as a mere conduit for science communication. (Interviewed by the author on 8 December 2022.) However, an equal artistic concern of his was about the scientists being too equivocal: How does a playwright produce a script on the 'material' of science, when

the collaborating scientists fail to provide clear and univocal responses to the concerns of the lay public?

Lindberg's initial sense of creative frustration regarding how to navigate this Sci-Arts collaboration developed into the main theme of the play. As such, the production is a meditation on the illusion and inability of science to provide the lay citizen with straightforward answers on how to live our lives in the face of a looming environmental crisis. The frustrated man on stage is mirroring the frustrated playwright: Both want scientists to act as sages who make sense out of a chaotic world. Both are provoked by scientists' refusal to adjudicate on how we and others should exercise our freedoms.

Construed as science theater, the Lund play diverges from some of the above-mentioned classics. Unlike, say, Frayn's *Copenhagen*, the protagonist is not a scientist: Again, as mentioned in the introduction, midway through the performance the audience realizes that whom they thought was a researcher is in fact an actor playing a 'mere' concerned member of the lay public. Moreover, the Lund production is not drawing upon scientific metaphorics that characterize the science plays studied by Shepherd-Barr (2006: 6). For instance, *Copenhagen* introduces Heisenberg's uncertainty principle as a metaphor for the unknowability of the actual unfolding of a specific historical meeting, and the unknowability of human relations more broadly. *The Right Way* does not make use of any such plot device.

Nevertheless, it is possible to place *The Right Way* alongside established literary classics, thus analyzing it in the fashion of a literature scholar. For example, the play can be compared to Albert Camus' last novel *The Fall* (Camus, 1957). In both works, we encounter protagonists who struggle to lead unimpeachable lives, and who judge others and themselves by impossible standards. Both *The Right Way* and *The Fall* suggest that this is a common predicament: In modern life, none of us can live up to our expectations of virtue. Camus' classic is often interpreted as a comment on the futility of searching for durable systems of values that are both intellectually rigorous *and* actually practicable. This search sends the protagonist on a downward spiral of judging himself and others. This also seems to be the predicament of the tormented man on stage in the Lund production.

A theater performance satirizes the inflated pretentions of scientism: How does this work as an opener to a full day of discussions and experiments about nano-plastics in the human and natural environment? Mikael Ekvall – one of the participating researchers from the Department of Chemistry – suggests that this 'deflating' approach served as a surprisingly productive entry point to the subsequent exercises. (Interviewed by the author, 12 October 2023.) Having started out in 2019 in the southern region of Scania (*Skåne*), the play and workshop started touring throughout Sweden during 2020. At this point, some 1500 students have participated in the project.

When science communication enters the stage

In analyzing this Sci-Arts endeavor, one may first restate the point that the Lund project is somewhat unorthodox. Not only is the protagonist not a scientist – the subject matter is not science or technology. This is unlike the theater productions discussed by recent publications on science theater. In their review of the field, Fraaije *et al.* (2022: 694) hint at a focus on nanotechnology (de Ridder and Vignone, 2012; Last, 2012), biotechnology (Reinsborough, 2020) and information technology (Altamirano-Allende & Selin, 2016). In contrast, the subject of *The Right Way* is science communication itself. At stake are the desires placed on science – as stable, univocal message – by members of the lay public.

Thus, there are elements of metatheater in the Lund production, inasmuch as it knowingly acknowledges the fact that the audience is watching a play. The metatheatrical is evident in how the play manipulates the conventions of the performance (such as the fourth wall), bringing attention to its artificial and 'staged' nature. This aesthetic strategy is as old as theater itself; metatheatrical elements have been present throughout the history of the drama form. The most well-known example is perhaps Shakespeare's *Hamlet*, whose protagonist 'is the first stage figure with an acute awareness of what it means to be staged' (Abel, 1963: 47).

This strategy proves effective in the context of science theater. Through metatheater, *The Right Way* front-stages the above-mentioned challenges faced by the science theater genre. Specifically, it deconstructs the conventions of the trustworthy-scientist-communicating-science-to-high-school-students. In a recent anthology on science and theater edited by Shepherd-Barr, Mike Vanden Heuvel (2021: 133) distinguishes between two types of science theater: The didactic lecture aimed at 'explication', and the open-ended 'exploration' performances where meaning is co-created by the audience. Using this terminology, one may say that *The Right Way* enacts the breakdown of the explication-oriented science theater. In the wreckage of the supposed lecture – in the ruins of this purely didactic project – an exploratory experience emerges.

Thus, science metatheater can be understood as a knowing, self-reflexive and self-ironic mode of expression. Here, we may draw on Reinsborough's (2020) discussion of the interrelation between epistemological practice and aesthetics in Sci-Arts projects. Reinsborough cites philosopher Alexander Gottlieb Baumgarten's conception of aesthetics as 'a practice to organize or relate our sensory experience to a cognitive process'. (p. 99) This goes some way in describing the science metatheater aesthetic. If the problem of aesthetics is how we make sense of what we see, then the science metatheater aesthetic is one that brings the viewer's attention to the staged nature of science theater. In extension, it highlights the constructed and negotiated nature of Sci-Arts collaborations more broadly.

Science metatheater productions like *The Right Way* move beyond placing 'science on stage', instead seeking to place science theater *itself* on stage. This front-staging may inform other Sci-Arts projects – perhaps operating outside of the performing arts – as they negotiate competing communicational, epistemological and aesthetic concerns. Science metatheater shows how Sci-Arts projects can create aesthetic experiences that counterbalance an otherwise all-too-didactic, explication-oriented approach to science communication. As such, it may serve as one out of several artistic strategies that ensure that the Sci-Arts movement remains vital and relevant.

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