



Sound Studies

An Interdisciplinary Journal

ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/rfso20>

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To cite this article: Flora Dennis (2020) Cooking pots, tableware, and the changing sounds of sociability in Italy, 1300–1700, *Sound Studies*, 6:2, 174–195, DOI: [10.1080/20551940.2020.1794650](https://doi.org/10.1080/20551940.2020.1794650)

To link to this article: <https://doi.org/10.1080/20551940.2020.1794650>



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Published online: 19 Aug 2020.



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Cooking pots, tableware, and the changing sounds of sociability in Italy, 1300–1700

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ABSTRACT

This article considers how the sounds produced by the preparation and consumption of meals in Italy changed between around 1300 and 1700. It argues that by focusing on sound, and by using ecological approaches, we can rediscover obscured connections between different categories of material objects. By examining material and textual evidence for three categories of objects associated with cooking and dining – metalwork, ceramics, and glass – the article traces changes in the material cultures of kitchen and table, and the clear impact these changes had on domestic soundscapes. It considers these sound-producing objects as agents of social interaction, exploring the social relationships they constructed, and the role sound played in those relationships. The article then focuses on the practices of cooking and dining, and the way they shaped the sound of objects. Finally, the article situates objects and social practices within the spatial context of the home, tracing an increasing impetus to manage and control specific types of sound in relation to gender. In the discourse on hospitality, noise came to signify a badly-managed, and therefore morally dubious, household, while silence testified to decorous and authoritative domestic management.

ARTICLE HISTORY

Received 21 August 2019
Accepted 9 July 2020

KEYWORDS

Material culture; history of sound; early modern Italy; food culture; gender

At first glance, the objects in [Figures 1](#) and [2](#) have little in common. [Figure 1](#) is a large tin-glazed earthenware (or maiolica) dish, made in Urbino in 1532 and signed by one of the most renowned maiolica painters of the sixteenth century, Francesco Xanto Avelli (Wilson 2016, 181–185). Identified in an inscription on the reverse of the dish, the image illustrates a passage from Pliny's *Natural History*: the moment when an eagle throws itself onto the funeral pyre of the woman of Sestos who had tamed it. It is now on display in the Metropolitan Museum of Art in New York. [Figure 2](#) shows a row of undated copper cauldrons forming part of a “historic” kitchen installation in the Museo archeologico, Feltre.

The maiolica dish and copper cauldrons have both been decoupled from their original functions and sensory contexts. For modern art historians, Xanto's signature on the reverse of the dish lends it artistic value and status, as does its association with the noble Florentine Pucci family, whose arms are visible on the right of the dish. A named painter and prestigious patrons transform this object into a “work of art”, worthy of display in an art museum. It is now installed in the galleries as if it were indeed a painting: propped up

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Figure 1. Francesco Xanto Avelli, tin-glazed earthenware dish with *The Woman of Sestos and the Eagle and arms of the Pucci family*, Urbino, 1532, 4.8 x 40.6 cm, Metropolitan Museum of Art, New York.

vertically, so as to obscure its three-dimensional form (Syson 2016, 13). On the other hand, the six anonymously fashioned cauldrons hang from a shelf above a long stone sink in a local archaeological collection, in a room containing disparate furniture and utensils from the sixteenth to the nineteenth centuries.

In both museums, the sensory qualities of these objects have been quashed. The dynamic complexity of their original relationships to people, practices, other objects, and spaces has been undermined. The very different “biographical” trajectories that led them to their respective museum displays have also kept them segregated (Appadurai 1986). The idea that objects like these once occupied overlapping spheres and forged strong functional relationships tends to be forgotten or underplayed in scholarship as well. For the purposes of this paper, these two types of object, at opposite ends of a museological spectrum of artistic value, stand for the myriad objects whose collective identities have been masked by museum taxonomies and the disciplinary fixities of scholarship.

The collective identity that this article investigates is sound: the set of acoustic phenomena created by meals on the Italian peninsula between the fourteenth and seventeenth centuries. Recovering the sensory experiences of the medieval and early modern past and reconstructing their meanings has stimulated growing academic interest (see, for example, Newhauser 2014; Roodenburg 2014; Sanger and Kulbrandstad Walker 2012). The meal engages all of the senses, allowing us to understand sound as



Figure 2. Copper cauldrons in kitchen installation at the Museo Archaeologico, Feltre, Archivio fotografico Musei Civici, Feltre.

integrated within a broader spectrum of sensory encounters. Drawing attention to how the sounds resulting from the acts of preparing, cooking, serving, eating, and clearing away food possessed a distinct, overarching identity enables us not only to uncover often obscured connections between apparently disparate categories of material objects, but also to highlight links between different everyday practices and social groups. This in turn permits us to understand the social significances of sound, and the importance of sound's materiality in the past.

In a recent paper on "sound objects", musicologist Carolyn Abbate exhorts us to attend to the "mundane, ordinary, disdained", acknowledging that it "can reveal marvels" (Abbate 2016, 795). My aim in this article is to consider "mundane" and "ordinary" domestic objects whose connection with sound has not been examined. The article is therefore exploratory and (by intention) speculative. It presents initial findings, all of which invite deeper exploration. Drawing on scholarship from a number of disparate fields, from histories of food, architecture, and the decorative arts, to archaeology and art history, it provides new readings and fresh juxtapositions of primary sources known to historians, with the aim of revealing the unacknowledged importance of sound. The article aims to highlight the fact that objects we often merely look at today had flourishing multi-sensory identities, and reiterates the importance of attending to the everyday, to sound's materiality and the contingency of its social meanings. It takes two approaches: firstly considering a series of specific materials-based categories of objects to explore their sonic identities, and secondly examining domestic practices that created and controlled sound, resulting in noise and in silence. I foreground here the contribution of material

artefacts to the sound of the meal, but I fully acknowledge the considerable contribution to the acoustic environments of kitchen and table made by other animate and inanimate forces: the voices of the people within these assemblages; the noises of the birds, cats, or dogs often included in visual representations of kitchens in this period; the musical sounds of song and even instruments. A larger study would also consider these additional, rich, auditory contributions.

The sounds of meals from long ago can never be reconstructed fully, wholly “authentically” or with precise accuracy. Here, rather, I aim to evoke a particular set of “sonic things”, ideas of the sonic past that emerge from cookery books, architectural treatises, inventories and surviving objects.¹

Considering the sound of the meal requires us to address the objects of cooking and dining. Copper cauldrons, pewter platters, drinking glasses, earthenware dishes, and brass ladles have the potential to make a lot of noise. The broad category of objects that constellated around Italian kitchens and tables witnessed significant change between 1300 and 1700. This can be observed in the nature and content of meals (what was eaten and how, with whom); in a growth in the variety of forms, materials, and functions of objects involved in producing and consuming meals (influenced by the global trade in raw materials, foodstuffs, and artefacts, as well as shifting patterns in local manufacture); and, finally, in the practices and behaviours that animated those objects. Material changes during this period, and their conceptual and symbolic ramifications, had an impact on the soundscapes generated by meals within the home.

Objects do not produce sound on their own. Understanding artefacts within the dynamic ecology of the home – “the intertwining of the human and non-human, the material and the social” (Campbell 2014, 4) – draws out multiple interactions among objects, people, and practices, revealing the rich complexity of the contexts in which sound was produced and had meaning. Thus, when in use, a pewter bowl might have sat on a carpet- and linen-covered table. Next to it might have been a fork, knife, and spoon, a glass, brass dishes, more pewter or maiolica. The bowl would have passed through different hands before it reached the table, was eaten from, cleared away, washed, and dried. Out of use, it might have been propped upright or stacked horizontally with similar dishes of pewter or of other materials.

Ecological models allow us to approach space with more subtlety, moving beyond a definition of space as a container for objects and actions to allow for the entanglements between people, artefacts, and practices (Latour 2005; Morton 2010; Ingold 2011; Bennett 2010). Here, I am keen not to limit my discussion to single specific room types – the kitchen or the *sala* (where most Italian entertaining took place in this period), which stem from architectural definitions of domestic space that do not do justice to the messy phenomenology of lived experience. I take inspiration from Erin Campbell’s use of ecological approaches to explore the functional and conceptual connections between the zones of kitchen, hearth, table, and the credenza, a cupboard-like piece of furniture, on which tableware was displayed during meals and from which food brought from the kitchen was served, as in the example illustrated in the distant room on the left-hand side of Figure 3. Together with the metaphors of the network and the mesh, Campbell uses ecological methodologies to acknowledge the role that objects, people, and practices had in fashioning these zones, as well as the fact that objects and people flowed regularly from one to another (Campbell 2014).



Figure 3. Antonio Tempesta, 'January' from a series of the months, Rome, 1599, engraving, 19.6 x 28 cm, Rijksmuseum, Amsterdam.

Bringing material relationships and their resultant social meanings to the fore allows us to define the role of sound in domestic sociability. Cooking tools and eating utensils were frequently used and could be highly mobile. Socially, they encompassed everyone in the household, from servants and enslaved people to family members and guests. These objects therefore possessed an accessibility that was not shared across the material culture of the household. Unlike handbells, which were sonic and visual markers of status and domestic power, or musical instruments, which required specific knowledge and expertise to play, all interactions with such objects – whether quotidian or exceptional – could result in sound (Dennis 2010). Ignoring the sonic dimension of these everyday objects limits our capacity to understand the historic importance of sound's materiality and its social significance.

It is widely accepted that pre-industrial sensory environments differed markedly to those experienced today, imbuing sound with levels of communicative force that may not be immediately apparent (Smith 1999, 49–51). In general, the lower overall decibel levels and an absence of the broad-frequency "white noise" characterising modern urban soundscapes meant that a wider range of sounds could be heard over greater distances. Experienced and interpreted within particular social and spatial contexts, these sounds therefore took on greater specificity and significance (Ruggiero 2006, 309). Niall Atkinson has convincingly shown sound's political importance in the public spaces of Renaissance Florence and the ways in which urban rebellions deliberately

developed effective acoustic strategies (Atkinson 2012, 2016a). Sound's important relationship to the body politic, to the social on a grand scale, has been clearly established. Yet similarly nuanced studies of the meanings and sociocultural implications of sound within the early modern home are lacking.² This is despite the fact that sound took on additional force in the period of considerable urban growth following the Black Death. The resulting increased population density meant that city dwellers lower down the social scale frequently lived in cramped conditions in shared tenement buildings. Even the splendid palaces occupied by patrician families were often divided into apartments. Sharing front doors, staircases, and landings was not uncommon, and barriers between living spaces could be flimsy and permeable. Such physical proximity inevitably magnified sound's impact on the domestic sphere (Dennis) 200809.

The nature and broader cultural significance of historic domestic sounds remains elusive. In part this is due to the problematic nature of studying the ephemeral phenomena of the everyday: archival and early printed documents rarely expound on the habitual and unexceptional, and images tend to represent extraordinary events. Tracing the transient, secondary echoes of quotidian sonic events is protracted and frustrating. Where the written record offers only vague, descriptive hints or absences, this article suggests how attention to material culture – both surviving objects and their visual and textual traces – can augment and enhance our understanding of sound's social importance.

Material objects and the meal

Between the mid-fourteenth and the late seventeenth century on the Italian peninsula, important shifts in the material environment had an impact on the sound of the meal. The kitchen and table were subject to extraordinary change (for overviews, see Sarti 2002; Ajmar-Wollheim and Dennis 2006). This was partly due to alterations in what was eaten and how, which stimulated increasing specialisation in the function of cooking equipment and tableware. It was also fuelled by responses to Italy's increasingly global trade in imported goods and raw materials, which led to technical advancements in the local manufacture of objects, exemplified by the production of tin-glazed earthenware and *cristallo* glass (Goldthwaite 1989; McCray 1999).

As well as a general expansion in the quantities of utensils, kitchens (particularly, but not only, in wealthier households) witnessed the arrival of equipment with increasingly specialised functions. Generic frying pans transformed into pans specifically designed to fry eggs or fish. Alongside large, stone mortars appeared bronze mortars of different sizes (Blake 2006, 335; Motture 2001). The kitchen became the focus of intensive technological experimentation and innovation (Molà 2014, 13–14). Venetian patents reveal inventions for preparing different types of pasta, machines that peeled and ground cereals and legumes, and experiments with bread-making, alongside proposals for more efficient cauldrons, stoves, and ovens, and even a portable multifunctional kitchen. The materiality of the table also experienced fundamental shifts during this period, from smaller numbers of multifunctional objects made of a limited range of materials to numerous specialised objects in a variety of materials. Fewer, larger communal dishes were replaced by individual table settings. An expansion in the use of cutlery diminished the direct use of

the hands in eating. Sound-absorbent wooden trenchers, found across social levels at the start of this period, were increasingly supplanted by percussive metal and resonant ceramic dishes. In Italy, these changes took place significantly earlier than elsewhere in Europe.

What impact did such innovations have on early modern domestic soundscapes? How did they influence objects' sonic properties and the potential for sound-producing material interactions? More fundamentally, what evidence can we draw on even to begin to answer such questions?

Significant methodological challenges confront us when we try to access the sensory, embodied experiences of the historic past. Few early modern objects related to meals survive, and those that do are often difficult to date. These objects were used for as long as possible and when they broke, metal and glass artefacts were recycled and turned into other objects, wood was burnt, and ceramics thrown away. Archaeological digs discover discarded fragments, the occasional complete object, and, in very rare cases, preserved hoards. The specific contexts of such early modern finds are, however, rarely identifiable (Blake 2006, 332–334). Objects in museum collections rarely have a concrete historical provenance. Their survival usually reflects the particular enthusiasms of the collectors who preserved them, and so they may not be typical. Documents can be equally problematic. Inventories, for example, can provide rich information about types and quantities of domestic objects, in some cases also recording their location within the house, including informative descriptions and recording economic values. They are, however, static snapshots, recording the location of objects in repose rather than the functions of artefacts in use. It can be difficult to match the names of objects in documents to surviving artefacts, creating parallel scholarly and curatorial worlds of surviving things without names and recorded names without things (Pennell 1998, 208). Contemporary textual accounts and visual representations of meals focus on the remarkable and extraordinary, rather than the everyday (Grieco 1999, 2012). Cookery books, discussed further below, tell us something about culinary practices in theory, but their relationship to quotidian diet is complex and they rarely give much information about the objects that the preparation of their recipes required (Grieco 1992).

The evidence we have can confound our contemporary expectations in different ways. In some cases, inventories contain no food-related equipment at all. This may be because items used for cooking and eating belonged to someone other than the deceased; this is most frequently the case with women's possessions, which are not listed in post-mortem inventories relating to their husbands (Ago 2013, 95). In other inventories, the degree of specialisation of equipment may be astonishing. As ever for this period, the most detailed sources can be found for the highest levels of society. But taken as a whole, evidence from archives, printed texts, images, and art and archaeological museum collections, enables us to identify large-scale changes across society between the fourteenth and seventeenth centuries. To do this, I will explore in detail three categories of material objects in detail – metalwork, ceramics and glass – before considering the effects of their sonic properties within social interactions.

Metalwork

Metal objects, the most resonant on the table, spanned considerable hierarchies of value, from pewter and brass to silver, and an extraordinary wide range of forms, from dishes and bowls to cutlery, ewers, and basins. During the fifteenth century, silver tableware was largely restricted to affluent elites and its use during meals was a means of conspicuously displaying wealth. Florentine merchants borrowed and loaned items for family banquets to supplement the goods they owned (Liefkes 2006, 255; Lindow 2007, 28). Silver was easily pawned and sold and therefore widely used as a means of storing wealth. During the sixteenth century, silver spoons, forks, and vessels appear with greater frequency throughout the social scale, with artisans often owning sets of six, nine, or twelve small spoons (Blake 2006, 332; Cavallo 2006, 74). Silver was not restricted to display: a Flemish merchant in Venice described his silver cutlery (spoons, forks, and knives), salts, and ewer and basin as being “for use in the house” (Liefkes 2006, 255). Late sixteenth-century artisans owned new specialised silver objects for storing salt and spices (Cavallo 2006, 74; Hohti 2020).

The sounds of silver can be imagined via documentary evidence. In the early sixteenth century, Agostino Chigi’s notorious pretence of lavish conspicuous consumption, when guests to his villa in Trastevere were invited to throw their silver and gold dishes out of the window into the Tiber (where they were caught by hidden nets), would have been a moment of sonic as well as symbolic extravagance (Larivaille 1997, 64). The resonance of silver tableware is confirmed in a discussion of how it could be used, washed, and re-used during banquets involving numerous courses. The racket this would have created is one of the reasons cited by the steward Giovan Battista Rossetti for his disapproval of the practice: “I’m not in favour of washing them [silver dishes and bowls] because, beyond the noise [and] the bad smell, there is the risk of losing them” (Rossetti 1584, 39).

Italian pewter objects remain understudied, largely because so few of them survive. As the passage in Benvenuto Cellini’s autobiography recording the casting of his bronze statue of *Perseus* dramatically describes, pewter was easily melted down and recycled. Noticing that the bronze had become more viscous during the casting process, Cellini writes: “I sent for all my pewter platters, porringers, and dishes, to the number of some two hundred pieces, and had a portion of them cast, one by one, into the channels, the rest into the furnace” (Cellini 1910, 397, discussed in Krohn 2013, 230–231). He goes on to note the immediate effect on the materiality of his table: once the *Perseus* had been successfully cast, “[a]ll my poor household, relieved in like measure from anxiety and overwhelming labour, went at once to buy earthen vessels in order to replace the pewter I had cast away. Then we dined together joyfully” (Cellini 1910, 397).

Pewter is primarily composed of tin, which was noted by Biringuccio as a material with the potential to transform a metal alloy’s acoustic properties. “What others say, that it produces no sound itself, is also true,” he writes, “but by hardening other metals it makes them sonorous, just as if it puts the spirit there and vitalizes the substances” (Biringuccio [1540] 1966, 60). A rare archaeological survival is the hoard of thirty six pewter, bronze, and copper domestic objects probably buried during the war between Venice and the League of Cambrai in 1510, including large pewter shallow dishes and a number of smaller pewter bowls (Blake 2006, 333–334). The wide rims of these dishes increased their surface area and therefore the potential for

sound-producing clashes both with each other and with additional categories of object. Their hard, polished surfaces, together with their concave profile, charged these objects with considerable sonic potential.

Pewter proliferates in sixteenth-century Venetian inventories. In 1582, a fairly well-to-do Venetian engraver owned fifty pieces of pewter, weighing 62 pounds, while a wealthy apothecary in 1560 owned pewter dishes in four different sizes (large, medium, small, and very small; between twenty-six and thirty-five of each size), as well as forty-seven pewter trenchers.³ These inventories reveal a surprising category of pewter objects, the existence of which is not matched in material records: *fondelli*, translated by John Florio in 1611 as “rundlets to lay under dishes as they use in Germany” (Florio 1611, 192), presumably similar to today’s coasters. Some are specifically identified as for glass vessels, others appear generic. Their presence would have magnified the sonic impact as objects made of glass, ceramic, or other kinds of metal were put down on top of them on the table.

The shift from shared, communal tableware to individual place settings is seen most clearly with the increased use of cutlery and the expansion from knife alone to knife, spoon, and fork. Raffaella Sarti notes that the etymology of the Italian *posate* (cutlery) is from *posare*, to place, indicating that these objects were placed upon the table (Sarti 2002, 153). This nomenclature is significant, as it represents a move from diners using their own utensils, which they brought to the table, to hosts providing individual sets of cutlery for their guests. The increased use of cutlery physically distanced diners from both foodstuffs and each other. Inventories sometimes distinguish between knives for use at the table and carving knives. Otherwise, they are noted for the decoration of their handles (“gilded”, “silver”, “worked iron”) or where they were made (“from Brescia”, one of Italy’s most important centres for the manufacture of cutlery). Various hypotheses surround the emergence of the fork; what is not in dispute is that it was most widely used for the first time in Italy (Young 2006). Increasing differentiation and quantities of cutlery multiplied the opportunities for sound-producing contact between blade, bowl, or tine and metal or glazed ceramic surfaces.

Ceramics

We can trace the influence of international trade most readily in relation to the production of ceramics and glass, and the shift away from wooden tableware. Richard Goldthwaite’s important article on maiolica deftly outlines how the Italian production of ceramics was influenced by imported tin-glazed tableware and other artefacts from Islamic craftsmen active in Spain (these lusted objects themselves imitating ones produced in the Middle East, which were in turn imitating Chinese porcelain) (Goldthwaite 1989. See also Lightbown and Caiger-Smith [1980] 2007; Thornton and Wilson 2009; Wilson 2016). During the thirteenth century, Italian potters began working with imported Cornish tin to create white grounds and absorbent surfaces suitable for painting (Caroscio 2014, 109) that eventually competed with Spanish imports.

This was a remarkably swift evolution. It multiplied the number of objects involved in the consumption of food, clay being cheap and easy to mould or form. The new glazing, painting, and firing techniques for maiolica allowed for detailed,

chromatically rich, clearly detailed decoration, transforming the look of the table. As the surface decoration of maiolica objects became more elaborate, so too did their forms. Their functions were increasingly specialised and they began to take on a coherent, group identity. Subtle distinctions developed between types of dishes, produced in differing sizes, depths, and profiles, with and without rims or covers. Specialist salt holders, jugs, and other vessels appeared, often made as part of matching sets, with spouts, handles, feet, and other sculptural additions. Most importantly, as function specialised, the quantities of maiolica tableware increased. In the mid-fifteenth century, we find orders for around fifty pieces of maiolica; by the late sixteenth century, services of nearly two hundred pieces were made for non-courtly noble families, and up to six hundred pieces for members of the ducal Gonzaga, d'Este, and Medici families (Goldthwaite 1989, 21–22). Formerly “lowly” ceramics were endowed with a new status, thanks to the added value of this craftsmanship as well as perceived connections with the pottery of the ancient past (Syson 2016, 13). In a letter to a friend in the late fifteenth century, the Neapolitan humanist Giovanni Pontano exhorted: “let the table and the maplewood credenza glow with pottery for you” (Syson 2016, 11).

How did the visual glow of maiolica relate to its acoustic properties? The resonance of individual ceramic objects will vary according to their form, thickness, density or porosity, and glaze. Porcelain’s distinctive ring (which indicates a lack of flaws) is a result of the crystalline structure arising from the very high temperatures at which it is fired. Historically, maiolica was fired at much lower temperatures. Unglazed earthenware is highly porous, but the glazes that cover maiolica’s surfaces make it resistant to liquids. The first glaze created a white powdery surface to be painted; frequently this was followed with another layer of transparent lead glaze. When fired, the glazes fused to form a hard, vitreous surface. The research of ceramicist-scholars such as Alan Caiger-Smith and Stephen Wharton has provided important insights into historical production practices (Lightbown and Caiger-Smith [1980] 2007; Wharton 2005); further collaboration with potters and ceramic conservators is needed to define the influence of these technological developments on the sound of maiolica. How might the sonic response of a tin-glazed dish when struck differ from that of one glazed with lead or of unglazed earthenware? While we cannot currently provide empirical evidence of how acoustic responses varied, what we can be sure about at this stage is that the greater the number of objects on the table, the more likely it is that they physically encountered each other, with each of those encounters resulting in a sonic marker. We also know that such encounters made maiolica vulnerable to damage. In a 1584 account of the number of dishes and bowls to be used at a banquet, Giovan Battista Rossetti contrasts silver objects with “those that break” – that is, maiolica (Rossetti 1584, 39).

Glass

Glass followed a similar pattern of foreign imports being imitated and then superseded by local manufacture of increasing technical complexity (Hills 1999; McCray 1999). There was a huge expansion in the production of glass in Venice in particular, and by the 1450s Murano was the leading supplier of fine glassware for the table across Europe. Drinking glasses and bottles were ordered from Venice in their hundreds and became more sophisticated in shape, often imitating forms found in precious metalware (Liefkes 2006;

Rihouet 2013, 138). From drinking vessels shared between two or more guests, individual glasses became the norm on the table, increasingly present in less wealthy homes (Rihouet 2013, 135 and 142–143; Hohti 2020). For everyday use, simple glass beakers were also available cheaply from local glassmakers, usually slightly green with impurities, unlike the sought-after transparent Venetian *crystallo*. The distinctive lightness of Venetian glass, due to its lower lead content, which allowed it to be blown more thinly, demanded greater dexterity and care in handling. Shapes became more elaborate, with widely flared cups and ornate stems increasingly common. This undermined the stability of drinking glasses, raising not only the risk of spillages, but also their propensity to topple and smash (Rihouet 2013, 139). Sipping from a shallow, footed *tazza* (Figure 4) became a perilous social performance (Hills 1998; Rihouet 2013). In the late fifteenth century, the Holy Roman Emperor Frederick III was presented with glassware by the Venetian senate. Having dropped and shattered it, he pointed out the advantages of gold and silver over glass, as their “broken shards are still useful” (Welch 2002, 211). The metallurgist Vannoccio Biringuccio noted that “considering its brief and short life . . ., [glass] cannot and must not be given too much love” (Biringuccio [1540] 1966, 132).

While the penetratingly audible acoustic ring of intact glass vessels was noted in the sixteenth century – Biringuccio states that well-baked charcoal should be “as resonant as glass” (Biringuccio [1540] 1966, 179) – its fragility became one of its defining features. The crisp sound of breaking glass still has the capacity to silence a room. In the sixteenth century, glasses were broken deliberately “as a sign of great merriment” in sociable contexts, to considerable acoustic effect. A description of a banquet in Mantua to celebrate the wedding of the future Duke Vincenzo Gonzaga in 1581 starts by emphasising the rich variety of glass objects on display and in use, before noting the dramatic and disruptive sounds created by smashing some of them:

There were then beyond the most rich credenzas and usual wine holders, a *prospettiva* of diverse glasses, carafes, and vessels, and other most beautiful vases of Venetian crystal glass, that I believe would have brought together all the workshops in Murano, and there was need of that, since all the Lordly Diners, after having drunk, broke their glass, which they kept in their hand, as a sign of great merriment, and one heard every so often such a clamour, that it usurped the harmony of the perfect music heard from the four choirs who were high up in the four corners of the large hall, which were stupendous sounds and voices. (Cervio 1581, fol. 47v)

Practices of cooking and dining

I have traced a tendency towards increasing numbers and greater varieties of objects in the material culture of the meal and have begun to explore the acoustic consequences of these changes. For their relationship to sound to be fully understood, they need to be considered animated in practice, as agents of social interaction.

Inventories are rich in detail, often providing locations for objects under the headings of room names or implying spatial relationships between objects, thanks to the order in which they are listed. Quantities, materials, sizes, weights, functions, styles, origins, and economic values are carefully noted. But inventories mask the original mobility of objects, presenting us with kitchen and tableware at rest. In contrast, “cookery books”, such as Bartolomeo Scappi’s *Opera* (1570), are full of detail about process and action, but are not



Figure 4. Tazza, Venice (Murano), late sixteenth century, glass, 11.7 x 13 cm, Metropolitan Museum of Art, New York.

always explicit about the objects involved (Krohn 2015). To take just one example, in the instructions for how “to spit-roast or stew a loin of beef”, certain tools are specified (“a bat” to tenderise the meat; “a press” for it to marinate in; “a cord” to bind it with; “a dripping pan” to catch the juices; “the spit” to roast it on), while others must be inferred from the instructions given (“cut away” suggests a knife; “splash it”, a container for liquids and possibly a utensil to splash with; “ground” ingredients require a mortar and pestle; “cook it in a very temperate fire” demands fire tools) (Scappi [1570] 2008, 137). Putting these sources together, however, enables us to start thinking of how practices unite particular clusters of objects, deepening our understanding of the spaces with which they were intimately connected and the sounds they once produced.

Cooking and dining are physical, embodied practices. For all of these sonic encounters to take place, we must imagine the hands and the bodies of the people who were cutting, splashing, grinding, carrying, serving, eating, and drinking. The configuration varied widely depending on the social level of the household and the meal taking place. In some households enslaved people, servants, professional cooks, and carvers prepared and presented food; in others, the cooking and the eating would have been done by the same people (Romano 1996). Some roles were gendered in particular ways (carving meat, for example); other jobs were seen as suitable for the young or the elderly. Certain types of object were limited to use predominantly by particular groups of people – cauldrons remaining with producers of food in the kitchen, for example – while others, such as plates, might be carried from kitchen to credenza by one servant, loaded with food by another, carried to the table by another, and finally eaten from by a member of the household or a guest, before commencing their dance backwards towards the kitchen to be cleaned. In each case, these objects, and the practices they generated, constructed social relationships within which sound could assume considerable communicative value.

In the late fifteenth century, the humanist Giovanni Pontano defined *conviviality* – gathering to enjoy a meal with familiar companions – as a social virtue (Welch 2002, 213). Pontano discusses the communicative value of a knife: “The base man and the splendid man both use a knife at table. The difference between them is this. The knife of the first is sweaty and has a horn handle; the knife of the other man is polished and has a handle made of some noble material that has been worked with an artist’s mastery” (quoted in Welch 2002, 215).

As hospitality was increasingly imbued with representational value, behaviour in social settings, including at the table, became ever more codified and theorised. Norbert Elias demonstrated how such literature defined a framework of manners that focused on controlling the social body and its involuntary impulses, emphasising a need to minimise excessive movement, smell, and noise (Elias [1939] 1994). Sneezing, coughing, breaking wind, hiccupping, slurping, smacking lips, and gulping were all to be avoided, as were exaggerated facial expressions and bodily gestures. This impulse had a longer history, but gained renewed force during the sixteenth century. It resulted in part from the rapid increase in the circulation of prescriptive texts in print and also from a new emphasis on self-fashioning, in which objects and behaviour projected particular social identities and signalled social distinctions.

Spaces of the meal

Literature codifying ideal forms of human behaviour developed at the same time as writing that explored ideal forms of human habitation. Theoretical literature discussing the locations and architectural structures of houses expanded during the fifteenth and sixteenth centuries, partly inspired by the model provided by the *De architectura* of Vitruvius. The smooth functioning of the ideal house was a priority, dependent on careful planning of the disposition of space. The same concerns expressed about human bodies in social situations can be observed in architectural treatises in relation to the functioning home. Noise is equated there with “filth and smells” as a category of nuisance to minimise or eliminate wherever possible. Ephemeral and intangible, noise and smell were hard to control, but their potency was understood.

Within theoretical writings on architecture, sound therefore became a principle for organising space. Authors differentiated between the sound environments required

by particular inhabitants and the sounds that they were understood to produce. Status, age, and gender were primary means of categorisation, creating hierarchies of sonic need within the home. The requirements of male householders – usually undisturbed peace – were privileged above those of other inhabitants; women, children, and servants were understood to produce excessive, uncontrolled noise (“the prattling and noisy hordes of children and housemaids should be kept well away from the men”, Alberti 1988, 120).

Architectural treatises define the optimal qualities of the spaces in which food was to be prepared and to be eaten, and consider the functional relationships between them. Tensions emerge between a desire for convenient proximity and for decorous distance. Authors concur that the ideal kitchen should be distanced from the main living quarters. In the mid-fifteenth century, Alberti suggested: “The kitchen should be neither right in the lap of the guests, nor so far off that dishes intended to be served hot become cold in transit; those dining need only be out of earshot of the irksome din of scullery maids, plates, and pans” (Alberti 1988, 148). In the early seventeenth century, Vincenzo Scamozzi wrote that kitchens “must be in some part of the house sooner hidden than not, either underground or on the ground floor, or rather between the two, in such a way that they may not occupy a place of importance, and because of the noise and the nausea that they produce” (Scamozzi 1615, 311).

Other forms of prescriptive literature also comment on the kitchen’s ideal location, established in significant part because of sound. In a 1560 treatise on household management, Giovanni Lanteri follows Alberti in identifying problematic noise as produced by servants: “The rooms where guests are to be lodged will be in a place far from the noise of the family Above all, the servants’ dining hall [*tinello*], the cellars, the kitchen, and every other place for servants, should be placed far from the place of guests, so that the noise of the family cannot be heard easily” (Lanteri 1560, 18). In his “cookery book” of 1570, Bartolomeo Scappi advises: “I think, first of all, that the kitchen should preferably be located in a remote place rather than in a more public area. This is for several reasons, particularly to avoid the distractions that accompany the concourse of people, along with the dangers, and to avoid annoying those dwelling nearby in the palace with the noise which is normal in a kitchen” (Scappi [1570] 2008, 100). Because noise was “normal in a kitchen”, structural and material measures were proposed to diminish its effects. Scamozzi writes that the kitchen “may be vaulted to secure it from fire, and from damp, and because [the vault] will not amplify noise” (Scamozzi 1615, 311).

Managing sound

Architectural treatises represent kitchens and the servants who populated them as creating “noise and nausea” almost inevitably. This noise could not be suppressed, but was rather something that needed to be accommodated and worked around. In this final section, I explore the early modern desire for acoustic control. In the literature that focused on household management in the period, a well-ordered household was one in which sound was regulated. This meant exercising governance over objects, people, and the processes that enmeshed them with domestic space. The idea was encapsulated in the term *oconomia*, or “household management”, the title of a highly influential work

attributed in this period to Aristotle, in which the house and its inhabitants were defined as an economic organism (Frigo 1985; Romano 1996). Numerous prescriptive literary texts inspired by the *Oeconomia* were written from the fifteenth century onwards and more appeared in print in the sixteenth century, increasingly in the vernacular rather than Latin.

The management of domestic practices was also becoming professionalised. The intricately structured managerial hierarchies found in courtly households defined specific roles in relation to the preparation and presentation of food, which were then theorised in print. With growing frequency from the mid-sixteenth century onwards, books set out the responsibilities and necessary skills for stewards, carvers, and cooks. Sound is identified within these texts as something in need of management. When serving at the table, the steward (*scalco*) is reminded: “And in all this [serving], as in all the other business, note to yourself above all to proceed always with the least noise that may be possible” (Rossetti 1584, 40), while it is the role of the under-steward (*sottoscalco*) to prevent “rowdiness or noises at the other tables” (Rossetti 1584, 25). The codified hierarchies of servants presented in these texts reveal similar associations between status and propensity for noise. When receiving a pope, king, or “great prince”, the steward is instructed to prepare “far from the palace one or two large tables for the coachmen, littermen, muletiers, porters, hunting dog keepers, and dog keepers, who may make so much noise that it will seem like hell” (Cervio 1581, fol. 54 v).

Literature directed at smaller, non-courtly households offered similarly prescriptive advice on managerial responsibilities within the home. The acquisition of goods (both a financial and moral investment for the household) was the duty of the *paterfamilias*; the management, upkeep, and even augmentation of those goods, his wife’s. Stefano Guazzo sets out these expectations vividly in his literary dialogue of 1587, *Dell’honour delle donne*:

Don’t expect me now to lower myself [to describe] the minutiae of the threads, and the textiles for the use and ornament of the house, or the polishing of the furniture, or the needlework, the distaff, the wool winder, the breeding of the silkworms, the looking over the cellar, the granary, the pantry, the garden, the poultry hut, and the animals of the farmyard, the keeping count of the laundry, and all the crockery, the cooking ordinary foods and the preserves for all year, because it would mean instructing women on the management of the household, which is not our task. (Guazzo 1586, fol. 132v)

Concerns about sound in the house are found in the books that were written to instruct women on the management of the household. Here, undisciplined sound was connected to poor hospitality. Alessandro Piccolomini writes in the *Dialogo de la bella creanza de le donne* or *Raffaella* (1540):

And if a guest is welcomed in the house ... I wish that she [the woman of the house] welcome him with a very good face ... and not, as I’ve seen in some ... speak out of turn, and make a confused racket, a noise of chairs, and of stools ... neither should they make him wait two hours in discomfort expecting that the meal is ordered, and then eventually see on the table extraordinarily two fritters of one and a half eggs, one broken ... so that the poor man, sweating with rage, leaves ... never to return again. (Piccolomini 1540, fols. 22r–23v).

The “confused racket” and “noise of chairs, and of stools” – both symptomatic of the specialisation in furniture, as communal benches gave way to individual seating (Sarti 2002, 152) – are equated with the lack of concern for the guest’s comfort and the pitiful

nature of the meal that finally appears. Noise signifies a badly managed household. Piero Belmonte makes a similar point about convivial expectations raised and then confounded in the *Institutione della sposa* (1587):

You should not behave as I have seen some women do, who make so many words, such moving about and banging of tables and chairs, and so much noise of plates, and knives, that the guest expects a sumptuous meal, and at the end realises that the mountain has brought forth a mouse ... instead, you will issue your orders with silence, and will set everything up, and ensure that everyone is well looked after according to their standing. (Belmonte 1587, 52, quoted in Ajmar-Wollheim 2006, 210)

Belmonte adds plates and knives to the cacophony of furniture also invoked by Piccolomini, conjuring up the material variety of percussive encounters that ultimately proved so disappointing. Even more importantly, Belmonte offers an alternative, successful sonic model for hospitality which explicitly invokes the benefits of silence. Interestingly, this parallels discussions of sound and managerial authority in other, professional, contexts. Setting out the qualities of a good steward, Cervio recommends: "Don't do as many do, now calling this one and now crying out at that one, and making so much noise that they think that by acting terribly, they will be more esteemed and obeyed"; Scamozzi criticises the "master builders who seek to cry out at and argue with their builders and workers" (Cervio 1581, fol. 67v; Scamozzi 1615, 85).

Literature on silence and gender in the early modern period has (rightly) focused on the patriarchal oppression of female voices (Burke 1993; Wiesner-Hanks 1999). Loquacity was identified by contemporary (male) writers as dangerous, seen as a potential symptom of sexual incontinence, or dismissed as a "familiar vice of silly little women" (Antoniano 1584, fol. 105r). Silence, defined in opposition to excessive speech, added "grace" or functioned as an "ornament" to women, symbolic of their obedience, chastity, and devotion. Belmonte's text frames silence in two ways: the first in contrast to excessive speech ("so many words"), the second as the opposite of noise generated by disorderly interactions between people and objects ("moving about and beating" of furniture, the "noise" of plates and knives). By issuing orders "with silence" and eliminating unnecessary noise, women were able to ensure that a sociable occasion was hosted with appropriate decorum. They ensured that an ideal convivial soundscape, of conversation, music or other entertainment, was not disturbed by kitchen noise. Subduing the clamour of kitchen and table therefore became a means of audibly exerting power; a lack of noise became testimony to women's capacities as accomplished and authoritative household managers. This opens the possibility for new ways of understanding early modern female silence in terms of agency, rather than just oppression (although, of course, exercising this agency may have resulted in the oppression of others lower down the social hierarchy). "Performing" silence enabled women to make significant contributions to the household's reputation, and therefore its moral economy.

Kitchen utensils and the moral imperatives of sound were also united at the opposite end of the sonic spectrum. The actual and symbolic force of noise became evident in action at particular moments when pots and pans were freed from the confines of the kitchen and put to a different use in a very dissimilar social context. Metal dishes, basins, and other vessels were involved in the cacophonous house-shaming rituals that were directed at

remarrying widowers – the *mattinata* in Italy, known as the *charivari* in France, and rough music or skimmington in England (Klapisch Zuber 1985; Pennell 1998, 212–213). If “noise is sound out of place”, kitchen noises outside of the house had an anomalous force and considerable communicative power (Bailey 1998, 195). A pan in the street was unruly in a multiplicity of ways: it was out of its “natural” environment (no longer in the kitchen, not even in the house), not performing its designated function of cooking food, but instead deliberately producing noise, something prescriptive literature was at pains to repress and diminish. It found itself participating in a very different soundscape that had its own particular rules, expectations and meanings. Finally, the sounds created were diametrically opposed to “silence” in the ideal model of the well-ordered, harmonious, and morally virtuous household discussed above. In the *mattinata*, the noise of kitchen objects signified dishonour, shame, and the opprobrium of the community.

Conclusion

In the early modern period, sound was perceived to be powerful in ways that can be difficult to appreciate today. A book about the production of silk recommends that music be lovingly played to silkworms in the belief that it encouraged them to produce more thread (Gabrielli 1588, 14 and 49). Architectural theorists advocated taking care in the placement and construction of wine cellars because sound was thought to spoil the contents of their barrels (Scamozzi 1615, 175 and 299). It is a challenge to identify the distinctive qualities of historic domestic soundscapes, and even more difficult to understand those sounds’ rich and varied cultural meanings. Materials and their properties – the materialities of the physical objects discussed here – therefore become instrumental in both forming and understanding the social lives of these objects, and the social meanings of the sound that they produced. Rather than culture and materiality being opposed (Ingold 2000, 340; Daston 2007, 15), sound has not only provided matter with meaning, but also offers a way to explore how meaning can arise from matter.

Studies of historical objects frequently consider them individually or in terms of categories based on the materials and techniques of their production. The visual aspects of objects are often privileged over their other sensory properties. By using ecological approaches to resuscitate the complex of social, material, and spatial interactions in which objects of kitchen and table participated, and by focusing on the sounds these interactions produced, we can revive dormant relationships across material categories of object. Explicit documentary references to sound are sparse. Combining quantitative, but static, evidence about numbers and types of objects from inventories with the more dynamic, process-focused testimony of recipe books and prescriptive literature becomes essential, enabling us to begin to imagine how the clinks and thuds of maiolica bowls meeting silver spoons, drinking glasses encountering pewter coasters, or iron pot-chains banging against copper cauldrons contributed to domestic soundscapes of this period. We can also deepen our understanding of how the effects and meanings of sound could be highly contingent on context. The same crash of shattering glass could result in opprobrium when a consequence of a kitchen servant’s clumsiness, or could constitute a socially unifying collective act of celebratory conspicuous consumption when glasses were deliberately dashed “as a sign of great merriment” by elite guests at a wedding banquet, as discussed above. The absence of sound – silence – could be as positively communicative as noise.

How might future research in this area develop? The methods of practice-led experimental archaeology, digital humanities, and re-enactment offer exciting possibilities. Historians of science and technology, and of fashion and textiles, have used experimental practical reconstructions over the last decade, to develop material-based methodologies and explore concepts of knowledge that transcend modern categories of humanities and sciences.⁴ Practice-led research collaborations with makers using historically informed techniques to create ceramic, glass, and metalwork artefacts will allow us to explore and record the effects of differing materials, forms, and construction methods on objects' acoustic properties. Although costly and labour-intensive, such collaborations will help to uncover the multisensory nature of objects' production, further extending the range of assemblages within which we can investigate their sonic and social identities.

Digital sound mapping of the early modern Italian home is another way to develop this exciting and innovative, but challenging area of research. Using documentary sources and sound clips from practical experiments, mapping will enable us to consider how the nature and flow of material objects might vary across space, with consequences for domestic soundscapes. Niall Atkinson's innovative research focusing on the city soundscapes of Renaissance Florence investigates how sensory experiences recorded in historical documents can be visualised using mapping technologies (Atkinson 2016b). The models created reveal unexpected connections and stimulate new questions about historic sensory experience. Sound mapping of this kind has most frequently been carried out for large-scale urban spaces, for example, the London Sound Survey (<https://www.soundsurvey.org.uk/>) or Emily Thompson's project The Roaring Twenties, which allows users to explore the historical soundscapes of New York City (<http://vectors.usc.edu/projects/index.php?project=98>). We can use similar methods to map material objects' sensory encounters on a more intimate scale. This would take into account the physical domestic environments in which sound-producing encounters took place, allowing us to explore relationships between objects with greater and lesser resonance, and the sonic identities of the areas of the house in which they were found. Importantly, drawing on evidence from material culture in addition to that of documents allows us to counterbalance the dominant perspectives and narratives found in written records. We can therefore start to unpick the subjectivities of historical acoustic experience, which varied considerably according to gender, age, and status within the home.

Re-enactments of specific meals will be another profitable avenue of future research. Extensive documentation for particular festive occasions and, in some cases, intact physical environments survive, which permit us to situate the acoustic phenomena and practices I have discussed here within broader soundscapes encompassing music and conversation, and embed them in the highly multisensory experiences of producing and consuming food.⁵ Re-enactment using reconstructed artefacts and historically informed culinary practices is extremely popular with audiences at historic houses and museums (Pennell 1998, 201; Krohn 2015, 200–203), with the potential to bring to life the sensory richness of kitchen spaces in immersive ways. But, as Sarah Pennell notes, while the creation of affect in audiences may be powerful, it is vital also to communicate the original meanings and values of materials, actions, and effects. This allows "authentic" sounds to retain their power.

In this article, I have aimed to provide a new framework for considering the relationships between sound, sociability, and materiality. Listening to "mundane, ordinary, disdained" dishes, pots, and cutlery reminds us not only that these objects possessed important sonic identities, but that the sounds they produced carried powerful social

and cultural meanings. Everyday objects are often considered to be banal, stolid, and uncommunicative. The evidence shows the opposite: they are vibrant and revelatory.

Notes

1. For a definition of “sonic things” as productive misrepresentations of the past see the Introduction to this Special Issue.
2. Atkinson (2014) explores similar territory to this article from a different perspective; Quiviger (2010) considers sound’s contribution to the sensory richness of banquets.
3. Archivio di Stato, Venice (ASV), Cancelleria inferiore, Misc. notai diversi, inventari, b.42, n.53; ASV, Cancelleria inferiore, Misc. notai diversi, inventari, b.40, n.73.
4. For example, Columbia University’s *The Making and Knowing Project* (<https://www.makingandknowing.org/>, accessed 27 May 2020); the ERC-funded *ARTECHNE – Technique in the Arts, 1500–1950* (<http://artechne.wp.hum.uu.nl/>, accessed 27 May 2020); the HERA-funded *Fashioning the Early Modern* (<http://www.fashioningtheearlymodern.ac.uk/>, accessed 27 May 2020), and the ERC-funded *Refashioning the Renaissance* (<http://refashioningrenaissance.eu/>, accessed 27 May 2020).
5. See, for example, *Reimagining and Reconstructing the Renaissance Banquet*, a collaboration between the France-Stanford Centre for Interdisciplinary Studies and the Centre d’Etudes Supérieures de la Renaissance, University of Tours (<https://francestanford.stanford.edu/projects/reimagining-and-reconstructing-renaissance-banquet>, accessed 27 May 2020). My thanks to Camilla Cavicchi for alerting me to this project’s existence.

Acknowledgments

I am deeply grateful to Viktoria Tkaczyk and Leendert van der Miesen for the invitation to spend time as a visiting scholar at the Max Planck Institute for the History of Science to work on this topic, and to the friends and colleagues in Berlin (Ruth Ur and Philipp Misselwitz in particular) with whom I discussed this paper fruitfully in its early stages. My thanks to Kate Sturge for her exceptional editing; to Francesco Ventrella, Jaqueline Marie Musacchio and Alexander Masters for their invaluable comments and suggestions on earlier drafts; and to the three anonymous reviewers for *Sound Studies* for their helpful suggestions.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by a visiting scholarship at the Max Planck Institute for the History of Science, Berlin, Germany.

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References

- Abbate, C. 2016. "Sound Object Lessons." *Journal of the American Musicological Society* 69 (3): 793–829. doi:10.1525/jams.2016.69.3.793.
- Ago, R. 2013. *Gusto for Things: A History of Objects in Seventeenth-Century Rome*. Chicago: Chicago University Press.
- Ajmar-Wollheim, M. 2006. "Sociability." In *At Home in Renaissance Italy*, edited by M. Ajmar-Wollheim and F. Dennis, 206–221. London: V&A Publications.
- Ajmar-Wollheim, M., and F. Dennis, eds. 2006. *At Home in Renaissance Italy*. London: V&A Publications.
- Alberti, L. B. 1988. *On the Art of Building in Ten Books*. Translated by Joseph Rykwert, Neil Leach, and Robert Tavernor (Written c. 1443–52, First Published 1485). Cambridge, MA: MIT Press.
- Antoniano, S. 1584. *Tre Libri Dell'educatione Christiana Dei Figliuoli*. Verona: Sebastiano delle Donne.
- Appadurai, A. 1986. *The Social Life of Things*. Cambridge: Cambridge University Press.
- Atkinson, N. 2012. "Sonic Armatures: Constructing an Acoustic Regime in Renaissance Florence." *Senses and Society* 7 (1): 39–52. doi:10.2752/174589312X13173255802030.
- Atkinson, N. 2014. "The Social Life of the Senses: Architecture, Food, and Manners." In *A Cultural History of the Senses in the Renaissance*, edited by H. Roodenburg, 19–41. London: Bloomsbury.
- Atkinson, N. 2016a. *The Noisy Renaissance: Sound, Architecture, and Florentine Urban Life*. University Park: Pennsylvania State University Press.
- Atkinson, N. 2016b. "Seeing Sound: Mapping the Florentine Soundscape." In *Mapping Space, Sense, and Movement in Florence. Historical GIS and the Early Modern City*, edited by N. Terpstra and C. Rose, 149–168. London: Routledge.
- Bailey, P. 1998. *Popular Culture and Performance in the Victorian City*. Cambridge: Cambridge University Press.
- Belmonte, P. 1587. *Institutione Della Sposa*. Rome: Eredi di Giovanni Osmarino Gigliotto.
- Bennett, J. 2010. *Vibrant Matter: A Political Ecology of Things*. Durham, NC: Duke University Press.
- Biringuccio, V. [1540] 1966. *The Pirotechnia of Vannoccio Biringuccio*. Edited and Translated by Cyril Stanley Smith and Martha Teach Gnudi. Cambridge, MA: MIT Press.
- Blake, H. 2006. "Everyday Objects." In *At Home in Renaissance Italy*, edited by M. Ajmar-Wollheim and F. Dennis, 332–341. London: V&A Publications.
- Burke, P. 1993. "Notes for a Social History of Silence in Early Modern Europe." In *The Art of Conversation*, edited by P. Burke, 123–141. Ithaca, NY: Cornell University Press.
- Campbell, E. 2014. "Listening to Objects: An Ecological Approach to the Decorative Arts." *Journal of Art Historiography* 11: 1–23.
- Caroscio, M. 2014. "Raw Materials, Transmission of Know-how and Ceramic Techniques in Early Modern Italy: A Mediterranean Perspective." *History of Technology* 32: 107–130.
- Cavallo, S. 2006. "The Artisan's Casa." In *At Home in Renaissance Italy*, edited by M. Ajmar-Wollheim and F. Dennis, 66–75. London: V&A Publications.
- Cellini, B. 1910. *The Autobiography of Benvenuto Cellini*. Translated by John Addington Symonds (Written c. 1558–63, First Published 1728). New York: P. F. Collier and Son.
- Cervio, V. 1581. *Il trinciante*. Venice: Eredi di Francesco Tramezzino.

- Daston, L. 2007. "Speechless." In *Things that Talk: Objects Lessons from Art and Science*, edited by L. Daston, 9–24. New York: Zone Books.
- Dennis, F. 2008–09. "Sound and Domestic Space in Fifteenth- and Sixteenth-Century Italy." *Studies in the Decorative Arts* 16 (1): 7–19. doi:10.1086/652811.
- Dennis, F. 2010. "Resurrecting Forgotten Sound: Fans and Handbells in Early Modern Italy." In *Everyday Objects: Medieval and Early Modern Material Culture and Its Meanings*, edited by C. Richardson and T. Hamling, 191–209. Farnham, UK: Ashgate.
- Elias, N. [1939] 1994. *The Civilizing Process*. Translated by Edmund Jephcott. Oxford: Blackwell.
- Florio, J. 1611. *Queen Anna's New World of Words, or Dictionarie of the Italian and English Tongues*. London: Melchior Bradwood for Edward Blount and William Barret.
- Frigo, D. 1985. *Il padre di famiglia: Governo della casa e governo civile nella tradizione dell' 'economia' tra Cinque e Seicento*. Rome: Bulzoni.
- Gabrielli, M. 1588. *Dialoghi*. Rome: Eredi di Giovanni Gigliotti.
- Goldthwaite, R. 1989. "The Economic and Social World of Italian Renaissance Maiolica." *Renaissance Quarterly* 42 (1): 1–32. doi:10.2307/2861915.
- Grieco, A. 1992. "From the Cookbook to the Table: A Florentine Table and Italian Recipes of the Fourteenth and Fifteenth Centuries." In *Du manuscrit à la table: Essais sur la cuisine au Moyen Âge*, edited by C. Lambert, 29–38. Montreal: Presses de l'Université de Montréal.
- Grieco, A. 1999. "Food and Social Classes in Late Medieval and Renaissance Italy." In *A Culinary History from Antiquity to the Present*, edited by J. L. Flandrin and M. Montanari, 302–312. New York: Columbia University Press.
- Grieco, A. 2012. "Food Production." In *A Cultural History of Food in the Renaissance*, edited by K. Albala, 29–42. London: Bloomsbury.
- Guazzo, S. 1586. "Dell'honor delle donne." In *Dialoghi piacevoli*, edited by S. Guazzo, 126r–149v. Venice: Giovanni Antonio Bertano.
- Hills, P. 1998. "Venetian Glass and Renaissance Self-Fashioning." In *Concepts of Beauty in Renaissance Art*, edited by F. Ames-Lewis and M. Rogers, 163–178. Aldershot, UK: Ashgate.
- Hills, P. 1999. *Venetian Colour: Marble, Mosaic, Painting and Glass 1250–1550*. New Haven, CT: Yale University Press.
- Hohti, P. 2020. *Artisans, Objects and Everyday Life in Renaissance Italy. The Material Culture of the Middling Class*. Amsterdam: Amsterdam University Press.
- Ingold, T. 2000. "On Weaving a Basket." In *Perception and Environment*, edited by T. Ingold, 339–348. London: Routledge.
- Ingold, T. 2011. *Being Alive: Essays on Movement, Knowledge and Description*. London: Taylor & Francis.
- Klapisch Zuber, C. 1985. "The 'Mattinata' in Medieval Italy." In *Women, Family, and Ritual in Renaissance Italy*, edited by C. Klapisch Zuber, 261–282. Chicago: University of Chicago Press.
- Krohn, D. 2013. "Reflecting on Recipes." In *Cultural Histories of the Material World*, edited by P. N. Miller, 226–233. Ann Arbor: University of Michigan Press.
- Krohn, D. 2015. *Food and Knowledge in Renaissance Italy: Bartolomeo Scappi's Paper Kitchens*. Farnham, UK: Ashgate.
- Lanteri, G. 1560. *Della economica*. Venice: Vincenzo Valgrisi.
- Larivaille, P. 1997. *Pietro Aretino*. Rome: Salerno.
- Latour, B. 2005. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.
- Liefkes, R. 2006. "Tableware." In *At Home in Renaissance Italy*, edited by M. Ajmar-Wollheim and F. Dennis, 254–265. London: V&A Publications.
- Lindow, J. 2007. *The Renaissance Palace in Florence: Magnificence and Splendour in Fifteenth-Century Italy*. Farnham, UK: Ashgate.
- McCray, W. P. 1999. *Glassmaking in Renaissance Venice: The Fragile Craft*. Brookfield, VT: Ashgate.
- Molà, L. 2014. "Inventors, Patents and the Market for Innovations in Renaissance Italy." *History of Technology* 32: 7–34.
- Morton, T. 2010. *The Ecological Thought*. Cambridge, MA: Harvard University Press.

- Motture, P. 2001. *Bells and Mortars: Catalogue of Italian Bronzes in the Victoria and Albert Museum*. London: Harry N. Abrams.
- Newhauser, R. G., ed. 2014. *A Cultural History of the Senses in the Middle Ages*. London: Bloomsbury.
- Pennell, S. 1998. "Pots and Pans History': The Material Culture of the Kitchen in Early Modern England." *Journal of Design History* 11 (3): 201–216. doi:10.1093/jdh/11.3.201.
- Piccolomini, A. 1540. *Dialogo de la bella creanza de le donne*. Venice: Navò e fratelli.
- Piccolpasso, C. 1980. *I Tre Libri Dell'arte Del Vasaio. The Three Books of the Potter's Art*. Translated by Ronald Lightbown and Alan Caiger-Smith (Written Mid-Sixteenth Century). London: Scolar; repr. Paris: Les Editions Ateliers d'Art de France (2007).
- Quiviger, F. 2010. *The Sensory World of Renaissance Art*. London: Reaktion Books.
- Rihouet, P. 2013. "Veronese's Goblets: Glass Design and the Civilizing Process." *Journal of Design History* 26 (2): 133–151. doi:10.1093/jdh/eps056.
- Romano, D. 1996. *Housecraft and Statecraft: Domestic Service in Renaissance Venice, 1400–1600*. Baltimore: Johns Hopkins University Press.
- Roodenburg, H., ed. 2014. *A Cultural History of the Senses in the Renaissance*. London: Bloomsbury.
- Rossetti, G. B. 1584. *Dello scalco ... E gli ordini di una casa da principe*. Ferrara: Domenico Mammarello.
- Ruggiero, G. 2006. "Mean Streets, Familiar Streets, or the Fat Woodcarver and the Masculine Spaces of Renaissance Florence." In *Renaissance Florence: A Social History*, edited by R. J. Crum and J. T. Paoletti, 295–310. Cambridge: Cambridge University Press.
- Sanger, A., and S. T. Kulbrandstad Walker. 2012. *Sense and the Senses in Early Modern Art and Cultural Practice*. Farnham, UK: Ashgate.
- Sarti, R. 2002. *Europe at Home: Family and Material Culture, 1500–1800*. Translated by Allan Cameron. New Haven, CT: Yale University Press.
- Scamozzi, V. 1615. *Dell'idea della architettura universale*. Venice: Giorgio Valentino.
- Scappi, B. [1570] 2008. *The Opera of Bartolomeo Scappi (1570)*. Translated with Commentary by Terence Scully. Toronto: University of Toronto Press.
- Smith, B. 1999. *The Acoustic World of Early Modern England*. Chicago: University of Chicago Press.
- Syson, L. 2016. "Italian Maiolica Painting: Composing for Context." In *Maiolica: Italian Renaissance Ceramics in the Metropolitan Museum of Art*, edited by T. Wilson, 11–36. New York: MetPublications.
- Thornton, D., and T. Wilson. 2009. *Renaissance Ceramics: A Catalogue of the British Museum Collection*. London: British Museum Publications.
- Welch, E. 2002. "Public Magnificence and Private Display: Giovanni Pontano's *De Splendore* (1498) and the Domestic Arts." *Journal of Design History* 15 (4): 211–221. doi:10.1093/jdh/15.4.211.
- Wharton, S. 2005. "What You See Is What You Get: Colour in Italian Renaissance *Istoriato*-ware." *Renaissance Studies* 19 (5): 592–603. doi:10.1111/j.1477-4658.2005.00123.x.
- Wiesner-Hanks, M. 1999. "Introduction." In *My Gracious Silence: Women in the Mirror of 16th Century Printing in Western Europe*, edited by A. Erdmann, i–xvi. Lucerne: Gilhofer & Ranschburg.
- Wilson, T. 2016. *Maiolica: Italian Renaissance Ceramics in the Metropolitan Museum of Art*. New York: Metropolitan Museum of Art.
- Young, C. 2006. "The Sexual Politics of Cutlery." In *Feeding Desire: Design and the Tools of the Table, 1500–2005*, edited by S. D. Coffin, et al., 104–112. New York: Assouline.