

# **Making Things Public Atmospheres of Democracy**

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# Galileo's Traveling Circus of Science

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Making things public is the result of specific choreographed performances.<sup>1</sup> Buildings and rooms matter insofar as their architectural features affect their role as stages. A look at the courtly contexts in which Galileo made things public may actually support a stronger claim: These spaces did not simply stage performances but were performances themselves. Making things public and the making of the space where things were made public were part of the same performance. For similar reasons it is very difficult, perhaps impossible, to separate the things being displayed during the performance from the actors acting the performative display.

As important as the talk about private and public spaces has been to give visibility to the processes regulating what can be said or made public about what, where and by whom, it might also have fed a certain "architectural essentialism," that is, the thinking of scientific space in terms of more or less specialized rooms, buildings and laboratories – or in terms of their absence, as in the case of "field" sciences. It has been exceptionally rewarding to take walls, floor plans and doors seriously after so much talk about ideas and disembodied minds, but the more I look at early modern spaces of knowledge or practice, the less I understand how to apply the labels "private" and "public" in a useful fashion. What does the adjective "private" add to our understanding of the bedroom, when in aristocratic and courtly circles that space was also routinely used to receive visitors (often with the host lying in bed so as to "perform" the illness that justified the informality of the reception)?<sup>2</sup> And in what sense were Louis XIV's *coucher* and *lever* private events, if they marked the beginning and end of the day at court and were ritually witnessed by a sizable group of courtiers (including a priest) assembled in the royal bedroom?<sup>3</sup>

If the practices of political absolutism escape our modern spatial dichotomies, we might also question the frequent assumptions about the residential patterns of early modern scientists and the spatial, architectural specificity of their work sites. Yes, Tycho's star catalogs were produced in a custom-built astronomical castle, Libavius wanted alchemists to live and work in specifically designed houses and natural history museums displayed their specimens in specialized, hard to move spaces.<sup>4</sup> But we have equally strong evidence about the widespread (and sometimes endemic) mobility among early modern practitioners.<sup>5</sup> In the case of artisans and engineers, such mobility across national borders was often connected to a specific form of making things public we now call industrial espionage.<sup>6</sup> Once we stop privileging

- 1 I am drawing from the notion of choreography as articulated in Charis Thompson, *Making Parents: The Ontological Choreography of Reproductive Technologies*, The MIT Press, Cambridge, MA, 2005.
- 2 On the Medici grand duke's use of the bedroom for meetings with visitors who wished to remain incognito, see Silvia Tofani, "Composizione e cerimoniale della corte medicea: 1650-1670," in: *Vivere a Pitti*, Sergio Bertelli, Renato Pasta (eds), Olschki, Florence, 2003, pp. 118f.
- 3 Norbert Elias, *The Court Society*, Pantheon, New York, 1983, pp. 83ff, 87, 89f. On the prince's levee as the "clock" of the Medici court see Marcello Fantoni, "Vita di corte nel palazzo secentesco," in: *Gli Appartamenti Reali di Palazzo Pitti*, Marco Chiarini, Serena Padovani (eds), Centro Di, Florence, 1993, p. 62.
- 4 Owen Hannaway, "Laboratory Design and the Aim of Science: Andreas Libavius versus Tycho Brahe," in: *Isis*, 77, 1986, pp. 585-610; Jole Shackelford, "Tycho Brahe, Laboratory Design, and the Aim of Science: Reading Plans in Context," in: *Isis*, 84, 1993, pp. 211-230; John Robert Christianson, *On Tycho's Island*, Cambridge University Press, Cambridge, 2000; Paula Findlen, *Possessing Nature*, University of California Press, Berkeley, 1994.
- 5 See for instance the high turnover rate among Tycho's assistants evidenced in Christianson, op. cit., and the migratory patterns of early modern mathematicians discussed in Owen Gingerich, Robert Westman, "The Wittich Connection," in: *Transactions of the American Philosophical Society*, 78, 1988, part 7. The itinerant practices of early modern engineers and inventors (as well as of visual artists and architects) have been well established.

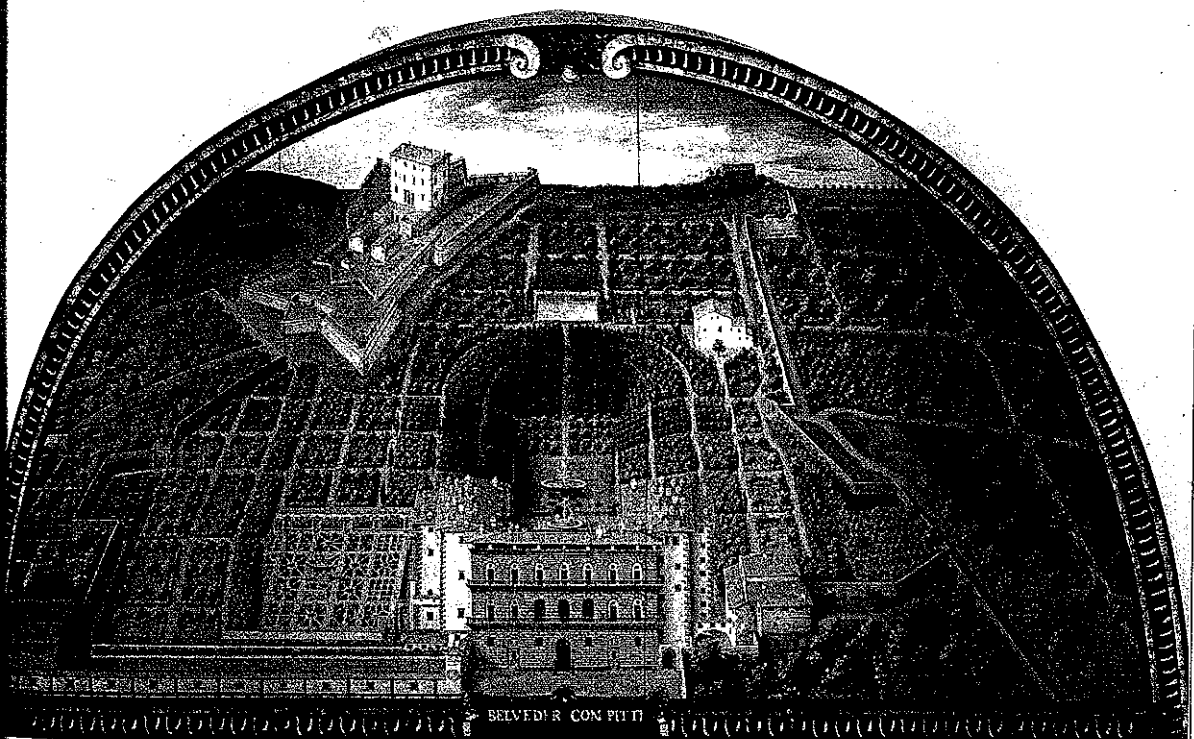


Fig. 1. Justus Utens, *Belvedere con Pitti*, c. 1599, fresco, Museo storico topografico, Florence, Italy, © Museo storico topografico



Fig. 2. Pandolfo Reschi, *Pallazo e piazza Pitti*, oil on canvas, 146 x 278 cm, private collection

stability over mobility, we quickly notice also the variability and ephemeral nature of many of the work sites of early modern scientific practitioners. Despite its aura of institutional stability, even Tycho's observatory was moved from the Danish sound to Prague.

It seems, then, that we need much finer spatial distinctions than those provided by private/public or stable/unstable if we wish to think of spaces as dynamically structured by choreographies rather than by walls and thresholds. As a beginning, we might refrain from turning large, immobile facilities into the paradigm of scientific sites and pay equal attention to spaces like the generic hotels where we convene for academic conferences, where walls can be moved around in a matter of minutes to accommodate audiences of different sizes, or perhaps to demarcate a history of science conference from a dentists' convention. As we all know, where a plenary session was held at 5 p.m., a rubber chicken banquet might be enjoyed at 7 p.m. Galileo's courtly sites functioned very much like these hotels, except that they looked much better.

In general, the early modern sites where things were made public (or perhaps just visible) came in many shapes and forms. Some were quite use-specific: anatomy theaters, botanical gardens, natural history museums, alchemical workshops or the observatories connected to scientific academies. Some were designed to make things public (at least to students or people with appropriate credentials) while others (like Tycho's Uraniborg) were built on islands precisely to prevent things from becoming public. One might say that these buildings exemplified the knowledge-making practices that took place in them, or that they stabilized those practices by constraining them in specific ways – that is, that there is a relationship between the stability of knowledge and the stability of the spatial structure that houses its making. But one could say as least as plausibly that the apparent stability of these sites was the mundane result of bulk or other movement-limiting features of these facilities and the objects they contained. Simply, they were furnished with large and heavy instruments, plants and trees with deep roots, furnaces or built-in display structures. They looked like institutions (things that belong to a certain

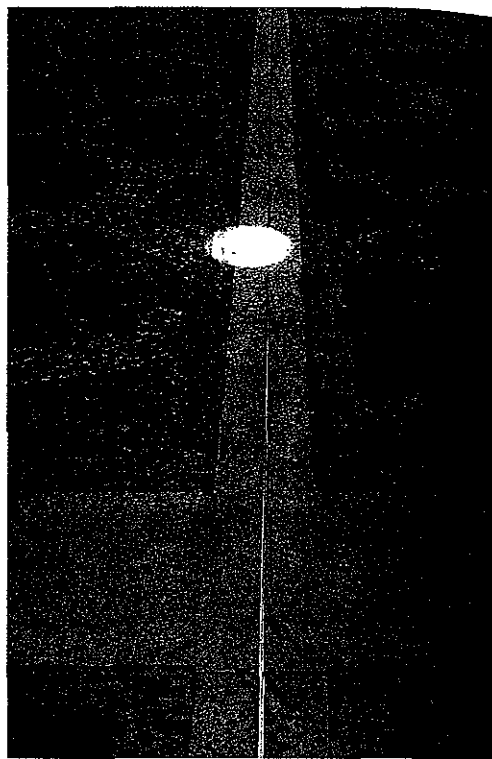


Fig. 3. Meridian, Church of San Petronio, Bologna, Italy, c. 1650s, in: *The Sun and the Church, Cathedrals as Solar Observatories*, J.L. Heilbron (ed.), Harvard University Press, Cambridge, MA / London, 1999, plate 4.

plot about discipline formation and professionalization), when in fact they might have simply been “real estate” – what the French call *immeubles* and the Italian *immobili*.

Other spaces like the meridians that punctured the roofs of several Italian churches projecting pin-hole images of the sun on the floor (and possibly on the faithful themselves) were remarkably public but required some time-sharing among different practices [fig. 3].<sup>7</sup> It was probably inappropriate to do astronomy during Mass, but it would not have been objectionable to do so at other times. Galileo observed sunspots projected on a piece of paper placed on the church floor and suggested that oth-

6 Christine MacLeod, *Inventing the Industrial Revolution: The English Patent System, 1660-1800*, Cambridge University Press, Cambridge, 1988, pp. 10-14.

7 John Heilbron, *The Sun in the Church: Cathedrals as Solar Observatories*, Harvard University Press, Cambridge, MA, 1999.

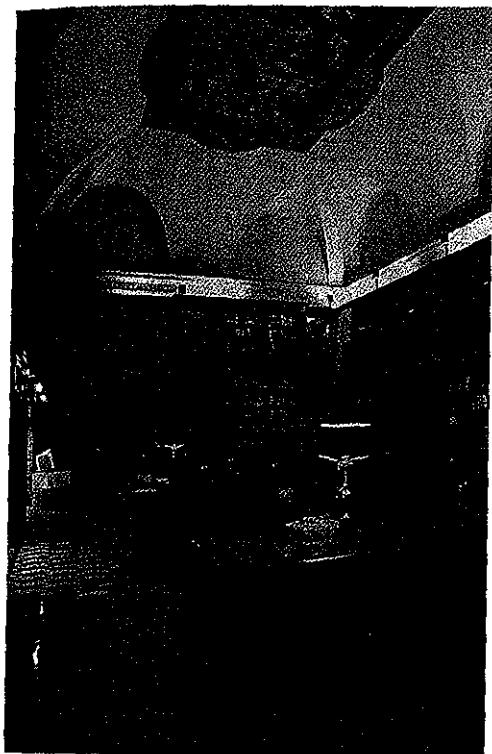


Fig. 4. Room of the ancient Dominican convent of Santa Maria sopra Minerva, Rome, Italy. Galileo did not make his abjuration in the church itself but in this room or in one of the adjacent ones. ■ In: *Galileo in Rome. The Rise and Fall of a Troublesome Genius*, William R. Shea and Mario Artigas, Oxford University Press, 2004.

More frequently, however, the spaces of early modern science were generic. Equipped with small, light telescopes, Galileo observed anywhere – from rooftops to terraces and gardens. He observed during trips as well, almost every night as he was going from Padua to Florence in 1610, probably from the rooms or the gardens of the inns where he was staying.<sup>13</sup> Even scientific academies, the epitome of the stabilization of certain practices of making things public, were architecturally generic. The early Royal Society moved from Gresham College and Arundel House (neither of which had academic specificity), while the Academie des Sciences of Paris met at the royal library in the Louvre but also at Versailles and elsewhere. Set up by a Medici prince 10 years after Galileo's death, the Accademia del Cimento led an equally itinerant life among non-specific spaces. In sum, there is no clear relationship between the stabilization of certain practices and the physical blackboxing of their sites. Certain sites were indeed stable (in the sense that they were hard to move), but that does not mean that they sustained stable practices. Time-sharing of spaces among vastly different practices was common then as it is today.

The few public observational seances Galileo had in Venice, Pisa and Rome were performed in nonspecific spaces of which we know very little, except that one demonstration took place at the Medici court in Pisa in 1610, while another in Rome in 1611 was performed in the presence of cardinals and aristocrats in a vineyard on the outskirts of the city. When in "residence" in Florence (which usually meant moving around from one house to another, or in and out of the city boundaries for long-term visits at his friend

8 Mario Biagioli, *Galileo's Investments*, University of Chicago Press, Chicago, forthcoming 2005, Chapter 3.

9 Darwin's "Beagle" is the locus classicus (no pun intended), but one can imagine many earlier analogous examples.

10 Giovanna Ferrari, "Public Anatomy Lessons and the Carnival: The Anatomy Theater of Bologna," in: *Past and Present*, 117, 1987, pp. 50-117.

11 Katharine Park, "The Criminal and Sainly Body: Autopsy and Dissection in Renaissance Italy," in: *Renaissance Quarterly*, 47, 1994, pp. 11-33. For the practice of medical inquests in pubs (up to the nineteenth century) see Ian A. Burney, *Bodies of Evidence: Medicine and the Politics of the English Inquest, 1830-1926*, Johns Hopkins University Press, Baltimore, 2000, pp. 16-51.

12 Mary Terrall, *The Man Who Flattened the Earth*, University of Chicago Press, Chicago, 2002, pp. 88-129.

13 Biagioli, 2005, op. cit., chapter 2.

ers could do so themselves.<sup>8</sup> The Jesuit mathematicians' use of their churches' bell towers for telescopic observations is another example of the grafting of one practice over the space of another. Some use-specific sites were not at all like cathedrals with deep sturdy foundations but rather rolled and pitched along, like exploration ships carrying practitioners, apparatus and inscriptions within them.<sup>9</sup> They functioned like a sort of floating node of a network moving on a network. Other spaces moved not due to displacement but rather because they were routinely erected and disassembled, as in the case of early anatomy theaters.<sup>10</sup> (Anatomies were conducted also in private homes and, in England, even in pubs.<sup>11</sup>) Astronomical observatories could be ephemeral, too, like those built by Maupertuis' team in the Lapland.<sup>12</sup>



Fig. 5 Pitti Palace, Sala di Giove [Room of Jupiter], Florence, Italy

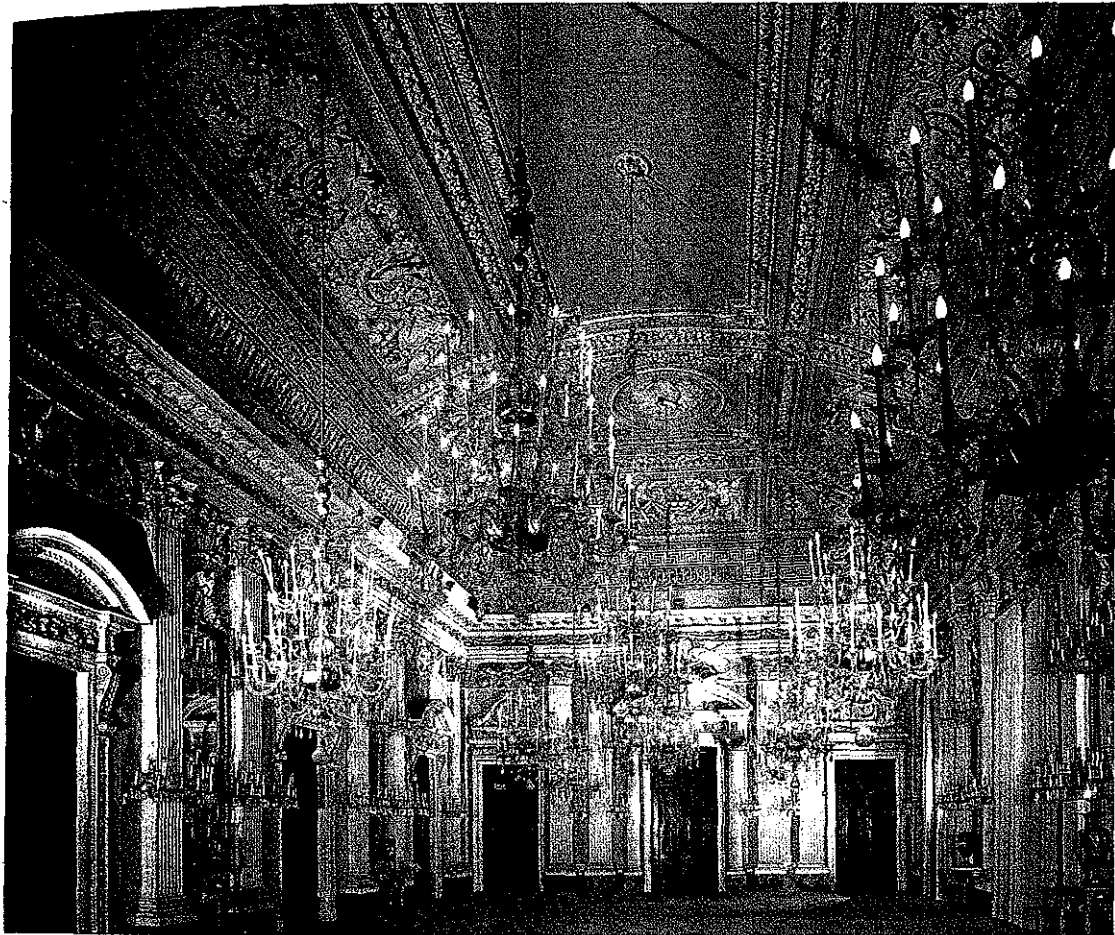


Fig. 6. Pitti Palace, Sala Bianca [White Room], Florence, Italy

Salviati's Villa delle Selve), Galileo frequently observed and made drawings of sunspots with his patrician friend and his guests, probably on some terrace or in gardens.<sup>14</sup> He also performed experiments and disputations at the Pitti Palace – the Florentine court palace – but the spaces that accommodated experiments on buoyancy one day saw a ball the next day or a political function a week later. Other sites of Galileo's demonstrations moved in an even more literal sense. During a short spin on Prince Cesi's pleasure boat on an Umbrian lake, Galileo suddenly tossed one of his host's keys up in the air in front of a puzzled audience only to argue (when the key landed safely in

his hands rather than in the water) that the Earth's motion had no detectable effects on the objects that moved on or over it. His last public performance (the abjuration of Copernicanism in front of the Inquisition in 1633) took place in a generic, multi-purpose room of the Convent of Santa Maria Sopra Minerva. This room (now part of the library of the Italian Parliament) was not even the permanent headquarters of the Inquisition, which, acting a bit as an itinerant tribunal, met in different Roman buildings at different times [fig. 4]. For most of his life, Galileo's work was associated with movement and generic spaces. It became physically blackboxed only after the

<sup>14</sup> Maria Luisa Righini Bonelli, William Shea, *Galileo's Florentine Residences*, Istituto e Museo di Storia della Scienza, Florence, n.d.

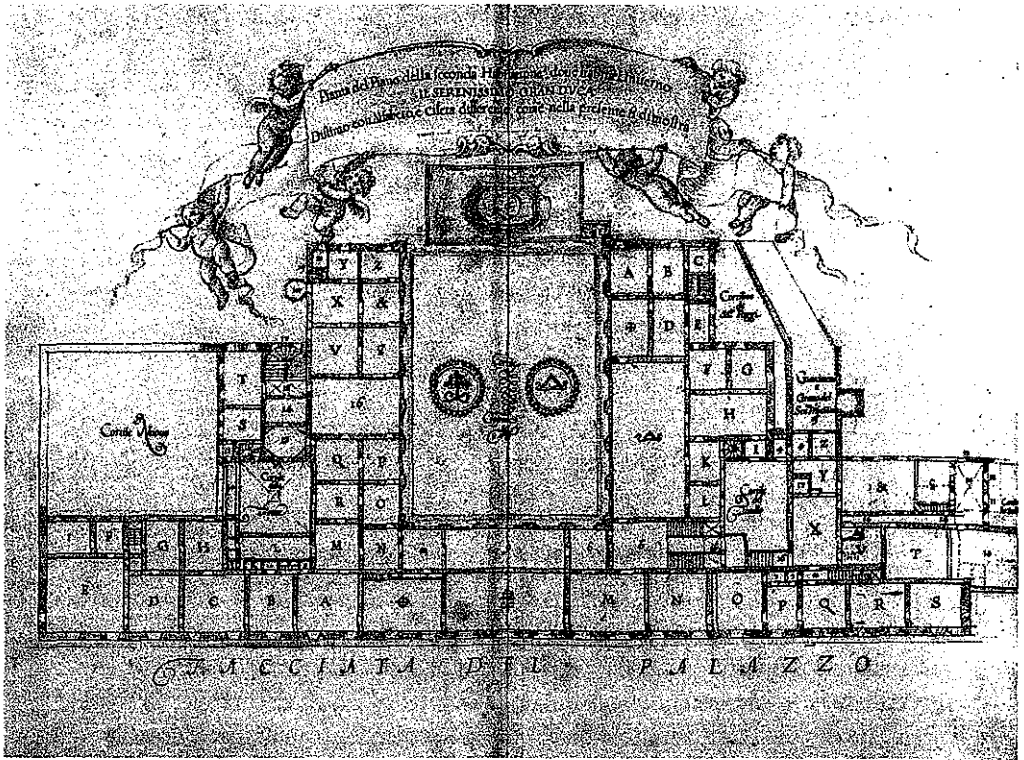


Fig. 7. D. M. Marmi, *Piano del Piano della Seconda Habitatione, dove Habita l'Inverno il Serenissimo Grand Duca* [Plan of the duke's winter apartment of Palazzo Pitti, Florence, Italy], c. 1622, Biblioteca Nazionale Centrale Firenze, Maglab II.1.284  
 ■ Granduca Ferdinando II: 9 (Loggia della Guardia Tedesca), Sala centrale delle Statue, Sala adiacente di Venere, A, B, C, D, E, 1 (Sala della Stufa), F, G, H, L.  
 Granducessa Vittoria: M, N, O, P, Q, R, 13 (Capella delle Reliquie), 14 (Sacrestia), 16 (Salotto della Guardia Tedesca).  
 Principe Cardinale Giovan Carlo: V, X, Y, Z, e, 17 (Corridorio), 18 (Capella), 19 (Sacrestia), 20, 21.

trial, and that blackboxing was called house arrest. Before getting to a discussion of where and how Galileo made things public at court, we must consider what this construct – the court – was and what its spatial features were. To go to court did not mean to go to a specific place or building. The court was the grand duke, his family, his entourage of nobles, administrators and servants. A bit like medieval kings who traveled through their lands to administer justice and keep an eye on their feudal subjects, the Medici moved around a lot, for months every year. The engine behind their constant migrations, however, was not so much political control as temperature control. Palazzo Pitti at Florence was the court's primary base, but winters were usually spent in milder Pisa (where Galileo traveled to show the four satellites

of Jupiter he had discovered and named the Medicean Stars) and summers in the countryside villas (like Pratolino, where Galileo would go to teach mathematics and show the calculating compass to Prince Cosimo). As the court enlisted about 350 workers (in addition to the courtiers themselves) by the time Galileo joined it and about 600 by the time of his death, these migrations were staggering logistical feats. The villas where the court resided (or simply stopped to catch its breath, during longer moves) were empty, only to be completely furnished and unfurnished at each visit.

Literally, the court was not a building but an entity in a state of perpetual camping-in-style. The closest comparison I can find to making things public in this framework was performance in an



itinerant circus. Like the exploration ships mentioned before (but on a much larger scale), the court was not a fixed node but a traveling one. It certainly was no encampment, and yet its inherent mobility should make us conceptualize the many rooms it occupied not as “stable spaces” but as tents with unusually sturdy walls. This suggests that the distinction between “residential” science with permanent displays and the itinerant shows of seventeenth- and eighteenth-century traveling experimenters is only phenomenological (as is the more general assumption about the distinction between center and travel, or nodes and lines connecting nodes).<sup>15</sup> It is not clear if it is things that go to places, places that go to things or places that go places.

The inherent mobility of space can be seen even when the court was allegedly “at rest” in Florence. Such a mobility reflected various cycles of change, each operating at a different pace. Long-term changes derived from the continuous expansion and internal reorganization – drastic reorganization – that the Pitti Palace saw throughout its 300-year life as a court palace. In 1608 (two years before Galileo moved to court), it was little more than a large suburban villa [fig. 1], but it was rebuilt as a very large royal palace over the next 50 years [fig. 2] to house more than 800 people in more than 400 rooms.<sup>16</sup> The way in which apartments, kitchens, chapels, bathrooms, ceremonial rooms, visitors’ rooms were added, redivided and reasigned to different uses (bedrooms into chapels and vice versa) reminds one of the shape-shifting conference hotels mentioned earlier. In the process, the workshops where Medici artisans made furniture and statues and worked precious stones (among them Francini, the artisan who ground Galileo’s telescope lenses) were relocated at the Uffizi (the seat of the Medici bureaucracy and collections).<sup>17</sup>

Faster changes followed from family dynamics. Etiquette required that each member of the family of the grand duke have his or her apartment from the time he or she was about two years old. These were courts within the court, eight of them around 1650.<sup>18</sup> A two-year-old had an entourage of a handful of people, but a teen-age prince could already have fifteen to twenty people around him. Each birth, marriage or prince’s elevation to the

cardinalate required massive, quick restructurings so as to rearrange the increasingly cramped space while preserving the correct hierarchy within and across the various sub-courts. Deaths in the family of the grand duke meant quick redistribution of vacated rooms, which in turn meant redrawing the boundaries of bordering apartments. This was a unique feature of the Pitti Palace (as other European courts did not keep all their sub-courts under the same roof) and greatly increased its “architectural mobility”.<sup>19</sup> If this were not enough, the court moved between winter, summer and mid-season quarters every year within the same building [fig. 7]. Because of this pattern, a substantial percentage of the Pitti Palace – entire wings and floors – was empty at any given time (not unlike the villas the Medici kept in the countryside).<sup>20</sup> In this sense the court was “camping” even when at Pitti. Conversely, if large ceremonial halls (like those in which Galileo performed) remained architecturally more stable than the rest of the palace, it is because they were primarily dedicated to the entertainment of visitors.<sup>21</sup> As such entertainment required highly flexible spaces, those rooms remained stably “generic” – as generic as stages.

These changes could be measured on the scale of days rather than years. Apartments for visitors were kept empty until the identity of the guest was known, so as to not only match his/her rank with the location, size and luminosity of the room but with its decor as well. (There were seven styles of beds from which to pick to match the status of the sleeper).<sup>22</sup> Everything from furniture to paintings to draperies was brought in for the visit and then brought back to the *guardaroba* – the general

15 Larry Stewart, *The Rise of Public Science*, Cambridge University Press, Cambridge, 1992; Jan Golinski, *Science as Public Culture*, Cambridge University Press, Cambridge, 1992, esp. chapter 7.

16 *Palazzo Pitti: L'arte e la storia*, Marco Chiarini (ed.), Nardini, Florence, 2000, pp. 20-125; Sergio Bertelli, “Vivere a Palazzo,” in: Bertelli, Pasta (eds), op. cit., pp. VII-XXIV.

17 Silvio Bedini, “The Makers of Galileo’s Scientific Instruments,” in: *Science and Instruments in Seventeenth-Century Italy*, Variorum Reprints, London, 1994, pp. 89-115.

18 Marcello Fantoni, *La corte del granduca*, Bulzoni, Rome, 1994, p. 56.

19 Sergio Bertelli, “Palazzo Pitti dai Medici ai Savoy,” in: *La corte di Toscana dai Medici ai Lorena*, Anna Bellinazzi, Alessandra Contini (eds), Ministero Beni Culturali, Rome, 2002, pp. 36f.

20 Fantoni, 1994, op. cit., p. 57.

21 Francesca Fantappiè, “Sale per lo spettacolo a Pitti (1600-1650),” in: Bertelli, Pasta (eds.), op. cit., pp. 135-180.

22 Fantoni, 1994, op. cit., p. 63.

warehouse where all courtly objects were stored, from Galileo's telescopes to the grand duke's lodestones, to silverware, to curtains, rugs, mattresses, beds and bedpans. The same pattern applied to ceremonial salons. Their furnishings went in and out of storage according to the rooms' immediate use. It does not come as a surprise that the *maggiordomo*, the court official in charge of this breakneck choreography, developed a complex cataloging system to manage the retrieval of the various sets of furniture for each room.<sup>23</sup> The court was a permanently changing stage.<sup>24</sup> The actors changed, too. A steady stream of new visitors would come and go every day, often never to return.

Galileo did not live at court but went there when summoned by the grand duke. Audiences were granted in the so-called *Room of Jupiter*. It is still there [fig. 5], but the décor is that of the nineteenth-century Savoy kings.<sup>25</sup> It is more difficult, instead, to identify the exact site where Galileo disputed over buoyancy against the Aristotelian philosopher Papazzoni in 1611, in front of Cardinal Barberini, Cardinal Gonzaga, the family of the grand duke and select courtiers.<sup>26</sup> It was either the *Sala dei Forestieri* (later turned into the *Sala Bianca* [fig. 6]) or, more probably, the *Sala delle Figure* (also called *Sala delle Nicchie*).<sup>27</sup> The *Sala delle Figure*, too, was renovated by the Savoy kings in the nineteenth century, but we are fortunate to have a virtual reconstruction of its early seventeenth-century look.<sup>28</sup> It was located right in the center of the palace, on the "noble floor," that is, the floor above the ground floor.

How did the room look? Where were Galileo and Papazzoni located in relation to the audience? Was apparatus brought into the room? Who could see what? Unfortunately we have only hypothetical answers based on other comparable ceremonies. Given that this was an official event in honor of two visiting cardinals, their status dictated the *décor* of the room, how many other guests would be invited, the banquet's menu and the nature of the post-meal entertainment. That day the entertainment was provided by the disputation between Galileo and Papazzoni. Based on similar events, we can guess that three dining tables were brought in (the central one for the grand duke and his guests) and that Galileo and

Papazzoni probably did not participate in the banquet. More likely, they were ushered in after "the table was cleared," the expression used by court diaries to mark the transition from banquet to post-banquet entertainment. Probably they disputed in front of the central table, addressing themselves to the grand duke and the cardinals, as each cardinal had been invited to support one of the two disputants – Barberini for Galileo and Gonzaga for Papazzoni. Given that the dispute (at least as it was written up *post facto*) hinged on the phenomenon of water surface tension (water surface's tendency to prevent small bodies from penetrating it even if their specific weight might be higher than that of water), it is surprising that no apparatus is mentioned in the reports that have survived. Nor do we find mentions of drawings, diagrams, blackboards and the like.

A hypothesis is that this event was a performance in the most literal sense: two people acting a disputation (a traditional academic genre) in a space clearly defined as a stage (an empty room in which specific "sets" were brought in depending on the planned performance), in front of an audience that expected to be entertained at the end of a banquet (on analogous occasions, the same set of people would have been entertained with music, poetry, or dance). As the reports make clear, people were not concerned so much with truth or matters of fact as with the quality of the performance and the skills of the disputants. In other words, what was being made public that day at the Medici court was not so much things as people (or, more specifically, their academic acting skills).

An interesting coda to this disputation is that the notion of "room" is shown to be inadequate to describe how these spaces worked. I find it useful to think of the Pitti Palace (or any other villa occasionally occupied by the court) as a naked body (not unlike the courtiers' bodies prior to putting on their rank- and function-specific garbs and uniforms). Like courtiers, palace spaces were dressed according to rank and circumstance. What people

23 *Ibid.*, p. 63.

24 *Ibid.*, p. 58.

25 Gabriella Capecchi et al. (eds), *Palazzo Pitti: La reggia rivellata*, Giunti, Florence, 2003, pp. 62ff.

26 A discussion of the dispute and its genealogy is in Mario Biagioli, *Galileo Courtier*, University of Chicago Press, Chicago, 1993, pp. 159-209.

27 Capecchi et al. (eds), *op. cit.*, pp. 110-23, 637f., 509f.

28 *Ibid.*, pp. 124-127.

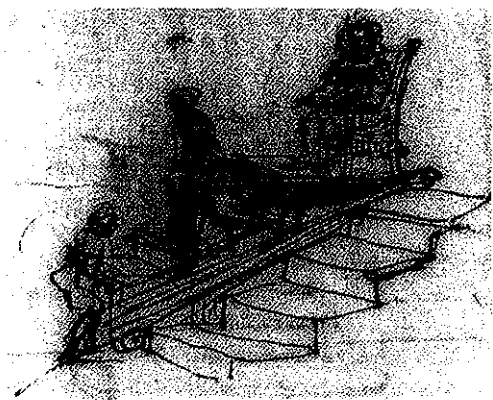


Fig. 8. D. M. Marmi, Sketch of a staircase lift for the main staircase of Palazzo Pitti, c. 1662, in: Marcello Fantoni, *La Corte de Granduca, Forma e simboli del potere mediceo fra Cinque e Seicento*, Bulzoni Editore, Rome, 1994, fig. 6.

saw (what was made public) were not rooms but stage sets, clothed architectural structures. These stage sets were not just “backdrops” but rather constitutive of the courtly performance that took place in them. Space was performed through furniture and *décor*. The court’s itinerant movements across Tuscany were just other levels of the same performance.

The notion of threshold might be rethought along the same lines. Of course the Pitti Palace had doors – several hundreds of them – but that does not mean it had clear thresholds. The throne room was not some kind of “safety box” where the prince’s sacred body was shielded from the profaning effects of contacts with low-class people. The encounter between prince and visitor was a duet based on the relative status of the two individuals, and it took place precisely on the spot defined by the balance between their ranks.<sup>29</sup> We need to think not so much of rooms and thresholds but rather of a continuum that starts with the throne room but moves outward through halls, corridors and staircases down to the palace gates – a sliding rule of space. Subjects who were not particularly distinguished might have been taken to the throne room, usually stopping at various waiting points along the way for a determined amount of time to be entertained by courtiers of status appropriate to that of the visitor. But if the visitor

was important, the grand duke came out of the throne room to greet him or her. Often the encounter was staged at a specific point in the halls or along the staircase. A sliding throne was apparently installed on the main stairs so as to exactly calibrate the location of the prince to the rank of the visitor [fig. 8].<sup>30</sup>

Such “outward greetings” did not end at the gates of the palace. Important guests were met miles outside of the city’s gates, sometimes at the borders of the state.<sup>31</sup> The modalities and locations of these encounters were encoded in the court’s etiquette rules, thus showing that the court was not limited by its palace. People entered the court not when they crossed a threshold but when they encountered a person sent by the grand duke to represent him. When Galileo visited Florence in the spring of 1610 to show the Medicean Stars to the grand duke, he effectively entered the court when he stepped into a Medici horse carriage that had been waiting for him at Bologna. From then on, he gained access to performances in spaces that were alternatively generic and highly customized to the important people who lived or visited in them – and not to the things that were produced, showed, discussed or shared there.

The patterns of multi-level, relentless changes in the spaces occupied by the court (both when traveling and in residence) were an index of power – not only of the power of the prince who could pay for the massive amount of labor needed to sustain those ongoing changes but of the power that was produced through those fragile spatial differences and distinctions. Much literature about the court emphasizes rules of etiquette and the organization of space as key tools for controlling the multiple, interconnected performances that happened under its roof. The same logic is found in much history of science, where the regulation and stabilization of practices is seen as key to the stabilization of knowledge. But this regrettably short discussion of court spaces (empty, generic, ceremonial) and the way they staged Galileo’s practices suggests that “stabilization” does not capture the process through which things might have been made public. I have tried to foreground how power was produced not just through stabi-

29 Fantoni, 1994, op. cit., pp. 64-69; Tofani, op. cit., pp.130-134.

30 Fantoni, 1994, op. cit., p. 69.

31 Tofani, op. cit., pp. 128-129.

lization – the turning of spaces into “specialized” sites, of people into “roles,” of claims into “disciplines” – but rather through a fast-paced, relentless restaging of spaces through an increasingly complex choreography.

It did not matter that Galileo performed in spaces that had little or nothing to do with astronomy, natural philosophy or theology. What mattered – and mattered a lot – was that he performed in spaces that were extremely specific (from location to *décor*) to the authoritative people in front of whom he was performing. It was by staging his performances in rooms temporarily customized to receive distinctive, powerful people that he could gain distinction himself. These visitors did not stay long. Cardinals came and went, and the grand duke moved around, too. So the next performance was likely to be in front of other people and visitors, in rooms that were yet again dressed differently for the occasion and for the people who made the occasion. Spaces were generic because what mattered was the specificity of the bodies that occupied them. Or, to put it differently, they were generic because they had to be dressed up often and quickly in ways that were highly specific to the authoritative body that walked into them.

How does this relate to the processes of making things public today? I wish I could say I had a good answer. All I can offer are a few observations on the differences between the two regimes, plus some genealogical strains that might connect them. The most obvious difference that comes to mind is that Galileo operated in a political absolutist regime while most science today is produced within representative democracies. Politics was theatrical then as it is now, but the notion of theatricality has changed dramatically. Unlike modern representative democracies where politicians speak in the name of collective and necessarily generic bodies, the people on the courtly political stage acted themselves or, more specifically, their everyday political roles.<sup>32</sup> The grand duke acted himself as the center of power, while the courtiers impersonated their specific everyday roles. In this sense, princes and courtiers did not represent themselves but rather made themselves public, visible *together with* (rather than *to*) those people who counted within that choreography and made it possible.

Galileo, too, made himself public by acting his character of philosopher and mathematician of the grand duke. He made things public at court but only insofar as those things could become part of his personal performances. The courtiers who saw the Medicean Stars through the telescope were, in a sense, Galileo’s fellow-actors in a courtly performance. At court, the four bright dots visible around Jupiter were not the satellites of Jupiter but the Medicean Stars. Observing them was like gazing at the other Medici marvels one saw while walking through the grand duke’s art gallery, walks that were as carefully choreographed as any other courtly event.<sup>33</sup> In many ways, then, the “theater of the world” was the grand duke’s stage (though some of its props could be seen only through some special “opera glasses”).

Not all politics, however, was acted at court. Historians and political theorists have taught us about the emergence of the “public sphere” in parallel (and often in opposition) to the sphere of the court and of the personalized state. Galileo made things public on this non-courtly stage as well, this time performing through books rather than with his body. Those books, however, continued to carry the traces of the “personal acting” of the courtly regime. Galileo’s *Dialogue on the Two Chief World Systems* does not read as an impersonal treatise but rather as a vivid description of discursive performances that took place in specific settings (however fictional those might have been). These performances feature specific characters – his late friends Salviati and Sagredo – who argued in his place (or he in theirs) using a voice that actually matches the persona we have of them. The text still feels very “personal,” but it can be read by people who were not there, a “there” that, of course, could not be clearly located in time or space.

Some of his other books were written as letters. Like the dialogue, the letter referenced a personalized performance – perhaps not an embodied one for the grand duke but a textual one for a friend. The epistolary genre allowed the framing of the communication as personal (that is, as an *ad hominem* performance) while acknowledging the

32 My remarks are loosely informed by Paul Friedland’s excellent *Political Actors: Representative Bodies & Theatricality in the Age of the French Revolution*, Cornell University Press, Ithaca, 2002.

33 Biagioli, 2005, *op. cit.*, Chapter 2.

distance between the performer and the spectator or co-performer. The letter, in fact, would not be needed if both individuals were present to each other. In this sense the epistolary genre tries to maintain an effect of personal connection while acknowledging distance. But in doing so, it includes other readers, readers as distant as the letter's "official" recipient. Distance is not an obstacle but a door through which the conversation can be opened to other readers, readers who could not have been there had Galileo been actually conversing with his friends Cesarini or Welser.

It seems, then, that Galileo's book replicated (in form) the ancien regime's embodied interactions he experienced in courtly and patrician contexts – performances where people did act but acted their roles. At the same time, the act of read-

ing those performances in printed text made those roles look like "mere" roles, that is, generic roles. Perhaps these texts point to the possibility of a regime change that Galileo did not witness: from intricate performances staged in generic spaces in front of very specific people to scenarios where the textual style is very specific – "professionalized" – and yet no longer personal. Things became reframed, too. Today when we read "Medicean Stars" we think "satellites of Jupiter". Perhaps Galileo meant the pictures of the Medicean Stars he included in his books as re-presentations, that is, as the presentation of an object to the specific individual for whom it was produced. But now we see them as representations – pictures of things that are as public as the museum that now takes place in the Pitti Palace.