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## **Toys in Trade: Playfully Poetic Technology in Qing Dynasty Canton**

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### **Introduction**

Early modern trade in luxury goods has drawn attention to the transmission of aesthetic, as well as technical, knowledge between artisans who were separated both by language and by distance.<sup>1</sup> Chinese porcelain bowls entranced their European consumers as much for their delicate design as for the fiery technique that transformed clay into ceramic.<sup>2</sup> Over time, European artisans

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<sup>1</sup> Anna Grasskamp and Monica Juneja, eds. *EurAsian Matters: China, Europe, and the Transcultural Object, 1600-1800* (New York, 2018); Alden Cavanaugh and Michael E. Yonan, eds. *The cultural aesthetics of eighteenth-century porcelain* (London, 2017); Meha Priyadarshini, “Crafting a Global Brand: Jingdezhen and Its Artisans in the Early Modern World,” in *Chinese Porcelain in Colonial Mexico* (London, 2018), 29-61. See also Emily Byrne Curtis, *Glass exchange between Europe and China, 1550-1800: diplomatic, mercantile and technological interactions* (Farnham, 2009).

<sup>2</sup> The literature on the making of porcelain in Europe and the efforts that led to the transfer of technique is vast. New additions to the field include Dawn Odell, “Delftware and the Domestication of Chinese Porcelain,” in *EurAsian Matters: China, Europe, and the Transcultural Object, 1600-1800*, eds. Grasskamp, Anna, and Monica Juneja (New York, 2018), 175-202; John McAleer, “Global Connections: Punch, Porcelain and Maritime Material

collected information and experimented with the making of porcelain in order to alter the technique to suit available materials and the appearance to suit European taste. In a similar fashion, craftsmen framed foreign materials such as corals or nautilus shells in gilt frames and sold them to collectors in both China and Europe.<sup>3</sup> Their artisanal process as well as their precious material was their source of value, most particularly in Europe where early examples were integrated into princely and royal Kunstkammern as *artificialia*, emphasizing the value of

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Culture,” in *The Material Cultures of Enlightenment Arts and Sciences*, eds. Adriana Craciun and Simon Schaffer (London, 2016), 195-197; Gianenrico Bernasconi, “L’objet comme document. Culture matérielle et cultures techniques,” *Artefact. Techniques, histoire et sciences humaines* 4, no. 4 (2016), 31-47; Göran Ulväng, and Sofia Murhem, “To Buy a Plate: Retail and Shopping for Porcelain and Faience in Stockholm During the Eighteenth Century,” in *A Taste for Luxury in Early Modern Europe: Display, Acquisition and Boundaries*, eds. Johanna Ilmakunnas and Jon Stobart (London, 2017), 197-219.

<sup>3</sup> Anna Grasskamp, *Objects in frames: displaying foreign collectibles in early modern China and Europe* (Berlin, 2019); Gedalia Yogev, *Diamonds and Coral: Anglo-Dutch Jews and Eighteenth-Century Trade* (London, 1978); Francesca Trivellato, *The Familiarity of Strangers: the Sephardic Diaspora, Livorno, and Cross-Cultural Trade in the Early Modern Period* (New Haven, 2009); Anna Grasskamp, “Metamorphose in Rot: Die Inszenierung von Korallenfragmenten in Kunstkammern des 16. und 17. Jahrhunderts,” *Tierstudien* 4 (2013): 13-23; Marlise Rijks, “‘Unusual Excrescences of Nature’: Collected Coral and the Study of Petrified Luxury in Early Modern Antwerp,” *Dutch Crossing* 41, no. 2 (2017): 1-29.

their having been made by human skill.<sup>4</sup> Without suggesting a direct parallel, this article proposes that the process of making as a means of understanding a new technique was also at play in the introduction of clockwork technology to China. In addition, by placing this process in conversation with James Trilling's use of "conspicuous virtuosity" developed in the context of Byzantine art and Nadia Baadj's outline of "collaborative craftsmanship" and "chimeric creation" developed in the context of early modern European *Kunstkast* (cabinets displaying individual collections), this article seeks to map how the processes of dismantling an original and remaking it in a different aesthetic form could allow actors in the global trade to co-create artisanal and social practices.<sup>5</sup>

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<sup>4</sup> The primary materials and inventories detailing early modern collections is too vast to cite here, but the interested reader is referred to what remains a key text in the field, namely Impey, Oliver, and Arthur MacGregor, eds., *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe* (Oxford, 1985). In addition, Julius Ritter von Schlosser's *Die Kunst- und Wunderkammern der Spätrenaissance* originally published in 1908 continues to provide a foundation for a start to compiling a comprehensive biography of kunstkammer inventories, particularly in light of the recent publication of an English edition edited by Thomas DaCosta Kaufmann and translated by Jonathan Blower. *Art and Curiosity Cabinets of the Late Renaissance: A Contribution to the History of Collecting*, ed. Thomas DaCosta Kaufmann and trans. Jonathan Blower, (2021); von Schlosser and Julius Ritter von Schlosser, *Die kunst- und wunderkammern der spätrenaissance*, vol. 11. (Leipzig, 1908).

<sup>5</sup> James Trilling, "Daedalus and the Nightingale," in Maguire, Henry, eds. *Byzantine court culture from 829 to 1204* (Dumbarton Oaks, 2004) 217-230, 225; Nadja Baadj, "10 Collaborative

In the decades following the arrival of the British, French, Danish, and Swedish East India Companies in Canton (Guangzhou) in the 1730s, European enchantment with purchasing, commissioning, gifting, and re-selling trade artifacts from China intensified.<sup>6</sup> As international trade expanded, the alleys and side streets surrounding the European Quarter in Canton boomed with shops selling a fantastic array of commodities: porcelain, silk, lacquer, herbal medicine, and clocks. The latter had been of vital importance in gaining access to China for missionaries and merchants alike.<sup>7</sup> Subsequently, interest in timepieces surged among the Chinese elite, who

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Craftsmanship and Chimeric Creation in Seventeenth-Century Antwerp Art Cabinets,” in *Sites of Mediation* (Leiden, 2016). doi: [https://doi.org/10.1163/9789004325760\\_012](https://doi.org/10.1163/9789004325760_012).

<sup>6</sup> The scholarship on the histories and material culture of these companies is too extensive to cite here. However, two fascinating new additions to recent scholarship are Lisa Hellman, *This House is not a Home: European everyday life in Canton and Macao 1730-1830* (Leiden, 2018) and Guido Van Meersbergen, “Writing East India Company History after the Cultural Turn: Interdisciplinary Perspectives on the Seventeenth-Century East India Company and Verenigde Oostindische Compagnie,” *Journal for Early Modern Cultural Studies* 17, no. 3 (2017): 10-36.

<sup>7</sup> Catherine Pagani, “*Eastern Magnificence & European ingenuity*”: *Clocks of Late Imperial China* (Michigan, 2001), 6; Simon Schaffer, “Enlightened Automata,” in *The Sciences in Enlightened Europe* eds. William Clark, Jan Golinski, and Simon Schaffer (Chicago, 1999), 126-165, 128. For the role of automata in Europe see Adelheid Voskuhl, *Androids in the enlightenment: Mechanics, artisans, and cultures of the self* (Chicago, 2013); Alexander Marr, “Gentile curiosité: Wonder-working and the Culture of Automata in the Late Renaissance,”

treasured clocks both for their ability to tell time and for the spectacular performances executed by the troupes of automata that served as decoration.

While the majority of clocks entering the Chinese market during the eighteenth century were produced in Europe, a local production also arose in Canton.<sup>8</sup> Although the Jesuit missionaries who first gained entry into China were skilled in maintaining and winding clocks, professional clockmakers did not travel with the merchants seeking entry into China by bringing clocks as gifts until late in the process of technology transfer. Hence, the object, namely the clocks, became the primary referent for developing this production, particularly outside the Imperial workshops. Dismantling, remaking, and making were the core means by which mechanical skill could travel. Hence, it is necessary to look at the objects around which this argument is centered through the lens of materiality, understood here as the ways in which the object is engaged with both as a material and as a material that is part of a broader social fabric,

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in *Curiosity and Wonder from the Renaissance to the Enlightenment*, eds. Evans, Robert John Weston, and Alexander Marr (London, 2017), 165-186, 160.

<sup>8</sup> Simon Schaffer, "Instruments and Cargo in the China Trade," *The British Journal for the History of Science*, 44 (2006): 217-246. Other less productive centers existed around Shanghai, Ningbo, and Nanjing. Catherine Pagani, "Clockmaking in China under the Kangxi and Qianlong emperors," *Arts Asiatiques* 50, no. 50 (1995), 78-79; Kristina Kleutghen, "Chinese Occidenterie: The Diversity of 'Western' Objects in Eighteenth-Century China," *Eighteenth-Century Studies* 47, no. 2 (2014): 117-135; Huang Qingchang 黃慶昌, "Qingdai Guangzhou zhizao de xishi zhongbiao jiqi lishi beijing tanxi," 清代廣州制造的西式鐘表及其歷史背景探析, *Nanfang wenwu* 南方文物 3 (2011): 190-195.

or perhaps, more precisely as an instigator of embodied emotion, by its makers, owners, and onlookers.<sup>9</sup> In taking this approach, the article seeks to explore the archaeological proposal made by Oliver Harris and Tim Flohr Sørensen in the last decade, that materials might be historically explored as instigators of “atmosphere.”<sup>10</sup> While this approach is grounded in an analysis of Neolithic material remains and architectures, it resonates with the understanding of place and experience proposed by Jonathan Hay’s exposition of Ming and Qing dynasty “surfacescapes” or material landscapes. In a broad sense, looking at mechanical tableaux from the early period of mechanical invention in Qing China offers the opportunity to explore how technique and materials could accommodate changing aesthetics and move seamlessly between elite cultures.

This article takes as its point of departure an object, which sheds light on how the knowledge to produce automata was put to use in Canton. It shall be argued here that artisans in Canton (Guangzhou) stripped clockwork technology down to parts and that in the first stage, only the mechanics that allowed a sculpture to move were retained in Canton-made objects. The mechanism was then modified so that it could animate an intricate tableau that showcased the

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<sup>9</sup> Emotion in the early modern period has been the focus of much recent research. See Andreea Marculescu and Charles-Louis Morand Métivier, eds., *Affective and Emotional Economies in Medieval and Early Modern Europe* (New York, 2018) and Philippa Maddern, Joanne McEwan, and Anne Scott, *Performing Emotions in Early Europe* (Turnhout, 2018).

<sup>10</sup> Oliver J.T Harris and Tim Flohr Sørensen, “Rethinking Emotion and Material Culture,” *Archaeological Dialogues* 17, no. 2 (2010): 145-163; Tim Flohr Sørensen, “More than a feeling: Towards an archaeology of atmosphere,” *Emotion, Space and Society* 15 (2015): 64-73.

already famous skills employed by Canton artisans, such as carving, enameling, and miniaturization.<sup>11</sup>

The object that takes center stage in this article is part of a group of three miniature mechanical tableaux, all built around an internal set of gears. All three were made in Canton. They would have been brought to Denmark by the Danish Asiatic Company (operating from 1729-1844, henceforth DAC). The company was an extension of the Danish East India Company (in operation 1616-1650 and 1668-1729), but sailed almost exclusively to China, rather than India as its predecessors had done. It was founded in 1729 and sent off its first ship to China in 1730 while operating under the auspices of *Det Kinesiske Selskab* (The Society of China).<sup>12</sup> It has not been possible to date the tableaux yet, but it is likely that they were made between 1730 and their first appearance in Danish records in 1760.<sup>13</sup> Two of them became a part of the

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<sup>11</sup> Xu, Xiaodong, “Europe-China-Europe: The Transmission of the Craft of Painted Enamel in the Seventeenth and Eighteenth Centuries,” in *Goods from the East, 1600–1800. Europe’s Asian Centuries* eds. Maxine Berg, Felicia Gottmann, Hanna Hodacs, and Chris Nierstrasz (London, 2015), 92-106; Elaine M Gibbs, “Colors and Techniques of Eighteenth-Century Chinese Wallpaper: Blair House as Case Study,” in *The Materiality of Color*, ed. Andrea Feeser (London, 2017), 247-264; Paul A. Van Dyke, *The Canton trade: Life and enterprise on the China coast, 1700-1845*, Vol. 1. (Hong Kong, 2005).

<sup>12</sup> Benjamin Asmussen, “Netværk, ledelse og kinafart–‘Interlocking Directorates’ i 1700-tallets tidlige entreprenante tid,” *Erhvervshistorisk Årbog* 67, no. 1 (2018): 1-14.

<sup>13</sup> The earliest written records of the three mechanical sculptures are their inventory entries in a late eighteenth-century inventory of the royal Danish Kunstkammer. All three mechanical



collection belonging to Queen Sophie Magdalene (1700-1770) and subsequently entered the royal Kunstkammer upon her death. The largest and most intriguing tableau entered the household of DAC director Olfert Fas Fischer (1700-1761) before being bequeathed to the Kunstkammer.<sup>14</sup> In all likelihood, both the queen and the DAC director bought their treasures on the Danish Asiatic Company auction. Once part of the royal Kunstkammer collection, they were integrated either in the “Indian Chamber,” where all sorts of articles from across the globe were placed side by side, or they were on display alongside intricate pieces of ivory turned on mechanical lathes by generations of Danish royalty, as well as architectural and ship models, in the “Model Chamber.”

These events frame a significant gap in our knowledge about the three tableaux, which is grounded on a wider lack of knowledge about how clockwork technology was not merely transferred to but changed by the artisan and merchant community in Canton and in what ways production was sustained in the face of European competition. Namely, for whom and for what purposes were they produced? Who wound them? Watched them? Gifted them? Conducting a close analysis of the iconography employed in the tableau owned by Olfert Fas Fisher, this article suggests that it allowed the international community in Canton to cocreate a cross-cultural version of a popular Chinese drinking game.

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sculptures were noted to have been produced in Canton. They were first recorded between 1760 and 1775. Bente Dam-Mikkelsen and Torben Lundbæk, *Etnografiske Genstande*.

<sup>14</sup> The auction was held on the 20 March 1762. Bente Dam-Mikkelsen and Torben Lundbæk, eds., *Etnografiske Genstande i det Kongelige Danske Kunstkammer 1650-1800 / Ethnographic Objects in the Royal Danish Kunstkammer 1650-1800* (Copenhagen, 1980), 206-207.

By situating the tableaux within the wider context of automata used by European courts and their emissaries, the practice of playing drinking games is shown to be an important aspect of trade, where Chinese and European merchants might find common ground. Two of the three tableaux make direct reference to a Chinese drinking game. Known as “羯鼓录” (*jiégǔ lù*), the game requires a flower to be passed from player to player while a drum is beat. In the Qing dynasty, the recitation of a poetic couplet, as well as the imbibing of one’s drink, was mandated as penalty for holding the flower when the music stopped. This game could be played with or without a mechanical prop. However, similar European drinking games were also centered on the ability to set an object in motion without the ability to predict when it would stop. Mechanical boats equipped with canons sailed along the top of banquet tables, while Roman goddesses rode unfortunate young men transformed into deer.<sup>15</sup> When the mechanism wound down, the courtier faced with the sculpture would offer a toast as penalty. At their core, all of these tasks required only a very simple movement of gears, driven by a manually wound spring.

The lack of complexity in the interior mechanism might suggest that the resultant sculptures were merely derivative and simplistic imitations that would have been less valuable to both European and Chinese buyers of the eighteenth century than the complex clocks brought to China by European missionaries, merchants, and ambassadors. On the contrary, the mechanical sculptures produced in Canton demonstrate how the combination of foreign technology with

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<sup>15</sup> Hervé Oursel, Isabelle de Conihout, Julia Fritsch, Jan Jaap L. Haspels, J.H. Leopold, Eric Rieth, and Nadja Zweigler, *Ships of curiosity: three Renaissance automata* (Paris, 2001); Jessica Keating, *Animating Empire: Automata, the Holy Roman Empire, and the Early Modern World* (Pennsylvania, 2018).

local design—music, ivory carving, and poetry—led to sculptural innovation, shaped Canton’s self-referential representation of artisanal production, and provided a new aesthetic means of celebrating success and participating in social games.

### ***The Mechanism***

These tableaux are many-layered in the broadest sense of that term. While they provide a multitude of points from which to begin an analysis, this article will start by connecting the mechanical movement found in Olfert Fas Fischer’s tableau to its theatrical exterior and then proceed to its iconography and possible uses. I propose that the mechanical sculpture offers up an opportunity to look at cross-cultural exchange through the lens of *techne*—a Greek philosophical concept, taken here to refer to the knowledge generated by the making of artifacts, the performance of this process, and its relationship to understanding.<sup>16</sup> While Cantonese artisans made and designed the tableau in a material understanding of those terms, it could also be visually remade or co-created by the Chinese and European merchants who wound it and

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<sup>16</sup> I use this term deliberately as a means to place this argument in between the domains of knowledge and craft. The roots of *techne* in Antiquity and its relationship to *episteme* and *praxis* is discussed in Pamela O. Long, *Openness, Secrecy, Authorship: Technical Arts and the Culture of Knowledge from Antiquity to the Renaissance* (Baltimore, 2001), 16-46; Ulrich Lehmann, “Making as knowing: epistemology and technique in craft,” *The Journal of Modern Craft* 5, no. 2 (2012): 149-164.

watched or participated in its performance. This is especially the case for Olfert Fas Fischer's tableaux.

(Figure 1 here)

In the tableaux, in a garden on the ground level of a four story tower, a figure stands behind a snakeskin drum with two drumsticks in its hands (Figure 1). The arms are attached to levers connected to the gear box hidden behind the figure and contained in a solid wooden base. On the first floor, six tiny boats sail in an anticlockwise circle between two doorways. On the wall hangs an ink painting of a mountain landscape. On the second floor, six slightly larger, individualized figures carrying baskets of flowers circle through two doors, entering on the left and leaving on the right. Between them hangs an ink painting of a lotus flower. On the top level, four smaller men carrying green stalks spin in a circle in front of an intricately carved ivory screen. On each floor, the doors and paintings are framed by poetic couplets that together form a poem about spring, drunkenness, and the urging forth of flowers with heavenly music. The three topmost floors are each connected to the gear box by a central rod that runs behind the ink paintings. On either side of the lacquer painted wooden box on the first floor is a door that opens up to reveal the mechanical heart of the sculpture. The main machinery is hidden behind a metal screen, but as the sculpture moves it is possible to see a small lever strike a bell just below the first floor alternating in time with the drumming. The mechanical interior not only propels the exquisitely carved exterior into motion, but it also performs alongside it.

(Figure 2 here)

The mechanism is a wind-up, mainspring-powered device consisting of components common to early modern wind-up mechanisms: a mainspring, three gear wheels (two with pins),

three horizontal ratchets, one vertical ratchet, and a pawl. The following description is based on two x-rays of the metal box containing the movement, since a shift in weight along the left side of the wooden structure barred visual access. The first x-ray (Figure 2) is a side-on view, whereas the second x-ray (Figure 3) shows the view from the back. The mainspring, contained in a barrel with gear teeth around its edge, is long (more energy stored), thick (more torque), and tightly coiled (Figure 2). It powers three gear wheels and four axels, tempered by the pawl, which is connected to the third and smallest gear. The central rod is turned by the largest gear wheel, also connected directly to the mainspring.

(Figure 3 here)

The energy stored in the winding of the torque spring translates into three distinct movements. The first movement is the striking of the bell that sits directly on top of the mechanism. It is caused by a vertical lever pivoted by nine pins on either side of the largest gear. These ensure that if the mechanism is sufficiently wound up for a full rotation of the gear wheel, the bell would be struck at least nine times. The second movement is the raising and lowering of the ground floor figure's arms, hitting the drum. In this case, a total of eighteen pins have been attached to both sides of the second largest gear wheel, where the placement of the pins alternates. Two levers connected to the drummer's lower arms protrude back through the front screen, through the metal box containing the movement, and come to rest on their respective sides of the wheel. In this manner, the arms lift and hit the drum at alternate intervals. On Figure 3, only two pins are visibly protruding from the largest gear wheel, while only four on either side

protrude from the smaller of the two. Nonetheless, on the other x-ray the circular joints of more pins are visible, suggesting that the pins may simply have broken off through wear.

The third movement is a relatively soundless one, although as with most early modern automata, the moving components themselves in all likelihood rattled merrily. The central rod, powered by the turning of the largest gear wheel, is connected to three other metal rods, each connected to a round plate that supports the figures circling through the two doorways on each of the three upper levels. The figures do not move independently. All this is to say that once wound, the top floors would spin, the drummer would audibly drum, and an unseen bell would strike from within. The movement, tempered by gears and pinwheel escapements, may have lasted longer than one rotation of each wheel, since the torque spring is long and thick. Moreover, the addition of a pawl to the small, top gear would slow the movement down, spacing out the drumbeats, the striking bell, and the circling figures. Nonetheless and perhaps naturally enough for the purposes of the game it was intended to structure, the duration of the mechanical performance relied on the strength and determination of the person winding it.

The other two mechanical sculptures feature similar technology, and their workings are either visible to the viewer or capable of being revealed in the act of winding. The first is a two story tower that also features a drummer on the ground floor, topped by four circling figures carrying enormous flowers. This simpler mechanical tableau features characters celebrating the drunken urging of flowers to bloom by hitting a drum. The second is an ivory boat on metal wheels, which when the mechanism is wound is steered by finely carved figures carrying poles. It features a standardized parting, wishing the receiver well on their travels.

What Fischer's tableau fails to reproduce from European movements is the pendulum or balance spring that would have powered a timekeeping device. By paring a European-type clockwork movement down to its most basic elements, the tableau contains a segment of a timepiece devoid of its time keeping function. In addition, if compared to another Canton-made piece also featuring a drummer, now in the Palace Museum in Beijing, even its movements and pacing of sound might appear unsophisticated. Yet, with a clearer understanding of the social context and how precisely mechanical components ordered the movements of the tableaux in light of this, it becomes apparent that, in effect, the craftsmen who built it had more than a rudimentary understanding of how to structure and pace movement and sound in a wind-up mechanism. The close connection between the rearticulated movement and its aesthetic, academic, and ultimately mercantile purposes remains true of all the examples of Chinese-made non-clockwork tableaux in the Danish collection.

(Figure 4 here)

### ***Canton Craftspeople***

Linking the Chinese tableaux to the plethora of automata already peppering early modern European *kunstkammern* connects them to a narrative of near-celestial fascination centered on the experience and performance of winding, remarked on by almost every scholar of European mechanical sculptures.<sup>17</sup> The tactile connection between the owner and the object created a

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<sup>17</sup> Horst Bredekamp, *The Lure of Antiquity and the Cult of the Machine: The *Kunstkammer* and the Evolution of Nature, Art, and Technology* (Princeton, NJ, 1995).

unique power dynamic, where the winding of the interior mechanism demonstrated the control exerted by its owner, while simultaneously relying on the artifact's ensuing autonomy to impress and awe the spectators.

Attributing god-like powers to the maker who could animate the inanimate was a foundational aspect of the appreciation for automata. This association was not always a positive one, and Minsoo Kang has pointed to its perceived link to the practice of “magical” and “demonic” arts.<sup>18</sup> These connections are, as one would expect of early modern Europe, rooted in the monotheism that governed the European belief system. Yet, they still resonate with early Chinese texts describing encounters with long lost mechanical sculptures. An automaton purportedly invented by Yan-Shi for King Mu of Zhou Dynasty (1023-957 BC) was described in the *Liezi*:

He can sing and he can act. The King stared at the figure in astonishment. It walked with rapid strides, moving its head up and down, so that anyone would have taken it for a live human being. The artificer touched its chin, and it began singing, perfectly in tune. He touched its hand, and it started posturing, keeping perfect time. It went through any number of movements suggested by its owner's fancy.<sup>19</sup>

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<sup>18</sup> Minsoo Kang, “Wonders of Mathematical Magic: Lists of Automata in the Transition from Magic to Science, 1533-1662,” *Comitatus: A Journal of Medieval and Renaissance Studies* 33, no. 1 (2002): 113-139.

<sup>19</sup> The *Liezi* is a book presumed to be written in the third century B.C.E. by Lie Yukou. Graham, trans., *The book of Lieh-tzu*, 110-111. See also Joseph C.Y. Chen, *Early Chinese Work in*



Puppets and puppet plays are a long-standing part of the repertoire of performing arts throughout East Asia and early automata (fictional or otherwise) were grounded in this tradition.<sup>20</sup> Moreover, the skills that early automata exhibit are almost inevitably performative, whether made in China or in Europe.<sup>21</sup> That is, they dance, they sing, or they perform religious rituals.<sup>22</sup> Their ability to capture the attention of their audience and amaze them is contingent on the autonomy they display when they perform of their own accord. The maker's ability to bring them to life with a single touch adds to the dynamic and affective performance.

In Fischer's tableau, the maker advertised their abilities and promoted their status as specialist by bringing together a collage of skillfully crafted materials, such as ivory, ink

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*Natural Science: A Re-examination of the Physics of Motion, Acoustics, Astronomy and Scientific Thoughts* (Hong Kong, 1996) and Joseph Needham, *Science and Civilization in China: Volume 2* (Cambridge, 1986), 53.

<sup>20</sup> On Asian puppet traditions, see Jane Marie Law, *Puppets of Nostalgia* (Princeton, 2015) and Siyuan Liu, ed., *Routledge Handbook of Asian Theatre* (London, 2016).

<sup>21</sup> Adelheid Voskuhl, *Androids in the enlightenment: Mechanics, artisans, and cultures of the self* (Chicago, 2013).

<sup>22</sup> The role of performance in rituals has been extensively discussed by Richard Sechner and Victor Turner. It has spawned a rich literature on the turn to performativity in anthropology. See Richard Schechner, "Performativity," *Performance Studies: an Introduction* (New York, 2006): 123-169; Victor Witter Turner, *By means of performance: intercultural studies of theatre and ritual*, (Cambridge, 1990); Dwight Gonquergood, "Poetics, play, process, and power: The performative turn in anthropology," *Text and performance quarterly* 9, no. 1 (1989): 82-88.

paintings, and calligraphy.<sup>23</sup> Highly skilled carvers and what might even be termed “dynasties” of artisans competent in miniature modelling and carving were well known in the Guangdong region. Moreover, individual artisans were occasionally celebrated for their manual skill, thus blurring the distinction between “scholar” and “craftsman.”<sup>24</sup> In a clock made in Guangzhou and now in the Palace Museum, the central focus is on two small figures holding tools, who circle around a miniature tower. Unfortunately, it has not been possible to publish an image of the clock. The two figures are slightly crouched and intently bent toward the multi-tiered, golden structure. Although there are no other visual parameters for the proportions used for figures in this clock, the tower is certainly not full-sized. If the two artisans were to straighten, they would almost be able to reach the top tiers. The very ornate clock case is gilded and enameled. Other figures shake hands as they pass two doors flanking the watch face on the ground level, and a large gilded figure tops the pavilion. It is noteworthy that the two artisans are positioned directly above the watch face making them the focus of the clock’s ornament.

A similarly self-referential sculpture can be found alongside the mechanical tableaux in the Danish collection. Made in Canton and non-mechanical, the sculpture depicts the front of a

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<sup>23</sup> Arguing that few direct client-artisan relationships can be identified or verified, Craig Clunas singles out the porcelain industry as the closest comparison to early modern European workshops. While most artisans remain unnamed, the elevation of a few names to fame served to create a system (or a “mechanism”) for distinguishing quality (86). Craig Clunas, *Superfluous Things: Material Culture and Social Status in Early Modern China* (Cambridge, 1991), 61-68.

<sup>24</sup> Dorothy Ko, *The Social Life of Inkstones: Artisans and Scholars in Early Qing China* (Washington, 2017), 9

shop house, where a man in a long, yellow coat with gold trim stands next to a table and two chairs. On the table stands a white miniature figure. From the back of the house, a man and a woman step into the room. The lone figure on the table may be a prototype for the porcelain figures, which were produced in large quantities in the Jingdezhen region for European export, or it may be an example of clay portrait figures, such as those commissioned by the Danish supercargoes on their first successful trip to Canton with the DAC.<sup>25</sup>

Both Horst Bredekamp and Alexander Marr have pointed to how makers or *mechanicians* could advance their career by taking advantage of their status as God-like creators.<sup>26</sup> In addition to the elevation of the maker as primary instigator of how automata could “act” in the world of art and curiosity, studies of early modern collecting have traced how the tableaux of materials and animation of landscapes gathered and presented the principles of display and collecting that underpinned the Kunstkammer as a cohesive miniature world, created by nature or through skill and owned by one person.<sup>27</sup> Yet, this emphasis on craftsmanship also places the primary

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<sup>25</sup> The Beijing Palace Museum collection also contains a clock featuring a small figure grasping a miniature model of a pagoda close to his top hat, next to another European figure. *Clock with the decoration of pavilion swimming ducks and revolving figures*, gilded bronze, 110 x 59 x 51 cm, Qianlong period (most likely c. 1790).

<sup>26</sup> Bredekamp, *The Lure of Antiquity*. Marr, “Gentile curiosité.”

<sup>27</sup> Jonas M. Nordin and Carl-Gösta Ojala, “Collecting, connecting, constructing: Early modern commodification and globalization of Sámi material culture,” *Journal of material culture* 23, no. 1 (2018): 58-82; Sven Dupré and Michael Korey, “Inside the Kunstkammer: the circulation of optical knowledge and instruments at the Dresden Court,” *Studies in History and Philosophy of*

emphasis on the maker as the purveyor of the “conspicuous virtuosity” that the automaton performs. Elly Rachel Truitt has demonstrated how Trilling’s concept can be usefully applied to descriptions of Byzantine imperial robots to reveal how these acted in the multicultural spaces of diplomacy. Arguing that rather than seeing the automata as the product of a single maker, diplomats visiting the Byzantine court perceived the automata as springing from the society in a broader sense, she has pointed how automata could perform multiple accounts of their own origins.<sup>28</sup> In a similar manner, the processes and rituals by which techno-aesthetic ideas circulated in early modern global trade were influenced by the culturally commensurable concept that socio-political structures could be reflected in miniature mechanical sculptures.

While the Jesuit priests at the imperial court in Beijing presided over the maintenance and later the making of clockwork, the first stop for many of these clocks was Guangzhou. The process of transmission is often depicted primarily in terms of the codified knowledge produced by collaborations between Jesuits and Chinese literati, because the Jesuits were key participants in translating and disseminating Chinese texts that explained mechanical engineering, as Catherine Pagani has charted.<sup>29</sup> Yet, this knowledge did not remain exclusively in the hands of

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*Science Part A* 40, no. 4 (2009): 405-420; Mark A. Meadow, “An Open and Shut Case: On the Dialectic of Secrecy and Access in the Early-Modern Kunstkammer,” in *Quid est secretum?* (Leiden, 2020), 316-330.

<sup>28</sup> Elly Rachel Truitt, *Medieval robots: mechanism, magic, nature, and art* (Pennsylvania, 2015), 22.

<sup>29</sup> J. O'Malley, *The Jesuits II, Cultures, Sciences, and the Arts, 1540-1773* (Toronto, 2006); Baichun Zhang and Tian Miao, “Wang Zheng and the transmission of Western mechanical

the European priests. Elaborate automata clocks were sent to China for private sale or in the service of diplomatic missions by successful British clockmakers like James Cox (1723-1800).<sup>30</sup>

The Danish mechanical tableaux pre-date the earliest European clockmaker's workshop to be set up in Canton.<sup>31</sup> Significantly, the lists of tribute from Guangdong province, now preserved in the archives at Beijing, reveal that between the eighth year of the reign of Yongzheng (1730) and the fifty-ninth year of the reign of Qianlong (1794), an unusually high number of imported timepieces were presented to the Qing court. Most of these came from London, and in some cases they were assembled in Guangzhou.<sup>32</sup> Later records suggest that there

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knowledge to China," in *Transformation and transmission: Chinese Mechanical Knowledge and the Jesuit Intervention*, eds. Baichun Zhang and Jürgen Renn (Berlin, 2006), 75-88; Benjamin A. Elman, "The Jesuit Role as 'Experts' in High Qing Cartography and Technology," *National Taiwan University History Bulletin (Taida lishi xuebao)* 31 (2003): 223-250.

<sup>30</sup> Roger Smith, "James Cox's Silver Swan. An eighteenth century automaton in the Bowes Museum," *Artefact. Techniques, histoire et sciences humaines* 4, no. 4 (2016): 361-365; Schaffer, "Instruments and Cargo in the China Trade"; Pagani, "Clockmaking in China under the Kangxi and Qianlong emperors"; Pagani, *Eastern magnificence*; Fuxiang Guo, "The origin and usage of clocks in the Qing Court under Yongzheng's reign," *Journal of Harbin Institute of Technology (Social Sciences Edition)* 3 (2001).

<sup>31</sup> Clare Le Corbeiller, "James Cox and his curious toys," *The Metropolitan Museum of Art Bulletin* 18, no. 10 (1960): 318-324; Smith, "James Cox's Silver Swan."

<sup>32</sup> Pagani, "Clockmaking in China under the Kangxi and Qianlong emperors," 80.

was a flourishing industry based on dis/assembling clocks at their port of arrival.<sup>33</sup> Mechanical sculptures produced by Chinese artisans not in the Palace Museum collection are comparatively rare, but examples can be found in collections across Europe and America. Perhaps the best-known and most elaborate example outside China is an automaton clock featuring peacocks flapping their wings and a small man holding out a small vase or model to the viewer. The Imperial Palace workshop produced the clock around 1790, and it now stands in the Peabody Essex Museum in Salem.<sup>34</sup>

In addition to depicting themselves at work, artisans also left marks and instructions on their pieces, anticipating their assemblage or later maintenance. In Fischer's tableau, writing found on the interior surrounding the movement provides insights into the workshop environment and the process employed in the making of the sculpture. Here (Figure 5), two lines of instruction run across the ceiling behind the machinery: 三大力 (*sān dàlì*, three big forces) / 斗 (? Dòu, fight) / 十六寸 (*shíliù cùn* sixteen inches).<sup>35</sup> The three great forces are most likely a

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<sup>33</sup> Yunlu 允祿 (1695-1767) et al. compiled, Huangchao liqi tu 皇朝禮器圖, juan 3, in Sikuquanshu 四庫全書.

<sup>34</sup> A video of the clock in motion can be seen in the online exhibition, "The Emperor Looks West," hosted by the Peabody Essex Museum. See <http://emperor.pem.org/#> (accessed 12/02/2017).

<sup>35</sup> Fas Fischer's model has collapsed on one side and could not be opened sufficiently to see the complete text. However, using a micro-camera we were able to take pictures behind the machinery.

reference to the three gear wheels, while the sixteen inches refer to the length of the pole reaching from the mechanism to the top floor. Moreover, the character (興 *xìng*, to begin) can be glimpsed underneath the flowers in the pot at the front of the mechanical sculpture. In the two story mechanical sculpture (Figure 4), the interior ceiling is marked by 天 (*tiān*), meaning sky or in this case, the top. The back wall of the box displays a character that has almost disappeared, but may have been 口 (*kǒu* opening).

(Figure 5 here)

In both cases, the calligraphy of the interior characters is markedly different to that of the exterior. In the small sculpture, the characters seem to be straightforward instructions on how to assemble the wooden box around the mechanism. That instructions were included in the building of the sculpture may indicate that it is the work of several artisans working together.

Furthermore, the references to the force of the mechanism in the taller sculpture may indicate that the artisan anticipated that the mechanism would require reparation at a future date.

The conditions under which the artisans that created these sculptures worked are characterized by first, that they worked in collaborative communities akin to a guild association and, second, that they were literate, at least to a basic degree.<sup>36</sup> The instructions point to a

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<sup>36</sup> Guild associations of artisans were common in Canton. These men may have belonged to the *Zhongbiao hangshang hui* or Commercial Clock Guild Association, which had been active since the arrival of the Jesuits. Chang T'an-jung, *Qinggong shuren [Detailed Account of the Qing Imperial Palace]*. (Taipei, 1969), 316-318; Pagani, *Eastern Magnificence*, 78-81; William T.

workshop where each artisan was specialized in a particular skill. Moreover, the structural and iconographic similarities between the two houses may indicate that the mechanical sculptures were invented in a workshop whose structure recalled the traditional clockwork workshops from Europe. That is, where a master built the mechanical parts and designed the overall structure, supported by apprentices or journeymen.

Depending on the level of their literacy—which the interior characters suggest may not have been very high—the artisans or the master may have been familiar with the publications on clockwork and its maintenance, through collaboration with Jesuits and connected Chinese literati. Wang Zheng (1571-1644) had published *Yuan xi qi qi tu shuo*, [*Illustrated Explanations of the Strange Implements of the Far West*] in 1627, in order to explain the complicated mechanical devices being introduced to China at the time.<sup>37</sup> This treatise contained images and was published at a time of surging scholarly interest in artifacts and their production. As Dorothy Ko has pointed to in her analysis of inkstone artisans, the lines between skilled master and Chinese scholars—“these incessantly fame-seeking, wine-drinking, and poetry-writing men”—became increasingly blurred in the transition between the Ming and Qing dynasties.<sup>38</sup> Ultimately,

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Rowe, “Political, Social and Economic Factors Affecting the Transmission of Technical Knowledge in Early Modern China,” in *Cultures of Knowledge: Technology in Chinese History*, ed. Dagmar Schäfer (Leiden, 2012), 25-44, 39.

<sup>37</sup> The same author also published *Zhu qi tu shuo*, *Illustrated Explanations of the Various Implements*, while in 1631 Song Yingxing published *Tian gong kai wu*, *Heaven's Craft in the Creation of Things*. Clunas, *Superfluous Things*, 166-167.

<sup>38</sup> Ko, *The Social Life of Inkstones*, 10.



in 1809, the Chinese horologist Xu Zhaojun 徐朝俊 would write a technical, but also critical, treatise, that simultaneously explained the working of and rejected the decorative appeal of clockwork.<sup>39</sup> Yet, the circulation of codified information at the level of the elite by no means guaranteed that this information was successfully dispersed among the artisan group in Canton. However, at the very least, the characters do point to artisans who were well aware of the frailty of their product and the need to reach out to future colleagues to maintain its mechanical skeleton.<sup>40</sup>

### ***Playthings***

Aside from the transfer of technical and scientific knowledge, European aesthetic influence in China was limited, albeit not unknown.<sup>41</sup> In other port cities, such as Suzhou, Occidentalism emerged among the Chinese literati, and the ability to send European oddities and curiosities as part of the annual imperial tribute to the emperor was highly lauded. Catherine Pagni has shown how playful terminologies emerged to characterize the new mechanical additions to the household. In particular, clocks could be referred to as *qiqi*, “strange things” or *wanyi* “playthings” rather than as timekeepers.<sup>42</sup> The development of a playful vocabulary in response

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<sup>39</sup> Xu Zhaojun, “Ziming Zhong biao tu fa 自鳴鐘表圖法,” reprinted in Bo Shuren 薄樹人, ed., *Zhongguo kexue jishu dianji tonghui 中國科學技術典籍通彙*, 1021-1032.

<sup>40</sup> David Clarke, *Chinese Art and its Encounter with the World* (Hong Kong, 2011), 61 and 64.

<sup>41</sup> Kleutghen, “Chinese Occidenterie.”

<sup>42</sup> Pagni, *Eastern Magnificence*, 18-19.

to the new technology suggests that the clocks were appreciated primarily for their entertainment value and links the technology transfer with the engaging, performative and sociable aspects of the tableaux.

The playful aspect is further evidenced by the game referenced on the poetic tablets found on each level of the four-story tower. Here, each tier is framed by a set of vertical tablets that mimics poetic couplets, titled by horizontal tablets above each doorframe. If read from the top of the tower and from right to left, the tablets form the following couplets:

4<sup>th</sup> floor: 催花

*Flowers are urged to bloom*

3<sup>rd</sup> floor: Tablet: 仙樂亭

*The Immortals' Pavilion of joy or music*

Door Couplet: 蓬萊 / 仙島

*Penglai /The Immortals' Island*

2<sup>nd</sup> floor: Tablet: 魚翁樂 [漁翁樂]

*(Old fisherman's music or joy)*

Door Couplet: 魚家 / 萬景

*A family of fishermen / A thousand views*

1<sup>st</sup> floor: Tablet: 擊鼓亭

*The drum pavilion*

Door Couplet: 花木 / 四時

*A flowering tree / The four seasons*

Central Couplet: 催花人飲酒

*When flowers bloom, one drinks wine*

擊鼓閣詩成

*The drumming court's poem has come to an end*<sup>43</sup>

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<sup>43</sup> This translation is the author's own, with gratitude for valuable guidance by Leif Littrup and Liu Ruxin.

On the two-story house, the exterior characters demonstrate far more skilled calligraphy, having been written in seal script. Unfortunately, much of the ivory and wood paint has now faded. Two tablets on the front of the small house are still legible. They read:

花催人酒醒

*(At the appearance of flower blossoms, one awakens from drunken sleep)*

鼓擊閣詩成

*(The drumming court poem is finished)*

The poems' references to drinking (酒醒) and the emergence of flowers (催花) are links to the story of the Tang Dynasty emperor, Xuanzong (685-762 CE), as is the visual centrality of the drummer. This foundational story, upon which both the sculpture and the drinking game are based, can be found in the *Siku quanshu* 四庫全書, and it deserves citation in full here,

嘗遇二月初，詰旦巾櫛方畢。時當宿雨初晴，景色明麗，小殿內庭，柳杏將吐，覩而歎曰：“對此景物，豈得不為他判斷之乎！”左右相目，將命備酒，獨高力士遣取羯鼓。上旋命之臨軒縱擊一曲，曲名《春光好》。神思自得。及顧柳杏，皆已發拆。上指而笑謂嬪御曰：“此一事不喚我作天公，可乎？”

Translated and paraphrased, the story tells of how Emperor Xuanzong sat in an inner courtyard after the last examinations had been finished and there he called for music and wine to drink under the willow and apricot trees. The musicians struck up a song composed by the emperor, entitled “Spring is Good” and played upon a Xinjiang drum or 羯鼓 (*jiégǔ*). As the music played, the willows and apricots blossomed, ostensibly encouraged to do so by the wondrous music. The court ladies were awestruck and the emperor, who was known for his sense of humor, exclaimed “Surely you will not compare me to a god, eh?”

Both the visual of the drummer surrounded by flowers and the poetic couplets’ reference to the drums, flowers, seasons, and wine all connect the house tableaux with the story. That a performance of Emperor Xuanzong’s story could be brought to life at a moment’s notice is extraordinary. The mechanical sculptures perform what amounts to a theatrical play. To some this may be unsurprising since the story was popular in Qing Dynasty China. The description of its musical performance stands out by its sheer magnificence and splendor in the great Chinese novel, *The Story of the Stone (The Dream of the Red Chamber)*, where it is connected not only to the theatre, but also to play.

The novel was written by Cao Xueqin and first printed in 1791, although it had circulated among the elite as a manuscript prior to its publication. In the fifty-fourth chapter, the main characters celebrate the Lantern Festival of the lunar new year with a great banquet, resplendent with lanterns, fireworks, food, and theatrics.<sup>44</sup> At midnight, Xi-Feng, who is characterized as

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<sup>44</sup> *Dream of Red Chamber*, vol 2, Chapter 54.

almost a court jester, suggests that the theatre troupe play the drum while a plum blossom is passed around,

“While the ballad singers are still here,” she said, “why don't we get them to play ‘Spring Joy on Every Brow’ for us and we can have a game of ‘Pass the Plum.’”

“Oh yes, that's a good game,” said Grandmother Jia, “just right for this time of year, too.”

Orders were given for a pair of drums to be fetched special drinkers drums whose black lacquered sides were studded with patterns of brass nails and hand it to the blind women someone produced a flowering spray of red plum for the game.

“Now,” said Grandmother Jia, “whoever's hand the branch is in when the drumming stops must first drink a Cup of wine and then they have to say something.”<sup>45</sup>

The core aspects of the “羯鼓录” (*jiégǔ lù*) game are to pass a flower from one person to another while the drum plays and whoever holds the flower when the music stops must finish their drink and tell a story or recite a poem. In the novel, the game results in the telling of several humorous stories resplendent with references to classic literature. The music is described as

Sometimes slow as the last drips of a water clock, sometimes as fast as the rattle of dried beans poured from a bag, sometimes it would go galloping along like a runaway horse,

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<sup>45</sup> Cao Xueqin, *The Story of the Stone: The Warning Voice (Volume 3)*, (London, 2012), 37-38.

sometimes it became a soft whisper interspersed with sudden bursts of sound to make you jump, like flashes of lightning in the darkness. When the beat was slow, the branch is passed slowly from hand to hand; when it was hurried the passing too grew faster.<sup>46</sup>

It might be tempting to think of the tableau as an illustration of this scene in *The Story of the Stone*. Nonetheless, this is more likely a reference to the lantern festival. After all, the sculpture had already entered a Danish collection some time before 1760 and thus long precedes the publication date for the printed novel (1791) as well as the circulating manuscript.

The poetic couplets on the large tableaux from Olfert Fas Fischer's collection extend the invitation to drink and drum until the apricot and willows traditionally associated with the story flower. Yet, to do so means meandering the gaze through the multitude of flowers painted onto and carved into almost any available surface. The ground floor figure, framed by painted peonies behind clear glass, looks out over narcissus and chrysanthemum planters. A swirling gold lotus flower adorns the back of the lacquer box. Above the drummer, carved ivory lanterns show evidence of painted chrysanthemum. Meanwhile, the ivory fence also sports carved lotus and chrysanthemum flowers in bloom. These flowers re-appear on every level of the tableau. On the first floor, a painted mountain landscape's green ink recalls the drooping branches of the Chinese willow tree. On the floor above, figures carry baskets of flowers, such as one would give to a successful candidate who has passed the imperial examinations. On the top floor, the four little figures might even be holding branches of flowering willows, with little yellow or white catkins, although it is difficult to distinguish this. Ultimately, the tableau reveals one final, secret flower.

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<sup>46</sup> Cao Xueqin, *The Story of the Stone*, 38.

Opening the door to the mechanism, the inside is delicately lacquered with the gold outline of a flowering apricot branch, referencing the tree that flowered above the Emperor.

Yet, although the story of Emperor Xuanzong and the drinking game are referenced by the sculpture, the iconography is altered and supplemented in two important ways. First, the drum is a single headed barrel drum, unlike the traditional “羯鼓” (*jiégǔ*), which can be seen in an illustration of Emperor Xuanzong’s story in the Dunhua caves (Figure 6). Second, the magnificence of the house of Rong in the Story of the Stone is emphasized by the power and wealth which enables Lady Jia to command an entire theatre troupe to set the drinking game to music. In the face of such a display, albeit a fictional one, even the intricacy of the large sculpture might pale in comparison. This begs the question of whether the sculpture was made to accommodate the tastes of an emerging Chinese merchant class, increasingly wealthy and increasingly literate, or for the ruling elite, which was still to all intents and purposes a wealthy, hereditary officialdom, despite the meritocracy of the examination system.

(Figure 6 here)

The symbolic relationships between the lotus and administrative honesty, willows and successful examinations, as well as baskets of flowers and heavenly achievement are too striking not to be meaningful.<sup>47</sup> The results of imperial examinations were posted in the spring, very near to the new year celebrations. As such, the large sculpture might ground the poetic couplets and drinking game in the context of scholarly achievement in the official examination system. It is worth noting that this connection is primarily predicated on decoding the language of flowers

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<sup>47</sup> The author is preparing a monograph on the subject.



that occupy and frame every level of the sculpture. Nonetheless, further archival work is required in order to attribute the provenance of the sculpture to a specific patron or a family with a successful examination candidate in the years 1730-1760 and a strong connection to the Danish Asiatic Company.

Producing these delicate, intricate mechanisms was so difficult and time-consuming that “the only people able to afford to construct such artefacts were well-to-do artisans, artisans in employment or under the patronage of a court, or artisans who could expect members of the nobility to buy their products.”<sup>48</sup> Hence, acquiring a mechanized miniature sculpture demonstrated extensive purchasing power. Moreover, the owner signaled an appreciation of a range of skills, each of which expanded the playfulness of Westernized *wanyi* into the realm of Chinese practices. Unlike the chinoiserie fantasies employed by European artisans while making automata for the Chinese market, the sculpture takes European technology and transfers it into a Chinese social practices and iconography.<sup>49</sup> Instead, the parallel—between the mechanical tableaux and porcelain production in Europe—is between the design of the mechanical sculptures and the mid-eighteenth-century Meissen factory use of European images in their production of porcelain. The iconography remains true to the culture where it was produced, while only the technological aspect is altered. Yet, with this alternation the social context and meaning is also shifted.

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<sup>48</sup> Voskuhl, *Androids in the Enlightenment*, 25.

<sup>49</sup> Yangwen Zheng, *China on the Sea: How the Maritime World Shaped Modern China* (Leiden, 2012), 159-161. Schaffer, “Instruments and Cargo,” 235-240.

As is the case in the *Story of the Stone*, this article argues that the performance of the story—in this case by the tableau rather than a theatre troupe—extended beyond that of the mechanical stage and asked for an early modern type of audience participation. The suggestion is that it may have functioned as a time keeping device distinct from a clock, because instead of keeping the hours it was a source of unpredictable time similar to timers used in contemporary games such as charades or Pictionary.<sup>50</sup> Whether the Danes who collected the piece understood the game cannot be ascertained with certainty. Yet, to the sculpture's storytelling, an understanding of or participation in the drinking game would have added the dimension of cocreated cross-cultural playful interaction. The acquisition of the piece by the Danes may indicate that they played it and, thus, points to the interactive, inter-personal relationships possibly fostered by the international community in Canton.

### ***European Players***

Although restrictions on the European merchants in Canton would have limited social interaction, Hong merchants still hosted banquets where European supercargoes were invited. In 1738, a Canton merchant hosted a large feast attended by the Chinese elite as well as by twenty-nine Europeans.<sup>51</sup> A brief look at the DAC records suggests that the tableaux may have been

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<sup>50</sup> Allison Levy, ed. *Playthings in Early Modernity: Party Games, Word Games, Mind Games*. (Kalamazoo, 2017).

<sup>51</sup> Lisa Hellman, *This House Is Not a Home: European Everyday Life in Canton and Macao 1730-1830* (Leiden, 2018), 227.

gifted to Christian Lindencrone (1703-1772), a Danish supercargo, on account of his close friendships with Cantonese Hong merchants. Moreover, the game may have been played in 1740, when Lindencrone spent a year in Canton and Macau instead of returning to Copenhagen with his ship. During this time, he attended several social gatherings, among them a new year's banquet. Unfortunately, at this stage, the identity of the maker and the initial consumers must remain mere conjecture.

Despite the restrictions imposed on the sociable aspect of trade, it is clear from this sculpture that a great deal of creativity was engendered by the interactions between Chinese craftspeople, the Chinese elite, and European merchants and diplomats. Looking at these connections through the lens of making as a means of knowing, or *techne*, shows how pivotal early modern artisans were in creating pathways of communication between different communities by making explicit their own accumulation of knowledge and enactment of their craft. For instance, the Chinese makers anticipated the movement's perpetual cycle of interaction that put the fragile and delicate tableau at risk of damage and they provided for its constant need for maintenance by marking its interior.<sup>52</sup> It follows that these types of communications depended on the successful transfer of culturally commensurable techniques, forms, and systems of ornament.<sup>53</sup> In this case, the latter was likely the pivot for the sustained maintenance of the

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<sup>52</sup> Keating, *Animating Empire*.

<sup>53</sup> Sanjay Subrahmanyam, *Courtly Encounters: Translating Courtliness and Violence in Early Modern Eurasia* (Cambridge, MA, 2012); Finbarr Barry Flood, *Objects of Translation: Material Culture and Medieval "Hindu-Muslim" Encounter* (Princeton, N.J., 2009), 5.

sculpture—that mechanical tableaux were equally prized by European and Chinese elites as precious ornaments.

Moreover, the shared references to drinking, merriment, and the splendors of spring is likely to have transcended culture. In early modern trade, artifacts often took on the role of mediators, agents, and translators, in this instance between European and Chinese merchants.<sup>54</sup> Fischer's tableau is a physical, detailed testament to the fact that often in cross-cultural interactions, it is not always force or economic resources that win the day. It seems that, occasionally, the ability to play nicely with others served a far greater purpose.

To contextualize the potential for this kind of cross-cultural play, it is useful to keep in mind that this is not the first instance of automata traveling and performing within the dense political and religious networks in and beyond Europe.<sup>55</sup> A striking example of this is the Diana the Huntress automaton from around 1610, attributed to Joachim Friess.<sup>56</sup> Its hollow center allowed it to be used as part of a drinking game. The automaton shows a nude goddess from Roman mythology, Diana, astride a stag. It could be wound so that it would ride down the center of a table, coming to a halt at the courtier who would decapitate the deer and drink from its neck. Jessica Keating has nonetheless used a depiction of the automaton by a Mughal painter to point to how it lost its connection to play and drink once it entered Mughal Emperor Jahangir's court

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<sup>54</sup> Van Dyke, *The Canton trade*.

<sup>55</sup> Keating, *Animating Empire*.

<sup>56</sup> Jessica Keating, "Metamorphosis at the Mughal Court," *Art History* 38, no. 4 (2015): 732-747; Clare Vincent, "Diana, Goddess of the Showering Arrows: A Seventeenth-Century German Automaton Clock," *Yale University Art Gallery Bulletin* (2016): 75-87.

(presumably as part of the gifts brought by Sir Thomas Roe in 1619).<sup>57</sup> Instead, the automaton took on new meaning, as a symbol of material wealth and artisanship. In the spaces between cultural commensurability and incommensurability, certain artifacts were able to shift not only their shape but also their connotations.

### ***Conclusion***

Ultimately, the iconography on the sculpture and its potentially playful uses bring us back to the importance of their process of making and how artisans played with newly introduced clock movements. The mechanical sculpture produced in Canton demonstrates how the integration of foreign technology into local design traditions helped to shape Canton's international agora, as well as how the artisanal community chose to represent itself.

In line with Liliane Hilaire-Pérez and Catherine Verna's overview of the dissemination of technical knowledge in early modern Europe the ways in which the Chinese mechanical sculptures navigate the connection between new, European technology and established Chinese aesthetics allows us to trace how the application of techniques is "not universal; they belong to a

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<sup>57</sup> Keating, "Metamorphosis," 741.

world of diversity, contingency, and heterogeneity.”<sup>58</sup> Looking closely at the objects pushes them some way toward answering the questions raised by this approach to technology transfer:

Is it possible to follow one technique across multiple territories? What resources are available to the historian to identify techniques that were so rarely recorded and codified? What part did products play as conduits for technical knowledge? Are their appellations related to geographical origins or the names of their makers, or do identifying marks on the products themselves provide clues?

The tableau from DAC director Olfert Fas Fischer’s collection traverses Chinese, European, social, maritime, official, and personal territories. Occasionally, it straddles several of these, thus shedding light on the artisans who made it, the merchants who used it, and the elites who drank with it. Moreover, it speaks of its own making, particularly if put in conversation with other automata where this type of object and its makers were themselves put on display. This conspicuous virtuosity, to return to Trilling’s concept, was not just the prerogative of the artisans or the owner but was shared by both when the movement was started and observers could participate in the remaking of the sculpture.<sup>59</sup> The sculpture conjured pathways for collaboration or “chimeric creation” as Baadj has termed it. Olfert Fas Fischer’s tableaux fills the gap in our

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<sup>58</sup> Liliane Hilaire-Pérez and Catherine Verna, “Dissemination of Technical Knowledge in the Middle Ages and the Early Modern Era: New Approaches and Methodological Issues,” *Technology and Culture* 47, no. 3 (2006), 537.

<sup>59</sup> Trilling, “Daedalus and the Nightingale,” 225; Baadj, “10 Collaborative Craftsmanship.”

knowledge about Chinese-made early modern automata by pointing to how important a role games could play in the very serious undertaking of global trade.

The other mechanical tableaux in the Danish collection might very well provide different answers to the above questions. Moreover, further analysis of the personal relationships created in the crucible of trade at Canton will certainly aid in providing a deeper understanding of their significance. Thus far, the sculptures invite us to straddle different territories and play with them in new ways. They are neither timepieces nor automata. Instead, the spectator is presented with a moving landscape of delicately constructed activity that is framed by poetry and underpinned by an insistence on craftsmanship. It is up to each spectator whether they wish to bring the story of Emperor Xuanzong, his drinking habits, and his flowers to life.

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