Strange Things for Strangers: Transcultural Automata in Early Modern Amsterdam

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Strange Things for Strangers: Transcultural Automata in Early Modern Amsterdam

ANGELA VANHAELLEN

All these machines open, within the protective enclosure, a space which is also that of marvelous communication. —Michel Foucault, Death and the Labyrinth

While early modern curiosity cabinets and private galleries have received much scholarly attention as precursors to the museum, less is known about how inns and taverns were used as exhibition spaces. A type of attraction called a doolhof, or labyrinth, was unique to seventeenth-century Amsterdam. The Doolhof inns were licensed public houses that offered guest lodgings and also tendered alcoholic refreshments and the enjoyment of artful recreations in their gardens and galleries. In the tavern yards, customers could enjoy a drink as well as the play of spectacular figural fountains embellished with unusual hydraulic effects. Some establishments charged an admission fee to enter and experience the forking and twisting paths of a hedge maze. Those peripatetic visitors who solved the labyrinth were delivered into a building housing a sculpture gallery. Inside, they encountered wondrously inventive works: moving mechanical statues (automata), life-size waxwork figures, and intricate astronomical clocks. As they moved through these eclectic exhibition sites, visitors were immersed in multiple sensory experiences. The ever-changing bodily experience of the labyrinth created conditions of disorientation and visual uncertainty; automated figures driven by mechanics surprised viewers with unanticipated sounds and actions; and the waxworks, while deathly still, were perceived as “most lively,” in the words of one visitor. At the Doolhof taverns, confounding mazes, spraying water, and Bacchic conviviality together enhanced the collective force of a gathering of moving artworks so strikingly lifelike that they appeared to come alive.

The seventeenth-century repute of these exhibits is evidenced by numerous prints, posters, drawings, and souvenir pamphlets (Fig. 1). The sites, included in officially commissioned histories and maps of the city, were visited and described in the travel accounts of well-educated international curiosity seekers. Although they were renowned in their day, none of the inns and very few of their attractions survive. Partially due to the lack of extant artifacts, these idiosyncratic exhibition venues are rarely mentioned in art historical studies of the period.

The approach advised by Johan Huizinga accordingly guides my investigation: “the admiring study of the surviving masterpieces does not suffice: that which has been lost also demands our attention.” What follows is in part an experiment in recovering what can be known about nonextant works and their modes of display.

My larger claim is that the moving artwork, particularly the automaton, has the potential to put art history in motion, animating it and dynamically opening it up to a consideration of different kinds of objects, modes of engagement, and methods of analysis. In a foundational text that helped to usher in the “new art history” in the 1980s, Svetlana Alpers importantly connected Dutch art to seventeenth-century advances in science and technology:

1 Title page from a Doolhof publicity booklet attributed to Jan Vos, D’Oprechte Aenwijser, Amsterdam: Alexander Iansz. Lintman, 1674. Allard Pierson, University of Amsterdam, OTM 0 62-2616 (artwork in the public domain; photograph provided by University of Amsterdam Library [UvA] Special Collections)
“pictorial and craft traditions, broadly reinforced by the new experimental science and technology, confirmed pictures as the way to new and certain knowledge of the world.” The Art of Describing, with its emphasis on vision and visual culture, allied the descriptive pictorial mode with the development of instruments like the microscope and telescope, and with viewing devices like the camera obscura. Drawing on Alpers, Jonathan Crary, in his influential book Techniques of the Observer, claimed that the camera obscura was a dominant metaphor for human vision across Europe in the seventeenth century. In Crary’s account, this viewing technique signaled a new model of subjectivity in which the image is separated from the object, and the act of seeing sundered from the physical body of the observer: “the observer’s physical and sensory experience is supplanted by the relations between a mechanical apparatus and a pre-given world of objective truth.” Vision, in other words, was decorporealized. However, alongside the camera obscura, telescope, and microscope, there were other sorts of artistic, scientific, and technological apparatuses—mechanical and hydraulic automata especially—that were equally prevalent in the seventeenth century and also were devised as tools to interrogate the workings of nature. If we reconsider the histories of vision and visuality in relation to these types of artworks, we should therefore rethink the mode of viewing prompted by mimetic art, which does not simply convey sure knowledge of “a pre-given world of objective truth.” Automata do more than imitate or describe nature; they move as if they are alive, signaling the contiguity of life and art and the congruence of artwork with beholder. The moving image thus calls for an approach that takes into consideration the startling impact of the work of art on viewers who cannot be characterized as detached observers.

Notably, this spurs us to reassess the now-ubiquitous term “visual culture” and shift to a consideration of multisensorial interactions with artworks. We cannot really set apart a purely visual apprehension of things from all of the other sensory, cognitive, psychological, and emotive impressions that come into play. While Alpers’s and Crary’s narratives have long dominated visual culture studies, art historians have begun to question assumptions about detached and objective viewing, turning to primary source material as well as theories derived from disciplines such as philosophy and anthropology. A recent outpouring of studies has evaluated the affective and performative qualities of early modern art and reassessed aesthetic experience in terms of emotions, sensations, and embodied engagement with works of art. Important books by Caroline van Eck, Thijs Weststeijn, and Fredrika Jacobs have definitively shown that classical and early modern art theory posited the moving and lively qualities of artworks as vital to their impact. Regarding approaches to Netherlandish art, a meaningful rethinking of the field is evident in special issues of flagship journals such as Nederlands Kunsthistorisch Jaarboek and Journal of the Historians of Netherlandish Art, dedicated to exploring the importance of the passions and the sublime in encounters with early modern art. There are also volumes devoted to particular reactions and embodied viewing practices such as early modern horror, the erotics of looking, and theatricality. Recent literature on automata takes into account their intense affective impact, mainly in the context of courtly and religious realms and in relation to philosophical and literary traditions. What all of this current scholarship demonstrates is that physical, emotive, and sensory experience—far from being supplanted—was integral to apprehending early modern artworks. The camera obscura metaphor of detached observation therefore does not adequately characterize the period eye. Instead, I suggest that the automaton offers a more fitting model for understanding seventeenth-century visual culture as affective, multisensory, embodied, and performative.

Automata also prompt us to acknowledge that visual culture is always transcultural. Historical evidence of how global knowledge exchange informed the production, display, and reception of automata demonstrates that the vibrant burgeoning of the arts in
the seventeenth-century Dutch Republic was generated by multifaceted cultural encounters. Situated as points of intersection in rapidly expanding networks of global transit, Amsterdam's automata-exhibiting taverns attracted a diverse audience of international travelers and local residents, who gathered to experience, enjoy, and talk about the startling effects of unusual artifacts. As places where strangers met in encounters with strange things, these exhibition sites stimulated conversations between cultural traditions. The evidence I assess shows how this type of transcultural communication instigated inventive experimentation with various technologies of visual culture and stimulated new ways of knowing about the world. My analysis of automata exhibits thus contributes to recent interrogations of the field of Dutch art history that challenge long-held nationalistic assumptions about the existence of “typically Dutch” art. As we are beginning to understand, global relations and the extraordinary multiculturalism of the Dutch cities account for the notable artistic, scientific, and technological innovations of the period. If we rethink the field in these terms, then the overlooked prominence of automata in Amsterdam elicits recognition of the way local artistic practices and priorities in the Dutch cities were fully entangled within the larger dynamics of a changing, diverse, and interconnected world.

That Amsterdam’s automata exhibitions mediated cultural differences and knowledge exchange through pleasure and entertainment is central to this investigation. Publicity materials promoted the appeal of the Doolhof’s array of moving artworks for the many foreign visitors who flooded into Amsterdam as it developed into a hub of world trade. Such advertising makes audacious declarations about the capacity of the city’s mechanical wonders to strike strangers dumb with astonishment. These sorts of assertions about the technological superiority of Amsterdam were made visible in presentations of humanlike mechanized statues dressed in exotic costumes. I assess the performative staging of these strange exhibits in relation to predominant philosophical understandings, particularly the theories of Aristotle and René Descartes, which emphasize the transformative impact of affective encounters with automata. This analysis opens up a consideration of how foreign-looking automata were likened to enslaved people and how foreign viewers were likened to automata. The Doolhof’s strategies of display thus reveal the ways in which the forceful effects of the moving statue were deployed in support of the fiercely competitive and exploitative mercantile practices that brought about Amsterdam’s precipitous rise.

The investigation next moves to a case study indicating that foreign guests—far from being dumbstruck—made significant intellectual contributions to the cultural life of the Dutch Republic, including fostering the esoteric knowledge needed to create automata. The main focus is the inn of Jan Theunisz, a scholar of Arabic who honed his language skills and cultural knowledge in conversation with international visitors, including a Muslim diplomat from Morocco. I link the inventions displayed at this tavern with the innkeeper’s access to rare Arabic manuscripts about the making of automata. This case exposes what the inns did not publicize: the extent to which their technological innovations were indebted to transcultural encounters. The affective dynamics of these urban exhibition sites—which could be characterized as a vacillation between hospitality and hostility to strangers—accordingly demonstrate that early modern artistic invention was activated by the global mobility of people and moving art objects.

A COMMON SCHOOL FOR ALL PEOPLE
The wondrous powers of the automaton had long been marshaled by rulers in the international relations of courtly politics. Automata were given pride of place in princely collections and cabinets of curiosities; they were deployed as diplomatic gifts and employed to enliven festi-
Moving statues proclaimed the ruler’s command of sophisticated craft traditions, technological advancement, and access to esoteric forms of knowledge. While these courtly dimensions of automata history are well known, public urban exhibitions have received comparatively little critical attention. Simon Schaffer has argued that automata were characteristic of the milieu that produced them: “automata were both arguments and entertainments, designed seductively to place craft skill within the setting of power.” In contrast to courtly displays, Amsterdam’s commercial collections of marvelous moving artworks were distinctive to a context that was republican and mercantile. Advertising the promise of edification and enjoyment to anyone who could afford the low price of admission, they served as a means to promote civic interests.

To begin, it is important to understand the conditions that generated the establishment of the inns. The first Doolhof exhibition site was set up about 1620, coinciding with the precipitous rise of the Dutch Republic to prominence as a global trading entrepot. The 1611 urban profile by Claes Jansz. Visscher II sets the scene as an ambitious early attempt to make sense of Amsterdam’s new position in the world (Fig. 2). At the center of the crowded composition is a female personification of the city, the Amsterdam Maid, who wears a crown. The explanatory text proclaims that the Maid is an empress who commands the whole world. On her left are traditional Dutch folk bringing the bounties of land and sea to the Maid. On her right are the peoples of the world. They offer the abundance of their lands: spices, porcelain, Brazil wood, ivory, gemstones, grains, pearls, textiles, and many more commodities are pictured and inventoried by the print. The appealing fiction of this image is that these astonishing riches are bestowed as gifts in tribute to the Maid. In return, she presents religion and law, represented by the rod of justice and the open Bible, and imparts learning and the arts, pictured as a globe, a quill, a painter’s palette, two books, and some musical notation (Fig. 3). The text
of the print explains that the Maid exends wisdom and knowledge to foreigners and locals: republican Amsterdam is described as “a common school for all people, as was formerly the city of Athens.”

This pretension comes up rather short, though, when listing places where people could actually access the city’s stores of learning, art, and wisdom. A library in the Nieuwe Kerk is mentioned, as are the map and print shops (promoting Visscher’s own business). However, few public places for the exhibition of art existed at this time. Artistic treasures that had formerly filled the churches had been removed or destroyed during the Protestant Reformation, especially in the iconoclastic riots of 1588. Reformed prohibitions continued into the early decades of the seventeenth century, and important cultural centers like the civic Schouwburg theater and the Amsterdam Illustrious School (called the Athenaeum) were not founded until the 1630s. Visscher’s print thus reveals, albeit unwittingly, that while Amsterdam was fast becoming a powerhouse trade emporium, it had not achieved world dominance in the realm of culture. This situation must have presented a substantial challenge for the urban elite: how to make their city into an impressive global storehouse of learning and the arts in spite of considerable religious opposition.

As if to fulfill the mission of transforming the city into a school for all people, five Amsterdam Doolhoven were established in the early decades of the seventeenth century. The Oude Doolhof (Old labyrinth), at the corner of Prinsengracht and Looiersgracht, was in operation from about 1620 until its closure in 1863. In 1626 its owner expanded to an adjacent lot and built the Nieuwe Doolhof (New labyrinth). In 1648 the Nieuwe Doolhof was purchased, updated, and moved to a larger site on Rozengracht, where it remained until 1717. There was also a Roode Doolhof (Red labyrinth) near the Regulierspoort from 1630 to 1663 and a Franse Doolhof (French labyrinth) by the Sint-Anthoniespoort from 1637 to 1679. A similar type of inn and exhibition space for automata and hydraulic works, called D’Os in de Bruiloft (The ox at the wedding), was established near the harbor. No other European city had public urban labyrinth gardens for the exhibition of automata; they were a unique feature of Amsterdam.

Significantly, many of the inns’ proprietors hailed from Amsterdam’s leading families. Vincent Coster, founder of the Oude Doolhof, held civic office, and his uncle was a city burgomaster. Antonia Cloeck, who oversaw the Franse Doolhof, also came from the patrician class: her grandparents were the burgomaster C. P. Hooft and Anna Blaeu, of the renowned publishing and map-making family. Moreover, her uncle was the playwright P. C. Hooft, one of the Dutch Republic’s most prominent cultural figures. Jan Theunisz, owner of the inn D’Os in de Bruiloft, was a scholar who had taught at Leiden University and the Dutch Academy in Amsterdam. The idea of using taverns as cultural centers was thus spearheaded by Amsterdam’s political, cultural, and intellectual elite. The Hoofts, Cloecks, Costers, and Blaeus belonged to the regent class, the oligarchs who served in municipal government. Members of these families held positions on the governing boards of various civic institutions such as the prisons, orphanages, and old people’s homes, as well as the powerful and profitable Dutch East and West India trading companies. Their main interests were the maintenance of civic harmony and the increase of prosperity.

As civic leaders, the regent families deliberately shaped the cultural life of the city. The playwright P. C. Hooft and the scholarly innkeeper Theunisz, for instance, were both involved in the establishment of a Dutch academy in Amsterdam in 1617. The academy was conceived as a cultural and academic center, with the aim of offering vernacular public instruction in arts and sciences that was “meant for the edification and amusement of everyone.” It had no official connection to the Reformed Church and focused on classical
rather than theological learning. The ambitious aims of this civic cultural center were short-lived, however. Repeated condemnations by Reformed Church leaders, who especially complained that the academy’s classical curriculum veered rather too far in the direction of paganism, resulted in the academy’s closure in 1619. At about the same time, the first Doolhof appeared on Prinsengracht, just a canal away from the academy building on Keizersgracht. As private businesses and public places of hospitality, inns could evade the religious scrutiny that was directed at civic institutions. Consequently, these taverns could take up the academy’s mandate to advance various forms of learning and entertainment, including the demonstration and discussion of art, the new science, and inventive technologies.22

By midcentury, the political power of ultraorthodox Calvinism had waned, and the Doolhof inns could openly advertise their exhibits as a means to draw customers. A number of substantive histories of Amsterdam were published in the mid to late seventeenth century, and most of them contain fulsome descriptions of the Doolhof shows. These books reiterated claims about a new Athens and directed readers to an expanding number of public places where they could access the arts and learning that the city afforded. Notably, they dedicated full chapters to the Doolhof inns, promising the enjoyment of astonishing and unprecedented novelties. Souvenir pamphlets sold at the inns also boasted of compelling inventions that had never before been realized, detailing the pleasures of encountering animated imagery that appeared to come to life: “Each image moves and acts as if it lives, for the wonder and delight of onlookers.”23 The title page of a Nieuwe Doolhof pamphlet pictures Athena and trumpets news of works that have never been seen or even thought of before (Fig. 4). As in the Visscher print, the allegation is that Amsterdam had become a new Athens, a cosmopolitan center of learning. The Doolhof exhibits promised to captivate visitors with rare creations that they could experience only in the Dutch city.

**STRANGERS AND STRANGE THINGS**

While the Doolhof venues were open to all who paid admission, the publicity often singled out a target group within this broad audience, expressly encouraging international travelers to pay a visit. In his important history of seventeenth-century Amsterdam, Caspar Commelin stressed that the Doolhof displays offered “fine things for foreigners such as fountains, the performance of many moving histories, and many other similar things to see.”24 And Melchior Fokkens, in his civic chronicle of 1662, alleged that the diversions displayed at Amsterdam’s Doolhof inns were particularly “worthwhile for all foreigners who have not been here before, strange and wondrous for them.” He reiterates a few pages later that these marvels were especially pleasurable “for strangers and foreigners who do not live here in Amsterdam . . . wondrous for those who have never seen it before.”25

Doolhof publicity booklets pressed such assertions further, at times inserting denigrating remarks about the inability of foreigners to fully comprehend the marvels on display. One pamphlet alleges that international sightseers declared the works “impossible” and avowed that nothing like them could be found anywhere else in the world, so that foreigners “were struck with wonder at the mechanisms of the clockwork here, and could not even understand it, but only gazed in wonder.” Strange inventions were purported to strike strangers with wonder. The obvious biases of this marketing approach were no doubt a means to proclaim the cultural and technological superiority of Amsterdam in relation to the rest of the world: the trading empire promoted itself as a center of global knowledge production.
with much to teach the unenlightened. In addition, this strategy may well have served to deny the actual relations with foreigners and foreign inventions that informed the exhibitions, an issue we return to below.

The narrative that strange things induced wonder in strangers framed these displays. Evidence suggests that automata were displayed to audiences in dramatic presentations that potentially conveyed similar disparagement of foreigners. The various artworks were staged as “shows” (vertooningen) and explained to spectators by a presenter, likely one of the proprietors. Theatrical modes of display included the raising of stage curtains accompanied by music, immersing audiences in an affective and multisensory experience. Housed today in the Amsterdam Museum are the extant Doolhof moving statues: painted wooden figures of David and Goliath (Fig. 5). This sculptural ensemble is depicted in a printed image that
was reproduced in a number of the Oude Doolhof guidebooks (Fig. 6). The print situates the figures in the context of the battlefield—probably in front of a painted backdrop scene, giving an indication of the theatrical trappings of automata shows. Goliath and the invading Philistine army face the Israelites who line the city walls. David turns his gaze up to the enormous armed soldier as the Israelite shepherd boy prepares to battle the giant from Gath. Although the boy stands only as high as the titan’s shield, he is animated by a potent force: with mouth slightly agape, the moving statue would slowly raise its head and then roll its eyes back and forth as if in assessment of his fearful adversary. Dramatic music accompanied this action, heightening its emotive charge. The Goliath statue responded by turning its head and moving its eyes in glowering disdain. A poem at the bottom of the print gives an indication of the presenter’s narrative. It assures that David’s defeat of the giant with his sling was a warning that all those who mocked God would themselves become objects of ridicule. Alien intruders beware.

These polychrome statues, especially the colossal Goliath, with a height of almost sixteen feet (or five meters), may have been constructed at the Amsterdam shipyards. They resemble the giant painted wooden figureheads and elaborate sculptural ornamentation that decorated East and West India Company ships (Fig. 7). Ship sculptures often represented imposing monsters, beasts, or warriors: as the Dutch trading companies sailed the world, their conspicuous colorful figures were intended to intimidate and impress those who encountered them on the high seas or in far-off ports. The David and Goliath statues may also derive from the large-scale sculptural programs that had long adorned Renaissance cities. The Florentine Davids of Donatello and Michelangelo were particularly compelling, acting as apotropaic figures that guarded the republican city against enemies. With the Amsterdam David, the powers of sculpture were taken to an extreme. This mechanically driven statue of the shepherd boy is so lively that it seemingly becomes David as it physically moves to attack the invader Goliath. Such actions resonate with the guidebook’s claim that foreigners “were struck with wonder at the mechanisms.”

David thus deals a double blow: as the mechanized statue moves to confront the automated foreign giant, it simultaneously strikes foreigner viewers with wonder.

Many of the Doolhof’s moving statues drew attention to the wondrous strangeness of the automaton, which appears both as lively person and lifeless machine, similar to but not the same as the viewer. Predating David and Goliath was a life-size mechanical moving figure at the Oude Doolhof named Jochum (Fig. 8). This work does not survive, but a print of it appears in several of the guidebooks, advertising it as a key attraction. The image pays particular attention to the figure’s pursed lips and wide staring eyes, as well as its hands and fingers.
An accompanying description declares that Jochum could play an innumerable variety of tunes on his moesel, or bagpipes. While he performed, his head, eyes, and hands all moved “as if he lived.” He is very artfully put together, the pamphlet states, and the “Master’s work” is hidden inside.32 This phrase, “Master’s work,” has dual significance: it could refer to the ingenious craftsman who made the android, but it also implies the work of God, raising questions about what activates this humanlike being whose mechanisms are well hidden within its man-machine body. The illusion created by the clockwork is that the repetitive movements of Jochum’s fingers, eyes, and head are powered by muscles, whereas the bagpipes externalize the functioning of unseen internal lungs. The invisible life force of breath appears to pulsate from the lips into the pipe to inflate the sack and produce various sounds, endowing the personified machine with interiority. A marvel of technology, the android performs as a living being, so that audiences would have experienced Jochum’s vivid lifelikeness as if it (or he) was human.

The staged presentation of moving statues like Jochum, David, and Goliath clearly raised questions about what distinguished the human from the costumed automata. Pondering this very issue, Descartes famously observed: “Were I perchance to look out my window and observe men crossing the square, I would ordinarily say I see the men themselves. . . . But what do I see aside from hats and clothes, which could conceal automata?”33 Notably, the philosopher had taken up residence in Amsterdam at the time he penned this statement and may well have been looking out of his window onto the busy streets and squares of the Jordaan district, where he lived within easy walking distance of the Doolhof inns.34 Jessica Riskin has argued that “the great bustling population of lifelike devices that enlivened the world in which Descartes lived, before arriving at his radical philosophical and scientific proposal . . . shaped how Descartes conceived the idea during the 1630s and ‘40s. He had the machines in mind as he wrote.”35 While scholars concur that Descartes’s personal fascination with automata contributed considerably to his mechanical philosophy, there is only speculation about where he encountered such devices.36 Because the Amsterdam Doolhoven have not received much scholarly attention, the possibility that Descartes was thinking of Amsterdam’s mechanized moving exhibits as he wrote has not been taken into account. The Doolhof exhibits reached their zenith in the 1630s and 1640s; given his more than passing interest, it is likely that the philosopher was familiar with the well-publicized automata that enlivened his own neighborhood.

Descartes’s thoughts about the similarities between human bodies and animated costumed automata pinpoint what makes the moving statue distinct from other forms of art. The mimesis of this kind of artwork does not simply imitate nature with deceptive illusionism in the manner of many Dutch paintings. Rather, it exceeds descriptive realism by appearing to function just like the workings and processes of nature. As Victor Stoichita has observed, the art of the copy, which Plato termed the eikastiké, has triumphed as the main focus of Western art history. This has certainly been the case with Dutch realism. The phantastiké, the art of the simulacrum, by contrast, remains vague, ambiguous, and unheeded.37 Pushing well beyond the art of describing, automata move as if they live. As the sixth-century Roman scholar Cassiodorus observed, the machine is the only thing that seeks to surpass nature: “it makes mute things sing, lifeless things live, immobile things move.”38 An inherently paradoxical creation, the android is equally animate and lifeless.39 Observations about the natural and artificial qualities of the automaton were reiterated in the early modern...
period. In a publication of 1648, the British natural philosopher John Wilkins differentiated the mechanical arts by stating: “Now Art may be said, either to *imitate* Nature as in Limning and Pictures; or to *help* Nature, as in Medicine; or to *overcome* and *advance* Nature, as in these Mechanical Disciplines.”40 Francis Bacon’s *Novum organum* of 1620 explains that experimental mechanical arts were a method of intervening in nature and devising its hidden workings: “the secrets of nature reveal themselves more readily under the vexations of art than when they go their own way.”41 Activated by “the Master’s work,” the automaton interferes with nature, interrogating and exposing its hidden workings. The moving statue stops just at the verge of realizing nature’s greatest secret—and art’s most transgressive aim—the creation of life.

Especially intriguing is the way in which the Doolhof attractions managed the unsettling weirdness of extraordinarily humanlike figures. Accounts of the Amsterdam automata highlight the appeal of their *uytheemsche kleedinghe*—outlandish clothing.42 Descartes’s observation about hats and clothes specifies how the costuming of animated statues makes them look like people. While Descartes speculated that the men bustling about in the town square could be automata, to my knowledge there were no seventeenth-century automata that were clothed to look like European men. As the sources indicate, the Amsterdam automata were decked out in foreign costumes: they tended to wear turbans and robes rather than hats and cloaks. The printed image of Jochum shows that the figure was dressed in a long, patterned fringed garment, possibly a figured silk *entari*, an Ottoman robe. Jochum also wears a curious headdress—a turban or furred cap adorned with a large plume of feathers (see Fig. 8). A nineteenth-century sketch of this long-lived exhibit emphasizes the android’s dark complexion and coarse black hair (Fig. 9). The vaguely Eastern appearance of this foreign-looking figure seems to thematize the alien otherness of the lifelike machine.43

Other parts of the costume are less exotic, however. For instance, the garment cuffs and collar look like European lacework. And Jochum’s distinctive bagpipes were customary in Netherlandish music making, as depicted in numerous early modern Dutch and Flemish representations of peasant dances, festive revelries, and tavern scenes (Fig. 10). Jochum’s countless variety of tunes thus may have included traditional folk songs, although the machine plays on tradition in an entirely novel way. Such vacillation between familiarity and exoticness seems to characterize the staging of automata. The android’s mix of clothing and accessories, which are both indigenous and Orientalized, create the impression that the humanlike machine is somewhat Dutch and somewhat foreign, both ordinary and unfamiliar.

In this way, the strange thing appears as a stranger. In Georg Simmel’s definition, the social position of the stranger combines the contradictory qualities of proximity and distance. Because strangers are like us, yet not like us, interactions with them sharpen perceptions of general commonalities as well as differences. Strangers consequently are met with a mix of friendliness and prejudice.44 We have already encountered this type of response in Doolhof.
publicity, which both welcomes and derides foreign guests. It also can be discerned in the fact that almost-human automata were never clothed as European gentlemen, so that their disquieting and entertaining qualities were associated with foreigners.

The interplay between proximity and remoteness in Amsterdam was intensified by the fast expansion of trade routes forged by the East and West India companies, which brought ever more commodities and peoples of distant origin into the port city. Jochem resembles the costumed figures that appear in a specific subgenre of Dutch still-life painting, which developed in tandem with the colonial exploitation that undergirded the Dutch Republic’s rise to global power. A relevant example by the Amsterdam still-life painter Juriaen van Streek depicts a table covered with an imported carpet and heaped with luminous porcelain wares from China and citrus fruits from the Mediterranean, together with local oysters and breads (Fig. 11). Behind this sumptuous array is a turbaned African youth wearing a silky orange- and gold-striped robe. He looks out and holds up a porcelain platter of fruit, evidently inviting the beholder to partake in all of the various and sensuous pleasures of the exotic. People and things from around the world have been brought near and domesticated.45 The turbaned youth in this painting corresponds to the possessable luxury goods that surround him, brought from afar to serve the Dutch. Here, the stranger is presented as a strange thing, conflated with the importable commodities of the trading empire.46

Indeed, Van Streek’s painting might be recording the European custom of dressing enslaved people and household servants in costumes that were not congruent with their actual place of origin but gave them a generically foreign appearance. While the ownership of enslaved persons was not permitted in the Dutch cities, Dutch merchants certainly were enslavers in the colonies. They set up large slave-owning households in the East and West Indies. In the Americas, especially Brazil, Dutch colonists implemented plantation slavery. Driven by profit, the Dutch West India Company took control of the transatlantic slave trade in 1637 and was responsible for the seventeenth-century escalation of African enslavement.47 Paintings like Van Streek’s, in which African figures obligingly present viewers with costly imports, manage to give no hint of the atrocities of the slave trade while still showing how African people conveyed enormous wealth to the Dutch.48

When we situate Jochem—a dark-skinned automaton dressed in turban and robe—within this context of global capitalism, such a figure can conjure the dream of a self-moving machine that performs as a perfect slave. This is a fantasy that weaves through the literature on automata.49 Writing about Daedalus, the legendary ancient inventor of moving statues, Plato observed that if one of his works was untethered, it could give you the slip “like a runaway slave.”50 And Aristotle wrote of self-moving machines: “For if each instrument were able to accomplish its own task, either in obedience or anticipation, like the [statues of] Daidalos . . ., then in same manner . . . master builders would not need apprentices, nor masters, slaves.”51 For these ancient Greek philosophers, automata and enslaved people were alike because both were perceived to lack the capacity for reason. This denigrating prejudice continued to inform seventeenth-century attitudes. As the influential Dutch scholar Daniël Heinsius opined in his 1611 commentary on Aristotle, a slave does not have a correct understanding of learning or wisdom.52 And the Amsterdam philosopher Baruch Spinoza (1632–1677) declared that people who are ignorant and uncomprehending “one has to regard as automata that are utterly mindless.”53 While Heinsius and Spinoza were paraphrasing classical sources, such statements take on new relevance in the setting of a society that was heavily invested in the slave trade. For the Dutch merchants in the Doolhof audience, an exoticized moving statue like Jochem may well have called up long-standing comparisons between automata and enslaved persons. If so, then particular qualities, especially the automaton’s routine,
repetitive, automatic, mechanistic activity, could merge with the desire to perceive foreigners as controllable, obliging, unthinking, and less than human. Spurious claims about the intellectual deficiency of the enslaved could justify violent practices of human exploitation that brought staggering financial profits to Amsterdam’s civic leaders and mercantile class.

STRUCK DUMB BY ASTONISHING AUTOMATA
Close reading of Doolhof publicity reveals how rhetoric that correlated strangers with strange things also was directed at foreign trading partners. “The Chinese,” claims one booklet, “the subtlest nation in the whole world, were struck with wonder at the mechanisms of the clockwork here, and could not even understand it, but only gazed in wonder.” This statement should not be taken as a documentary account of the responses of actual Chinese visitors. Rather, it plays on the dominant philosophical understanding of the purpose of automata. In another oft-repeated dictum, Aristotle maintained that the main objective of the automaton was to prompt wonder, which is the beginning of philosophy. Aristotle’s theory sketches out a temporal progression from wonder to curiosity to thinking. The philosophical potential of the automaton was unleashed by its shockingly lifelike qualities, which startled and arrested viewers. This initial embodied and emotive response acted as a trigger that aroused inquisitiveness. Curiosity about causes could stimulate further investigation, rational discourse, and the acquisition of new knowledge. More than mere entertainment, the automaton activated the intellect. The problem with the Chinese, according to the pamphlet, was that they did not progress from a prediscursive response to deeper understanding; instead, they remained fixed in an arrested state of wonder.

Descartes in fact described this specific type of immobilized reaction to strange things in *The Passions of the Soul*, written during his time in Holland and first published in Amsterdam and Paris in 1649. In his passages on wonder, the philosopher considers both the beneficial and harmful effects of this most powerful of the passions. Obviously inspired by Aristotle (and possibly by the Doolhof displays), Descartes states that feelings of wonder usefully motivate scientific inquiry. He counsels that the main way to induce this passionate response was with strange and novel objects, particularly if shown in a manner that was surprising or unexpected. Like Aristotle, Descartes asserts that an initial automatic sensory reaction to unusual works serves as an impetus for thinking and discourse. However, Descartes cautions that the force of a sudden surprise could cause excessive wonder, which he terms astonishment. Astonishment is detrimental, as it “can entirely block or pervert the use of reason” with a paralyzing outcome: “the whole body remains still as a statue.” In Descartes’s terms, then, the affective presentation of uncommon objects could strike some observers in a manner similar to the guidebook’s account of the Chinese response to the Doolhof’s mechanical displays. This was the perceived power of the moving statue: it could turn its viewers into stationary statues.

There was a cure for astonishment, advised Descartes, and it was to seek out repeated encounters with astounding objects. By gaining familiarity with marvels, the viewer could learn about them and dispel their mysterious powers. Allegations made in Doolhof publicity that the demonstration of rarities was especially “worthwhile for all foreigners who have not been here before, strange and wondrous for . . . those who have never seen it before” thus resonate with the predominant philosophical understanding of the edifying and beneficial purposes of the automaton. Outlining how exposure to automata enabled an advancement from wonder to thinking, Descartes assures his readers: “After having stirred wonder in you by exhibiting to you . . . very strange and rare automata, . . . I will then uncover the secret devices on which they rest and these are so simple that you will no longer be tempted to feel
wonder regarding any product of human devising.” When the strange is made familiar, its captivating influence diminishes. Once viewers move past their initial feelings of wonder, they become open to learning.

A remarkably similar response to the Amsterdam automata displays is recorded in the travel journals of the English gentleman John Evelyn, who visited the city in 1641. Evelyn was a polymath, interested in the new experimental philosophy. He was most impressed by what he saw at the tavern called D’Oos in de Bruiloft, run by the scholar Theunisz. Evelyn’s is one of only a handful of descriptions that we have of this extraordinary place:

The next day we were entertained at a kind of tavern, called the Briloft. . . . Here were many quaint devices, fountains, artificial music, noises of beasts, and chirping of birds; but what pleased me most was a large pendant candlestick, branching into several sockets, furnished all with ordinary candles to appearance, out of the wicks spouting out streams of water, instead of flames. This seemed then and was a rarity, before the philosophy of compressed air made it intelligible.

In this brief passage, Evelyn charts a transition from the pleasures of viewing an appealing array of surprising devices to dispassionate consideration of the laws of natural philosophy. The inventive spurring candlestick was perceived as a rarity only before the physics of compressed air were explained. Like Descartes and Aristotle, Evelyn tracks how wonder, the initial prediscursive response, prompts inquiry and discourse about causes.

The travel writings of the German gentleman scholar Zacharias Conrad von Uffenbach provide more evidence of this type of detached analysis. Like Descartes and Evelyn, von Uffenbach desired to comprehend the inner workings of a curious object, illustrated in his published travelogues (Fig. 12). The android depicted here, which von Uffenbach saw in a private German collection, is labeled “statuum fumantem” (smoking statue). Akin to Jochum, this mustached pipe smoker wears a turban and robe, giving it a similarly generic Eastern appearance. Here we see a practical purpose for the turban, which houses mechanically driven bellows. The illustration of the back of the automaton shows that it can be opened up—its secrets disclosed—by removing two small panels, visible as dark oblong shapes between the front and back views of the figure. The interior cavity houses gears, pulleys, and bellows. The entire apparatus is depicted at the far right of the page as if it has been pulled out of the statue. By considering all three views together, it becomes evident that weight-driven pulleys move the interlocking toothed wheels to make the bellows expand and contract, pushing air through the lips of the costumed figure. Functioning like Jochum’s bagpipes, the tobacco pipe makes the process of breathing visible, so that forced air appears as life force. Von Uffenbach anatomizes the android, prizeing it open to reveal its insides. With its mysteries eviscerated, it is exposed as a human-made device that is clever, but not powerfully rare and wonderful. The exotic automaton thus understood does not hold sway over thoughtful human viewers. Like Descartes, von Uffenbach presents the automaton as a work of mechanical ingenuity, a pleasurable puzzle to be solved by the intelligent beholder.
Notably, none of the Doolhof publicity discloses technical information about mechanics to the general public. Exposing all of the mysteries to all comers would have been a risk, not least because dispelling novelty and rarity could result in fewer paying customers. In fact, the advice to hide the machinery and keep it confidential had long been an aspect of automata lore. One of the earliest treatises, by Hero of Alexandria (first century CE), advocates that readers keep the maker's knowledge to themselves. This caveat was repeated in early modern treatises: the engineer Salomon de Caus (1576–1626) cautioned that only with ignorance of causes did such devices appear marvelous, and Wilkins called automata “veiled arts,” advising that legendary ancient practitioners like Daedalus had found it wise “to conceal their learning from Vulgar Apprehension or Use” in order to be able “to excite the People's Wonder and Reverence.” Writing in 1648, Wilkins warned that popular public displays of self-moving images risked being “derided by common opinion.”

In contrast, the self-disclosed responses to automata of educated European men like Descartes, Evelyn, and von Uffenbach were informed by classical texts, which advocated that strong affective engagement was crucial to teaching and learning. They clearly were guided by Aristotle and probably also by Cicero’s well-known maxim from the first century BCE that the best orator teaches, and delights, and moves his listeners: “To teach them is his duty, to delight them is creditable to him, to move them is indispensable.” The moving statue acts like Cicero's orator, teaching audiences by startling and entertaining them. In a sense, then, the practice of viewing strikingly illusionistic and experimental works of art could potentially create the detached and objective observers that Alpers and Crary described. If this was the goal, however, then it is important to recognize that in classical and seventeenth-century aesthetic theory, the process of arriving at disengagement first involved intense engagement with the formidable emotive energy aroused by moving artworks.

Also significant is the historical fact that the position of the detached observer was one of rank and privilege. As we reconsider the histories of vision and visuality in relation to transcultural encounters and diverse audiences, as at the Doolhof inns, it becomes clear that efforts were made to distinguish different kinds of affective viewing practices. Von Uffenbach, Descartes, and Evelyn obviously had access to insider knowledge about the workings of wonders, but it is not likely that everyone was privy to this information. These men were well connected and highly educated, with particular interest in experimental science and technology. It is conceivable that the mechanisms of these inventions—the secrets of the maker’s practice—were mainly divulged to men of their social status. Indeed, one suspects that Doolhof publicity advertising “fine things for foreigners” probably targeted a preferred type of international visitor: the highly educated European gentleman. Disparaging comments about foreign lack of understanding, on the other hand, were directed mainly at non-Europeans such as "the Chinese.”

Evidence therefore indicates how delineations were drawn between a thoughtful response, associated especially with educated European gentlemen, and a passionate, automatic, and unthinking reaction, characterized as common to vulgar people and non-European foreigners. One of the most novel aspects of using public houses as exhibition venues was the potential diversity of the audience. Until this time, displays of wonders had mainly been reserved for the cultured elite, offering them specialized knowledge. Amsterdam's commercial displays, open to all who paid the entry fee, contributed to what Lorraine Daston and Katharine Park have called a democratization of wonder. Broader accessibility to formerly elite culture often prompted mockery of unruly or ignorant responses to the marvels. This kind of differentiation between learned wonder and vulgar wonder reinforced social hierarchies based on perceptions of class, ethnicity, race, nationality, and gender.
The distinction between appropriate and inappropriate viewing responses has particular significance in the case of automata shows. Descartes argued that the ability to make the transition from wonder to contemplation and rational discourse was precisely what distinguished the human from the machine. Because the automaton lacks an intelligent mind or rational soul, it does not possess the human capacity to use words or signs to convey thoughts; while a machine can make noise, it cannot converse or answer questions in dialogue with another.68 The Doolhof guidebook’s assertion that Chinese viewers “could not even understand” but were transfixed by the reason-blocking powers of excessive wonder was thus a way of likening strangers to the strange machines that astounded them.

That the guidebook singles out the Chinese is significant. The slur about not being able to understand automata was a particularly pointed insult considering that the booklet also calls China “the subtlest nation in the whole world.”69 This backhanded compliment acknowledges the fact that China had exceeded Europe in technological innovation for centuries. As early as the third century BCE, there were tales of Chinese inventors who constructed deceptively human-looking automata, and in the eleventh century, the inventor Su Sung had designed sophisticated clockwork that incorporated moving mechanical figures.70 Scholars have noted the difficulty of tracing the entangled global transmission of clockwork technologies, a multidirectional diffusion of ideas, people, and artifacts that provoked local inventions in various places. Knowledge of early Chinese mechanical automata may have been conveyed to India and thence via Islam to Europe.71 Know-how about the workings of these types of devices was passed on by artisans and voyagers, as well as in treatises, especially the important Hellenistic works of Philo of Byzantium (third century BCE), Apollonius of Perga (second century BCE), and Hero of Alexandria (first century CE). These texts, which we return to below, were preserved and circulated in Arabic translations in the Middle Ages; they were taken up in Byzantium and Persia, where the knowledge probably commingled with Chinese and Indian elements.72 Ancient ingenious inventions became legendary, and fables about the wonders of the East were conveyed to European audiences in medieval romances and travel accounts that described courtly displays of artificial marvels encountered or imagined in faraway places like China, Constantinople, and Persia. In the European cultural imaginary, automata had long been associated with distant places and mythic times.73

By the seventeenth century, however, European craftspeople had become accomplished automata makers, and the diplomatic gifting of mechanical devices was a widespread practice, a means to impress and influence foreign rulers with wonders of Western ingenuity.74 The Doolhof guidebook demonstrates awareness of such transactions. In point of fact, the denigrating comments about the wonder-struck Chinese were borrowed almost word for word from the writings of the Italian Jesuit missionary Matteo Ricci (1552–1610). Ricci is credited with introducing European automata and clocks to China. His presentation of these technologies as gifts to the court of Emperor Wanli in 1601 created much interest in mechanical marvels of the West, particularly in automata. The Chinese called them qiqi: strange things.75 In Ricci’s words, the clockwork presented at the court “struck all the Chinese dumb with astonishment,” for such things “had never been seen, nor heard, nor even imagined, in Chinese history.”76

In these passages, echoed at the Doolhoven, the Chinese seem to fall behind Europe into the belated time of the Other. Ricci’s point was to underline the advancement of Western knowledge by denying the extensive history of Chinese technological innovation, a claim that legitimated the Jesuit’s mission of conversion.77 Exposure to European mechanical inventions, the missionary implied, would beneficially cure the dumbfounded Chinese. Clockwork would move them forward in time, from astonishment to the enriching philosophical understandings that wonders stimulated.
While Ricci introduced mechanical devices at the emperor’s court to further his religious mission, in mercantile Amsterdam, similar rhetoric was marshaled toward different ends: the commercial conversion of the Chinese. There were many marvelous Chinese-made things that Dutch merchants were actively seeking to import in the face of significant trading obstacles. Visscher’s engraved city profile (see Figs. 2, 3), which details a multitude of goods brought by the various peoples of the world to Amsterdam, describes the Chinese as _diepsinnige_—profound, abstruse, and complex. The print itemizes priceless treasures, claiming that they were bestowed freely by the Chinese as gifts to the Maid: silks, precious stones, objects in gold and silver, ivory combs, and porcelain. Contradicting this appealing fiction, the text of Visscher’s print openly criticizes the restrictive trading practices of the Chinese, which were quite disadvantageous to the Dutch. Visscher laments the loss of an “inexhaustible richness” of potential profits on both sides. The flow of wealth into Amsterdam was in fact obstructed by the Chinese emperor, who blocked direct trade with middle-class Dutch merchants in part because they had no royal or courtly status. Dutch traders were required to make lavish payments of costly gifts—and automata and clocks were especially desirable. Visscher’s fantasy scenario in which Amsterdam is represented as “Empress of the whole world” receiving homage and tribute from the acquiescent Chinese thus imagines a profitable reversal of actual trade relations.

Returning to Schaffer’s claim that automata were distinctive of the milieu that produced them and that they persuasively placed craft skill in the service of power, we can conclude that in the competitive context of early capitalism, automata especially were mobilized to assist global trade. In his 1632 speech “On the Wise Merchant” at the inauguration of the Amsterdam Athenaeum, the Illustrious School, Professor Caspar Barlaeus declared the whole city a treasure chamber. Referring not just to commercial imports, he called Amsterdam a treasury of wisdom and knowledge, especially in the teaching of the arts and sciences. In these areas, the scholar asserted, there was much that caused foreigners to wonder, rendering them “struck dumb” by the city’s many marvels. As Barlaeus summed it up, folk from all parts of the world could benefit from Amsterdam’s _wetenschappelijke markt_—its knowledge market. The city’s wonders had a great deal to teach foreign visitors. The Doolhoven thus addressed complex urban transformations brought about by capitalism and the increasing global circulation of people and things. Automata attractions especially promoted the city as a center for the European-made curiosities that were most coveted by reluctant trading partners: _qiqi_, the strange things that facilitated global commerce. Advertised as “fine things for foreigners,” automata constituted a means of bringing the fabled wealth and wonders of the world into Amsterdam.

**THE ART OF TRANSCULTURAL CONVERSATION**

Running counter to fabricated reports of dumbstruck foreigners, compelling evidence suggests that actual meetings between locals and strangers at Amsterdam’s automata-displaying taverns created opportunities for reciprocal dialogue and new understandings, which meaningfully shaped the cultural life of an increasingly cosmopolitan city. For example, D’Os in de Bruijloft, run by the scholar Theunisz, was a well-known gathering place for discussion and debate, especially pertaining to matters of religion and natural philosophy. This is where Evelyn experienced the rare water-spurting candlestick that gave him so much pleasure. Another visitor was the Frankfurt cartographer and publisher Caspar Merian, who refers to the public house in his _Topographia Germaniae Inferioris (Topography of Lower Germany)_ of 1659, a volume that contains descriptions of various Dutch cities and towns. The German lawyer Gottfried Hegenitius visited in 1627 and described Theunisz’s establishment as a music hall that included wonderful fountain work as well as extremely unusual and hitherto unknown
devices and musical instruments. An avid recorder of epitaphs, Hegenitius transcribed a poem that laid out “the rules of the house,” designating it a paradise. He concluded that to hear and see all of the shows taught the gentle art of conversation, an observation that is central to my analysis of this exhibition site.²⁸

The colorful career of the innkeeper Theunisz has interesting implications for understanding Amsterdam’s automata shows. Theunisz was highly educated: he had been a student at Leiden University in the 1590s, studying Hebrew and mathematics with Professor Rudolph Snellius and Arabic with Professor Franciscus Raphelengius.²⁹ He worked with Raphelengius, son-in-law of Antwerp publisher Christophe Plantin, at the Leiden branch of the Plantin Press. This print shop was a meeting place for Leiden’s intellectuals, including renowned humanist scholars Joseph Justus Scaliger and Franciscus Junius.³⁰ As the first European publisher outside Rome to design Arabic types, Raphelengius made Leiden a center for Arabic publishing. He produced the first Arabic-Latin lexicon ever to be printed, and Theunisz probably assisted in its publication.³¹

Theunisz moved to Amsterdam in 1604, where he worked as a bookseller, printer, and publican. It was during this time that he encountered on the streets a man who, as Theunisz later wrote, attracted his attention because of his “dark complexion” and “curious clothes.”³² The innkeeper approached this stranger and—making practical use of his university training—struck up a conversation in Arabic. The man was ‘Abd al-‘Azīz ibn Muhammad, who was visiting the city as part of a Moroccan diplomatic deputation sent to Holland by Sultan Mulay Zaydan in 1609. Such delegations were of great interest to locals. A sketch by Jacques de Gheyn II depicts three views of a turbaned African man (Fig. 13). In one, the figure sits at a table and writes in a book; an inkpot and pile of coins lie adjacent. The drawing, today in the British Museum, London, has been dated to about 1605–10, making it possible that the artist encountered this visitor to the Dutch Republic because he was a member of the sultan’s delegation, if not ‘Abd al-‘Azīz himself, who served in the role of secretary. In contrast to the caricatured turbaned figures in paintings like Van Streek’s still life (see Fig. 11) or prints of costumed automata (see Figs. 8, 12), de Gheyn’s drawing conveys the agency and intelligence of an African man.

Winter was setting in at the time of the meeting between ‘Abd al-‘Azīz and Theunisz. The Moroccan visitor told Theunisz that he planned to overwinter in Amsterdam and set sail in spring when the seas were calmer. Seizing this opportunity, Theunisz invited the sojourner to reside with him, offering bed and board in exchange for instruction in Arabic.³³ ‘Abd al-‘Azīz agreed and stayed on for four months, during which time he gave lessons to Theunisz and a few other interested scholars. The group included the English intellectual Matthew Slade, who was rector of Amsterdam’s Latin school and curator of the library in the Nieuwe Kerk. Also joining them was John Paget, Slade’s compatriot, who had studied Arabic at Cambridge University and was pastor of the English Reformed Church in Amsterdam.³⁴ The eclectic group met regularly to converse in Arabic. Theunisz later wrote a summary of their lively cross-cultural Arabic debates “about the Christian religion and the Quran,” highlighting

![Image 13: Jacques de Gheyn II, Three Studies of an African Man, ca. 1605–10, pen and brown ink over black chalk on light gray-brown paper, 7¾ x 12½ in. (19.7 x 32 cm), British Museum, London (artwork in the public domain; photograph © Trustees of the British Museum)]
areas of agreement and commonality as well as irreconcilable points of doctrine. These discussions were quite frank. For instance, the publican Theunisz recorded ‘Abd al-‘Azīz’s insistence that God forbade the consumption of alcohol.

The keen interest of Theunisz, Slade, and Paget to learn about Islam was in keeping with larger academic trends. A number of scholars and theologians at the universities and academies advocated study of the Qur’an and the Torah as well as language training in Arabic and Hebrew. The impetus for opening up these areas of study was not disinterested: it assisted trade and diplomacy. Moreover, knowledge of Semitic languages was regarded as a valuable means to attain deeper comprehension of the Bible and to further the Calvinist mission of converting all non-Christians. The Reformed approach had much in common with that of Jesuits like Ricci who believed that informed debate based on familiarity with languages, texts, culture, and religious traditions was a more persuasive and effective missionary technique than the violent and coercive methods of the Roman Catholic Inquisition. Yet if conversion was the intent of Theunisz and his learned friends, it seems that ‘Abd al-‘Azīz’s stopover among the Christians served only to reinforce his Islamic convictions. If anything, it appears that he may have sought to convert his Protestant hosts. Before departing, ‘Abd al-‘Azīz gave some precious gifts to Theunisz in thanks for his hospitality: one was an Arabic copy he made of an Islamic prayer book; another was his own manuscript of the Qur’an. The Moroccan diplomat then boarded a ship bound not for Marrakech but for Medina, having resolved to go on pilgrimage to the burial place of the prophet Muhammad.

This kind of dialogue between people from different faith groups and parts of the world could have significant cultural reverberations, some of which can be traced through the subsequent career of Theunisz. The innkeeper later wrote of his meeting with ‘Abd al-‘Azīz as a life-changing experience that occurred “not without divine intervention.” The language skills he gained from a winter in study and conversation with ‘Abd al-‘Azīz were so impressive that he was hired as a lector to teach Arabic at Leiden University in 1612. A passage from the Qur’an written in Arabic in Theunisz’s hand is preserved in the Leiden University Library collections, testifying to his skills. As part of his academic work, Theunisz produced a translation of the Qur’an given him by ‘Abd al-‘Azīz. He also served the States General of the United Provinces, composing and translating diplomatic correspondence.

Theunisz’s knowledge of Hebrew must have been equally impressive: he built on his university training by cultivating a relationship with Amsterdam’s Jewish immigrants, and in 1617 he was appointed professor of Hebrew at the newly established Dutch Academy in Amsterdam. Theunisz was one of the first Amsterdam printers to use Hebrew type. Possibly he designed and made it himself, a skill he had opportunity to learn during his apprenticeship with Raphelengius. Notably, he published the Hebraic scholarship of the English Puritan Hugh Broughton, an associate of Slade, Paget, and Raphelengius. This led to a public debate between Broughton and David Farar, a rabbi in Amsterdam’s Portuguese Jewish community: the two men may have first met at Theunisz’s pub or his print shop. The rabbi and the Puritan discussed the value of the Gospels, another instance of open conversation about contentious religious differences.

In spite of (or perhaps because of) Theunisz’s substantial contributions, Reformed Church leaders protested his prestigious academic appointments, resulting in his dismissal—first from Leiden University and later from the Dutch Academy—on the grounds that he was a “dissenting Mennonite.” Theunisz belonged to the Amsterdam Waterlander Mennonite community, and his inn was sometimes called “Mennisten Bruyloft” (Mennonite marriage). Like every non-Reformed confessional group, Mennonites were not permitted to hold public office—these positions were reserved for confessing Calvinists—but they were allowed to
gather for worship, as long as it was done privately, mainly in house churches. They also came together in places like Theunisz's pub, which seems to have functioned as a center for Nonconformist conventicles. These gatherings and Theunisz's unconventional views may account for the fact that, unlike the Doolhof inns, his internationally known tavern and its marvelous displays were not publicized in any of the official histories of Amsterdam.

The Mennonite innkeeper seemed to court controversy throughout his career. Jan van der Veen composed a poem in 1630 that lists the multiple sects and dissenters that could freely express their opinions in the Dutch cities. The poem begins with obvious denominations like the Calvinists, Catholics, Lutherans, Mennonites, Zwinglians, and Puritans, followed by the more radical Libertines, Socinians, and Sophists. Van der Veen then turns to extremists, heretics, and pagans, including the “Turks, Jews, and heathens.” Also recorded in this section is Theunisz's inn as “Den Mennisten Bruyloft,” together with the “Brothers of the Rosy Cross.” The latter is in reference to the Rosicrucians, a radical Protestant secret society engaged in the alchemical transformation of matter, including the quest to transmute base metals into gold, and the creation of a homunculus, a small living human. That the Bruiloft inn was grouped with such extreme unorthodoxy certainly gives a sense of the notoriety of the place. In fact, the Amsterdam Reformed Church council made a formal complaint about the tavern to the civic government in 1633. The church leaders alluded to immoral goings-on, with insinuations about “blasphemous inscriptions.” What these were, we do not know, although it is tempting to speculate that they were Arabic or Hebrew script and may have been connected with the lifelike things that the proprietor was creating. These certainly could have appeared magical, blasphemous, or alchemical to the churchmen.

After he had been dismissed from his academic appointments, Theunisz devoted his energies to his public house and to developing its fabulous hydraulic automata in the 1620s and 1630s. While this may seem like a retreat from scholarly pursuits, I want to explore the idea that Theunisz's experimental creations arose from his active engagement in Arabic studies. The English baronet Sir William Brereton visited the Bruiloft inn in 1634. In his travel account, he describes Theunisz as “a man of most strange invention” and makes a point of stating that he “hath been professor in Leyden of the Arabic language,” even though the innkeeper had only briefly held the position of lector more than twenty years prior to Brereton's visit. Evidently, Theunisz's knowledge of Arabic was communicated to visitors who came to see his strange inventions, perhaps because there was a connection between the Bruiloft inn's highly unusual waterworks and the proprietor's academic training.

As a dealer in books, Theunisz would have taken an active interest in the Arabic manuscripts that were being auctioned in Amsterdam and sold in its bookshops. Moreover, his close associations with the most prominent scholars and publishers of Arabic in the Dutch Republic gave Theunisz access to the manuscripts that they were avidly collecting and studying. Some of these entered the collections of Leiden University and were counted among its most prized possessions. In 1609 Heinsius, who oversaw the library, commissioned the construction of a closed bookcase to house the Eastern manuscripts bequeathed to the university by Theunisz's professor Raphelengius and his close colleague Scaliger. This special bookcase is prominent in the right foreground of a 1610 print of the library (Fig. 14). As lector of Arabic in 1612, Theunisz would have had particular knowledge of the esoteric Eastern manuscripts enclosed in the university library bookcase.

Theunisz's successor in Arabic studies, Thomas Erpenius, also amassed an eminent collection of books and manuscripts, which were auctioned after his death in 1624; many of these works eventually entered the collections of the University of Cambridge. In the 1620s, Erpenius's pupil and successor, Jacobus Golius, traveled to Morocco and through the Levant,
including Aleppo and Constantinople, where he purchased more than two hundred manuscripts for the Leiden University Library.\(^{103}\) He also acquired an impressive private collection, which later went to auction, with many of the manuscripts ending up in the University of Oxford’s Bodleian Library.\(^{104}\) To give a sense of the renown of such manuscripts and their impact on European scholars, Descartes moved to Leiden in 1630 so that he could join Golius in the study of a newly obtained and exceedingly rare Arabic manuscript of Apollonius of Perga’s *Conics*.\(^{105}\) And Constantijn Huygens penned a poem in praise of the precious manuscripts brought by Golius, comparing his collection to Admiral Piet Heyn’s famed capture of a Spanish fleet loaded with silver from the Americas. These Eastern manuscripts bring more glory and prosperity to the fatherland than the silver fleet, proclaimed Huygens: they are true gold, of benefit to everyone. The spoils of the whole globe, East and West, belonged to the Dutch.\(^{106}\) Like Visscher and Barlaeus, Huygens expressed the sentiment that the astonishing material wealth and riches of the Dutch Republic were exceeded only by its vast treasury of knowledge.

Of importance for our study of the mechanical wonders of Amsterdam is the fact that Golius brought back manuscript copies of some of the foremost Arabic books on automata making: al-Jazarī’s *Book of Knowledge of Ingenious Mechanical Devices*, as well as a fragment of the Banū Mūsā’s *Book of Ingenious Devices*, and an Arabic manuscript of Hero of Alexandria’s *Barulcus* or *Mechanics*.\(^{107}\) The Banū Mūsā brothers were three ninth-century scholars from Baghdad, and their *Book of Ingenious Devices* describes the construction of one hundred mechanisms, including automata, fountains, and musical instruments, some of which are elaborations and improvements on the more basic ideas conveyed in the Hellenistic texts of Hero as well as Philo of Byzantium and Apollonius of Perga.\(^{108}\) The thirteenth-century *Book of Knowledge of Ingenious Mechanical Devices* by the Mesopotamian engineer Ismā’īl ibn al-Razzāz al-Jazarī was also indebted to the works of Hero, Philo, and Apollonius, and the author specifically notes the improvements he had made to the previous designs of the Banū Mūsā.\(^{109}\) Besides the Arabic copy of *Mechanics*, there were two Greek manuscripts of Hero’s works in Leiden. One of these, containing Hero’s *Pneumatica* and *Automata*, was housed in the Leiden University library bookcase.\(^{110}\) The other was in the collection of Professor Gerardus Johannes Vossius, who taught at Leiden University and later as one of the first professors (together with Barlaeus) at the Amsterdam Athenaeum in 1632. Vossius’s son Dionysius had studied Hebrew and Arabic at Leiden University while still an adolescent, and he became associated with Theunisz after the Vossius family moved to Amsterdam.\(^{111}\) Theunisz thus potentially had access to a number of notable ancient manuscripts about the crafting of automata. Moreover, the innkeeper had the language skills to decode these esoteric works and a vibrant scholarly community with which to discuss the ideas and designs.\(^{112}\)

That Theunisz might have studied al-Jazarī’s text is of particular importance because it was written as a sort of how-to manual for craftspeople.\(^{113}\) This treatise contains detailed instructions as well as illustrations for the manufacture, construction, and assembly of various
automata, fountains, water clocks, and trick drinking vessels. The components needed to make these things included tanks, pipes, floats, siphons, axles, levers, taps, valves, and gears. Illustrations show how to fit parts together in order to harness the principles of hydraulics, pneumatics, and mechanics to spectacular effect. The eclectic Theunisz would have been able to manage this because, in addition to everything else, he was a distiller of brandy. He routinely handled the tanks, vessels, pipes, and siphons used in distillation processes—the very equipment required for creating fountains and hydraulic apparatuses (and for carrying out alchemical experiments).

None of the curious devices displayed at Theunisz’s public house survive, nor are there any images of them, but the travel accounts of international visitors such as Brereton, Evelyn, and Hegentius chronicle highly innovative hydraulic works. Brereton gives special mention to figures that carried vessels from which water overflowed, such as “a lively representation of the five wise and five foolish virgins; the one having oil plentifully, the other wanting.” These may have been derived from al-Jazarī and the Banū Mūsà, who explain how to make all manner of trick vessels for dispensing liquids—hot and cold water as well as wine and oil—including those that overflowed and refilled automatically. Brereton also singled out “a most curious water-work at an infinite charge” and a work in which “the water did spring directly upwards three yards: in this work did the water issue at least in forty or fifty places.” This, too, may have come from al-Jazari, who details the workings of six different fountains with variations of alternating devices, allowing for water to emanate for a while as a single jet, then as multiple sprays, and again as a jet, without any diminishing of the water supply, so that it appears to flow “at an infinite charge,” as Brereton put it.

Brereton also describes “diverse beasts placed upon the rails round about whereon we leaned, out of all whose mouths water strongly sprung, and was carried two or three yards.” Al-Jazari’s book includes instructions for the fabrication of water-spouting animals and birds. A striking example is the illuminated manuscript page currently in the collection of the Museum of Fine Arts in Boston (Fig. 15). Painted in opaque watercolor with gold leaf, it depicts a peacock, its neck outstretched, perched on top of a fountain. Water spurts from the bird’s beak into a basin.
below; underneath the basin is a reservoir where a waterwheel ensures the continuous circulation of water. This illustration and accompanying instructions give a vivid sense of the types of inventions that Theunisz constructed.

Evelyn, visiting Theunisz’s inn in 1641, wrote of learning about the natural philosophy of compressed air while being entertained by “many quaint devices, fountains, artificial music, noises of beasts, and chirping of birds.” Al-Jazari’s book includes instructions for crafting chirping and whistling bird automata, which were considered an invention of Hero of Alexandria. The trick was using compressed air and forced water to create noises that mimic the sounds of birds or animals. As with all of these devices, once the basic principles were understood, the automata maker could introduce inventive and entertaining variations, creating all manner of noisy moving machines.

According to al-Jazari, who worked for the Artuqid kings of Diyār Bakr, his hydraulic assemblages were fashioned for use in palace entertainments and drinking games. For instance, he explains how to make a goblet topped with a bird so that when wine is poured the bird whistles and spins until it stops with its beak pointing to someone in the drinking party. That person has to drain the cup, imbibing through a spout. If any wine is left, it flows back into the closed body of the vessel, which compresses the air within so that the bird continues to whistle, and the drinker has to fully drain the cup in order to make the noise stop. An al-Jazari manuscript page shows an elaboration of this basic type (Fig. 16). While the top edge of the sheet has been cropped, we can still see part of a bird, which may have whistled and spun around on the roof of a pavilion. Kneeling inside is an automaton of a human figure wearing a colorful turban and robes. This automated figure draws up a basin with one arm, while its other arm pours liquid from a jug.

Like most of the humanlike automata that adorned al-Jazari’s devices, this moving figure plays the role of a servant or enslaved person. Many of the manuscript’s androids move to fill, empty, or convey various vessels, and some play musical instruments. For instance, the manuscript’s instructions describe an elaborate drinking game device with a seated figure, called a “slave girl,” who grasps a bottle and fills a goblet. Above her in a balcony, four more “slave girls” play the flute, tambourine, lute, and drum, while above them is a dancer with a ball. Topping this complicated assemblage, a rider on horseback twirls and stops to point his lance at the one in the party who must drink the goblet filled by the mechanized slave. This continues until the reservoir is empty, which triggers another automaton to emerge from a door and make a hand gesture that indicates “no more wine,” at which point the host of the party must decide whether to refill the device and continue the drinking game. The fantasy of the automaton acting as an agreeable and submissive slave serving the court enhanced the pleasures of palace entertainments.

Al-Jazari’s simulacra of enslaved peoples are dressed in turbans and robes, pointing to a likely precedent for the European practice of clothing the android in the sorts of costumes worn by Jochum and van Uffenbach’s pipe smoker (see Figs. 8, 12). The possibility
that exoticized automata came to Amsterdam via Arabic manuscripts prompts reassessment of the claims that were made about them. Although the publicity materials declared that Amsterdam’s moving statues were wondrous inventions that had never been seen, or heard, or even thought of before, the objects themselves tell a different story. Both the technology and the iconography betray engagement with long-standing craft traditions that had developed centuries earlier in the East. The circulation of people, objects, and manuscripts stimulated the creation of inventions in which elements from various places were intertwined. While the Amsterdam automata may have been presented as strange things that parodied strangers by mimicking them as machines that lacked understanding, their mime show could also be apprehended as a form of emulation, an attempt to imitate and understand the foreign technological accomplishments to which they were indebted.

Theunisz’s tavern can thus be understood as a sort of laboratory where he worked at re-creating ancient and esoteric forms of knowledge. Sven Dupré has noted that “experimental philosophy still lacked specific places of experimentation in the seventeenth century.” Taverns, especially those that engaged in the activities of brewing, assaying, and distilling, contained artisanal workshops. In the case of Theunisz, the innkeeper’s academic expertise was complemented by his practical know-how, allowing him to investigate and reinvent various ingenious devices. His inn was connected to other urban locales dedicated to the production of knowledge, such as print shops, libraries, bookshops, universities, and academies. Scholarly methods of learning by reading, writing, and studying were augmented by artisan practices of knowing through making and experimenting with materials. As a scholar-craftsman, Theunisz combined book knowledge with hands-on experience in order to bring ancient arts to life.

Amsterdam’s automata exhibitions probably shared the pedagogical aims of the short-lived Dutch Academy where Theunisz had taught: to demonstrate the arts and sciences “for the edification and amusement of everyone.” Brereton described the Bruiloft inn as having “no room without some rare invention for pleasure and delight,” and Hegenitius recorded the loftier objective of congenial engagement with the entertainments, which was to learn the art of conversation. At these taverns, strange things fostered communication between strangers. The gathering of curious artifacts and diverse people tested identities, stimulating discussion about commonalities and differences and reactions that ranged from hospitality to belittlement. Automata displays had the potential to provoke asymmetrical relations, in which ethnic and religious dissimilarities were disparaged, as with the assertions of Amsterdam’s world supremacy in contrast to foreigners’ dumb-founded lack of understanding. Yet the mobile dynamics of such places and their animated attractions also could spark reciprocal conversations and creative engagement with various ways of knowing. By bringing the faraway into dialogue with the local, Amsterdam’s inventive pub exhibits proved important venues for crafting mutable transcultural understandings of an interconnected world.

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Angela Vanhaelen, *Amstelodamum, 1919*.


3. Ten different editions of the various Doolhof pamphlet guidebooks survive, of which there are only fifteen extant copies. They were regularly updated with information and woodblock images of new attractions. See Hanny Reneman, *Het ‘Oude Doolhof’ te Amsterdam* (PhD diss., Leiden University, 1975), 75. Many of the travel accounts are cataloged in J. N. Jacobsen Jensen, *Reizen in Nederland, Nederlandsche Studenten Vereeniging, Amsterdam: Beschrijvende Lijst van Reizen in Nederland, 1917*.


17. The text of this print can be viewed on the Rijksmuseum website, http://hdl.handle.net/10934/RM000.COLLECT.190840.

18. On iconoclasm in Amsterdam, see Angela Vanhaelen, “Iconoclasm and the Creation of Images in Emanuel de Witte’s Old Church in Amsterdam,” *Art Bulletin 87*, no. 2 (June 2005): 249–64.


27. The statues of David, Goliath, and Goliath’s shield bearer are attributed to Albert Janz. Vincenbrinck, sculptor of the elaborate pulpit in the Amsterdam Nieuwe Kerk. David once had a wig of human hair, enhancing its lifelike appearance. Marianne Eisima, *David en Goliat met zijn Schildenier* (Uit de Hoofd Doolhof (Wormer, the Netherlands: Innere, 1996), 47. The Amsterdam Museum has recently acquired a wooden statue of Hercules with Vincenbrinck. Technical examination reveals that it was probably a moving statue, which raises the likelihood that it was part of the Doolhof displays. Thanks you to Anne Diestelkamp and Erma Hermens for bringing this work to my attention.


31. The first depiction of Jochum appears in an extant guidebook that predates 1648. Reneman, “Het ‘Oude Doolhof,’” 76.

Legacy in Leiden, 1669–2009 (Leiden, the Netherlands: Leiden University Library, 2009), cat. no. 41.
94. Wijnman, “Jan Theunisz.,” 40–41, 50, 60, 73–76.
95. Sprungert, Trumpets from the Tower, 56–58; Dalen, “Johannes Theunisz,” 166; and Wijnman, “Jan Theunisz.,” 56–65.
99. Wijnman, “Johannes Theunisz.,” 56. Of the eleven extant Banū Mūsā manuscripts, one is in Leiden.
100. Possibly the inn was nicknamed Mennisten Bruyloft Conica, which it was later sold by Amsterdam bookseller Matthäus Merian and half brother of the naturalist Abraham Jakob van der Aa, Biographisch Woordenboek der Nederlanden (Haarlem, the Netherlands: Brederode, Amsterdam University Press, 1989), cat. no. 45.
102. Vrolijk and Leeuwen, Arabic Studies, 27; and Graffon, Joseph Scaliger, 212–21.
104. Golius’s acquisitions for the university library are cataloged as Or. 1 to Or. 211. The al-Jazari manuscript is Or. 175; the Banū Mūsā is Or. 168; Hero’s Baracus is Or. 511. Levina Warner later acquired a second copy of the al-Jazari manuscript, which he left in his will to Leiden University in 1666. It is cataloged as Or. 656. Vrolijk and Leeuwen, Arabic Studies, 42–47, 58.
106. Al-Jazarī, al-Ḥasan ibn Ḥasan ibn