The study of material culture is a recent development in the history of medicine and the first wave of interest has focused on objects that can more immediately be defined as ‘medical’. These include artefacts which were designed with the explicit purpose of assisting practitioners in medical treatment (e.g. the surgeon’s operating tools or the corsets and trusses used to correct malformations and hold hernias), or those employed in the transmission and illustration of medical knowledge, as in the case of anatomical models.[[1]](#footnote-1) The health connotation that contemporaries attributed to a range of household objects has escaped the attention of scholars.[[2]](#footnote-2) A different perspective was offered by the recently published *Healthy Living in Late Renaissance Italy*, of which I am co-author. Here attention shifted from elements of material culture that were direct expressions of medical technology to artefacts that performed multiple and more mundane functions in the domestic environment and whose medical significance was so to speak ‘indirect’.[[3]](#footnote-3) In particular the study highlighted the role that a range of ordinary domestic artefacts played in strategies for health preservation. The early modern house was not just a therapeutic space where the sick body was taken care of but the principal locus where health was actively promoted. Hence medically expert householders were also routinely engaged in a range of preventive health activities taking place within the home. And these practices also required equipping the house with items of material culture that would enable the pursuit of healthy lifestyles: from billiard tables, boules and pall mall mallets, which allowed the performance of moderate physical exercise in the home environment, to the table devices used to produce salutary warm drinks; from the bed curtains that protected sleep and the digestive process associated with it to the rough cloths, combs and head brushes that facilitated the regular cleansing of any obstructions blocking the pores of the skin and the scalp. As revealed by the health advice found in preventive medical literature (regimens), and disseminated also by a range of other genres, from sport treatises to civility manuals, ordinary objects like these, which grew popular in the sixteenth and early seventeenth centuries, were now given a role in health-maintenance.

 In this article I would like to advance further in this discussion by considering more specifically the increasing influence of medical advice upon early modern domestic consumer culture. Hence section 1 illustrates the progressive extension of the preventive discourse to choices regarding home furnishing and design, which in this period even came to include recommendations concerning the colours and materials of household objects and the performance of household chores. Section 2 addresses the question of why this preventive culture was increasingly home-based and whether these developments were specifically Italian. It explores therefore the connections between the penetration of medical expertise into domestic routines and their material culture and the broader transformations taking place in this period in the way in which homes, civility and virtue were conceptualised in parts of the peninsula. Then the essay turns to air and its history, a subject that is attracting increasing scholarly attention.[[4]](#footnote-4) One aspect of medical thinking that had a particular impact upon the construction of the home environment was in fact the way in which air was conceived. In the conceptual framework of ancient medicine embraced by Renaissance culture the air one breathed was one of the six Non-Natural things that exercise a major influence upon one’s health. Scholarly attention, however, has concentrated on notions of ‘bad air’, neglecting the effects that ‘good air’ was also supposed to have on health. Moeover, these notions have normally been regarded as fixed, that is as immutable from classical antiquity to the demise of the humoural physiological paradigm. In reality, as we will see, ideas about air were not so stable. The diachronic analysis of vernacular heath advice literature conducted in *Healthy Living* has already revealed that air acquired new importance in sixteenth-century Italian health culture; moreover, the book signalled a number of subtle changes in the way in which harmful air was conceptualised. Shifts in early modern understandings of air deserve however further attention. Drawing on new research this essay explores therefore in a much more comprehensive way how and why ideas of dangerous air were re-defined over the period (section 3-5). Adopting the methodological approach also deployed in *Healthy Living* the analysis moves away from self-referential explanations, which often offer a totally segregated image of ‘medical culture’. It considers instead the wider contexts in which specific definitions of healthy and unhealthy air emerged, paying special attention to the pervasive growth of climatologic interests in the sixteenth century. Sections 4-5 also explore how shifting ideas about the sources of unhealthy air impacted upon the practice of residential architecture and, more generally, upon domestic forms of health management, whilst sections 6 and 7 consider in particular the changing purposes of the use of scent in the home and of its material culture. This investigation highlights among the rest the stimulating rather than merely protective function played by aromas, which were increasingly appreciated for their positive impact upon the senses and spiritual health. This paper will therefore suggest that definitions of ‘good air’ also deserve attention and that the emphasis on the sensorial effects of this element is one of the novelties that characterises the relationship between health and air in this period.

1. Medical advice and domestic consumerism

As noticed elsewhere, one striking feature of the numerous guides to healthy living published by doctors or lay popularisers of medicine in sixteenth- and seventeenth-century Italy is the attention given to the material culture of the home and its role in health maintenance.[[5]](#footnote-5) In *Healthy Living* we drew attention to the numerous references, in these cheap, and often pocket-size vernacular regimens, to the health value of specific household objects which we do in fact find increasingly populating Italian households. However, these texts merit further attention since they are concerned with all aspects of the physicality of household objects. Hence they recommend the use of certain colours in furnishings, which are evidently deemed to have a positive effect on health: hence interiors in which green, purple and median colours (*colori mezzani*), with shiny, rather than opaque tones predominate, are preferable, while looking at black or white objects and surfaces greatly damages the eyes - hence whitewashed rooms are to be avoided.[[6]](#footnote-6) Decoding the symbol-system to which doctors’ advice about colours refers is not an obvious task. As John Gage has noted, colour symbols were fluid in this period.[[7]](#footnote-7) Different classifications of colours co-existed - the heraldic one and the liturgical one, for example -, hence the same colour may be attributed different meanings according to different traditions. The colour scheme adopted by painters and poets of the Italian Renaissance, based on invisible correspondences between macrocosm and microcosm that, according to classical philosophy, structured the natural world, is another instance. Reiterated in contemporary neo-Platonic writings, these cosmic associations seem to have been the most significant reference for our authors.[[8]](#footnote-8) For example, their preference for green -seen in this cultural framework to possess a cosmic force of regeneration, and represent therefore a source of hope and optimism- clearly reflect our doctors’ humanist grounding. Classical theories of vision may also have played a part in their views, hence black and white may have been dismissed because they respectively contract and dilate the eye to an excessive degree.

 At the same time, the idea that colours possess healing and preservative powers, like any other element in nature, reveals the influence of natural philosophy upon sixteenth-century medical culture. Not by accident books on the attributes of colours, similar to those on the qualities of plants (herbaria) or stones (lapidaria), started to be published in the Renaissance; they established chains of correspondences between colours and other natural elements, such as stones, planets and signs of the zodiac. Italian authors seem to have been at the forefront of this production, both for the number of titles published and of editions and translations.[[9]](#footnote-9) As well as displaying their cultural inclinations, the doctors who included colours in their health recommendations were therefore also declaring their acquaintance with what might have been a topical theme of debate and conversation for educated readers in the social circles of sixteenth-century Italy.[[10]](#footnote-10)

 Alongside these references to the occult powers of natural elements the health advice literature reveals a more naturalistic awareness of their distinctive properties, based on observation and lived experience. This is evident in medical authors’ detailed advice about which materials are beneficial or harmful for health: Ficino encourages the use of drinking vessels made of gold and silver, especially for the elderly; others discourage the use of lead or copper not properly coated with tin.[[11]](#footnote-11) Authors also recommend sleeping under particular types of blankets in winter and specify what mattresses should be filled up with: silk fibre or wool depending on the season, while feather mattresses, used by the Germans, are to be avoided all together because they excessively raise the temperature of the body.[[12]](#footnote-12) The use of wall-hangings made with thick wool was recommended in winter, since they were understood to ‘draw in’ the humidity in the walls and thereby remove it from the ambient air that penetrates the lungs.[[13]](#footnote-13) Another agent regarded as particularly efficient against dampness was leather, probably by virtue of its impermeable qualities.[[14]](#footnote-14) The emphasis on the insulating properties of leather is indeed confirmed by the extensive employment of this material in house furnishing, we find that entire rooms were covered with leather panels called ‘cuori’ (hearts), as in the rare example still surviving in Villa Chigi near Rome, where squared pieces of seventeenth-century embossed leather cover the walls from floor to ceiling. In summer, by contrast, medical authors of the early seventeenth century recommended the use of wall-hangings made of silk, since this material allowed some humidity to transpire and cool the ambient temperature, thus diminishing the damaging effects of excessive heat.

 In encouraging specific choices related to the furnishing of the house the medical discourse was to some extent simply reiterating shared knowledge about the value for health of certain colours, materials and objects, since many readers of regimen participated in the same classical tradition as the books’ authors. Undoubtedly, however, medical advice also contributed to form and reinforce this knowledge, the publishing success of these texts suggests that the ideas they contained had a wide circulation and inevitably affected consumer behaviour.

 Medical ideas might even have influenced the appearance and design of new artefacts. Indeed we find that early modern doctors are alert to the novelties in home furnishing and quick to integrate them in the discourse about healthy living. For example, doctor Zacchia (1639) comments upon the benefits that newly designed reclining chairs may offer to those who are used to day rest: in this way the head will be raised, favouring digestion and it will be impossible to plunge into deep sleep – deemed to be unhealthy after meals. Doctor Frediano acknowledges the popularity achieved by foot-warmers, a relatively new object, and their role in protecting the extremities from severe cold, but he also warns about the dangerous consequences of an excessive and inappropriate use of these devices.[[15]](#footnote-15) Others go as far as recommending the introduction of exotic objects from distant countries, such as ‘the bed hanging from the four corners of the room ceiling, in which the Portuguese use to sleep in Brazil in summer’. This would assist in the battle against bed bugs and ensure sleepers the long and quiet rest that is regarded as crucial to a healthy life.[[16]](#footnote-16) There are even cases of medical authors who design new objects to promote the introduction of new healthy habits. An example is represented by the table water-heater, devised by Doctor Persio (1593) to encourage rejection of the fashionable cold drinking in favour of ambient-temperature drinks; another case is the teapot published by Doctor Scacchi in his 1622 treatise to encourage the adoption in Italy of a highly beneficial green drink called *chià*, to which he had been introduced a few years earlier by a group of Japanese ambassadors visiting the papal court.[[17]](#footnote-17) In Italy it was precisely in the sixteenth century that medicine started to intertwine with domestic consumer behaviour, favouring the acceptance and success of some domestic objects and discouraging other types of fashion, such as the use of feather mattresses, noted above. This integration of the home in the preventative discourse is an early modern feature[[18]](#footnote-18) - and in the next section we will explore why this medical interest in the home environment develops precisely in this period. The first regimens to mention household objects were those by Savonarola and Ficino, written in the second half of the fifteenth century but disseminated only after their appearance in print and in vernacular form in the following century.[[19]](#footnote-19) Then references to the material world of the house and the domestic environment occur more frequently in subsequent healthy living guides, with Rangoni (1556), Durante (1586), Fonseca (1602) and Frediano (1650) being among the authors who show greater familiarity with objects of daily use and domestic practices.

 The extension of medical expertise to home life is also evident in the presence, in some regimens, of detailed instructions about the correct performance of household chores that might contribute to create a salutary domestic environment. Doctors’ advice on how often bed sheets and personal linen should be changed and washed, and on what precautions should be taken in terms of house cleaning and ventilation to keep the house free from annoying and dangerous bugs.[[20]](#footnote-20) Fonseca, for example, recommends opening the windows in the morning, sweeping floors, lofts and even walls, then sprinkling water on the floor and finally shutting both the window and the door of the bedroom until night. In addition, bed frames should be smeared with strongly scented substances and equipped with mosquito nets to ward off insects.[[21]](#footnote-21) In some cases regimens also provide practical advice about how to maximize the benefits of health-related devices such as bed-warmers or fireplaces - the latter became a common feature across the social scale only towards the end of the sixteenth century. Hence authors stress the importance of feeding the fire with limited quantities of wood so as to avoid the production of excessive heat that would damage the head. Moreover, as the disposal of smoke was still a concern, they recommend designing the chimneypiece in ways that make the room smoke-free.[[22]](#footnote-22) Likewise Fonseca advises his readers to differentiate the use of the ubiquitous bed-warmer according to age and constitution.[[23]](#footnote-23)

 Compared with late medieval regimens the recommendations in the health advice literature were therefore becoming more concrete and practical. By including objects and the use of objects in the narrative doctors offered a much more tangible and graphic picture of what should and should not be done and appealed to the lived experience of readers. In so doing, they made their texts more credible to an audience by now accustomed to receive practical instruction not only through the many manuals about how to run a household, bring up children or farm one’s land published in this period but through the wealth of technical how-to-books which were flooding the print market.[[24]](#footnote-24) These trends required that doctors adapted their language to the new, practical form acquired by information. Meanwhile, by actively promoting the role of some household objects and practices in health-maintenance doctors were also responding to the demands for domestic-centred health strategies which, as we will see in the next section, were emerging from their readers. By assisting the public in its efforts to construct a healthful domestic environment that would make their home even more attractive and a symbol of virtue, doctors were fulfilling in new ways the role of advisor that was key to their professional image and self-presentation. In this role they succeeded in mitigating the heath anxieties that evidently troubled early modern Italians, stimulating at the same time the expansion of a material culture of health and contributing perhaps in non insignificant ways to the formation of the ‘empire of things’ that, in Richard Goldthwaite’s words, characterises the Italian Renaissance.[[25]](#footnote-25)

1. Domestic health and virtue in Italian cities

Let us explore the wider context in which these concerns for the healthfulness of the domestic environment emerge. Various elements suggest that both the growing importance attributed to health maintenance and the focus on the house as the main site where these preoccupations were addressed might have been distinctive Italian occurrences. The elevation of the house to principal site of prevention was partly a consequence of the enhanced attention to the quality of the home environment and domestic life that developed in many Northern and Central Italian cities especially from the second half of the sixteenth century. Here the residences of the affluent were acquiring new dignity as proved by the surge in palace building and modernisation in this period. Urban social structure was changing. The rise of a civic nobility in provincial towns like Verona and the urbanisation of recently ennobled territorial elites in cities like Rome, stimulated these building programmes.[[26]](#footnote-26) Parallel to this acquisition of visibility in the urban landscape the demand for domestic material culture was growing exponentially. Indeed the numerous treatises on household management published in this period stress the role of *addobbamento* (household ornament, decoration) and of *mobile domestico* (furnishings) in enhancing the decorum of the house.[[27]](#footnote-27) Long believed to have been born in England in the eighteenth century, domestic consumerism was in fact thriving in the Italian cities of the late Renaissance, nurtured, as Richard Goldthwaite has cogently documented, by levels of individual wealth and social mobility unknown in other parts of Europe, and by an extremely dynamic artisanal culture.[[28]](#footnote-28)

 Already at the end of the fifteenth century household goods were beginning to be understood in Italian conduct literature as the elements that conferred splendour to the lord and the palace. In the words of humanist Giovanni Pontano (1498), while magnificence derives from the architecture of the building ‘splendour shines through domestic ornaments, the care of the body and furnishings, and through the refinement of different things’.[[29]](#footnote-29) The attention given to these elements betrays the new role that the domestic interior was acquiring in the promotion of individual and family honour. The setting to which Pontano - secretary of two Aragonese kings of Naples and tutor of one of them - refers at the end of the fifteenth century is that of the courtier. But in the following century this promotion of the home and its material culture to key elements in the achievement of splendour was extending beyond court circles. We witness in this period a relocation of the arena in which social status and mobility were validated, from the princely court to the homes and villas of noble and prosperous families.[[30]](#footnote-30) Increasingly, these became sites for forms of entertainment and conviviality in which the civil credentials of householders could be deployed.[[31]](#footnote-31) As illustrated by Guazzo’s influential *On Civil Conversation,* 1574, a text which celebrates the lives of nobles and notables in Italian provincial towns (and hence removed from princely courts), education and mastery of the art of conversation learned and practised at home, were now regarded as key expressions of ‘civility’, the new hallmark of noble status.[[32]](#footnote-32) Indeed, in a period of intense social mobility, true nobility was no longer proved exclusively by birth and pedigree but attested through ‘virtue’, and virtue was increasingly deployed by fulfilling the requirements of civil life in the home setting.

 Claims to civility and virtue, however, were also substantiated by the appearance and quality of domestic surroundings, not just by learned and polite conversation. Domestic possessions, including those that fulfilled a role in health maintenance, were seen to certify the moral qualities that make the civil man. Many have commented on the attributes of sobriety, liberality, prudence, education, elegance, good manners and restraint expected of the true gentleman, but his virtue, I would argue, was also defined by health consciousness. He was required to possess the rational faculties and governing powers necessary to preserve the health of the family, as well as its wealth and honour. This is clearly documented in conduct literature. The manuals for the correct management of the household directed to the *pater familias* - a genre whose growth in this period is another sign of the scrutiny to which the organisation of domestic life is subjected - contain frequent references to the duty of ensuring the healthiness of all those living in the house. The physical well-being of the family, servants included, is described as one of the head of household’s key responsibilities.[[33]](#footnote-33) While the doctor treats the sick body, ‘preservative care’ pertains to the *pater familias*.[[34]](#footnote-34) This is the ‘greatest economy’ that a diligent head of household can make.[[35]](#footnote-35) He should be aware, therefore, of the ‘medicinal rules’ to be adopted within the household: authors detail the foods and drinks that are good or bad for health and when and in what manner they should be consumed;[[36]](#footnote-36) they discuss rest, which should not be too long, exercise, and the need to protect the body from severe temperature and humidity with appropriate clothing, and to avoid perturbations of the soul.[[37]](#footnote-37) Air is presented as another key concern of the father of the family: he will ensure that the house is located in a site of good, temperate air, exposed to the sun in the morning and to the salutary Eastern winds.[[38]](#footnote-38) The disposition of internal space is equally relevant to health: living space for the summer period will face North, but South in winter; storage spaces will be differently oriented according to the good they are storing (grains or foodstuffs, books or clothing), so that these are better preserved from corruption.[[39]](#footnote-39) The cleanliness of the house is also seen as assisting health.[[40]](#footnote-40)

 The medical discourse about home and health therefore did not develop in a vacuum; the re-definition of elite structure in Italian cities and of nobility as a moral quality, combined with the new representational functions acquired by the residential palace and the rise of domestic consumerism, were important contextual factors. They contributed to focus attention on the quality of the home environment and of lifestyle, stimulating the development of preventive concerns and of a pervasive home-based health culture. The early appearance of a preventive culture centered upon the home might therefore have been a distinctive feature of Italian urban society.

1. Changing definitions of healthy and unhealthy air.

As highlighted also by the examples examined above, air occupies a central place in the early modern preventive discourse. Its role in health culture extends in particular in the sixteenth century and is better understood in the context of the increased concern with climate and weather that characterises the period. The recovery and dissemination through print of ancient texts that brought to the fore the influence of the local environment on health, was a significant factor in this development. Even though medieval medicine was familiar with the idea that the climate and the quality of the air affected the physical and mental health of people living in a certain locality, it was in the Renaissance that the importance of the atmospheric constitution of a place gained special currency. One just needs to recall the extraordinary popularity that Hippocratic theories enjoyed from the second half of the sixteenth century, following the appearance in print of ‘Airs, Waters and Places’ in 1526. Likewise, the publication in 1486 in Latin and in 1521 in Italian of *The Ten Books of Architecture* by Vitruvius, a text imbued with preoccupations about the effects of air upon the body, clearly had a bearing on the increased attention devoted to the location, orientation and ventilation of the house, found not just in the health advice literature but across textual genres ranging from architectural treatises to conduct manuals.[[41]](#footnote-41)

 Reflection upon the impact of air temperature and qualities on health also received new impetus from the increased interest in the weather of those involved in long-distance commerce and navigation, hence from the expansion of the boundaries of the world and of maritime trade-routes. These concerns are reflected in the popularity enjoyed by ancient works such as Aristotle’s ‘Meteorologica’ and Theophrastus’ ‘De Ventis’. As Craig Martin has suggested, interest in climates peaked in sixteenth-century Italy.[[42]](#footnote-42) The exploration of weather change in the hope to protect crops from floods, hail and frost was further stimulated by the spread of innovative farming methods, stemming from new empiric approaches to agriculture.[[43]](#footnote-43) An increasing amount of effort was therefore devoted to recording correlations between climate and other natural phenomena. As noted by Katharine Park, these observations, which certainly have important medieval precedents, become more regular from the end of the fifteenth century and less tied to exceptional events such as equinoxes, eclipses, and comets.[[44]](#footnote-44) A century later, positive results in the attempt to measure air temperature (for example Galileo’s invention of the air thermoscope) further stimulated faith in the possibility of establishing some control upon climate and the weather.[[45]](#footnote-45)

 Another sign of the enhanced attention to the air is the expansion of the vocabulary employed in describing the qualities of this element. This is visible not only in the medical and architectural discourse about health and home but in humanist texts about *villeggiatura* (leisured time spent withdrawing from public affairs in the country villa). Here the air is presented as a palpable presence, defined by its density and texture as well as by its colour and smell. Like objects, and in spite of its invisibility, air acquires in the narrative of the time a physicality that can be experienced by all the senses, and through them by the spirit, as we will see. Not by accident, it is in this period that artists endeavour to make the effects of air upon the body visible by capturing for example its mobility, the acoustic effects it produces as well as its sensorial and psychological impact.[[46]](#footnote-46) These attributes will then be lost in modern culture, when the emphasis in thinking about the domestic interior will shift from a material idea of ‘air’ to the inherently empty concept of ‘space’.[[47]](#footnote-47) But in this period air is perceived as a fundamental element in the healthfulness of the home.

 Sixteenth-centurydoctors and other commentators describe good air as light, thin, transparent, and fresh but they also insist on it being ‘mobile’ -- air that is unconstrained is by definition pure. This is an important aspect, to which I will return. Bad air is on the contrary thick and heavy, dense, and turbid; it bears upon the head and afflicts the animal spirits, which, as we will see, are closely connected with sensation. Air quality therefore also has an effect upon feelings and mood. Indeed authors often attribute psychological qualities to air, defining it as ‘serene’, ‘cheerful’, ‘pleasant’ or ‘delightful’, while bad air ‘clouds the heart’ and upsets the mind.[[48]](#footnote-48)

 Studies on the impact of air on health, however, have ignored these nuances and the positive attributes of certain airs. They have focused overwhelmingly on the ‘bad air’ that one had to avoid, and this is normally identified with the corrupt air released from stagnant water, animal carcasses and rotten vegetation. Another feature typically associated with polluted air is that this could travel long distances, carried by winds, and generate pathogenic processes miles away from the source of corruption. Frequently described as ‘miasmatic theory’ in the secondary literature, these views about ‘bad air’ are regarded as unchanging and lasting well into the nineteenth century.[[49]](#footnote-49) The evidence from Italian sources, however, suggests that the understanding of what constituted unhealthy air changed considerably during the early modern period. In *Healthy Living* we already noticed that from the second half of the sixteenth century air temperature (especially cold) and an excessive level of humidity (or, to a lesser extent, dryness) in the air were seen as a much more serious and constant health hazard than vicious and disease-infected air. These findings are interesting since they diverge from the tendency to identify early modern notions of ‘bad air’ exclusively with air corrupted by external agents, such as the movement of planets or the malignant vapours released from marshes, organic waste or caverns.[[50]](#footnote-50) But there are wider implications to consider. This view stems overwhelmingly from narratives of emergency: from descriptions of unhealthy air dominant in plague epidemics and underpinning public health measures. But different sources provide different perspectives on early modern airs. Hence, regimens of health, which engage with the management of the body and the environment in the everyday, rarely include terms such as putrid, fetid or pestilential in relation to air and any expression that may suggest that air is in itself ‘infected’ and a carrier of disease. These texts devote far greater attention to the impact on health of ordinary atmospheric phenomena, such as the characteristics of the winds that blow in the locality and the dust they produce, the cold and moist quality of the air during the night, or unseasonal occurrences such as sudden drops or increases in temperature. Moreover, even when the vapours from lakes, ponds, marshes or caverns are indicated as the sources of corrupt air, these are now seen as local phenomena, deriving from the environmental characteristics of the place rather than as gaseous substances released far afield and transported by air currents.[[51]](#footnote-51)

 This increased interest in the local climate also explains the emergence of a new health-related textual genre: in the second half of the sixteenth century and earlier part of the seventeenth, many doctors write in-depth analyses of the air of specific localities (Venice, Genoa, Rome) or of regions, such as Romagna, implying that a more precise understanding of the characteristics of the air and climate of the place will enable the population to protect themselves from the effects of local natural phenomena.[[52]](#footnote-52) By contrast, the influence of the stars and planets becomes a much less significant element in writings on the weather. This is evident also in the profile of some authors, whose publishing activity turns from astrological prognostications of climate to works that display their profound knowledge of the local winds and airs.[[53]](#footnote-53) We witness therefore a rise in meteorological medicine which sees atmospheric conditions as main sources of disease and the possibility to control them as key to the maintenance of health. No longer inexplicable and falling in the realm of prediction, natural phenomena are now depicted as foreseeable and manageable.

1. Managing Air

These shifts in the understanding of dangerous airs were not confined to the realm of ideas but affected also the practice of the laity. Numerous testimonies discussed in *Healthy Living* illustrated that from mid-sixteenth century the quality of the local air and the exposure to winds were matters of concern also for those who were buying a house or villa or commissioning their building.[[54]](#footnote-54) Moreover the study suggested that the new emphasis on cold and damp air as major health-hazards had an impact on the material culture of the home, stimulating the dissemination across the social scale of new furnishings: bed curtains and canopies, which isolated the bed from air drafts and created a warm receptacle for the sleeper, wall-hangings, which absorbed the dampness in the ambient air, and various devices for heating the ambient air (from fireplaces to portable braziers).[[55]](#footnote-55) Increased concern for the health risks posed by freezing temperatures also encouraged the use of special headgear, padded clothes and leather garments, and the adoption of greater cautions in the approach to bad weather.[[56]](#footnote-56)

 I would now like to explore how changing ideas about air were reflected in other spheres of ‘practice’, starting from architectural thinking and activity. Here too air acquired central stage. ‘Designing the house with climate in mind’, as Deborah Howard has effectively stated, became the hallmark of Renaissance architecture.[[57]](#footnote-57) However, we should also note that subtle shifts in emphasis differentiate the approach of earlier and late Renaissance architects. In the writings of the latter, bad air is increasingly seen as locally generated and this also brings about a more positive assessment of winds than in previous generations of professionals. While Alberti’s *De Re Aedificatoria* (written in mid fifteenth century) still divides winds into salubrious and noxious and sees the latter as ‘carriers of harmful substances’, Scamozzi, writing a century and a half later, tends to see the role of winds in positive terms since, by giving motion to the air they make it pure and light and preserve it from the self-corruption generated by stagnation.[[58]](#footnote-58) Two important elements are introduced here: one is the mobility of the air seen as a positive quality; the other is the idea that standing air is exposed to the risk of self-corruption. In this respect late Renaissance architects distance themselves from the teaching of Vitruvius, who thought that winds should be kept out of the city all together and that standing air favoured health on account of its stability.[[59]](#footnote-59) Unlike Vitruvius, Alberti does not regard all winds as noxious but maintains that they can be mastered by human action.[[60]](#footnote-60) And this more pragmatic attitude to winds will then be developed by sixteenth-century architects such as Palladio and Scamozzi, who firmly believed in the possibility of regulating the mobility of air through architectural devices. Hence they pay more attention to windows than their predecessors: for Palladio their proportion had to reflect the size of the room to enable correct ventilation, and the symmetry of rooms was to be encouraged, since it created alignment of openings.[[61]](#footnote-61) Interestingly, these new architectural ideas were soon re-proposed in medical advice. Doctor Petronio also recommends, in his 1581 Latin regimen (translated in to Italian in 1592), that windows should be aligned to favour ventilation, providing an example of the cross fertilization between architectural and medical strands of reflection upon home and health that characterises the period.[[62]](#footnote-62) Doctor Durante expresses a similar concern when he encourages readers to live in houses whose windows ‘respond to each other, from the east to the west and from the north to the south, to prevent air from standing still for long time, as otherwise it would corrupt’.[[63]](#footnote-63)

 Compared with Alberti’s, Scamozzi’s explanations for the dangerous attributes of the air are also more climate and topography-based; the local geography and usual weather conditions of the place are seen as responsible for them, while the appearance of contagious disease is attributed to sudden changes in temperature, not suited to the season as it normally manifests itself in the locality.[[64]](#footnote-64) This increased attention to the qualities of the air generated by the season or characteristic of the locality is reflected in the professional practice of architects. For example, ingenious forms of environmental control were experimented in the design of a number of villas in the Veneto region, country residences in which, following the rise of the fashion for *villeggiatura* (villa life) -another distinctively Italian practice, profoundly imbued with notions of healthy living- prosperous Italians increasingly spent considerable time in the months comprised between late Spring and early Autumn. The architects’ aim was to temper the heat of the summer, regarded as a source of physical debilitation for the villa residents, as explained by architect Palladio*.*[[65]](#footnote-65) Hence the villa was situated on a complex combination of subterraneous wind-channels (*vendiducts*) to produce a system of natural ventilation: the air was then issued from the underground chamber into the central hall through a floor grating; a central opening on the villa’s dome, also enabled the wind to move vertically, thus producing cross-ventilation.[[66]](#footnote-66) This sophisticated air conditioning system was appreciated not only because it cooled the summer temperature but because it created a delightful, refreshing atmosphere which, as well as gratifying the body, uplifted the spirit of those participating in the *villeggiatura*, and was commended by renowned doctors such as Girolamo Fabrizio Acquapendente, assiduous visitor of these villas.[[67]](#footnote-67)

1. Tackling the self-corruption of the air

The extension of health concerns to the home environment occurring in this period is also reflected in the increased attention to the pathogenic processes generated within the domestic interior rather than externally. This shift in focus is evident in the numerous recommendation aimed to prevent the process of self-corruption of the air that might occur inside the home contained in the health advice literature. The air one breathed during sleep was a prime target. The air of the night, inseparably associated with cool and moist qualities, was reputed particularly damaging by doctors, who recommended that windows should remain closed during night sleep even in summer, but these dangers were supposedly exacerbated by the exhalations rising from the stomach during the process of digestion that took place while one was asleep. Hence the bedroom was expected to be ‘large and capacious, so that air could move faster, since in the tiny rooms it most easily gets corrupted’ – an idea that clearly reflected the new, positive emphasis on the mobility of air mentioned above. Small spaces were so dangerous that ‘according to Galen, a certain pestilence originated in Greece from those who lived in houses which were too small and where the air struggled to penetrate’.[[68]](#footnote-68) Interestingly, in this quote the harming agent –even capable of generating pestilence!- is not the impure air that may penetrate the house from outside but the process of adulteration of the ambient air that may occur in a narrow and enclosed space, from a combination of scarce mobility of the air and exhalations from the body.

 Indeed, rather than being generated from the outside, by the movement of planets, stagnant water or decomposing organic waste, bad air was increasingly understood as being produced by the body itself (as well as being triggered by unseasonal climatic conditions, as we have seen above). According to a mid-seventeenth century regimen ‘lazy city folk’ whose rich diet and lack of exercise meant they failed to digest their food properly, were more likely to emit dangerous ‘dense exhalations’ that made even the city environment unhealthy.[[69]](#footnote-69) Both the digestive process and the concentration of many people in a limited space were therefore seen as responsible for the corruption of the air. Hence, when the house is used as a venue for sociability –‘when you want to have a *commedia* or other public entertainment’– there is a danger that the breath of the numerous people, as well as the torches used to light the place, will over-heat the room thus worsening the quality of the air.[[70]](#footnote-70) Durante also warns against the congregation of many human beings within the rooms in summer or when it is very hot since ‘the multitude of people will excessively warm them’.[[71]](#footnote-71)

 The danger, as suggested by many authors, was that the heated air combined with the fumes and vapours released during the course of digestion would rise and suffocate the brain.[[72]](#footnote-72) The association between the quality of the air and the health of the brain was indeed very powerful. In medical terms this was justified by the fact that in Galenic physiology the brain, not the nose, was the olfactory organ (the nostrils were just a conduit that conveyed the air to the brain). Hence the quality of the air breathed-in directly affected one of the three cardinal organs of the body, potentially upsetting the sensory, motor and intellectual faculties for which the brain was responsible. This view contributes to understanding the anxiety surrounding the effects of bad air on health but it also explains, as we will see, the positive effects that pure air was supposed to have upon both mental faculties and the senses.

 The need to protect the precious brain was also at the heart of the many recommendations aimed to improve the breath found in the health advice literature.[[73]](#footnote-73) Numerous recipes for the domestic manufacture of products for the hygiene of the mouth –toothpastes, mouth-washes and toothpicks- were also present in the printed collections of recipes which became extremely popular in sixteenth-century Italy.[[74]](#footnote-74) These hygienic measures reflected the assumption that people could become infected by their own bad breath, generated by decayed teeth and gums or resulting from poor digestion, since, once inhaled through the nose, this could damage the brain and the key functions over which this presided. Again, underpinning these practices was the assumption that the deterioration of the air was prompted by physiological processes taking place within the body rather than by external harmful agents.

1. The changing uses of scent

The shifting understanding of what constituted dangerous and beneficial air highlighted so far also affected the practice of ‘purging’ or ‘rectifying’ the air within the home with aromaticwoods, herbs and spices. Scholarly accounts have presented this habit as reflecting the assumption that corrupted air was associated with bad smells, and these were seen to be endowed with the power to breed disease, in particular the plague. According to Richard Palmer, smells were not understood as immaterial but were seen to carry the qualities of the matters from which they emanated: rotten organic waste or putrid water in the case of stench, flowers and other aromatic substances in the case of pleasant smells.[[75]](#footnote-75) In this interpretive framework, the common practice of sprinkling scent on the body, clothes and in the ambient air is explained as a prophylactic measure aimed to create a protective armour around the body, and preserve it from the attack of contagious stinking vapours.[[76]](#footnote-76) This interpretation clearly conflates vicious air, bad smell and infection, elements which do not always coincide. Following this view, the medicinal use of perfuming practices and scented objects has largely been connected with the threat posed by the plague. According to Dugan, the contagious nature of smelly air was even reinforced in the sixteenth century by the penetration in medical thought of Paracelsus’ theories, which depicted disease as a separate entity, whose invisible particles were carried by the air.[[77]](#footnote-77) These views have long remained unchallenged. To a closer scrutiny, however, early modern perfuming practices present subtle shifts in form and meaning over the period, leading to question the picture of continuity prevailing in the literature.

 Certainly concerns for infectious disease dominate the approach to scent in late medieval regimens. Here, the advice to correct problematic air in the domestic environment by scattering flowers and fragrant herbs on tables and floors and burning aromatic substances in fireplaces was exclusively related to periods of epidemics.[[78]](#footnote-78) A fifteenth-century regimen advises that if one must move home during the plague the new house should be kept shut to lock out the corrupted air that causes the disease, and the rooms should be fumigated the day before moving in by lighting a fire with juniper wood, oak and cypress, sprinkled with incense, myrrh and similar scents.[[79]](#footnote-79) The target of these recommendations is clearly the pernicious air that may penetrate the house from outside; moreover, a simple equation is established in these texts between external air and infectious disease. This correspondence between the spread of practices aimed to correct the air and the appearance of plague epidemics is also confirmed by the diffusion of specific objects for this purpose, the perfume burners. The first exemplars are documented in Italy precisely in the late fourteenth century, after the Black Death (fig.1).[[80]](#footnote-80) Perfumed essences were burned with coal in the receptacle placed inside so that these portable objects would then release a fragrant smell through their perforated surface, which would quickly infuse the whole room.**(INSERT FIG.1** HERE)

 Later on however, the use of aromatic substances to maintain the ambient air salubrious is no longer related to outbreaks of plague. In the second half of the sixteenth century, regimens recommend the use of scented substances in relation to certain times of the year or day rather than when the area is affected by the plague. Moreover, the purpose of the practice has changed. It no longer targets pestilential, infected air but simply air whose humoural composition is unbalanced; there is a new attention to the humoural characteristics of air which is in turn related to the season. For example, a regimen dated 1586 suggests that: ‘when the air exceeds in any qualities it should be rectified by the contrary [qualities] ... hence if it is too hot and during the summer one should sprinkle the house with cool water and vinegar, since vinegar by being cold and dry contrasts the bad vapours in the air and prevents putrefaction’.[[81]](#footnote-81) Conversely, if the air is too cold, herbs with a hot humoural composition, such as mint, sage, laurel, rosemary and marjoram will be spread in the rooms, or will be sprinkled in form of decoction.

 Clearly, these substances are no longer meant to counter air infected with disease but air that is dangerous to the body on account of its humoural qualities, which are now conflated with its physical, and perceivable qualities: dampness or low or high temperature. A second notable point is that specific fragrances are recommended in different seasons and for different types of air. The corrective power of scent does not derive simply from it being sweet to the nose, as implicitly assumed by previous studies, which limit themselves to comment on the pleasant or pungent character of scented substances; rather, aromas are understood to rectify the air on account of their humoural make-up, an aspect ignored by scholars.[[82]](#footnote-82)

 This tendency to differentiate scents on the basis of their constitution and related healing and preventive powers was likely to have been stimulated by the dissemination of knowledge about the properties of plants made possible by the introduction of print. Herbals, which for the first time presented faithful representations of plants and far more detailed descriptions of their humoural attributes than their medieval predecessors, became a publishing success in the sixteenth century.[[83]](#footnote-83) The most accomplished example of this trend was precisely an Italian herbal, Mattioli’s commentaries to Dioscorides, a text which underwent 16 editions just during the life time of the author and enjoyed unusually large print runs.[[84]](#footnote-84) It is plausible that these highly accessible texts made people more aware of the practical usage to which plants could be put and more capable of employing them in their daily life to redress the humoural balance, not just of the body, but of the surrounding air.

1. Fragrant air and spiritual wellbeing.

Not only did perfuming practices aim, as we have seen, to modify the humoural qualities of domestic air rather than to protect the body from infectious air, but – and this is my last point – scent was increasingly used as an agent that actively stimulates the brain and ‘the spirits’, rather than for preventive reasons. In the second half of the sixteenth century doctors stress the positive function that certain aromatics exercise upon the brain, comforting and pleasing this important organ and lifting the spirits, responsible not only for evenly distributing natural heat throughout the body and facilitating the correct explication of vital organic functions but for acting as intermediary between physical experience and the wellbeing of the soul. Through the spirits, the effects of fragrant air were increasingly seen to affect the realm of the incorporeal as well as the health of the body.[[85]](#footnote-85) But what is meant by ‘spirits’? Even though ideas about the substance, nature, properties and virtues of the spirits were contradictory,[[86]](#footnote-86) bodily spirits were systematically defined, from classical times to the nineteenth century, as the instrument, vehicle or engine of the soul.[[87]](#footnote-87) Unlike the humours, they were conceived as vaporous substances characterised by being simultaneously celestial and physical entities; precisely on account of these double nature they fulfilled the important function of translating the experience of the senses into a language intelligible to the soul.[[88]](#footnote-88)

 The importance of gratifying the senses to achieve spiritual wellbeing was gaining currency as suggested by the numerous comments upon the positive impact of fragrances on the operations of the spirits found in a vast range of both learned and popular texts in this period: smells that delight can ‘strengthen’, ‘revive’, ‘comfort’ and ‘overpower’ ‘the spirits’. The frequent references to the brain in these passages suggest that the spirits in questions were more specifically the ‘animal spirits’, those concerned with facilitating perception, cognition, motion and memory and whose sphere of action was therefore located in the brain.[[89]](#footnote-89) For example, in Benvenuto Cellini’s autobiography (1558-63) and Straparola’s *Piacevoli Notti* (1549) we find references to beds prepared with scattered petals of roses, violets and other scented flowers which were supposed to be of much ‘comfort to the brain’.[[90]](#footnote-90) A 1589 regimen directed to a popular audience goes a step further, as it states that ‘smells are the food of the soul, they open the passages of the brain and fortify all the senses’.[[91]](#footnote-91) On a similar vein, Luca Contile in his *Discorso sopra li cinque sensi del corpo* (1552) explains that it is through the organ of smell that ‘the sweetness of scented things passes to the soul’.[[92]](#footnote-92) These works present what seems to be a simplified version of philosophical and physiological views, a version which conflates spirit, soul and brain. In reality the brain was not understood precisely as the seat of the soul, as we have seen, but of that celestial animal spirit which is distilled in the brain and acts as the main instrument of the soul in sensory-cognitive operations. These narratives, however, suggest that the expanding use of scent and scented things in sixteenth-century Italy might have been more connected with pleasure and the gratification of the senses than with preventive or therapeutic functions in relation to infectious disease. Indeed, references to perfuming practices in various literary genres are strikingly lacking any mention of their physical prophylactic function.

 This transformation in the purpose of perfuming is also confirmed by the appearance of new scent-related objects: small flasks (fig.2) which, unlike the perfume burner discussed above, do not release aromas in the ambient air but are filled with perfumed substances that are sniffed by the individual for personal delight and benefit. The physical characteristics and aims of these two types of object are clearly quite different: while the perfume burner aims to purify the surrounding air by continuously emitting a fragrant smell through its perforated surface, the scent flask is for individual use, its liquid essences can be inhaled only deliberately, following the gesture of removing or unscrewing the lid and bringing the small bottle to the nose. Regimens explain the rationale for these smelling practices: for example, Lennio (1564) recommends to bring to the nostrils ‘scented things’, especially those colourful and of vibrant nature, such as aloe, cloves, rosemary flowers and roses since their cheerful smell restores the brain and re-creates the spirits.[[93]](#footnote-93) (**INSERT FIG.2 and Fig.3 HERE, next to each others**)

 These smelling vessels also differ from the pomander, another scent-related object. Mentioned already in the late thirteen century, pomanders were perforated metal spheres holding a perfumed ball made of aromatic paste or solid balsam that continuously gave off scent (fig.3), precisely like the perfume burner discussed above.[[94]](#footnote-94) Pomanders bear resemblance with scent flasks since they were also worn, often hanging from a necklace or belt (as many portraits document), or being used as rosary beads; the function of scent flasks, however, was different, they promoted the health of the individual consumer’s brain, vehicle of his spiritual health, rather than the soundness of domestic air. Studies on the material culture of scent have long ignored these distinctions, they have tended to define ‘pomander’ any portable perfume receptacle and attribute identical functions to all of them. Only recently has the use of this umbrella term been challenged and have important differences in the purpose of variedly shaped perfume containers begun to be drawn.[[95]](#footnote-95)

 The appearance of smelling flasks was facilitated by technological improvements aimed to keep containers firmly sealed and prevent fragrances from evaporating. Indeed, tightly fitting stoppers and lids only became available in the sixteenth century, following the development of new techniques for making screws and threads.[[96]](#footnote-96) However, a key factor in the expansion of the purposes of perfuming was the increased preoccupation with the quality of sensory experience, regarded as crucial to the health of the soul, which characterises late Renaissance culture. Hence the role that not just fragrant air but the quality of the air more in general played in spiritual wellbeing was emphasised in the writings of medical authors, architects and humanists alike. See for example how the positive effects of good air are described in a text on the advantages of villa life: ‘How can I express the satisfaction that we get from the pure air here, which is so refreshing to the spirit? We find it wonderfully stimulating and at the same time it soothes the brain, purges the mind, calms the spirit and strengthens the body’.[[97]](#footnote-97) Architect Scamozzi is even more explicit in praising the holistic impact of pure air: ‘the most the air is good and close to perfection, the most it benefits not only the natural things and are outside of the body but all the internal parts and even the virtues of the soul.’ Through the brain, the synthesizer of sensory perception, pure air and selected fragrances were increasingly seen to affect spiritual wellbeing. The expanding importance of aromas, the rise of the Italian garden and the practice of *villeggiatura* were all expressions of this view.

Conclusion

 For decades a picture of substantial stability in medical definitions of unhealthy air and recommended corrective measures has remained unchallenged. This article has offered an alternative, dynamic depiction of ideas about air and health, and of related domestic practices, in early modern Italy. In particular, the focus on the home and its material culture has made it possible to identify shifts in definitions of health hazards that are otherwise difficult to pin down, highlighting not only a growing concern for the impact of air upon the body in the second half of the sixteenth century, but significant changes in the understanding of both the sources of unhealthy air and the risks associated with breathing it. At the same time, the attention to the distinctive intellectual and social trends which exercised a key influence on ideas about air and home in sixteenth-century Italy has offered the opportunity to stress the geographical specificity of the developments we observe in Italian, urban health culture in this period. Reflecting a new interest in the environmental characteristics of the locality but also the promotion of the home to central site of social and moral self-representation, bad air was increasingly conceptualised as seasonally, locally and home-produced, rather than deriving from distant and external, incontrollable agents. At the same time a new empiric attitude to nature inspired greater confidence in the possibility of acquiring a better knowledge of one’s surroundings and prevent the corruption of domestic air. Participating in this optimistic outlook, both doctors and architects engaged in providing solutions and advice aimed to preserve pure air through new building devices and through household practices which modified substantially domestic consumers’ habits, making health more central to their choices. A less direct idea of the effects of bad air upon health also prevailed: malign air was no longer understood as mechanically infecting the body but was seen to affect the correct functioning of physiological processes by virtue of its humoural make-up. This however could also be contrasted with fragrances holding opposite humoural qualities. The focus on the domestic medicinal use of aromas also shows that these practices acquired a new dimension over the period: the role of stimulating the working of bodily spirits and gratifying the senses and the soul. Overall this study has suggested that air, and early modern air in particular, has a history, or perhaps several histories, if we give due consideration to geographical contexts.

1. Examples include L. Dacome, ‘Women, Wax and Anatomy in the “Century of Things”’, *Renaissance Studies*, 2007, 21: 4, 522–550; C. Rabier ed., *Fitting for Health*, special issue of *Technology and Culture*,2013, 54:3. [↑](#footnote-ref-1)
2. The sole exception is represented by the material culture of the kitchen, whose versatile design is seen to have made it suitable not only for cooking but for the production of medicinal remedies for the household and even for commercial purposes. See for example E. Leong, ‘Making Medicines in the Early Modern Household,’ *Bulletin of the History of Medicine* 82 (2008), 145-68, esp. 158–165. [↑](#footnote-ref-2)
3. S. Cavallo and T. Storey, *Healthy Living in Late Renaissance Italy* (Oxford: Oxford University Press 2013). [↑](#footnote-ref-3)
4. See for example the chapters by Gage, Conforti and Donato, and the Introduction in S. Cavallo and T. Storey eds, *Conserving Health in Early Modern Culture* (Pickering and Chatto, forthcoming). [↑](#footnote-ref-4)
5. The chronology, authorship and formal characteristics of this genre are analysed in S. Cavallo, ‘Secrets to Healthy Living: The Revival of the Preventive Paradigm in Late Renaissance Italy’, in E. Leong and A. Rankin eds., *Secrets and Knowledge in Medicine* (Aldershot: Ashgate, 2011), 191–212;Cavallo and Storey, *Healthy Living*,13-31. [↑](#footnote-ref-5)
6. B. Pietragrassa, *Politica Medica per il Governo Conservativo del Corpo Humano...* (Pavia: Andrea Magri, 1650), 411, 415. M. Ficino, *De le Tre Vite, cioé, a qual Guisa si Possono le Persone Letterate Mantenere in Sanitá...* (Venice: Tramezzino, 1548), 14. [↑](#footnote-ref-6)
7. J. Gage, *Colour and Culture: Practice and Meaning from Antiquity to Abstraction* (Berkeley: University of California Press, 1999), 83-84. [↑](#footnote-ref-7)
8. D. Pavey, *Colour and Humanism*, revised edition (London: Micro Academy, 2001), esp. 49-52. [↑](#footnote-ref-8)
9. F. P. Morato, *Del Significato de’ Colori, e de’ Mazzoli* (Venezia: F.I. Bindoni & M.Pasini, 1533), which had more than 20 editions just in the sixteenth century; L.Dolce, *Dialogo nel quale si Ragiona delle Qualitá, Diversitá e Propietá dei Colori* (Venice: G. B. e M. Sessa et fratelli, 1565); C. Occolti, *Trattato de’ Colori* (Parma: Seth Viotto, 1568); G.P. Lomazzo, *Trattato dell’Arte della Pittura, Scoltura, et Architettura* (Milan: P.G. Pontio, 1584), book 2, chap. XI; G. Rinaldi, *Il Mostruosissimo Mostro...* (Ferrara: V. Baldini, 1584); A. Calli, *Discorso de’ Colori* (Padua: Lorenzo Pasquati, 1595). [↑](#footnote-ref-9)
10. Gage, *Colour and Culture*, 84. [↑](#footnote-ref-10)
11. Ficino, *De le Tre v=Vite*,13; M. Savonarola, *Libreto...de Tutte le Cose che se Manzano... e de Sei Cose Non Naturali* (Venice: Bernardino Benalio, 1515) 56; L.A. Camaffi, *Reggimento per Viver Sano nei Tempi Caldi* (Perugia: Stamparia Augusta, 1610) 171. [↑](#footnote-ref-11)
12. On blankets E. Frediano, *Arca Novella di Sanitá...con Alcune Regole per Conservarsi Sano...* (Lucca: Iacinto Paci, 1656), 37; on mattresses and wall-hangings, among others, R. Fonseca, *Del Conservare la Sanitá* (Florence: Semartelli, 1603), 80. [↑](#footnote-ref-12)
13. Cavallo and Storey, *Healthy Living*, 92-94. [↑](#footnote-ref-13)
14. *Ibid*., 137-8. [↑](#footnote-ref-14)
15. P. Zacchia, *De Mali Hipocondriaci: Libri Due* (Rome: Pietro Antonio Facciotti, 1639),102; Frediano, *Arca Novella*, 52 [↑](#footnote-ref-15)
16. Fonseca, *Del Conservare*,80. [↑](#footnote-ref-16)
17. A. Persio, *Del Bever Caldo Costumato dagli Antichi Romani* (Venice: Gió Battista Ciotto, 1593), chapter 2; Francesco Scacchi, *De Salubri Potu Dissertatio* (Rome: Alessandro Zanetto, 1622), 94–5. [↑](#footnote-ref-17)
18. Comparison has been made with the following medieval regimens: Tadddeo Alderotti (d.1296), *Libello per Conservar la Sanità del Corpo* (Imola: Galeati, 1852); Arnaldo da Villanova (d. c.1312), *Regimen Sanitatis ad Regem Aragonum*, in *Ibid*. *Opera Medica Omnia,* X.1*,* ed. L. García Ballester, J.A Paniagua and M.R. McVaugh (Barcelona: Universitat de Barcelona, 1996); and those by Maino de Maineri and Aldobradino da Siena (see note 81). Some medieval texts, however, are concerned with the exposition of living quarters, their width and height and with building materials. P. Gil-Sotres, ‘The Regimens of Health’, in M. D. Grmek ed., *Western Medical Thought from Antiquity to the Middle Ages* (Cambridge Mass.: Harvard University Press, 1998), 291–396, 302-04. [↑](#footnote-ref-18)
19. Published posthumous in 1501, Savonarola’s *Libreto* was written around mid-fifteenth century directly in Italian; Ficino’s *De Triplici Vita* was originally compiled in Latin and circulated in manuscript form until its appearance in print in 1489. It was published in vernacular only in 1548. [↑](#footnote-ref-19)
20. On changing bed-sheets and undergarments T. Rangoni, *Consiglio del Magnifico Caualiere... Come i Venetiani Possano Viuere Sempre Sani* (Venice: Francesco de' Patriani, 1565), 11. [↑](#footnote-ref-20)
21. Fonseca, *Del Conservare*, 85. [↑](#footnote-ref-21)
22. Rangoni, *Consiglio*,11. [↑](#footnote-ref-22)
23. Fonseca, *Del Conservare*, 79. [↑](#footnote-ref-23)
24. On technical writing see, among others, W. Eamon, *Science and the Secrets of Nature. Books of Secrets in Medieval and Early Modern Culture* (Princeton: Princeton University Press, 1993); P.O. Long, *Openness, Secrecy, Authorship: Technical Arts and the Culture of Knowledge from Antiquity to the Renaissance* (Baltimore: Johns Hopkins, 2001); N. Glayser and S. Pennell eds, *Didactic Literature in England 1500-1800: Expertise Constructed* (Aldershot: Ashgate, 2003). [↑](#footnote-ref-24)
25. R. A. Goldthwaite, ‘The Empire of Things: Consumer Demand in Renaissance Italy’, in F. W. Kent and P. Simons eds, *Patronage, Art and Society in Renaissance Italy* (Oxford: Oxford University Press, 1987), 155-75. [↑](#footnote-ref-25)
26. On Verona see O. Brugnoli and A. Sandrini eds, *L’Architettura a Verona nell’Etá della Serenissima* (Verona: Mondadori 1988), vol. I. For Rome see the case of the Spada family reconstructed in Cavallo and Storey, *Healthy Living*, 49-55. For the distinctive traits of the Italian nobility, C. Donati, ‘Nobiltá’, in *Enciclopedia delle Scienze Sociali* (Roma: Istituto della Enciclopedia Italiana, 1996), vol. VI, 235-246. [↑](#footnote-ref-26)
27. For example G. Lanteri *Della Economica*.. (Venice: Valgrisi, 1560); G.B. Assandri, *Della Economica overo Disciplina Domestica* (Cremona: Belpiero, 1616). ‘Masserizie’, also a common expression for household goods, had more practical connotations. [↑](#footnote-ref-27)
28. R. Goldthwaite, *Wealth and the Demand for Art in Italy, 1300–1600* (Baltimore: Johns Hopkins, 1993). [↑](#footnote-ref-28)
29. #  Cited in J. R. Lindow, *The Renaissance Palace in Florence. Magnificence and Splendour in Fifteenth-Century Italy* (Aldershot: Ashgate, 2007) 7, n.1, my translation.

 [↑](#footnote-ref-29)
30. A. A. Smith, ‘Revisiting the Renaissance Household in Theory and Practice’, in K. A. McIver ed.,*Wives, Widows, Mistresses, and Nuns in Early Modern Italy: Making the Invisible Visible through Art and Patronage* (Aldershot**:** Ashgate, 2012), 141-57. [↑](#footnote-ref-30)
31. On the growth of home sociability M. Ajmar-Wollheim, ‘Sociability’ in Ajmar-Wollheim and Dennis, *At Home*, 206-21. [↑](#footnote-ref-31)
32. #  E. Speciale, ‘Il Discorso del Gentiluomo’, in G. Patrizi ed*.,* *Stefano Guazzo e la Civil Conversazione* (Rome: Bulzoni, 1990).

  [↑](#footnote-ref-32)
33. T. Tasso, *Il Padre di Famiglia* (Venice: Aldo Manuzio, 1583), 75-6; Assandri, *Della Economica*, 307. This author devoted three full chapters to health preservation. [↑](#footnote-ref-33)
34. B. Frigerio, *Arte d’Acquistar e Conservar la Robba* (Rome: Grignani, 1650, first ed. 1629), 122-23. [↑](#footnote-ref-34)
35. V.Tanara, *L’Economia del Cittadino in Villa* (Venice: Bertani, 1661, first ed.1644) 6. [↑](#footnote-ref-35)
36. Assandri, *Della Economica*, 308-10. [↑](#footnote-ref-36)
37. *Ibid.*, 308;Frigerio, *Arte*, 122-23; Tasso, *Il Padre*,76. [↑](#footnote-ref-37)
38. P. Caggio, *Iconomica* (Venice: Andrea Arrivabene, 1552), 57-8; Assandri, *Della Economica*, 313-14. [↑](#footnote-ref-38)
39. *Ibid.*, 318, 283; Lanteri, *Della Economica*, 19, 22, 35, 37-9. [↑](#footnote-ref-39)
40. Tasso, *Il Padre*, 53. [↑](#footnote-ref-40)
41. The influence of these two texts is discussed in Cavallo and Storey, *Healthy Living*, 78-83. [↑](#footnote-ref-41)
42. C. Martin, *Renaissance Meteorology: Pomponazzi to Descartes* (Baltimore: Johns Hopkins, 2011), 3. [↑](#footnote-ref-42)
43. On scientific developments in agriculture and their links with vernacular agronomy publications M. Ambrosoli, *The Wild and the Sown Botany and Agriculture in Western Europe, 1350-1850* (Cambridge: Cambridge University Press, 1997). [↑](#footnote-ref-43)
44. K. Park, ‘Observation in the Margins, 500-1500’, in L. Daston and E. Lumbeck eds, *Histories of Scientific Observation* (Chicago: Chicago University Press), 2011, 15-44, esp. 31-37. [↑](#footnote-ref-44)
45. R. Thévenot, *A History of Refrigeration Throughout the World* (Paris: International Institute of Refrigeration, 1979), 25. I am grateful to Jane Levi for this reference. [↑](#footnote-ref-45)
46. Theorised by Alberti in his *Della Pittura* (1435) the attainment of a mimetic representation of natural phenomena -particularly air and winds- reaches its highest point in the sixteenth century in Leonardo’s drawings. A. Nova, *Il Libro del Vento. Rappresentare l’Invisibile* (Milan: Marietti, 2007), 65-68, 72-73,76-77. [↑](#footnote-ref-46)
47. Paul Emmons and Marco Frascari, ‘Making Visible the Invisible. Signs of Air in Architectural Treatises’, in B. Kenda ed., *Aeolian Winds and the Spirit in Renaissance Architecture* (London: Routledge, 2006), 87-102, 87. My thanks to Laurence Lumley for this reference. [↑](#footnote-ref-47)
48. Durante, *Il Tesoro*, 8. [↑](#footnote-ref-48)
49. C. Hannaway, ‘Environment and Miasmata’, in W.F. Bynum and R. Porter eds, *Companion Encyclopedia of the History of Medicine*, 2 vols. (London: Routledge 1997), Volume 1, 292-308, is representative of this wide tendency. For an alternative view see M.P. Donato, ‘The Afterlife of the Non-Naturals in the Early Eighteenth-century: from the Healthy Individual to a Healthy Population’, in Cavallo and Storey eds, *Conserving Health.*  [↑](#footnote-ref-49)
50. Cavallo and Storey, *Healthy Living*, ch. 3. [↑](#footnote-ref-50)
51. See for example the definitions of bad and good airs in the best-seller Durante, *Il Tesoro*, 7-8. [↑](#footnote-ref-51)
52. Examples include doctor Matteo Bruni’s *Note Climatologiche sulla Bassa Romagna*  *1570-1590* and doctor Domenico Panaroli’s *L’Aria Celimontana* on the air of one of the Roman hills, Mount Celio (1642). [↑](#footnote-ref-52)
53. A case in point is represented by Doctor Rangoni: a renowned astrologer, author of numerous climatic predictions, he then refashioned as natural philosopher and authored the first city-related regimen, which contains a detailed analysis of Venetian air. [↑](#footnote-ref-53)
54. Cavallo and Storey, *Healthy Living*, 84, 87, 91. See also the examples in F. Gage, ‘Chasing “good air” and viewing beautiful perspectives: painting and health preservation in seventeenth-century Rome’, in Cavallo and Storey eds, *Conserving Health.*  [↑](#footnote-ref-54)
55. Cavallo and Storey, *Healthy Living*, beds 91-98, 133-38. [↑](#footnote-ref-55)
56. *Ibid*. 75, 105-6; 107-11. [↑](#footnote-ref-56)
57. D. Howard, ‘Seasonal Apartments in Renaissance Italy’, *Artibus and Historiae*, 22:43 (2001), 127-35, 128. Howard discusses the issue only in relation to room orientation and seasonal living quarters. [↑](#footnote-ref-57)
58. L. B. Alberti, *L’Architettura: De Re Aedificatoria*, Latin text and translation into Italian by G. Orlandi with notes by P. Portoghesi(Milan: Il Polifilo, 1966), 30-31; V. Scamozzi, *Dell’Idea dell’Architettura Universale*  (Venezia: Girolamo Albrizzi, 1715, first ed. 1615), Part I, 135. [↑](#footnote-ref-58)
59. A. Nova, ‘The Role of the Winds in Architectural Theory from Vitruvius to Scamozzi’, in Kenda ed., *Aeolian Winds*, 74. [↑](#footnote-ref-59)
60. *Ibid.*, 75. [↑](#footnote-ref-60)
61. M. Hardy, ‘”Study the Warm Winds and the c=Cold”. Hippocrates and the Renaissance Villa’, in *Ibid*, 48-69, 54. [↑](#footnote-ref-61)
62. A. Petronio, *Del Viver delli Romani et di Conservar la Sanità*  (Roma: Domenico Basa, 1592) 301. [↑](#footnote-ref-62)
63. Durante, *Il Tesoro*,11. [↑](#footnote-ref-63)
64. Scamozzi, *Dell’Idea*,136-37, 147-50. [↑](#footnote-ref-64)
65. Hardy, ‘”Study the Warm Winds and the Cold”’, 53. [↑](#footnote-ref-65)
66. B. Kenda, ‘Aeolian Winds and the Spirit of Renaissance Architecture’, in Kenda ed., *Aeolian Winds*, 6-16. [↑](#footnote-ref-66)
67. *Ibid*.,16. [↑](#footnote-ref-67)
68. ‘la stanza del letto sia grande e capace dove l’aria abbia libera uscita, acciò possa più speditamente muoversi perchè negli stanzini più facilmente si può corrompere. Laonde racconta Galeno che una certa peste in Grecia ebbe origine da coloro che in piccole e poco dall’aria penetrate case habitavano’. Fonseca, *Del Conservare*, 80. [↑](#footnote-ref-68)
69. ‘Ci sono esalazioni dense . . . perché gli habitanti delle cittá di rado sono famelici, tardi digeriscono, hanno i sensi non molto purgati, sono di piena e quadrata corporatura e fatti molto pigri al moto.’ Pietragrassa, *Politica Medica*, 388. [↑](#footnote-ref-69)
70. Panaroli, *Aerologia*, 87. [↑](#footnote-ref-70)
71. Durante, *Il Tesoro*, 9. [↑](#footnote-ref-71)
72. L. Lennio, *Della Complessione del Corpo Humano...* (Venice: Domenico Nicolino, 1564), 100. [↑](#footnote-ref-72)
73. For example *Scuola Salernitana del Modo di Conseruarsi in Sanità* (Perugia: Pietroiacomo Petrucci, 1587), 54;Durante, *Il tesoro*, 10;D. Auda, *Breve compendio ... Con un Trattato per Conservarsi in Sanità* (Rome: Ignatio de’ Lazari, 1652) 272. [↑](#footnote-ref-73)
74. On this genre and its preventive characters S. Cavallo, ‘Secrets’. [↑](#footnote-ref-74)
75. R. Palmer, ‘In bad odour: smell and its significance in medicine from antiquity to the seventeenth century’, in W.F. Bynum and R. Porter eds, *Medicine and the Five Senses* (Cambridge: Cambridge University Press, 1993), 61-68, esp. 63, 65. [↑](#footnote-ref-75)
76. *Ibid*. 66-67, and, among others, H. Dugan, *The Ephemeral History of Perfume*, *Scent and Sense in Early Modern England* (Baltimore: Johns Hopkins 2011), ch. 4; E. Welch, ‘Perfumed Buttons and Scented Gloves: Smelling Things in Renaissance Italy,’ in B. Mirabella ed., *Ornamentalism: Accessories in the Renaissance* (Ann Arbor: The University of Michigan Press, 2011), 13–39. I have also re-proposed this view in my ‘Secrets’, 194-95. [↑](#footnote-ref-76)
77. Dugan, *The Ephemeral History,* 105-6. [↑](#footnote-ref-77)
78. [Maino de Maineri (d.1368)], *Opera Utilissima di Arnaldo da Villanova di Conservare la Sanità* (Venice: Tramezzino, 1549), 104; *Libro di Arnaldo di Villa Nuova ... del Modo di Conservar la Gioventù e Ritardar la Vecchiezza*, annexed to Pictorius, *Dialogi*... (Venice: Bottega d’Erasmo di Vincenzo Valgrisi, 1550) 107; Aldobrandino da Siena (d. c.1287)*, Le régime du Corps...Texte Français du XIIIe Siècle*, eds L. Landouzy and R. Pépin (Paris: H. Champion, 1911), 103. [↑](#footnote-ref-78)
79. U. Benzi, *Tractato Utilissimo Circa lo Regimento et Conservatione de la Sanitade* (Milan: Petromartire, 1508), 4r. First published in 1481 this work is in reality a translation of Reguardati’s 1475 Latin regimen, see H. Cotton, ‘Benedetto Reguardati: Author of Ugo Benzi’s *Tractato de la Conservation de la Sanitade’*, *Medical History*, 12, 1968, 175–89. [↑](#footnote-ref-79)
80. See A. Contadini, ‘Middle Eastern Objects’, in Ajmar-Wollheim and Dennis, *At Home*, 308-21, 314-15, and the bibliography cited there. [↑](#footnote-ref-80)
81. ‘quando l’aere eccede in qualche qualitá si deve correggere col suo contrario ... onde se sará troppo caldo e di state si asperga la casa di acqua fresca e aceto perché l’aceto, con la sua frigiditá e siccitá corregge i cattivi vapori dell’aere e proibisce la putredine’. Durante, *Il Tesoro*, 9. Similar advice is found in B**.** Boldo, *Libro della Natura et Virtu delle Cose, che Nutriscono, et delle Cose Non Naturali...* (Venice: Domenico & Giovan Battista Guerra fratelli, 1575), 212. In other cases the humoural characteristics of plants are not explicitly discussed but authors still specify which plants are suitable for the purpose. [↑](#footnote-ref-81)
82. The fact that what makes smells good for the circumstance are their humoural qualities is mentioned in the first pages of Richard Palmer’s pioneering article (see note 78), but the point is then lost. [↑](#footnote-ref-82)
83. B. Elliott, ‘The world of the Renaissance herbal’, *Renaissance Studies,* 25:1, 2011, 24-41, 26-29. Sixteenth-century herbals were the first to include life-scale representations of plants drawn from the actual original. [↑](#footnote-ref-83)
84. *Ibid.*, 29; T. Pesenti, ‘Il “Dioscoride” di Pier Andrea Mattioli e l’Editoria Botanica’, in aa.vv., *Trattati di Prospettiva, Architettura Militare, Idraulica e Altre discipline* (Vicenza: Neri Pozza, 1985), 61-103; S. Ferri ed., *Pietro Andrea Mattioli Siena 1501-Trento 1578: la Vita, le Opere con l’Identificzione delle Piante* (Perugia: Quattroemme, 1997). [↑](#footnote-ref-84)
85. This tendency should be related to the growing assumption of close ties between body and soul, characteristic of Renaissance Aristotelian psychology. See among other, K. Park, 'The Organic Soul', in Q. Skinner, E. Kessler and J. Kraye eds, *The Cambridge History of Renaissance Philosophy* (Cambridge: Cambridge University Press, 1988), 464-84. For the centrality of the spirits in the writings of sixteenth-century Italian humanists E.Garin, ‘Il Termine ‘Spiritus’ in Alcune Discussioni tra Quattro e Cinquecento’, in his *Umanisti, Artisti, Scienziati* (Rome: Editori Riuniti, 1989), 259-303.This trend had been anticipated by Marsilio Ficino. [↑](#footnote-ref-85)
86. Danielle Jacquart comments that ‘There are as many descriptions of spirits as there are authors’. Cited in C. Gagnon, ‘The Animism of Ambient Air at the End of the Middle Ages’, in C.L. Carlin ed., *Imagining Contagion in Early Modern Europe* (Basingstoke: Palgrave, 2005) 26. [↑](#footnote-ref-86)
87. C. Gottler, ‘Preface: Vapours and Veils, the Edge of the Unseen’, in C. Gottler and W. Neuber, eds., *Spirits Unseen: The Representation of Subtle Bodies in Early Modern European Culture* (Leiden: Brill, 2008), XV-XXV, XXII. [↑](#footnote-ref-87)
88. For a clear account of these views, E. Carrera, ‘Anger and the Mind-Body Connection in Medieval and Early Modern Medicine’, in *Emotions and Health 1200-1700* (Leiden: Brill, 2013), 95-146, 112-15. [↑](#footnote-ref-88)
89. Besides them, the vital spirits resided in the heart and spread life to the entire body, moving about in the arteries, while the natural spirits, whose site was the liver, circulated via the venous system and governed nutrition and generation. [↑](#footnote-ref-89)
90. Cited in F. Quiviger, *The Sensory World of Italian Renaissance Art* (London: Reaktion Books, 2010), 128-29. [↑](#footnote-ref-90)
91. ‘gli odori cibo dell’animo, aprono le serrature del cervello e tutti i sensi fortificano’, L. Anguillara, *Vaticinio et Avertimenti per Conservare la Sanità ...* (Ferrara: Vittorio Baldini, 1589),23-24. On these popular regimens, which targeted an unrefined audience by presenting content in a basic form, Cavallo and Storey, *Healthy Living*, 15, 18, 25. [↑](#footnote-ref-91)
92. Cited in Quiviger, *The Sensory World*, 130. [↑](#footnote-ref-92)
93. Lennio, *Della Complessione*, 100. [↑](#footnote-ref-93)
94. In reality pomanders were more often attached to a chain hanging from the waist, as Luisa Coscarelli has noted. She provides a fascinating explanation for this habit in her ‘Pomander and *Balsambüchse* -

Agents in the Material Culture of Sixteenth- and Seventeenth-Century German Medicine in the European Context’, V&A/RCA History of Design MA dissertation, 2014, ch.3. [↑](#footnote-ref-94)
95. Coscarelli, for example, has highlighted important differences in use between proper pomanders and balsam containers: these were usually shaped like an orange than opens up when the screw stopper is loosened, revealing individual compartments, each filled with a different balsam, which could be scooped out with a little spoon and applied to the body. *Ibid*., 44-53, 99-110. [↑](#footnote-ref-95)
96. C. Habrich, H. Meininghaus and T. Volz eds, *Five Centuries of Scent and Elegant Flacons* (Stutgart: Arnoldsche, 1998). [↑](#footnote-ref-96)
97. A. Gallo, *Le dieci giornate della vera agricoltura, e piaceri della villa* (1566), trasl. in J.S. Ackerman, *The Villa Form and Ideology of Country Houses* (Princeton: Princeton University Press, 1985), 130. [↑](#footnote-ref-97)