Mechanical *Disegno*[*]

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Abstract
The article argues that the debate around Italian Renaissance *disegno* has tended to overemphasize the rhetoric promoting a separation between design and execution, mind and body, and asserting a hierarchy of the arts constructed on the friction between intellectual and corporeal engagement in the making of artefacts. Building on written sources such as so-called "technical treatises" and on objects taken as evidence of the design process, it is suggested that we should consider instead a more integrated, organic, technologically engaged and "mechanical" notion of *disegno*, in which design might be seen to grow within a physical environment from the interconnection of human action and materials. Using Renaissance pottery as a case study, and exploring its understanding within different linguistic, literary and material contexts, the article proposes an epistemology allowing for greater fluidity, overlap and communality between supposedly distinct arts.

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[1] The emergence of a distinctive, theorised and self-reflexive concept of design is conventionally associated with the Italian Renaissance, through the formulation of the notion of *disegno*. From the Latin *designo* – a verb used within military and civil practice to refer to the physical act of marking out a territory, within politics to signify electing or appointing and within oratory to denote the process of setting out and ordering an argument – *disegno* encompasses in Italian a complex set of meanings: from design, to drawing, plan, intention and even conspiracy. *Disegno* is generally understood in the Renaissance as an act or practice involving rationality, intentionality, order and specificity – something *programmatic*, an offspring of the mind. *Disegno* is also a concept that has been seen to become increasingly central during the Renaissance not only in the articulation of the arts, but also to the professional identity and working practices of artisans, with new figures, such as the "master of design" (*maestro di disegno*), and related notions of individual authorship and intellectual property stemming from it.[1] The rise of *disegno* has also been linked to momentous changes in the organisation of labour

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[1] For an extensive discussion of *disegno*, also in relation to the "minor arts", see Luke Syson and Dora Thornton, *Objects of Virtue*, London 2001; Beth L. Holman, ed., *Disegno: Italian Renaissance Designs for the Decorative Arts*, exh.cat., New York 1997, Introduction, 1-14; Beth L. Holman, "Historiographies and Methodologies – Past, Present, and Future Directions: Guest Editor's Introduction," in: *Studies in the Decorative Arts* 9/1 (2001-2002), 2-12; David Rosand, *Drawing Acts. Studies in Graphic Expression and Representation*, Cambridge 2002.

in early modern Europe. This includes the slow but steady decline of traditional guild-based practices, replaced by the emergence of forms of design activity operative above and beyond the guild system, and new proto-industrial frameworks for manufacture.[2] We can also link to this the parallel emergence of the concept of the *arti del disegno*, informing a taxonomy separating out those practices seen as the central repositories of *disegno* – generally confined to painting, sculpture and architecture – from those perceived as being at its margins – rather paradoxically, those activities that we most associate with design today: the so-called "minor arts" (*arti minori*), a loaded phrase used by some Renaissance art theorists, such as Giovan Battista Armenini.[3] Although we should be wary of imposing a teleological view on this process of separation within the arts, we might notice the resonance with later taxonomies affirming a hiatus and a downward intellectual (and thus social) ranking between the "fine" and the "decorative" (or "applied" and "industrial"), and ultimately between "art" and "design".[4] While generally portrayed by Renaissance art theorists as the "father"[5], the "principle" or common "foundation" of all the arts[6], *disegno* might also be perceived as a strongly divisive and distorting force. Arguably at the heart of the profound dichotomy between design and execution, between thinking and doing, that has been asserted by the discourse around the arts since at least the *Quattrocento*, *disegno* and its articulations might be seen as, in part, responsible for, or at least instrumental in, the pervasive hierarchical distinction that places intellectual endeavour *above* physical labour, and artistry *above* craftsmanship.[7]

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[2] S.R. Epstein, "Craft Guilds, Apprenticeship, and Technological Change in Preindustrial Europe," in: *The Journal of Economic History* 58/3 (Sep., 1998), 684-713; S.R. Epstein, "Labour Mobility, Journeyman Organisations and Markets in Skilled Labour in Europe, 14th-18th Centuries," in: *Le technician dans la cité en Europe Occidentale (1250-1650)*, ed. M. Arnoux and P. Monnet, Rome 2004, 251-269; J. Farr, "On the Shop Floor: Guilds, Artisans and the European Market Economy, 1350-1750," in: *Journal of Early Modern History* 1/1 (1997), 24-54; L. Molà, "States and Crafts: Relocating technical skills in Renaissance Italy," in: *The Material Renaissance*, ed. Michelle O'Malley and Evelyn Welch, Manchester 2007, 133-153; C.M. Belfanti, "Guilds, Patents, and the Circulation of Technical Knowledge: Northern Italy During the Early Modern Age," in: *Technology and Culture* 45 (2004), 569-589; Pamela O. Long, "Invention, authorship, intellectual property and the origins of patents: notes towards a conceptual history," in: *Technology and Culture* 32 (1991), 846-884.

[3] See, for example, Giovan Battista Armenini, using *disegno* as a way to discriminate between painting and the "minor arts": "Che cosa sia il dissegno, quanto egli sia universalmente necessario a gli uomini et a qualsivoglia minor arte, quantunque in speciale egli sia più destinato alla pittura" (Giovan Battista Armenini, *De' veri precetti della pittura* [1586], ed. Marina Gorreri, Turin 1988, 52).

[4] For an exploration of the terminology of the arts, see Ferdinando Bologna, *Dalle Arti Minori all'Industrial Design. Storia di un'ideologia*, Bari 1972. For a discussion of the relationship between craft and the arts, see Glenn Adamson, *The Invention of Craft*, London 2013.

[5] Vasari calls *disegno* the father of the three arts of architecture, sculpture and painting (see Giorgio Vasari, *Le vite de' più eccellenti pittori, scultori e architettori*, ed. Paola Barocchi, Rosanna Bettarini and Rosanna Gaeta Bertelà, Florence 1966-1987, 1, 111: "Perché il disegno, padre delle tre arti nostre architettura, scultura e pittura").

[6] Pomponius Gauricus defines *disegno* as the principle (*caput*) and foundation (*fundamentum*) of all sculpture. See Pomponius Gauricus, *De Sculptura*, ed. Paolo Cutolo, Naples 1999, 148-151.

[7] See the powerful assessment of this intellectual framework as "one of the hallmarks of Western modernity" offered by Tim Ingold, *The Perception of the Environment. Essays on Livelihood,*

1 Maso Finiguerra, *Apprentice architect* (?), Florence, c.1450, pen and ink, wash and white lead on paper, 19.4 x 12.5cm. Gabinetto Disegni e Stampe degli Uffizi, Florence, GSDU 115F [68] © Polo Museale Fiorentino

2 Maso Finiguerra, *Apprentice woodcarver* (?), Florence, c.1450, pen and ink and wash on paper, 18.4 x 12.2cm. Gabinetto Disegni e Stampe degli Uffizi, Florence, GSDU 69F [35] © Polo Museale Fiorentino

Dwelling and Skill, London 2000, ch. 16. For an extensive discussion of the Renaissance debate around the mechanical arts, see Bologna, *Dalle Arti Minori all'Industrial Design*; for the *longue durée* historical roots of this discrimination, see Elspeth Whitney, *Paradise Restored: The Mechanical Arts from Antiquity through the Thirteenth Century*, Philadelphia 1990.

[2] It is tempting to see this supposed disjunction captured by two drawings by the fifteenth-century Florentine *maestro di disegno* Maso Finiguerra. One drawing, depicting a male figure in the act of sketching on a notebook, carries an eloquent inscription (an unusual occurrence for Maso), "I want to be a good draughtsman and become a good architect".[8] We might thus feel persuaded to identify the man as an apprentice architect and to see this drawing as a statement about *disegno*, in this case to be interpreted as draughtsmanship, as the main route to the practice of architecture (Fig. 1). The other drawing, which bears significant affinities with the first, might be seen to portray an apprentice woodcarver (Fig. 2). The two drawings bear striking resemblances in the way both the minds and the bodies of the artisans are merged together in the performance of their *arte*, their tools and equipment becoming one with their being. Both activities are shown as rational, thus deserving a similar status. Striking differences, however, are also visible here, for example in the way the woodcarver's tool is represented as a blunt object, allowing for the expression of a relatively brutal agency, rather than subtle and refined artistic skill or intellectual discernment. No self-reflexive inscription is provided here, an absence that in itself might be seen as significant, as we are left to speculate on the "professional" identity of the artisan. In accordance with a narrow notion of *disegno*, these drawings might also suggest that these two practices should be seen as discrete. Is it then legitimate to interpret the first drawing as illustrating *disegno*, the mental and physical act of drawing, and the one on the right as a representation of a merely manual, productive activity, devoid of a mental dimension and thus, ultimately, of design? Should we read these drawings as depicting two physically, intellectually and epistemologically distant, disconnected environments?

[3] This article puts forward a different way of understanding the role and meaning of Renaissance *disegno* and offers a more integrated approach to the theory and practice of the arts at the time. The fact of having largely accepted a notion of *disegno* that takes at face value the dominant rhetoric of Renaissance art theory, whose agenda is to claim a higher status for some arts on the basis of their supposedly higher intellectual, and thus liberal and moral content, is highly problematic. Most of the dissatisfaction, however, rests with the tendency of these conceptualisations to frame *disegno* as primarily an occupation of the mind, placing the corporeal and material dimensions of production in second place, while being oblivious to the interconnectedness between mind, body, materials and the environment which they inhabit. This construct leads us to ultimately disjoin *disegno* from the materiality of the things that it supposedly designs and to separate those who "design" from those who "make". I want to propose a different approach to *disegno,* one rooted within contexts of discourse and experience that challenge the polarity between hand and mind. This will bring the agency of making fully

[8] The inscription reads: "Vo esere uno buono disegnatore e vo / [de]ventare uno buono architettore".

into the creative process and, in doing so, also reintegrate the "minor arts" into broader frameworks of contemporary artisanal practice and knowledge. The "mechanical" or "technological" notion of *disegno* that this article would like to propose might help to bridge the gap between theory and practice, thinking and making, mind and body, design and execution, and thus also contribute to a more rewarding conversation between the arts.

[4] Any discussion of Renaissance *disegno* must take into account Giorgio Vasari's influential position, as outlined in different *loci* of his 1568's *Vite de' più eccellenti pittori, scultori e architettori*. While situating it firmly at the heart of any artistic practice, Vasari embraces a largely aprioristic notion of *disegno* and uses it to affirm a vertical relationship and division of labour between hand and mind. Combining Aristotelian and Neoplatonic theory,[9] for Vasari "*disegno* is expression and declaration of the concept that we have in our mind" and "proceeding from the intellect [...] produces a form or idea of all things in nature".[10] Relying on the dexterity of the hand and on the aptness of the tool to be articulated "*disegno* requires […] that the hand through study and the practice of many years be fast and able to draw and express well whatever thing nature has created, with a pen, stylus, charcoal, pencil or other thing, so that, when the intellect sends out the concepts purified and selected, the hands that have for many years practiced *disegno* make known the perfection and excellence of the arts and the knowledge of the artificer as well".[11] Vasari presents *disegno* as a hands-on activity, and yet, because it is seen to originate from a mental process, in its performance the hand, while central to its materialisation, retains an ancillary, instrumental role. The intellect produces the ideas that the hand proceeds to execute, in a relationship that clearly implies a split between the mental and the manual dimension, and affirms the superiority of the former above the latter.

[5] A second key notion put forward by Vasari, that of the imitation of nature (one of the variants of *mimesis*) understood principally *as figuration*, might be seen at the core of another rupture, this time *within* the arts.[12] According to him, *disegno* is "the imitation of

[9] Patricia Lee Rubin, *Giorgio Vasari. Art and History*, New Haven and London 1995, 241-242.

[10] These concepts are explained at length in the following passage (Vasari, *Le vite*, 1, 111): "Perché il disegno, padre delle tre arti nostre architettura, scultura e pittura, procedendo dall' intelletto cava di molte cose un giudizio universale simile a una forma overo idea di tutte le cose della natura […]; e perché da questa cognizione nasce un certo concetto e giudizio, che si forma nella mente quella tal cosa che poi espressa con le mani si chiama disegno, si può conchiudere che esso disegno altro non sia che una apparente espressione e dichiarazione del concetto che si ha nell'animo, e di quello che altri si è nella mente imaginato e fabricato nell'idea".

[11] Vasari, *Le vite*, 1, 111: "Ma sia come si voglia, questo disegno ha bisogno, quando cava l'invenzione d'una qualche cosa dal giudizio, che la mano sia mediante lo studio et essercizio di molti anni spedita et atta a disegnare et esprimere bene qualunque cosa ha la natura creato, con penna, con stile, con carbone, con matita o con altra cosa; perché, quando l'intelletto manda fuori i concetti purgati e con giudizio, fanno quelle mani che hanno molti anni essercitato il disegno conoscere la perfezzione e eccellenza dell'arti et il sapere dell'artefice insieme". Here I followed the translation provided by Louisa S. Maclehose in G. Baldwin Brown, *Vasari on Technique*, London 1907, 263.

[12] Stephen Halliwell, *The Aesthetics of Mimesis. Ancient Texts and Modern Problems*, Princeton 2002, 350.

the most beautiful in nature in all its figures, both painted and sculpted".[13] Placing the representation of figures at the core of *disegno* has enormous implications for those arts whose remit might not be fundamentally bound with this form of visual articulation. Vasari subsumes *all* the arts under the rubric of painting, sculpture or architecture – something clearly expressed in the section of the *proemio* devoted to the *paragone*, where we learn that, for example, "to work with earth, wax, plaster, wood, ivory" or to "cast metals" is "subjected to" sculpture, while painting "embraces" wood intarsia, mosaic, engraving, tapestry-making and painted pottery.[14] This is not a relationship built on equality, and the recognition of a modest role for the "minor arts" is further asserted by the omission from the *Vite* of many artificers operating *exclusively* in those arts that are not accorded an independent status, such as painted pottery. Thus, while a painter of limited fame who doubles up as a "designer" of pottery, such as Battista Franco, is conferred by virtue of his painting a space in Vasari's biographic collection, a potter of high repute specialising in painted ware, such as Francesco Xanto Avelli, active for elite patrons such as the Dukes of Urbino and of Mantua, is not included in the *Vite*.

3 Bottle, Venice, 1500-1525, chalcedony glass, 37.5 x 18.5cm. Victoria and Albert Museum, London, 5301-1901 © Victoria and Albert Museum, London

[13] Vasari, *Le vite*, 4, 4: "Il disegno fu lo imitare il più bello della natura in tutte le figure, così scolpite come dipinte".

[14] Vasari, *Le vite*, 1, 11: "Dicono che la scultura abbraccia molte molte più arti come congeneri e ne ha molte più sottoposte che la pittura, come il basso rilievo, il far di terra, di cera o di stucco, di legno, d'avorio, di gettare de' metalli, ogni ceselamento, il lavorare d'incavo o di rilievo nelle pietre fini e negl'acciai, et altre molte le quali e di numero e di maestria avanzano quelle della pittura".

[6] Adding to the problem, this proclaimed sisterhood between painting, sculpture and the other arts works only with regard with their *figurative*, rather than *technological* or *material* imitation of nature. Accordingly, not much attention is paid to those arts that engage with mimesis through non-pictorial means, as with glass, capable to transcend itself and take on *trans-materially* the appearance of a natural mineral, as with so-called chalcedony glass (Fig. 3). When referring to pottery, which is not given a dedicated space within the "technical" section of the *proemio*, it is not accidental that the only mention made by Vasari relates to so-called *istoriato maiolica* "depicting enamelled figures and making stories and other figures in earthenware vases", whereby tin-glazed pottery is presented as painting.[15] Instead of engaging with the possibilities proposed by the materiality of artefacts and the manner of their making, Vasari highlights how material and process can significantly hinder the full expression of *disegno*, as we learn from his discussion of wood inlays:

> And because such a line of work consists only in the choice of designs that may be appropriate to it – those containing blocks of buildings and objects with rectangular outlines to which force and projection can be lent by means of light and shade – it has always been exercised by persons possessing more patience than *disegno*.[16]

[7] Thus technological demands are seen to threaten, rather than enable and manifest, *disegno*. The specific properties of materials can even be seen to conspire against *disegno*, as we learn from an anecdote in the life of the Florentine "sculptor and architect" Benedetto da Maiano, where Vasari recounts an episode that he sees as pivotal in Benedetto's radical decision to abandon his practice as a woodcarver ("intagliatore di legname"), where he had excelled in the mechanical art of intarsia work, to embrace the arts of sculpture and architecture.[17] Having been invited to Hungary by king Matthias Corvinus, an enthusiastic patron of the arts, Benedetto worked "on two chests with difficult and beautiful mastery of wooden intarsia" and set sail to deliver them in person.[18] Once there he had the chests unwrapped in the presence of the king, but mildew and humidity had softened the glue in such a way that almost all the pieces of intarsia fell off, leaving Benedetto astonished and silenced. Although the chests were

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[15] Vasari, *Le vite*, 1, 15-16: "il dipigner le figure invetriate e fare ne' vasi di terra istorie et altre figure".

[16] Vasari, *Le vite*, 1, 157: "E perché tale professione consiste solo ne' disegni che siano atti a tale esercizio, pieni di casamenti e di cose che abbino i lineamenti quadrati e si possa per via di chiari e di scuri dare loro forza e rilievo, hannolo fatto sempre persone che hanno avuto più pacienza che disegno". Here I followed, with minor adjustments, the translation provided in G. Baldwin Brown, *Vasari on Technique*, London 1907, 263.

[17] Vasari, *Le vite*, 3, 523.

[18] Vasari, *Le vite*, 3, 524: "un paio di casse con difficile e bellissimo magisterio di legni commessi […] e quelle fatte sballare alla presenza del re che molto disiderava di vederle, vide che l'umido dell'acqua e 'l mucido del mare aveva intenerito in modo la colla, che nell'aprire gl'incerati quasi tutti i pezzi che erano alle casse appiccati caddero in terra: onde Benedetto rimase attonito et ammutolito".

successfully repaired, this public humiliation led him to dislike and relinquish intarsia work and instead devote himself wholeheartedly to sculpture, excelling in it. In this way, in Vasari's words, he demonstrated that the fault has resided "in the exercise [of intarsia], which was low, and not in his ingenuity, which was high and rare".[19] Elsewhere Vasari blames intarsia for its tendency to blacken and to get infested by woodworm.[20]

[8] The long-standing debate about *disegno* and its place in relation to the arts has been dominated by the intellectual framework exemplified by Vasari and Armenini and by their narrow notion of *disegno*, mobilised to support a hierarchical ordering of the arts, a dichotomy between thinking and doing, and to dismiss or condemn the engagement of *disegno* with material and technological forces.[21] It is possible, however, to propose that different definitions and understandings of *disegno* were available in the Renaissance, suggesting an intellectually more fluid and open situation. If we examine more carefully contemporary attitudes to the "mechanical arts", of those arts supposedly outside the reach of *disegno*, or at least quite marginal to it, we can in fact find a healthy confluence between these two apparent polarities that, arguably, can enrich our understanding of how the arts might have been practised and understood. In his *Pirotechnia* (or "Arts of fire"), a vernacular treatise first published in 1540 exploring all aspects of the technology of fire and especially metalworking, the Sienese engineer Vannuccio Biringuccio brings forward what might be seen as an alternative understanding of *disegno*. For Biringuccio, *disegno*, materials and process are linked almost inextricably, in a continuum that defies clear signposting, and *together* constitute the foundation of *arte*. We can see it, for example, in his discussion of pottery:

> The art of the potter has two sources as its principal basis. One comes from the art of *disegno*, the other from various alchemical secrets and elemental mixtures. In regards to these, I find that, in my opinion, all this art depends in the last analysis on four things: on good judgement in general, and on the art of *disegno*, so as to be able to make the vessels beautiful and of good shape, as well as to ornament them with painting; after firing them well the first and second time, the next thing is to know how to make and apply the glaze well and to paint them with varied and appropriate colours. The fourth is to see that you have good, fine clay without small stones or lumps – indeed this is to be considered the first thing.[22]

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[19] Vasari, *Le vite*, 3, 525: "Nella quale arte [scultura], prima che partisse d'Ungheria, fece conoscere a quel re che, se era da principio rimaso con vergogna, la colpa era stata dell'esercizio che era basso, e non dell'ingegno suo, che era alto e pellegrino".

[20] Vasari, *Le vite*, 1, 157: "ma per essere cosa che tosto diventa nera e non contrafà se non la pittura, essendo da meno di quella e poco durabile per i tarli e per il fuoco, è tenuto tempo buttato invano, ancora che e' sia pure e lodevole e maestrevole".

[21] For a discussion of the historical and epistemological roots of this value system, see the seminal work by Pamela Smith, *The Body of the Artisan: Art and Experience in the Scientific Revolution*, Chicago and London 2004.

[22] Vannuccio Biringuccio, *Pirotechnia*, Venice 1559, 301: "[…] per il suo principale fondamento ha due derivationi: una, che viene dal arte del dissegno: e l'altra, da varii secreti, e alchimiche mistioni. Et finalmente, appresso le dette (secondo il parere mio) tutta quest'arte ritrovo consister in quattro cose, cioè, in buono, et universale giudicio, in dissegno, per poter far belli, e ben garbati

[9] Not only does Biringuccio's text foreground the role and significance of *disegno* within the practice of pottery, but *disegno* here is not just painterly ornament and surface. Instead, it informs the body of the vessel in its totality, starting from its physical appearance and shape, down to the use of glazes, and is placed firmly within an integrated, on-going, organic process of making. It is *disegno* of a mechanical, technological kind. Biringuccio seems to allow for an outlook whereby the forms of artefacts are not "imposed from above" but "grow from the mutual involvement of people and materials in an environment".[23] This approach carries the potential of overturning the canonical paradigm and replace it with a model of action in which "the blacksmith, the carpenter or potter works from within the world, not upon it".[24] This invigorated, engaged notion of *disegno* as a "form-generating process"[25], as opposed to a stage that precedes and stands separate from making, is what this article intends to foreground.

[10] Before discussing further this integrated, embodied concept of *disegno* I would like to return to the classifications of the arts mentioned above, so as to ascertain whether this vision might be supported at the time by a theoretical framework sympathetic to these ideas. There is an alternative way of understanding artistic taxonomies that is relevant to the Italian Renaissance, one that bears greater continuity with Mediaeval formulations and embraces both Christian and Arabic frameworks of knowledge, manifested both in contemporary writings on the arts and in artisanal practices. It concerns the concept of the so-called mechanical arts, a term that had substantial currency during Late Antiquity and the Middle Ages as *artes mechanicae* and that carried on having an important intellectual role during the Renaissance, only replaced in the seventeenth century by the new, narrower notion, and the neologism, "technology".[26] During the Middle Ages, it has been convincingly argued, the "mechanical' or "technical" arts – a concept constructed around the notion of *techne* (τέχνη) or "productive art", that could encompass anything from building a cathedral to making a shoe – experienced a substantive epistemological reassessment that eliminated many of the ambiguities that had been associated with them in Graeco-Roman antiquity.[27] In Classical thought some suspicion was often

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vasi: et ancho, per puoterli ornar di pitura: l'altra (oltre al ben cuocerli prima, e seconda volta) saper dargli ben il vetro con appropriati, et varii colori dipingerli: e la quarta è di veder d'haver bona terra, sottil, senza ghiaiette, o nocchi, ch'invero questo debbesi averter come cosa principale".

[23] Ingold, *The Perception of the Environment*, 347. See especially chps.15-20 for a broader discussion of technology and making.

[24] Ingold, *The Perception of the Environment*, 347.

[25] Ingold, *The Perception of the Environment*, 347.

[26] Whitney, *Paradise Restored,* 148. See the extensive bibliography provided by Whitney for the epistemology of the *artes mechanicae* in antiquity, Arabic thought and Christian theology. For the Renaissance debate on the mechanical arts, see Paul Oskar Kristeller, "The Modern System of the Arts: A Study in the History of Aesthetics," in: *Journal of the History of Ideas* 12/4 (Oct. 1951), 496-527.

[27] See Whitney, *Paradise Restored*, 57-73.

expressed about the epistemological status of the mechanical arts, activities whose rationality, and therefore morality, was often questioned. Between Late Antiquity and the thirteenth century, however, a more positive intellectual framework emerged, supporting a notion of the mechanical arts as active contributors to knowledge. Although there is no space here to do justice to this complex debate, it is important to point out that this significant shift has been attributed to a cumulative rethinking embedded in Arabic thought, assigning to the mechanical arts a clear place within learning, and to new Christian formulations emphasising the role of work in salvation.[28] In turn, this reconceptualisation suggested an ecumenical and non-hierarchical epistemology of the arts, all the arts, and this notion of *communality* is something I would like to explore further here.

[11] To navigate this complex terrain it is fruitful to engage with a text occupying a significant position within the Renaissance debate on the arts, Benedetto Varchi's *Lezzione nella quale si disputa della maggioranza delle arti e qual sia più nobile, la scultura o la pittura*, ("Lesson in which the primacy of the arts of sculpture and painting is disputed, on which is the most noble"), delivered in Santa Maria Novella under the auspices of the Accademia Fiorentina in 1547. The second of two lectures on art theory, the *Lezzione* was first published in 1550 and republished in 1590.[29] What makes Varchi's text especially significant, ironically, is that it is largely the distillation of other people's thoughts. The *Lezzione* might be characterised as the result of a "consultation", during which Varchi gathered and responded to the views of eight illustrious Florentine art practitioners – from Michelangelo to Vasari – about the primacy of painting versus sculpture. The outcome of his enquiry is a confused, unresolved attempt to shed light on the crowded pantheon of competing taxonomies of the arts loosely inspired by Aristotle's theories of artistic creation.[30] Nevertheless, it can shed light on the issue at hand in terms of the epistemological context surrounding the arts at this moment in time. Rather than attempting to explain his argument in detail, I'd like to summarize some of its most striking formulations around the arts. Varchi distinguishes between *liberal arts* (grammar, law, rhetoric, arithmetic, geometry, music and astronomy) and *illiberal arts* (encompassing everything else). The former are worthy of free men, while the latter can be practised by servants and even slaves. He separates out the *arts of contemplation* (including physics, astronomy and the "true" sciences), from the *arts of making*, which in turn can be *factive* – if they produce lasting work, for example with architecture – or *active* – if they don't produce lasting work, as in the case of dancing. Some arts are

[28] Whitney, *Paradise Restored*, 57-73.

[29] For a critical discussion of this text, see Leatrice Mendelsohn, *Paragoni. Benedetto Varchi's "*Due Lezzioni*" and Cinquecento Art Theory*, Ann Arbor, Mich. 1982; and François Quiviger, "Benedetto Varchi and the Visual Arts," in: *Journal of the Warburg and Courtauld Institutes* 50 (1987), 219-224.

[30] Quiviger, "Benedetto Varchi and the Visual Arts," 220, 222.

necessary to the body, some to the soul, some are useful, some delightful, some honest, some vulgar, dirty and filthy (engaged in satisfying human needs); some are playful and humorous (mostly designed to please the populace). Some arts take their subject from nature (painting, sculpture), while others take their subject from *arte* (as in the case of weaving or shoemaking). Some arts prepare matter, some introduce form, while others use ready-made things – as with ship-building, where the first stage involves cutting the wood, the second giving form to the ship and the third using it. Some arts are called "principal", on the basis that they provide principles to the other arts, for example in the case of arithmetic "giving principles" to music; while the so-called "inferior arts" receive rules from the other arts. It is a cluttered, often impenetrable territory we are led through, as Varchi himself admits when, after engaging strenuously with this lengthy set of distinctions, he deplores their complexity and awkwardness:

> From these many and various discussions of different authors everyone can work out the difficulty of this matter, addressed by many with such confusion that seems to me not just uncomfortable, but impossible to understand, without the distinctions and explanations provided above by us.[31]

[12] The unintelligibility and incoherence of this subject is also a clear indication that we are looking at an open intellectual landscape, layered with diverging accretions of thinking – and for this very reason, one that is also to some extent dynamic and in flux. In the attempt to bring some unity and partially resolve the fragmented nature of this topic, Varchi proposes a breaking down of the boundaries between the arts, in a statement that claims a common ground between all *arti*:

> All the arts are mechanical, meaning by mechanical neither what is signified by the Greek word, that refers to the machine [which is of concern mostly to the architect], nor what is ordinarily understood, that is mercenary, vile and lowly; but by mechanical we mean those arts which are manual, and whose job involves making use in some way of the body.[32]

[13] Thus Varchi supports an understanding of the term "mechanical" as something *corporeal*, as an activity carried out through the use of the body and, more specifically, the hand – manual coming from the Latin for hand (*manus*) – and also as the foundation of *all* the arts. At the same time he takes into account two other current meanings of the word "mechanical" – as pertaining to machines[33] (and architecture) and as "vulgar" and

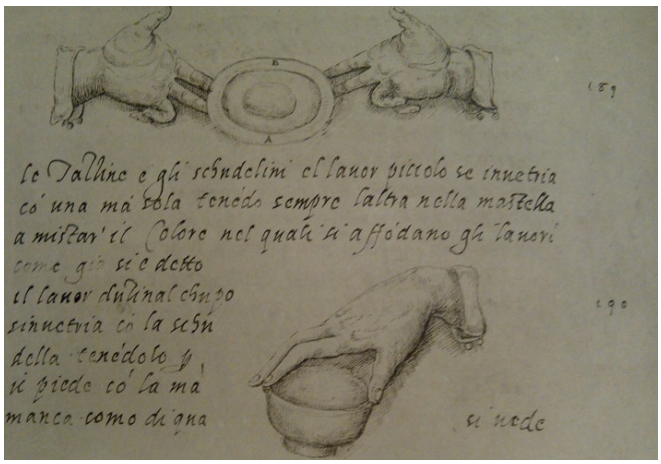
[31] Benedetto Varchi, *Due Lezzioni*, Florence 1550, 71: "Da queste tante e così varie divisioni di diversi autori può conoscere ciascuno la difficultà di questa materia, trattata da diversi tanto non pure diversamente, ma con tale confusione, che a me pare non solo malagevole ad intendersi, ma impossibile, senza le distinzioni e dichiarazioni fatte di sopra da noi".

[32] Varchi, *Due Lezzioni*, 71: "[…] tutti l'arti sono mecchaniche, pigliando mecchaniche non in quella significazione, che suona la parola greca, tratta dalla macchina […] la quale parte appartiene massimamemte all'Architettore; ne ancora quella significazione, che si dice volgarmente mecchaniche, cioè mercennarie, e del tutto vili, e abbiette; pigliando meccaniche, cioè manuali, e nelle quali sia di mestiero di servirsi in qualche modo del corpo".

[33] The word "*machine*" derives from the Latin word "*machina*", which in turn derives from the Greek "*mekhané*" (μηχανή), "contrivance, machine, engine", a derivation from "*mekhos*" (μῆχος), "means, artifice, expedient, remedy". For an extensive lexical analysis of this term and its history,

"filthy", and thus debased – and it is to these three connotations of the term *mechanical* that I would now like to turn.

[14] I would like to explore these issues further by looking at pottery as a mechanical art. Italian Renaissance pottery occupies an ambiguous epistemological space within contemporary conceptualisations of the arts for a number of reasons: its spectrum of production is unusually wide, encompassing anything from "works of art" to humble cooking pots. Its making involves complex technological processes, which include the use of machinery, such as the potter's wheel. It has a relationship with other *arti* via material mimesis, whereby pottery might be transformed into other arts, such as painting or metalwork. And lastly, pottery evidently engages with the wider, "mechanical" notion of *disegno*.



4 Cipriano Piccolpasso, *I tre libri dell'arte del vasaio*, c.1557, pen on paper. National Art Library, Victoria and Albert Museum, London, MSL/1861/7446 [f.55] © Victoria and Albert Museum, London

[15] The notion of the mechanical art fits well with Renaissance pottery. In a manual understanding of this art, in line with Varchi's thinking, it demands and displays an intimate, corporeal relationship between the body of the artisan and the vessel. The hand at work is closely observed and the skilled handling of even the most basic stages of production, such as the dipping of the vessels in tin-glaze, are carefully portrayed in contemporary technical treatises, such as Cipriano Piccolpasso's pottery manual, the *Tre libri dell'arte del vasaio* (c.1557). According to Piccolpasso, it is important to distinguish the work that requires both hands, from that demanding only one hand, and also that which uses just the fingertips of the index and middle fingers, from practices involving the thumb too, depending on the shape and size of the vessel. The hands of the potter (Fig. 4), which appear in a series of close-up drawings, don't just hold the vessel – they physically inform and are informed by it, in a physical dialogue between maker and matter that suggests organic flow rather than external control. The potter at the wheel is

see *Machina, Atti dell'XI Colloquio Internazionale del lessico intellettuale europeo*, ed. Marco Veneziani, Florence 2005.

shown moulding the vessels with his own body, both hands engaged in a coordinated, dynamic form-generating process (Fig. 5): the fingers imprinted energetically on the clay, the arm plunged deep inside the vessel to shape and smooth out the inside, in a close relationship that resembles a dance for its careful timing, spatial awareness and subtle coordination of movement. As with glass entrapping the breath, the *pneuma* of the blower, the form of the pottery vessels might be seen as a physical imprint. Pottery displays a vestige of the arm of the maker, an embodied manual action, in the way it captures and freezes the movements and pressures imparted by the hand, in a flowing dialogue with the clay. Consummate craftsmanship and discernment are displayed here, in a continuous conversation between mind, body, tool and material, challenging a subject-object approach to making.[34]

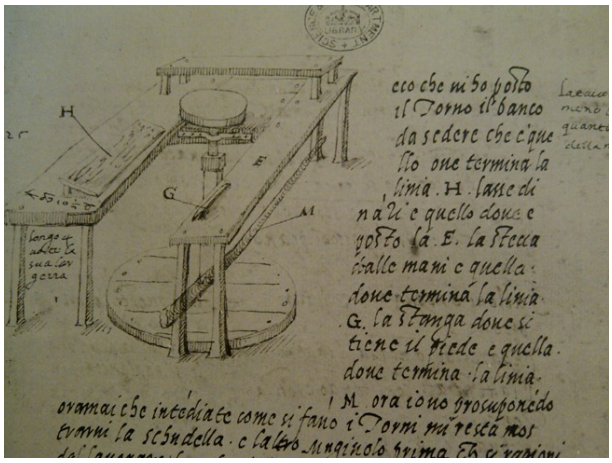
5 Cipriano Piccolpasso, *I tre libri dell'arte del vasaio*, c.1557, pen on paper. National Art Library, Victoria and Albert Museum, London, MSL/1861/7446 [f.16] © Victoria and Albert Museum, London

[16] Here, the mechanical as manual and the mechanical as machine-related are very closely intertwined, with the potter often shown throwing pots, his body in a symbiotic relationship with the wheel. The potter's wheel (Fig. 6) takes on a life of its own in sixteenth-century representations, as technical treatises increasingly present the mechanical as rational and worthy of articulate explanation in written and visual form.[35] Piccolpasso provides a step-by-step explanation of how to construct a wheel, assigning to the process intellectual legitimacy by virtue of this close combination of word and image. The ontological status of the tool is elevated through in-depth dissection and conceptualisation across different genres, with the wheel emerging as a visual trope. The

[34] For in-depth discussion of these ideas, see Raymond Tallis, *The Hand: A Philosophical Inquiry into Human Being*, Edinburgh 2003, chp. 1; Erin O'Connor, "Embodied knowledge in glassblowing: the experience of meaning and the struggle towards proficiency," in: *Sociological Review* 3 (2007), 126-141; and Ann-Sophie Lehmann, "Wedging, Throwing, Dipping and Dragging – How Motions, Tools and Materials Make Art," in: *Folded Stones*, ed. Barbara Baert and Trees de Mits, Ghent 2009, 41-60.

[35] For a detailed discussion of the emergence of the Renaissance technical treatise as a genre, see P.O. Long, *Openness, Secrecy, Authorship: Technical Arts and the Culture of Knowledge from Antiquity to the Renaissance*, Baltimore 2001.

wheel, however, personifies within Renaissance culture also the more "vulgar", intellectually, morally and artistically debased side of pottery production. In this tin-glazed earthenware dish probably used, in a self-reflexive fashion, as an advertisement device for a pottery shop (Fig. 7), a sophisticated visual language is displayed – conflating an understanding of ceramic technology in the representation of the wheel, with some familiarity with naturalistic painting and the conventions of perspective – but problematically, these visual devices are put to the service of selling humble kitchen ware, as the inscription testifies: "Here we make cooking pots".[36]



6 Cipriano Piccolpasso, *I tre libri dell'arte del vasaio*, c.1557, pen on paper. National Art Library, Victoria and Albert Museum, London, MSL/1861/7446 [f.10] © Victoria and Albert Museum, London

7 Dish, Deruta (Italy), 1520-40, tin-glazed earthenware (maiolica), diameter: 36.6cm. Victoria and Albert Museum, London, 659-1884 © Victoria and Albert Museum, London

[17] Given this inconsistent portrayal of pottery, how are we to understand its status in the Renaissance, what are its cultural connotations? In his playful and irreverent "encyclopaedia", the *Piazza universale di tutte le professioni del mondo*, published in 1585, the polymath Tommaso Garzoni defines the art of pottery in broad terms under the

[36] "QUI SE LAVORA DE PIGNATE".

heading: "De' figuli o vasari o pignattari o boccalari"("Of potters, cooking pot makers and beaker makers").[37] This polarity between the prestigious end of the production and utilitarian ware is also recorded by Piccolpasso, who devotes a section of his treatise to cooking pots (*pignatte*) and explains how for the sake of inclusiveness he has mentioned the two extremes of the art of the potter, the most and the least excellent down to the cooking pots.[38] Garzoni describes pottery as follows:

> The art in itself is quite dirty and vile, but clean and convenient for everybody else, because almost all the eating is done out of earthenware vessels. Others say that it is the neatest art that can be found, because […] the potter always washes his hands.[39]

[18] Although Garzoni acknowledges the broader social benefits of pottery, this view of it as a lowly, literally "soiled" occupation, in line with the notion of the mechanical arts as mercenary and "vulgar", certainly finds some support here. A more concerted attempt to apply a linguistic approach to Renaissance definitions, however, leads us to an acknowledgement of the taxonomic complexity associated with pottery. I would argue that it is exactly this multilayered quality that points to a lack of consensus about its epistemological position within the hierarchy of the arts.

[19] How is pottery understood at the time and where does it sit within the ordering of the arts? The lexicon employed to refer to pottery embraces a wide semantic field, from "*arte del vasaio*" to "*arte figulina*". The phrase "*arte del vasaio*" or "potter's art" had wide currency during the Renaissance, and we find it in technical treatises such as Piccolpasso's. It refers to the ware produced or *vasi*. The Latin term "*vas*" or "*vasum*" (from the Sanskrit "*vas*") alludes to the ability to contain, enclose, wrap, shroud or cover something else, and can be applied to any object embodying this property – from a house, to a garment, from a box to a pot. Thus the *vasaio* is a maker of things able to contain other things. This definition of pottery anchors this *arte* firmly to the earthly products that it gives rise to.

[20] "*Arte figulina*" is another phrase found commonly to refer to the potter's art, reviving the Latin use of the word "*figulus*" to refer to the potter. It derives from the Latin "*fingere*", meaning to give form, to model, and connects pottery firmly with the liberal art of sculpture. In the Renaissance, this notion of the potter as someone able to inform and manipulate matter leads to a merging together of potter and modelling sculptor, or

[37] Tomaso Garzoni, *Piazza universale di tutte le professioni del mondo*, ed. Paolo Cherchi and Beatrice Collina, Turin 1996.

[38] Cipriano Piccolpasso, *Li tre libri dell'arte del vasaio*, ed. Bernard Rackham and Albert Van de Put, London 1934, 65: "Mi son disposto por dua estremi del arte del Vassaio insiemi, cioe il piu eccelente et il meno eccelente, dico il bianco del Duca di ferara, che oggi e in tanto pregio, et il muodo da fare gli pigniatti o voglia dir pentole".

[39] Garzoni, *Piazza universale di tutte le professioni del mondo*, vol. 1, 751: "L'arte in se stessa è alquanto sporca e vile, ma polita e comoda per gli altri, imperò che tutto il mangiare quasi si fa in vasi di terra […] Alcuni, però, dicono che lei è la più netta arte che ritrovar si possa, con cotesta ragione, che in tutti i bisogni più necessari il boccalaro sempre si lava le mani".

sculptor in clay, thus eliding the distance between "ceramics" and "sculpture". This emerges, for example, from two contemporary treatises sitting, supposedly, at the opposite ends of the taxonomy of the arts, the *Pirotechnia*, devoted to the muscular technologies employing fire and the *De sculptura*, on the refined *arte* of sculpture. In his *Pirotechnia*, Biringuccio uses, somehow unexpectedly, the term "*arte figulina*" to refer to pottery and illustrates it through the representation of a potter at the wheel. His description of the products of pottery, however, proposes a wider understanding of its remit, as not just pots are mentioned, but also "clay statues, painted with enamels",[40] of the kind that we would associate with the Della Robbia workshops, thus blurring the boundaries between what would conventionally be seen as pottery and sculpture.[41] This merging together of sculpture and pottery can also be found in the opposite camp, Pomponius Gauricus' *De sculptura*, an accomplished humanistic treatise written in Latin and first published in 1504. Gauricus classifies the five different strands of sculpture according to material and process, rather than products, and provides a definition that bridges the gap between sculpture and pottery: "when one works with clay, we will call it *plastiké*, [or the art of giving form] because it is the art of those that mould and model the material, the potters or *figuli*".[42] "*Plastica*" is also the term used by the natural philosopher Ferrante Imperato in his *Historia naturale* of 1599, where pottery sits alongside clay sculpture and architecture because it uses earth in its making.[43] In a long chapter devoted entirely to *plastica*, Imperato devotes his attention to the processes that lead to the production of vases, statues and bricks, in a continuum underpinned by their common materiality and the spontaneous circulation of technologies from one production to another. This rich intellectual framework, foregrounding a material- and process-based approach to pottery, prompts important questions as to the epistemological classification of this *arte*, suggesting that a simplistic understanding of it as a self-contained and neatly defined "minor art" should not be endorsed.

[21] How can pottery be inscribed within a debate around the role of *disegno* in the Renaissance? To address this question I would like to focus now on the branch of Renaissance pottery that has most often been associated with notions of *disegno* and with arts of a higher standing, such as painting: tin-glazed earthenware, or *maiolica*. *Maiolica* is often presented by modern scholarship as the quintessentially Renaissance – in the conventional, "humanistic" sense of the word – "medium" (an anachronistic notion

[40] Biringuccio, *Pirotechnia*, 303: "[…] nell'arte della [sic] figure di terra, colorite in fresco di smalti".

[41] Bruce Boucher, "Italian Renaissance Terracotta: Artistic Revival or Technological Innovation?," in: *Earth and Fire. Italian Terracotta Sculpture from Donatello to Canova*, New Haven and London 2001, 1-31.

[42] Gauricus, *De sculptura*, 148: "[…] quum argilla, quoniam figulorum est, πλαστική nominabitur".

[43] The second book of his *Historia naturale* is entirely dedicated to clay.

in the Renaissance),[44] combining as it does a low intrinsic, monetary value with a high added value provided by its extraordinary variety and multiplicity of shapes, figurative subjects and ornaments, "the value of culture".[45] Widely appreciated by elites across Europe because of its intellectual cache, Italian *maiolica* embodied the Renaissance idea of the culturally charged artefact and was enthusiastically collected. *Maiolica* produced in the most prestigious workshops strove to comply with Renaissance notions of *disegno* and to compete with painting. Among figurative *maiolica* the most valued production was *istoriato* – named after its ability to depict stories, as opposed to simply ornamental patterns (Fig. 8).

8 Francesco Xanto Avelli, *Marriage of Ninus and Semiramis*, Urbino, 1533, tin-glazed earthenware, diameter: 46.9 cm. Victoria and Albert Museum, London, 1748-1855 © Victoria and Albert Museum, London. Coat of arms of Gonzaga and Paleologo families

[22] This new type of narrative object, developed in Italy in the second half of the fifteenth century, enabled *maiolica* to come to terms with broader developments in the visual arts. Now pots could accommodate themes inspired by Classical antiquity, from contemporary literature or even from current affairs. Traditionally, the discourse surrounding *istoriato* has brought about associations with "high" culture and humanism. It has been pointed out that even in the Renaissance, painting on pottery could occasionally be taken seriously and lead to a connoisseurial enjoyment of painted pots, as best documented by sixteenth-century examples of narrative dishes mounted within purpose-made contemporary frames, presumably with the aim of enjoying them as "paintings".[46] And yet there is a parallel story surrounding Renaissance ceramics that can help to illuminate the culturally complex

[44] Michael Cole, "The Demonic Arts and the Origin of the Medium," in: *The Art Bulletin* 84/4 (Dec. 2002), 621-640.

[45] Richard Goldthwaite, "The Economic and Social World of Italian Renaissance Maiolica," in: *Renaissance Quarterly* 42 (1989), 1-31.

[46] Marta Ajmar, "Talking Pots: Strategies for Producing Novelty and the Consumption of Painted Pottery in Renaissance Italy," in: *The Art Market in Italy (15th-17th Centuries)*, ed. M. Fantoni, L.C. Matthew and S.F. Matthews-Grieco, Modena 2003, 55-64.

and historically deep roots of this type of ceramics. These roots enable it to get out of a tête-à-tête with an abstract notion of *disegno*, and into a lively conversation between design, technology and materiality, where pottery connects meaningfully with other arts, not just painting, but also metalwork and sculpture and where *disegno* is an integrated mechanical process merging together the mental, the manual and the material.

9 Dish, Manises (Spain), c.1400-1450, tin-glazed earthenware with lustre decoration, height: 4.8cm, diameter: 42.8cm. Victoria and Albert Museum, London C.2053-1910 © Victoria and Albert Museum, London. Coat of arms of degli Agli family of Florence

[23] The direct technological precedents and immediate commercial competitors for Italian Renaissance *maiolica* were tin-glazed and lustred ceramics manufactured by Muslim craftsmen and imported from the Middle East or Southern Spain. Production of tin-glazed earthenware in the Middle East stretched back to at least the ninth century and prospered during the Middle Ages. Lustreware pottery (Fig. 9) became particularly popular with Italian elites from the early fifteenth century.[47] Florentine families would often commission entire services – customized with their armorial devices – and display them prominently within their homes. The *maiolica* technique relies on the use of a lead and tin glaze, which enables the potter to disguise completely the clay body of the pot and transform it into a homogenously white surface, through a process perhaps comparable to a material rebirth performed through the dipping of the vessel into a bath ("sinking" in Renaissance Italian, or *affondare*). The vessel emerges from this process with its new clothes on – which in Renaissance Italian was called *coperta* or cover, thus evoking a kind of shrouding of the body – and was now receptive to all kinds of decoration, some participating in a visual culture connected with painting, but others in

[47] Timothy Wilson, "The Beginnings of Lustreware in Renaissance Italy," in: *The International Ceramics Fair and Seminar*, London 1996, 35-44; Anthony Ray, *Spanish Pottery, 1248–1898: With a Catalogue of the Collection in the Victoria and Albert Museum*, London 2000; Marco Spallanzani, "Maioliche Ispano-moresche a Firenze nei secoli XIV-XV," in: *Istituto Internazionale di Storia Economica 'F. Datini', Prato. Serie II, Atti della 'Trentatreesima Settimana di Studi', 30 aprile – 4 maggio 2000*, ed. S. Cavaciocchi, Florence 2002, 367-377; Marco Spallanzani, *Maioliche Ispano-Moresche a Firenze nel Rinascimento*, Florence 2006.

conversation with other arts and other materials, such as metalwork. This proposed, in turn, the potential for a material mimesis, or what we might call trans-materiality. The shimmering, lustrous decoration on objects like these lustreware vases was obtained through the application of metallic oxides, usually copper or silver, a technique that involved a third firing. The end result was perceived in ways that alluded to a material metamorphosis, real or apparent, since these vases were referred to in workshop accounts as "*d'horo*", or golden, suggesting a trans-material process from earth into gold.[48]

10 Vase, Gubbio (Italy), c.1510, tin-glazed earthenware with lustre decoration, Height: 25.4cm, diameter: 22.8cm. Victoria and Albert Museum, London 499-1865

[24] By the sixteenth century these artefacts were successfully imitated by select Italian pottery workshops and customized for the local market to look increasingly like gold and silver vessels, not just on the surface, but also in the body (Fig. 10). This local Italian production made immanent the connection with metalwork, through the application of metallic lustre used not just as a decorative device, but in constructing *structurally* the vase, with conspicuous, plastic embossing and gadrooning, and importantly, through the process of making and naming of these objects that connected them forcefully with their metallic counterparts.

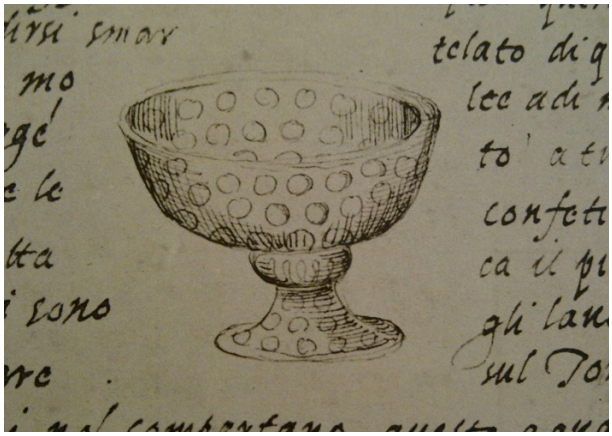
[25] The process involved in the making of these earthenware vessels confirms this tri-dimensional aspiration to the metallic form, as it involved the preparation of deep plaster moulds devised to imprint voluminous, curvaceous patterns on them. This process of transmission of design should not be perceived as a merely instrumental, passive procedure: the mould was also referred to as a "form" or "exemplar" (*forma* or *exemplar*).[49] Accordingly, it was meant to inspire and incite the material recipient by

[48] See, for example, the seventeenth-century recipe for "maiorcha che pare horo", in Dionigi Marmi, *Segreti di Fornace*, ed. Fausto Berti, Montelupo Fiorentino 2003, 210.

[49] Piccolpasso uses the term "*forma*" (Piccolpasso, *Li tre libri*, *23*); while Gauricus, "*exemplar*" (Gauricus, *De sculptura*, 148).

example, as an actual agent of making, in a dialogue with the clay matter. The resulting vase, named "*lavoro di rilievo*" or "work of relief" might thus have been seen as especially close to the plastic branch of sculpture mentioned earlier, thus connecting it not just with metalwork, but also with the *arte della scultura*. Piccolpasso refers to these pots as "*aborchiati*" or "studded", a name that explicitly alludes to embodied action, stating: "they have certain external reliefs in the way it is much in use today for courtly silver",[50] thus recognizing how this technology enabled a material mimesis between pottery, metalwork and sculpture (Fig. 11).

11 Cipriano Piccolpasso, *I tre libri dell'arte del vasaio*, c.1557, pen on paper. National Art Library, Victoria and Albert Museum, London, MSL/1861/7446 [f.18v] © Victoria and Albert Museum, London



12 Cipriano Piccolpasso, *I tre libri dell'arte del vasaio*, c.1557, pen on paper. National Art Library, Victoria and Albert Museum, London, MSL/1861/7446 [f.19] © Victoria and Albert Museum, London

[26] This trans-material comparison goes on, not just aesthetically, but technologically, as he connects the process of making these pots to what "we said for ancient bronze".[51] Piccolpasso returns to the metallic analogy later, when he talks about other pots informed by gold and silver vessels: the "*smartelati*", literally "hammered out", "of which kind I

[50] Piccoplasso, *Li tre libri*, 25: "Gli aborchiati adunque sonno questi: cioè quegli che hano certi rilievi in fuori come s'usa molto ne gli argenti oggi per le corti".

[51] Piccolpasso, *Li tre libri*, 25: "Posta adunque la terra nella sua forma. Ragiungasi, come si è detto del bronzo antico".

have seen many, in my days, made of gold and many of silver" (Fig.12).[52] Although, revealingly, *disegno* as such is not discussed in Piccolpasso's treatise, his concept of pottery foregrounds an engagement with *design* that brings together technology and materiality, supporting a notion of *disegno* fully embedded in the generative process of making.

Conclusion

[27] The debate around Italian Renaissance *disegno* has tended to overemphasize the role of the sixteenth-century art theory rhetoric promoting a separation between design and execution, mind and body, and asserting a hierarchy of the arts constructed on the friction between intellectual and corporeal engagement in the making of artefacts. Building on written sources such as so-called "technical treatises" and on objects taken as evidence of the design process, I suggested that we should consider instead a more integrated, organic, technologically engaged and "mechanical" notion of *disegno*, in which design might be seen to grow within a physical environment from the interconnection of human action and materials. I have used Renaissance pottery as a case study and explored its understanding within different linguistic, literary and material contexts, to propose an epistemology allowing for greater fluidity, overlap and communality between supposedly distinct arts.

<top>

[52] Piccolpasso, *Li tre libri*, 25: "Mi sono ancor risoluto mostrarvi gli smartelati […] Di queste, dico, ne ho vedute molte, a' dì miei, di oro e molte di argento".