Larger than Life

Scientific Theatre between Representation and Enactment

Nele Wynants

All the World's a Stage[1]

In *Nausea* (2014), the Belgian-Swedish artist Oona Libens explored the marvelous, mysterious underwater world by means of primitive projection devices.[2] A voice that sounds like it's coming from an old, crackling radio takes the audience in the theatre on a visual trip along the glistening water's surface to the dark ocean floor in an episode reminiscent of an outdated nature documentary. As we watch the screen on the stage from our seats, we are informed about the most bizarre of marine lifestyles. *Celeste* (2012), the first work in Oona Libens's trilogy of her so-called poetic-scientific performances, offered a journey through the universe. In this work, Libens's shadow theatre

1. This essay originates from the panel "Scale-framing the Anthropocene: Geological Consciousness in Performances Past and Present" that was part of the conference "Theatre and New Materialisms" (Montréal, 27–29 May 2019). The panel took its cue from *Inside* (2017), a lecture performance by Bruno Latour and Frédérique Aït-Touati on modes of representation of earth in what they have termed the new climatic regime (seen on 24 November 2018 in Kaaitheatre, Brussels).
2. For images and short film clips of Oona Libens's work, see her website: https://oonalibens.com/.

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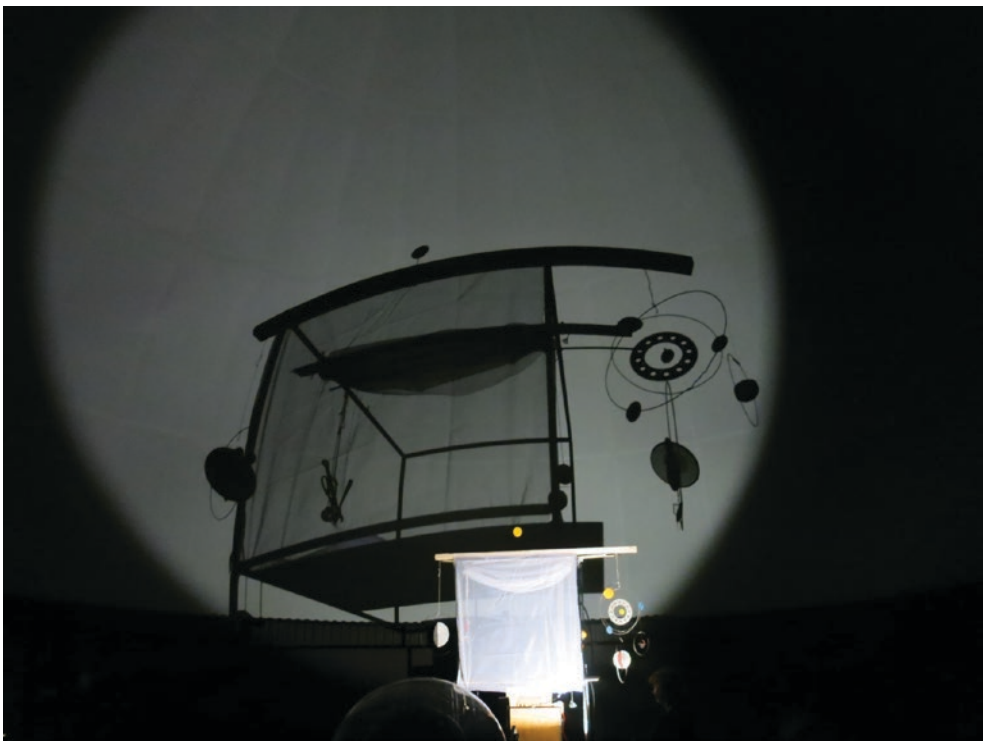

Figure 2. Celeste *(2012), the first in Oona Libens's poetic-scientific trilogy. Planétarium, Lieu Multiple/ Espace Mendes, Poitiers, 2018. (Photo © Gilles Demoor)*

is an observatory in which suns, moons, planets, and other celestial bodies pass in review before the telescope. The story is inspired by Athanasius Kircher's book *Iter exstaticum* (1660), in which the main character is invited by an angel to go on a space trip through our solar system to learn the qualities of the celestial bodies. Just like the angel, Libens takes us on a journey. Our trip is to the sun in an imaginary boat of asbestos (so as not to melt), as we are told by the narrator. We then continue the visual trip far beyond our own solar system, trying to find a convenient place to moor.

Libens's aesthetic is at once simple and ultimately refined. In a type of large-scale marionette theatre, she crafts an enchanted universe held together with wires and projections. The result is a complex construction of fragile mechanisms, wheels, ropes, shells, fishhooks, pieces of paper, and cardboard. The soundtrack is provided by an old-fashioned tape recorder. The artist breaks away from the two-dimensional screen to create an analogue virtual reality that occupies the middle ground between an instructional, scientifically informed documentary and an appealing abstract animation film—her poetic-scientific aesthetic.

Figure 1. (facing page) Artist Oona Libens operates a slide projector onstage in Nausea. *August 2016, Amok, Aalst. (Photo by Annelien Vermeir)*

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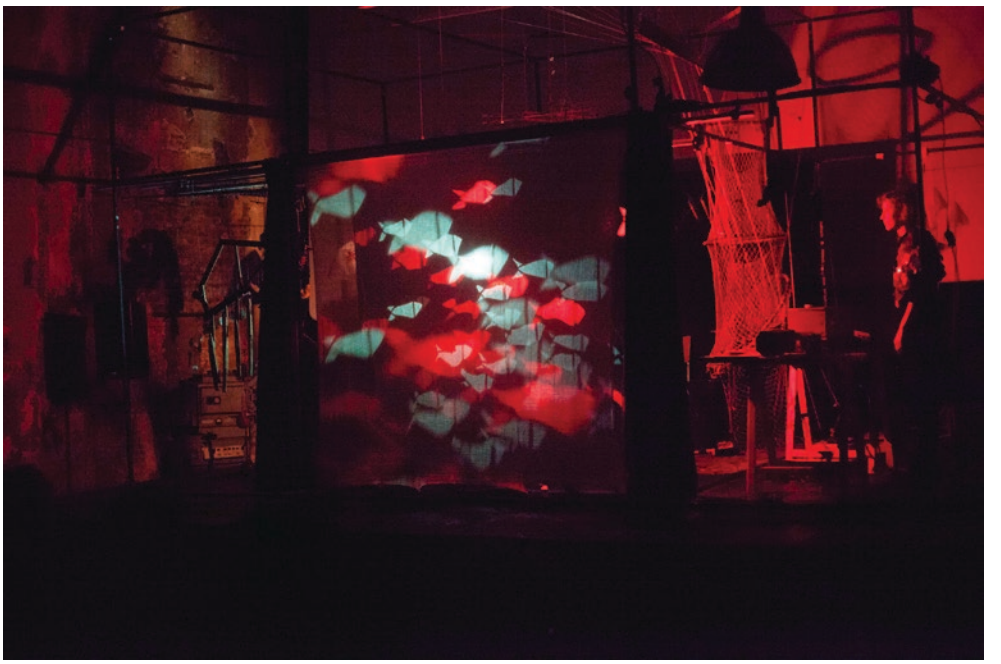

Figure 3. Live animations visualizing the mysterious underwater world by means of primitive projection devices in Nausea*, a performance by Oona Libens. 2 November 2016, Cinema Nova, Brussels. (Photo by Annelien Vermeir)*

In this series of performances, Libens positions humans in relation to the immeasurable expanse of the universe—which is virtually impossible to represent—as well as in relation to the micro-cosmos of fish, microbes, and bacteria, which are invisible to the naked eye. Libens's scientific shadow theatre clearly resonates with older popular science traditions of early modernity, such as anatomical theatres and traveling anatomical cabinets, spectacular demonstrations involving the early microscope, and planetarium performances. Both scientists and show people drew upon available scientific instruments to capture the invisible and incomprehensible: from the microscope, the camera obscura, and the magic lantern to photography and film (as well as today's remote sensing technologies such as satellites and aerial photography), these instruments rendered a realistic and true-to-life representation of the immeasurably small or vastly distant. Consequently, our views of nature, the world, and the universe have been determined in large part by these early media and scientific instruments, which unsurprisingly originate from the Age of Enlightenment, aka the Age of Reason, when scientific progress was celebrated. This anthropocentric worldview culminated with the Kantian subjects' perspective of the world as an object.

Today, in light of climate change, we must, with Bruno Latour in mind (2015, 2019), acknowledge that these dominant modes of representation of planet Earth are no longer adequate—and have never been. The "new climate regime," according to Latour, indeed requires alternative visualizations of how human beings are, and have always been, radically intertwined with their material and nonhuman environment(s) within the Anthropocene—a highly disputed label for the Earth's present epoch, our multimillennial span of geological time.[3] The theatrical space seems to

3. The term was coined by atmospheric chemist Paul Crutzen and biologist Eugene Stoermer in the May 2000 *International Geosphere–Biosphere Program Newsletter*; it has been cited since in a growing number of texts. However, the term is subject to discussion: the dates vary wildly from 1945 to 3000 BCE, the proof from sediments used to detect the neat mark of that geological period are still unsettled, and the politics of it are fuzzy.

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be an ideal environment to develop such alternative visualizations and, by extension, explore the intertwined relationship between humans and nonhumans (see for example Kershaw 2007; Bleeker and van der Tuin 2014; Schneider 2015). The theatre can offer a stage to both actors and nonhuman entities—not coincidentally also the reason why Latour has increasingly opted for a theatrical *dispositif* to communicate his thoughts and concerns about humanity's place and role in the current climate crisis. Latour and his collaborators, including historian of science and theatre director Frédérique Aït-Touati, more particularly advocate the heuristic and modeling capacities of the theatre to express what it means for humankind to be implemented in its material environments. The theatre can stage and visualize discussions of the Anthropocene as a strategy for representing geological changes in ways that make humanity's entanglement with a multitude of nonhuman materials, spaces, and temporalities more comprehensible. Moreover, Latour is convinced that art and performance do not only have the capacity to represent theoretical ideas, but also that they have the potential to change political reality by exploring alternative representations (Latour 2016).

Also within theatre and performance studies, reflections on climate change have been made at the intersection of performance studies and ecocritical new materialism with attention to the nonhuman world and nonhuman (f)actors. This emergent cluster of scholarship addresses questions on the agency of objects and the forces of materialization, increasingly blurring the borders modernity had built up between the animate and the inanimate. This relatively recent "material turn" in a wide range of scholarly disciplines is difficult to define or demarcate, but new materialist authors share a concern for the agency of matter and aim for a fundamental rethinking of what matter *is* and *does* (Coole and Frost 2010). Starting from a critique of the anthropocentric worldview, in which humanity conquers its material environment with the help of technology, the aim is to reconsider the relationship between humans and things, meaning and matter. This requires a radical rethinking of hierarchies, and the search for a more horizontal relationship in which people and things are interrelated acting entities.

In light of Latour's conceptual framework in relation to ecocritical new materialism, Libens's performances can be considered invitations to reflect on the entanglement of humans and technology in historical and contemporary practices of producing, representing, and sharing knowledge about the universe. Moreover, through her playful use of technological instruments and media in a live performance, the artist makes the materiality of this intertwinement of humans and artifacts plainly visible and concrete.

Microcosmos of the Body

In *Soma* (2019), the final piece of Libens's trilogy, the object of study is the microcosmos of the human body. The anatomical lecture opens with the skin: the boundary between inside and outside, or in the words of the artist, "that touch screen of the human body."[4] She visualizes the sense of touch literally, through the magnified projection of her own hand with a magic lantern live onstage. Together with an onstage assistant, she then disappears into the self-made mini theatre box onstage where they create simple but imaginative visual effects, as nearly invisible shadow actors in a puppet show. Through animated images created live, we follow the path of a piece of cake that is brought to a mouth by her projected hand, thus beginning its descent through the "digestive system"—in the laconic words of the artist, "a live stream through the blood stream." Libens and her assistant gradually descend deeper into the human body. An eloquent radio narrator comments on the different scenes and informs us about the respiratory system, the immune system, the nervous system, and the cognitive system.

Soma does not only provide a witty reflection on medical imaging of the human body; the performance also demonstrates the cultural evolution of body perception and preferences. After we follow the live animated projections through the inside of a body, the lesson begins with the historical beauty ideal of the Greek *contrapposto* and shows how this classical dream image evolved

4. All quotes from *Soma* are from notes I took at a performance at Les Brigittines in Brussels, 30 November 2019.

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Figure 4. The audience witnesses how Oona Libens creates her images like a puppet master live onstage in Soma. *30 November 2018, Les Brigittines, Brussels. (Photo by Annelien Vermeir)*

into the trained Botox bodies that populate contemporary fitness centers. In Libens's theatre, the inflated muscular bodies of gym enthusiasts burst into psychedelic virtual images. Concisely, in this imaginary dissection of the body, Libens combines the history of anatomy and a contemporary view of physicality with futuristic ideas of transhumanism, in which speech technology, artificial intelligence, and robotics focus on the relationship between body and technology. In *Soma*, this speculative science is playfully portrayed at the moment when the old-fashioned radio narrator loses his voice and a computer voice takes over, complaining cheerfully about today's beauty and health standards.

The images for the various stages of the lecture-performance are created in real time, using historical and more recent projection mechanisms, from shadow theatre (as the most primitive form of moving images) to many other analogue projection media (homemade lamps, 16mm film, slide projections, and episcopes), which Libens operates onstage. The techniques include, for instance, a self-made magic lantern, an early form of image projection that was particularly popular during the 19th century and well into the 20th. It was an exceptionally important instrument in education and entertainment, and science and media historians regard it as one of the most critical developments in visual mass media in the Western world.[5] Hand-painted and, later, printed images on glass plates

5. On the magic lantern see Mannoni (1995); Crangle, Heard, and Van Dooren (2005); and Dellmann and Kessler (2020). Scholarship on the magic lantern has expanded in recent decades, thanks to funded projects such as: Media-Historical, Methodological, and Media-Technological Principles of the Digitisation of Works in the Historical Art of Projection (2014–2017, Trier University); Screen 1900 (Trier University); A Million Pictures. Lantern Slides as Artefacts in the Common European History of Learning (2015–2018, Utrecht University, University of Exeter, University of Antwerp, University of Girona, and University of Salamanca); Heritage in the Limelight: The Magic Lantern in Australia and the World (2016–2019, Australian National University); The Magic Lantern as a Tool for Mediated Science Communication in the Netherlands, 1880–1940 (2018–2022, Utrecht University); Performative Konfigurationen der

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were projected for curious audiences. These types of early visual media constitute an important source of inspiration for Libens, who uses them in dialogue with modern visual techniques such as film and digital media and integrates them into her live theatre. In the combination of these analogue techniques, we see the imagery emerge. It is at once poetic and instructive, like Libens's 19th-century predecessors: scientific theatre that was both educational and spectacular. By calling her company Teatro Dondolo, a reference to 19th-century traveling puppeteers, Libens explicitly positions herself within a longer tradition of traveling artists whose spectacles introduced scientific experiments, new technologies, and a changing visual culture on their routes along towns and cities.

Just consider the many anatomical cabinets that traveled to European fairs, informing audiences about human anatomy and its deviations.[6] These cabinets stocked with wax figures were initially intended as instruments to be used in the education of medical students. In the second half of the 19th century, however, anatomical museums became a popular attraction at fairs. In these itinerant museums, cross sections and parts of the human body introduced visitors to the development of new life, childbirth, surgery, and diseases, as well as the terrible consequences of sexual promiscuity (e.g., syphilis). In the 1830s, microscopy also attracted great public admiration. Tiny insects and vermin in a drop of water were magnified to monstrous proportions with a projection microscope, to the horrified amazement of the audience. For the first time, people could see things that were invisible to the naked eye (see Wynants 2019). At the same time, from the mid-19th century onwards, magicians referring to themselves as "Professor" demonstrated insights from the fields of astronomy and physics on theatre podiums and at fairs (see Vanhoutte and Wynants 2017). This also happened to be a time when interest in the telescope was turning stargazing into public entertainment. Telescopes were set up in public areas—boulevards, bridges, and squares in Paris—staffed by amateur astronomers who offered a glimpse into the spectacle of the heavens, or, in the words of David Aubin, the "spectacle of science" itself (2017:126), to anyone willing to pay a few *sous* or pennies.

All these examples of scientific theatre illustrate how these instruments aided the human eye in seeing everything from the movements of the celestial bodies to the interior of the body. They provided mediated access to invisible knowledge about the world and thereby shaped our relation to that world. It is in that sense no coincidence that vision and optical devices have often been used as metaphors to theorize knowledge and express the relationship between the knowing subject and object. As Jonathan Crary has convincingly demonstrated, the camera obscura, for instance, with its enclosed space of representation, visualized for the 17th- and 18th-century observer contemplating and examining images of the world the veracity and stability guaranteed by the natural operation of this monocular decorporealized optical device (Crary 1992). Crary observes a shift in human perception in the 19th century as a result of the development of new visual media such as the panorama, stereoscopy, and later film towards a more subjective vision, which he considered to be part of "a broader process of normalization and subjection of the observer" (1992:17).

Libens's performance series appears to be a cheerful variation on this theme, but with a contemporary critical twist. Her work is indeed inspired by modern and early modern scientific experiments and findings, but the focus is not so much on the objectified relation between subject and object, the dissemination of knowledge, or a celebration of media as an extension of the human. Instead, she seems to draw attention to the specific configurations of scientific knowledge production and the representations of such knowledge.

Projektionskunst in der populären Wissensvermittlung. Medienarchäologische Fallstudien zur Geschichte der Gebrauchsmedien und des Screen (University of Marburg); and B-Magic—The Magic Lantern and its Cultural Impact as Visual Mass Medium in Belgium (1830–1940) (2018–2022, University of Antwerp, Université libre de Bruxelles, KU Leuven, Université Catholique de Louvain la Neuve, KASK HOGENT and Utrecht University).

6. On itinerant anatomical cabinets see Py and Vidart (1985); Pirson (2009); and Bates (2016).

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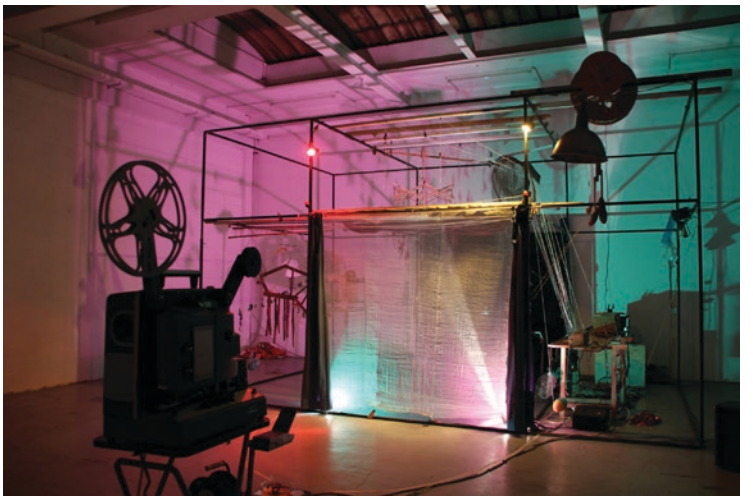

Figure 5. Oona Libens's mechanical stage, built for Nausea*, with projection equipment and all sorts of cloths, ropes, and pulleys to create visual effects. Croxhapox, Ghent, 2015. (Photo © Oona Libens)*

Libens's shadow theatre is literally a viewing device: observers see the masterful manner in which the images are constructed with light, shadow, paper, and cardboard, as well as how they are brought to life in the projections through the gestures of the puppeteer. Libens shows the messy process through which images are created. We are reminded, for example, that scientific knowledge about reality is always mediated by the instruments that are available to science at a given moment in time, and that our knowledge of the world is always a historical, social, and technological construction. This notion was also conceptualized convincingly by Latour and his colleagues in the field of science and technology studies. In *Laboratory Life* (1979) and, later, in *Science in Action* (1987) Latour demonstrated that scientific facts are not "suddenly" discovered by individual geniuses, but that they always emerge within a social context and are the result of a messy process: the knowledge that people have about the objects that make up their world is also dependent upon their relationship with that world.

Karen Barad goes a step further. In *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*, she draws on the work of quantum physicists Niels Bohr and Werner Heisenberg, who demonstrated in the 1920s the role of instruments in scientific knowledge production: how things come to be known, and how to decenter the human knower (2007:379). In brief, the act and the instrument used for observing change what is observed. Barad combines this quantum "entanglement" with theories of performativity (for example Judith Butler's influential *Gender Trouble* from 1990), reiterating Bohr and Heisenberg's idea that "the nature of the observed phenomenon changes with corresponding changes in the apparatus" (106). Therefore "concepts are defined by the circumstances required for their measurement" (109). Through what she calls a "diffractive methodology"—deliberately choosing an alternative visual metaphor—Barad conceives the world as a whole rather than as separate natural and social realms.

Inside the Universe

The idea that humans and objects are juxtaposed within a networked relationship also resonates in Latour's recent thinking on climate change. A central notion in Latour's argument is that, since the advent of the Anthropocene, human beings have been radically intertwined with their material and nonhuman environments. According to Latour, we are implied within and have an impact on our surroundings. *Inside* is the well-chosen and telling title of his 2017 lecture performance on this theme, aided by impressive electronically designed visuals and graphics, which he took on tour to European theatres.[7] In the performance, directed by Frédérique Aït-Touati, Latour convincingly argues that if we want to cope with the climate catastrophe, we should have the courage to withdraw humanity from the center of our worldview and explore alternative ways of imagining our world—which he refers to as "representations" throughout the lecture. Latour wonders

7. I attended the performance in Kaaitheater, Brussels, on 24 November 2018. See also Latour's website for a video of the performance: http://www.bruno-latour.fr/node/755.html.

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Figure 6. Bruno Latour in Inside*, a lecture performance by Latour and Frédérique Aït-Touati. 24 November 2018, Kaaitheater, Brussels. (Photo © Dorothea Tuch)*

whether it would be possible to change the way we view the earth, no longer seeing it from a distance as a blue marble in space, but from the inside out. The aim is to offer an alternative visualization that allows a shift from a planetary vision of places located in the geographic grid to a representation of events located in what Latour and his crew of scientists, artists, and engineers call a "Gaiagraphic" view (Arènes et al. 2018). In this holistic "theatre," human actors share the stage with other types of nonhuman actors. The human actor is then part of an "apparatus that [...] allows silent things to speak as if they were able to speak" (Latour 2015:45).[8] Taking new agents into consideration within a new "relationship to the world" that is no longer based on a distinction between nature and culture amounts to "faire monde," a formula borrowed by Latour from Donna Haraway, the French translation of the term "worlding" proposed in Haraway's *Staying with the Trouble* (2016).

Knowledge has indeed, in the Western/Cartesian tradition, preeminently been thought of as a relationship between humans and their environment, with humans in the position of dominance. Since nature has no voice, humanity gave it one through the representations that were made from its environment. Such conceptualizations often show up in the form of what Haraway calls "the god trick," the illusion that objective knowledge is an eye "seeing everything from nowhere" (1988:581). Latour as well points out that the idea that we can stand back and behold nature at a distance, as something discrete from our actions, is an illusion. There is no such thing as a view from nowhere; according to Latour, we are always implicated in the creation of our view. Both scholars dismiss the Western image of the world as a globe because it positions the human "outside" of it. As human beings we are radically implicated in our material and nonhuman environments. Haraway advocates for an embodied, situated knowledge that recognizes this position. She reclaims the sense of "vision" not as a route to a disembodied doctrine of objectivity but as a means "to find our way through all the visualizing tricks and powers of modern science and technologies that have transformed the objectivity debates" (582). Because, again in the words of Haraway, the "'eyes' made available in modern technological sciences shatter any idea of passive vision; these prosthetic devices show us that all eyes, including our own organic ones, are active perceptual systems, building on translation and specific ways of seeing, that is, ways of life" (583).

This idea becomes less abstract if we consider Libens's performances, which literally unveil how images are produced. She reminds spectators that the knowledge we think we have regarding anatomy, our natural world, and the universe is always a representation, brought about through the mediation of scientific instruments and their users. Libens's performances indeed demonstrate

8. Originally: [Un] "appareillage qui [...] permet de faire parler les choses muettes comme si elles étaient en mesure de parler" (Latour 2015:45). In 2015, Latour literally put this idea into practice in *Théâtre des négociations—Make This Work!* Students from all over the world met at the Théâtre Nanterre-Amandiers in Paris in order to "pre-enact" the COP 21 United Nations climate change conference to be held a few months later in Paris. Whereas at COP 21 only nation-states would be represented, students in Latour's theatrical preenactment negotiated on behalf of human communities whose interests differ from nation-states (e.g., NGOs, Indigenous Americans); some students also represented nonhuman entities such as oceans, soils, the atmosphere, forests, and endangered species. This experiment is at the core of the last chapter of *Face à Gaïa* (2015).

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that what we perceive as outer space, the underwater world, and the inside of the human body are not unaltered as if viewed through a transparent window, but in fact are technologically produced imaginings of what these natural worlds must be like. The performances remind us of how our understanding of the world (in various historical periods) is based on what is available to human perception as well as the tools and technologies that have helped us to discover that world.

Theatre of Objects

In contrast to the immersive dispositif of Latour's *Inside*, with its technologically sophisticated visuals that remain part of a representational regime, the theatrical world of Libens is handcrafted from low-tech machinery comprising ropes, pulleys, fish hooks, and analogue media. In her shadow theatre of objects, she recombines, like a bricoleur, a variety of representational conventions and techniques. Although this bricolage universe may look playful, her choice of analogue representational media is not an expression of childlike naïveté or romantic nostalgia for a forgotten past. Libens opens a corridor between the present and the past, drawing attention to the recent history of our current mediatized times. This return to a predigital, analogue world reminds us of the material foundations of contemporary media and technology. Her tactile, mechanical approach exposes the processes (and microprocesses) that are usually invisible (or concealed) in the standard design of engineering models that aim to achieve a type of magical, immaterial experience of technology. These tracings of the analogue prehistory of technology draw attention to the degree to which relationships between humans and technology have transformed as technology has developed, and how these relationships affect the ways in which the world and the universe can become known.

Moreover, in Libens's theatre of objects, nonhuman actors take center stage. At the beginning of the performance spectators see Libens as a puppeteer in a mechanical theatre—historically known as a *theatrum mundum*. Eventually she, as a human actor, disappears from the center of the scene to merge with the machinery and yield the stage to objects and nonhuman entities. The central characters in her theatre are no longer human beings but fish, algae, and seaweed; stars, comets, and planets. Even in *Soma*, the human body is reduced to cells, bacteria, molecules, and bodily functions. Of course, one could argue that Libens, as a human being, is still the one who holds her fingers on the puppet strings of the otherwise inanimate objects—and this live human presence onstage is commonly understood as the ontology of theatre, the "copresence" of living beings within the "here and now" of space and time (Fischer-Lichte 2008:32–33). But if we, with Rebecca Schneider, turn this perspective the "other way around" (2015:10) we could see how these objects and things initiate and choreograph Libens's behavior as well. Libens's analogue machinery is slow and fragile, and it falters at times, leaving spectators holding their breath. These are among the best moments of the performance, when the only thing that can be seen is the silhouette of Libens interacting with the objects onstage, trying to respond to what their agency has set in motion: the floating body of a bodybuilder suddenly collapses, and the only thing left is a swirling plastic sheet that the puppeteer tries to reanimate; the mobile objects in the shadow theatre determine the rhythm and movement of Libens's shadow dance.

What is on show are the intra-actions between a human and nonhumans in a specific relationship. In this way, Libens's aesthetic resonates with Latour's discourse on how human beings are radically implicated in their material and nonhuman environments, making it impossible to have an external objective viewpoint from which to view our world. Knowing that such thinking requires a paradigm shift in how we reflect, imagine, and represent the world, a theatre of objects can spark the imagination and express new worldviews. Therein lies its strength. In a playful twist on the format of the lecture-performance, Libens's theatre invites us to take a new look at representations of knowledge in order to explore alternative visualizations of the world we think we know.

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