L'ARTE E LO SPAZIO DELL'ANATOMIA: ORIGINI, STORIA E FUNZIONI DEI TEATRI ANATOMICI

a cura di Chiara Mascardi

THE ART AND SPACE OF ANATOMY: ORIGINS, HISTORY AND FUNCTIONS OF ANATOMICAL THEATRES

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In copertina: il teatro anatomico di Modena durante la mostra Gare de moi di Carlo Benvenuto, 15 Settembre - 31 Dicembre 2018, a cura di Chiara Ianeselli (Ph. Rolando Guerzoni).

On the cover: the anatomical theatre of Modena during Carlo Benvenuto exhibition Gare de moi, September 15 - December 31, 2018, curated by Chiara Ianeselli (Ph. Rolando Guerzoni).

Opere/Artwork
Carlo Benvenuto, Senza titolo, 1999, vetro di Murano, cm 10 x 12 cm 9 x 14 cm 9 x 12
Carlo Benvenuto, Senza titolo, 2018, C-print, cm 160 x 124
Carlo Benvenuto, Senza titolo, 2018, C-print, cm 24 x 24

On swedish nature. Olof Rudbeck and the Uppsala Anatomical Theatre of 1662

Christine Beese

Ruhr-Universität Bochum

ABSTRACT.

The anatomical theatre at the University of Uppsala (1662-63) was more than a space for the scientific dissection of bodies. Rather, it embodied the anthropological construction of a Swedish identity developed by its builder Olof Rudbeck in the four-volume work Atlantica. The following shows how Rudbeck created a space of representation and experience through his choice of formal models, materials and technical solutions, in which the essence of Swedish nature was to be explored and cultivated at the same time.

Parole chiave: Architettura, Storia della conoscenza, Antropologia, Meccanica.

Keywords: Architecture, History of knowledge, Anthropology, Mechanics.

The anatomical theater of Uppsala was built in 1662 by Olof Rudbeck, a Swedish polymath who started as an anatomist but soon also became interested in botany, mechanics, archaeology and anthropology. The son of a leading protestant priest was convinced that true knowledge was gained through empirical observation – may the phenomena be of natural or cultural origin. By combining first hand observation with technical skills anatomy for Rudbeck became the epistemic model for all sciences[1]. The title copper of his *Atlantica* makes it clear just how serious Rudbeck was about this setting (fig. 1). The picture shows Rudbeck himself dissecting the globe and revealing the words "Sweden, Island of the Gods" beneath the surface of Sweden. Rudbeck is surrounded by ancient philosophers, historians and mathematicians, such as Plato, Hesiott and Ptolemy, who gesticulously discuss his discovery of Sweden as the origin of classical civilization. The painting bears the caption "Et nos Homines" (we too are human beings), thus underlining the statement that it is not the authority of the ancient scholars but the sensory perception of nature that enables true knowledge[2].

The illustration is from Rudbeck's four-volume publication *Atland eller Manheim* (Atlantis and the Origin of Mankind), which appeared between 1679 and 1702. In this state-sponsored publication, Rudbeck set out to identify Sweden as the Atlantis described by Plato and Old Uppsala as its capital using linguistic, geological and archaeological evidence. With his thesis, he took up existing narratives according to which the Swedes were descendants of the Goths or the paradisiacal people of the Hyperboreans described by Hecataeus[3]. However, Rudbeck went beyond these established myths of origin in that he declared Sweden to be the place of origin of the entire classical culture. Plato's temple of Poseidon was located in ancient Uppsala; it was only through Swedish expeditions that ancient mythology and culture reached Greece and led to the construction of classical temples there. Against this background, Rudbeck presents his anatomical theatre not as a mediterranean, but as a genuinely nordic reception of antiquity[4].

Fundamental to Rudbeck's argumentation within *Atlantica* was the combination of natural and cultural anthropological arguments. On the basis of criteria such as language, customs, legislation, natural conditions, physiognomy, skin color, construction and clothing, Rudbeck believed he could prove that the inhabitants of Sweden had remained a homogeneous, identical and unchanged people throughout the centuries – in contrast to most

[1] G. Eriksson, *Rudbeck 1630-1702. Liv, läardom, dröm i barockens Sverige*, Bokförlaget Atlantis, Stockholm 2002.

[2] A. Ellenius, *Olaus Rudbecks Atlantiska Anatomi*, "Lychnos", 1959, p. 40–54 and A. Ellenius, *Den atlantiska anatomin: ur bildkonstens idéhistoria*, Norstedt, Stockholm 1984.

[3] J. M. Nordin, *Spirit of the Age. Erik Dahlbergh's Images of Sweden's Past*, in *Boreas rising. Antiquarianism and national narratives in 17th and 18th century Scandinavia*, edited by B.Roling and B. Schirg, Berlin 2019, p. 103-128; K. Neville, *History and architecture in pursuit of a gothic heritage*, in *The quest for an appropriate past in literature, art and architecture*, edited by K. Enenkel and K. Ottenheym, Leiden 2019, p. 619-648; B. Henningsen, *Die Schwedische Konstruktion einer nordischen Identität durch Olof Rudbeck* (Arbeitspapiere "Gemeinschaften"), Humboldt-Universität zu Berlin, 1997.

[4] K. J. Knoespel, *Reshaping the Earth. Olof Rudbeck and the Transformation of Sweden*, in *Cultural Exchange between European Nations during the Renaissance*, edited by G. Sorelius and M. Srigley, Stockholm 1994, p. 193-212. I would like to thank Mattias Ekman for generously sharing with me his thoughts on theatre and temple as typological models for Rudbeck in Uppsala.

other European peoples[5]. According to Rudbeck, this unbroken succession of the technologically advanced Atlanteans was the reason for Swedish superiority and also justifies Sweden's current claim to leadership.

There had already been plans to construct new educational buildings in Uppsala since the 1630ies[6]. Sweden owed its success as an up-and-coming great power in the Baltic region in particular to the chancellor Oxenstierna's administrative reforms, which were aimed at centralizing and homogenizing the area under his rule[7]. Under his chancellorship, the former cathedral school was to produce not only scribes, but also civil servants, engineers and cartographers. The imperial and university chancellor repeatedly demanded that the modern research program and the university's close relationship with the crown should also be reflected in its buildings. In particular, anatomical theatres and botanical gardens were part of the innovative spatial program of internationally renowned universities such as Leiden and Padua. Uppsala should be in no way inferior to these places. The young Rudbeck had also been sent to Leiden by the Chancellor to get an idea of the university's facilities and scientific methods. The *Niederdeutsche Mathematik*[8], an engineering school of Leiden University left a lasting impression on Rudbeck.

The technological knowledge and skills of the Dutch were of eminent importance for Sweden's position as a great power. As an economic and military partner, the Netherlands supported Sweden in the battle against Denmark, and Dutch merchants and manufacturers supplied the growing Swedish steel and cannon industry with investments and the necessary know-how. With the help of Dutchmen such as Hendrik Trip, who ran a cannon foundry in Julitabruk, the Swedish battlefields became the scene and testing ground for the latest weapon technologies. In the 1660s, Rudbeck himself became responsible for surveying and documenting natural resources in Sweden as the state commissioner for *Landculturen* – i.e. mineral resources – and set up the so-called *mechanical house* to train surveyors and craftsmen. On the one hand, this was intended to promote the Swedish economy and, on the other, to educate young Swedes – especially children from orphanages – to become productive members of society[9].

[5] G. ERIKSSON, *The Atlantic Vision: Olaus Rudbeck and Baroque Science,* Canton (Mass.), 1994, p. 13.

[6] G. LINDAHL, *Universitetsmiljö. Byggnader och konstverk vid Uppsala universitet*, Illustrerad, Uppsala 1957.

[7] N. KENT, *A concise History of Sweden*, Cambridge University Press, Cambridge 2014, p. 61-101.

[8] J. G. DOPPER, *A life of learning in Leiden. The mathematician Frans van Schooten (1615-1660)*, Ph.D. thesis, University of Utrecht, 2014.; G. GRÄMIGER, *Verortungen von Wissen. Die Räume und Sammlungen der Universität Leiden 1575–1700*, Ph.D. thesis ETH Zürich, 2018-2019. Regarding Rudbecks engagement with mathematics cf. M. KALLINEN, *Lectures and Practices. The Variety of Mathematical and Mechanical Teaching at the University of Uppsala in the 17th Century*, in *Universities and Science in the Early Modern Period*, edited by M. FEINGOLD and V. NAVARRO-BROTONS, Springer, Dordrecht 2006, p. 111-125, https://doi.org/10.1007/1-4020-3975-1_8 (18.03.2024).

[9] P. DAHL, *Svensk ingenjörskonst under stormaktstiden: Olof Rudbecks tekniska undervisning och praktiska verksamhet*, Uppsala Universiteit, Uppsala 1995, p. 85-106; C. WENNERLIND, *Atlantis Restored: Natural Knowledge and Political Economy in Early Modern Sweden*, "The American Historical Review", 127/4, 2022, p. 1687-1714, https://doi.org/10.1093/ahr/rhac419; H. FORS and J. ORRJE, *Describing the World and Shaping the Self: Knowledge-Gathering, Mobility and Spatial Control at the Swedish Bureau of Mines*, in *Transnational Cultures of Expertise*, edited by L. SCHILLING and J. VOGEL, De Gruyter 2019, p. 107-128, https://doi.org/10.1515/9783110553734-007.

Returning from the Netherlands, Rudbeck immediately began to lay out a botanical garden in Uppsala. After he had become university rector Rudbeck also suggested to the new university chancellor de la Gardie in 1661 that the anatomical theatre should not be located in a ground-floor building to the side of the cathedral, as initially planned, but should be placed in the middle of the university's main building, the *Gustavianum*[10].

The shift in the planned location of the Anatomical Theatre from a ground-level location, which was practical for dissections, to a prominent position on the university building makes it clear that the function of the room was not to be limited to practical anatomy. In fact, public dissections, to which not only members of the university but also local dignitaries and interested citizens were invited, only took place a few times. Only four events are documented, the last in 1756, but all foreign visitors to the city were taken to the anatomical theatre[11].

From a typological point of view, Rudbeck is not only oriented towards the form of the theatre, but also draws on ideas from church, court and observatory construction. He was familiar with the *Marekerk* and *Huis ten Bosch* in The Hague from his time in Leiden[12]. Images of the observatory built by Hans von Steenwinckel at Uraniborg also circulated[13]. By bringing together the semantics of these spatial forms, Rudbeck creates a place of ultimate knowledge that emphasizes the value of moral models and empirical observation as well as the proximity to the Swedish crown.

Via a narrow spiral staircase access is provided to an octagonal room that opens in a funnel shape from the dark bottom to the bright gallery. Around a central dissecting table, seven steep spectator tiers rise, their balustrades decorated with pilasters of the four canonical orders of columns – doric, ionic, corinthian, composite (fig. 2). This part of the room was removed in the 19th century and reconstructed from 1945[14]. Above the tiers, largely in its original state, is a gallery with Ionic pilasters whose entablature is pierced at the level of the frieze by a continuous band of windows. This window band is also in the tambour of the octagonal dome, which is supported by Ionic round columns. Although the columns, pilasters and cornices – like the entire room – are made of wood, their marbled painting simulates a stone materiality. The effect of the room is consciously supported by the use of colour: porfyr marbled balustrades provide a dark contrast against the light blue gallery and dome.

The room was most frequently used as a lecture hall for mathematical subjects such as geography and

[10] G. LINDAHL, Universitetsmiljö, p. 50-64.

[11] P. DAHL, *Svensk ingenjörskonst* cit., p. 126-127. With regard to the use of the anatomical theatre, cf.: E. AREEN, *Olof Rudbecks anatomiska teater och dess Förebilder*, in *Konstvetenskapliga Essayer och studier: tillägnade August Hahr på 60-årsdagen*, edited by A. HAHR, Stockholm 1928, p. 15-39.

[12] G. LINDAHL, *Universitetsmiljö* cit., p. 50-64.

[13] The floor plan and view of the Uraniborg were published by Tycho Brahe as early as 1598: T. BRAHE, *Astronomiae Instauratae Mechanica*, Wandesburg 1598, p. 82 and 84.

[14] M. HEYMAN, *Reconstructing the Anatomical Theatre in Uppsala*, "L'Internationale", Dec. 13th 2021, https://archive-2014
2024.internationaleonline.org/research/decolonising_practices/202_reconstructing_the_anatomical_theatre_in_uppsala/ (18.03.2024). I would like to thank Malin Heyman, Cecilia Ödman and Mikael Ahlund for welcoming me so kindly in Uppsala and for giving me an insight into the building itself and the sources of its history. Malin Heyman is currently leading a research project on the connection between racist concepts of knowledge and the reconstruction of the anatomical theatre in Uppsala.

architecture. Maps were hung in the gallery and Pehr Elvius the Elder brought the globes, which were kept in the library, into the theatre for his lectures (fig. 3). The pilasters were used by Rudbeck during his architecture lessons to illustrate various column orders. Together with his craftsmen, Rudbeck personally had carved the capitals and pilasters[15]. Rudbeck's aim was not only to save money – many members of the consistory criticized the building work, which they felt was unnecessarily prestigious – but also to demonstrate his own technical skills. Following his Leiden teacher Frans van Schooten, Rudbeck demanded of the students

> A master builder must be able to draw the designs for houses himself, the foundations, the layout of the rooms, doors, windows, etc." He must also be able to make models of houses and building details[16].

Rudbeck exhibited the value of applied science in the architecture of the anatomical theatre. Visible from afar, the dome bore its spherical sundial (fig. 4). As Eriksson clearly interprets it, the architect took the light of the sky and made it show the time for the benefit of mankind[17]. The green roof of the dome heralded Sweden's wealth of copper and its mastery of the necessary processing techniques. The parapets probably painted in Falun red also refer to Swedish copper production and the identity-forming artistic design traditions that emerged from this cultivation, as well as the country's economic and military greatness. The maps and globes on display in the interior illustrate the skill and usefulness of modern instrument making. Beyond the technical mastery of cartography, they convey the Swedish crown's claim to the territories that designate it[18]. The fact that Swedish architecture was to compete on an international level as part of Vitruvian building culture is made clear by the pilaster and column orders.

The windows with their extremely narrow profiles refer to Rudbeck's work at the botanical garden. He had developed greenhouses there that were adapted to the natural characteristics and needs of the plants in order to optimize cultivation. While plants were cultivated in the botanical garden, the Anatomical theatre served to educate and train young Swedes. By refining their practical and theoretical knowledge and putting it at the service of their country, the students were to bring out and perfect the Swedish nature that was supposedly inherent in them. In its combination of art and technology, theory and practice, culture and nature, past and present, the architecture of the anatomical theater became the ideal medium for Rudbeck to develop and disseminate his anthropological identity construction of *Atlantica*. By combining the architectural forms of theatre, temple and observatory, Rudbeck created an immersive space in which Swedish nature is constantly renegotiated from 1662 to the present day.

[15] DAHL, *Svensk ingenjörskonst* cit., p. 376-377, 578. Cf. Also A. HAHR, *Olof Rudbeck D.Ä. som Arkitekt*, Almqvist & Wiksell, Uppsala 1930, p. 121-175.

[16] Rudbeck, Olaus Sen., Collegium mathematicum privatim propositum, "Om Huusbyggerij", p. 55-56, Uppsala University Library (UUB), Collection C. G. Nordin, 519 published in R. JOSEPHSON, *Det hyperboreiska Upsala*, Svenska humanistiska förbundet 51, Stockholm 1940, p. 85-89.

[17] G. ERIKSSON, *Rudbeck 1630-1702* cit., p. 193.

[18] For more general considerations on the relationship between map, space and body, see: J. SAWDAY, *"They shall no more be remembered by their name": cartography, anatomy, and the Renaissance eponym*, "The Journal of Medieval and Early Modern Studies" 48, 2018, p. 11-40.

Fig. 1 - PETRUS TÖRNEWALL (artist) and DIONYSIUS PADTBRUGGE (engr.), Olof Rudbeck the Elder dissects the globe, table volume of Atland eller Manheim (Atlantica), Uppsala 1679, title copper.

Fig. 2 - Interior of the anatomical theatre of Uppsala, © Christine Beese.

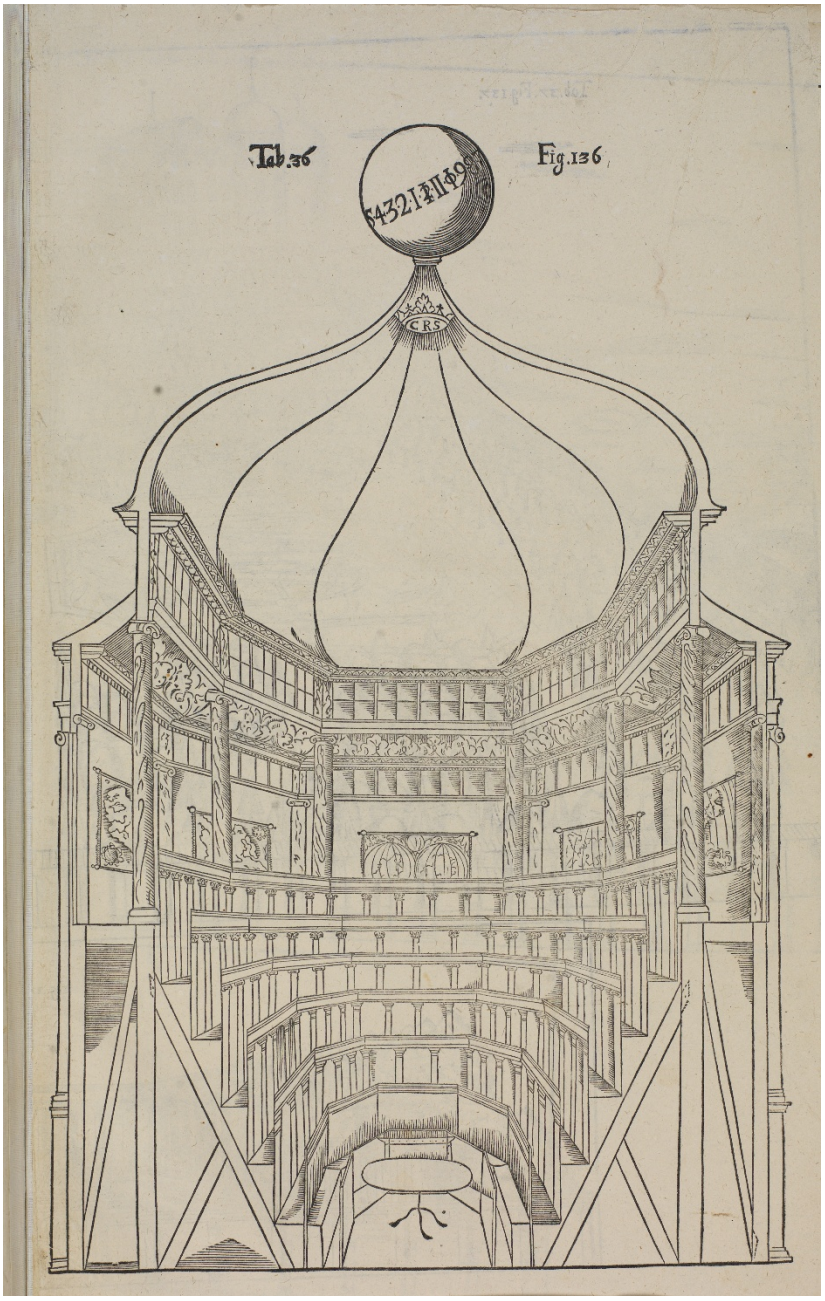

Fig. 3 OLOF RUDBECK THE ELDER, The anatomical theatre at Gustavianum, table volume of Atland eller Manheim, Uppsala 1679, Tab. 36, Fig. 136.

Fig. 4 Exterior of the Gustavianum with the anatomical theatre on top, © Christine Beese.