Working Papers on Design

Excellence in Execution: *Disegno* and the parallel of eloquence

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Abstract

Giorgio Vasari argued that the polyvalent term *disegno* in the Cinquecento should unite the arts of painting, sculpture and architecture in the *Accademia del Disegno*. The nature of invention, or *invenzione* in the united arts, was not as united; it was not the same for architecture as it was for painting. Alberti, as is well known, argued for the status of painting to be a liberal art modelled on mathematics and the rhetorical arts presented by Cicero. Carol Westfall observed however that 'Alberti nowhere claims that the painter is a liberal artist'. The disparity between the ordinary practitioner and the metaphysical aims of his art is also based on Cicero's *De Oratore*. The difference between the higher metaphysical aims of art and the actual achievements or capability of the practitioner was recognised; and Alberti developed his argument that painting has to be supported by intellectual principles, only then would the inventive aims and intentions of the mechanical arts be on par with any liberal art.

This paper visits the problem of *disegno* and explores its relationship to rhetoric during the rise of descriptive drawing. In particular this paper argues a case of recognising the parallel to eloquence in the visual arts, and the conditions for *guidizio* as qualitative reckoning amidst the present dominance of descriptive representation.

Leon Battista Alberti, as is well known, argued for the status of painting to be a liberal art modelled on mathematics, but also on the rhetorical arts as presented by Cicero. The ancient tripartite rhetorical schema of *inventio, dispositio* and *elocutio,* which loosely relate to creativity, ordering, and elegance of expression, was a structure that inspired and ordered major contributions in Quattrocento and Cinquecento theory (Baxandall 1986; Rosand 1987: Gilbert 1946). Westfall (1969) observed however '… Alberti nowhere claims that the painter is a liberal artist. There is a continual fissure between what a painter does and what painting is. Only the best painters are truly liberal artists, all the rest are only painters.' The disparity between the ordinary practitioner and the metaphysical aims of his art is also based on Cicero's *De Oratore.* The difference between the higher metaphysical aims of art and the actual achievements or capability of the practitioner was recognised; and Alberti developed his argument that painting has to be supported by intellectual principles, only then would the inventive aims and intentions of the mechanical arts be on par with any liberal art.

Visual Arts Relationship to Rhetoric

The Greek term for art (*techne*) and its Latin Equivalent (*ars*) were applied to all kinds of human skills, which in the modern day we may refer to crafts or sciences. The Ancients believed that the arts, as technê or ars, could be taught and learned. This was achieved through the organisation of the arts as a unity of collected knowledge. Various schemes existed for collecting the liberal arts with varying emphasis. Galen and Pliny valued Painting, Philostratus endorsed Sculpture in his writings; Vitruvius included Architecture as a liberal art. There were various attempts to codify the liberal arts more formally, and the most definitive scheme of the seven liberal arts came from Martianus Capella. It comprised Grammar, Rhetoric, Logic, Arithmetic, Geometry, Astronomy and Music. Other schemes of collective knowledge existed, such as Varro's, which included Architecture and Medicine in addition to the seven liberal arts. Despite this, the general status of Architecture, Painting and Sculpture was low. The early Middle Ages inherited this scheme of Capella and carried on the tradition of the *artes liberales*, or 'liberal arts', the constituent skills and knowledge necessary for a human being to be truly free. In contrast, the seven collected mechanical arts, first referred to by John Scottus Eriugena, were weaving, blacksmithing, armaments, navigation, agriculture, hunting, medicine, and theatrical arts. Architecture, Painting and Sculpture were listed amongst others as subdivision of armartura or armaments. The liberal and mechanical art divide continued through in the middle ages as was clearly outlined in the Didascalion of Hugh of St Victor.[1]

In the Quattrocento, the grammatical and rhetorical traditions continued in the *Studia Humanitatis.* The *Studia Humanitatis* consisted of five disciplines drawn from the classical educational curriculum, of the *trivium* (grammar,

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[1] It is not surprising therefore to find compatible histories in the development of representation of fortification, armaments and the three dimensional object. See Quek 2011.

logic, rhetoric) and the *quadrivium* (geometry, arithmetic, astronomy, music). The *Studia Humanitatis* generally corresponded to what we would call grammar, rhetoric, history, poetic/literary studies and moral philosophy, though in the Middle Ages and Renaissance both history and literary studies were a part of grammar.[2] The *Studia Humanitatis* expanded the scope of the generic educational curriculum by including history and elevating poetry (which was once a consequence of grammar and rhetoric) to a position of importance.

Eloquence first surfaced as the reckoning of value in Cicero's *De Oratore*. Prior scholarship has revealed the dependence of Alberti and others on the Oratorical model in their efforts to elevate the status of the mechanical arts (Van Eck 2007; Quek 2007). Cicero's *De Oratore* discussed invention and content, two aspects quite obviously shared between speech and artistic practice. Our concern is with the final aspect in the Oratorical model: this is the notion of *elocutio* or eloquence and how its parallel was understood in the arts as a measure of artistic merit, particularly in the arts that related to the idea of *disegno*.

Primarily, the liberal arts dealt with non-visual knowledge, the visual crafts were not really accorded much significance until the Italian Renaissance. The elevation of the status of the mechanical arts in the Renaissance is well known, but rarely if ever has it been noticed that the visual forms of expression as abstracted knowledge had not fully developed to the point of equity with non visual senses of knowledge. In Medieval times, even the written word did not have such independence; the oral tradition was dominant to the point that reading was mainly only possible as enunciated speech (Saenger 2000). The emergence, both of silent reading and visual information, as embodied forms of knowledge have a coincidence that eventually changed the nature of the relationship between poetic craft (*techne/poesis*) and discipline (*episteme*). The question of *disegno*, as a form of manipulation of artistic and visual knowledge is instructive in relation to craft and wisdom.

Disegno: Controlling Design and the Description of Objects

A large problem in discussing drawing or design in the present day is the use of generic terminology to describe the myriad of possible actions that are included as 'drawing' or 'design'. That both modern notions of design and drawing share the etymological root in *disegno*, is only part of the problem (Quek 2007). The Italian vernacular usage first surfaced in the *Trecento*, and derives itself from the root Latin word *designare* – which survives in Anglophone adoption meaning 'to designate'. In the Italian usage, which survives to modern times, the meaning is distinguished in context, but the word means both the physical manifestation of drawing and the intellectual intent of design.

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[2] Though the argument that Rhetoric was a revived antique notion is often raised, several medieval texts such as Geoffrey of Vinsauf's *Poetria Nova* can be understood as transitional efforts that certainly carried on the tradition of Rhetoric at the very least. See Purcell 1996 and Gallo 1971

Rowland (1994) observed '…many things, among them maps, plans, cartoons, frescoes, and geometrical exercises. Indeed, virtually anything wrought by pen or brush on any surface whatsoever, virtually anything but a written text, can be a *disegno*.' This problem of definition in relation to visualised knowledge was not new to the *Trecento*; it harks back to Vitruvius and his *De Architectura libri decem* (*Ten books on Architecture),* which famously has lost to posterity all the drawings that accompanied the text (Bartoli 1978). The mystery of the absent Vitruvian drawings in the light of his textual descriptions of *Ichnographia* (footprint drawing), *Orthographia* (upright drawing), and *Scaenographia* has led to much speculation as to what they were and what was meant. There is little disagreement as to what the first two notions meant, though between them there is probably some dispute as to whether any reciprocal projective correlation between *Ichnographia* and *Orthographia* existed. There is certainly no evidence of plausible reciprocal projective correlation until the late Middle Ages (Ackerman 1998). There was some dispute as to what *Scaenographia* really referred to, but this is not pertinent to the present argument.[3]

Many scholars have concluded that the absence of correlated projective drawings is a reflection of the lack of dependence of drawing in the design process during the Middle Ages. Some scholars (e.g. Frommel 1994) argue that the parchment plan of St Gall from the ninth century (819 – 826 AD) is evidence enough that projective visualisation techniques existed and whatever drawings existed then must have been, like Vitruvius' drawings, lost to posterity. The only evidence we have of any public description of the design process during the Middle Ages, either as intent or as critique survives in various ekphrases in the form of written prose, in poems, documents and tracts.

From the Middle Ages, as a visual counterpart to ekphrasis, we have floor scratchings left at various cathedral sites, understood to be tracing floors for stone cutting purposes during the processes of construction. These drawings are related to stereotomical projections of the seventeenth century, but are not as sophisticated or even mathematically understood as such (Perez-Gomez 1985). The drawing technique they used were in part for measurement, and in part for direct communication (Shelby 1971), they were certainly in no way portable descriptions as in a modern drawing as they were done on the floor at the cathedral sites! The portable folio of documents that was discovered in the nineteenth century of Villard de Honnecourt, a journeyman mason of the Middle Ages, is, it has been argued, evidence of early architectural drawings of the medieval era, demonstrating the use of geometry; and further, possibly demonstrating the use of orthography as well as ichnography. There certainly are drawings within Villard's folio that can be correlated to extant cathedral facades and floor layouts though this has not been the source of the evidence of geometry. Villard overlaid geometrical figures over man, beast and artifice in many drawings. This has

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[3] Ackerman, (1998) supports C. Thoenes' argument that Scaenographia is effectively an elevation with perspectival depth. Danielle Barbaro infamously substituted *sciographia* for *scaenographia.* See: Mitrovic, 1998. For what it is worth, I argue that Scaenographia was effectively 'scene drawing' irrespective of technique. It is sufficiently distinct from Orthographia and Ichnographia, which are unable to depict a scene as in *perspectiva naturalis*. See Quek 2011 *Isolated Representation of Architecture.*

also led to some speculation that there was geometrical understanding or that Villard had some kind of system of measure. These views presume that modern practice methods were in place at the time. There is no evidence that a building was ever required to be fully described in analogue prior to efforts to construction, or even prior to effort of contracting a design, in the medieval era. There are certainly records that many medieval structures collapsed due to a trial and error structural construction and had to be rebuilt.

Recent scholarship (e.g. Beffeyte 2004; Bechmann 2000) has argued very convincingly that Villard's drawings were no more than mnemonic notes for a builder. His was a private notebook, an *aide memoire*; it was not a portable folio of presentation drawings, working drawings, or even a travelogue that could readily communicate without its owner and interpreter. During the Middle Ages, the main form of communication prior to the modern exchange of prescriptive drawings was largely oral (Rykwert 1984). Though the folio was portable, its capacity to communicate was not quite as portable. Villard himself was the key to understanding many of the mnemonic diagrams. Villard's overlaid geometrical figures were mnemonic devices that simultaneously revealed both method and idea (Beffeyte 2004). His geometry was a method of reckoning; it was not a system of mathematical measure but a system of images that were only intelligible via a simultaneous oral recounting of ideas (Quek 2005).[4] Many of the ideas were memorised and kept largely within the Masonic lodges and its membership, one of which Villard was most certainly a member (Barnes 2009).

In 1459 significant changes occurred in how some of this knowledge surfaced. Some masons met at Regensburg, to standardize the statutes of their lodges, such that 'no workman, nor master, nor journeyman shall teach anyone, whatever he may be called, not being one of our handicraft and never having done mason work, how to take the elevation from the ground plan' (cited in Shelby, 1977). In 1486, however, Matthäus Roriczer, a third generation mason, published *Das Büchlein von der Fialen Gerechtigkeit* (Little Book of Correct Finials), a treatise on geometrical procedures relating to the resolution of certain constructional problems published as *Geometria Deutsch* (1486–90) and a tract on gables (c.1488–9), all of which revealed the once protected techniques (Bucher 1972). The change here is most significant for it recognises a change in how *disegno* is used, and its relationship to the person who uses *disegno* as a controller of design.

The shift recognised at Regensberg merely confirms a cultural shift of professional practice. Filippo Brunelleschi demonstrated during the construction of the *duomo* in Florence circa 1419 – 1436, a clear separation between

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[4] This simultaneity in symbolism is not unique and can be seen in many cultures. For example, Native Americans have rings of beads that account for genealogy and to others, these beads appear to be differentiated only by colour. The differentiation to the Native American owner of these beads can be differentiated via an oral recounting. The Maori, similarly have repeated tattoos and graphic pattern markings called *kowhaiwhai*, which to the outsider appear incomprehensible and are visually similar. These also carry genealogical symbolic content, which can only be revealed by oral recounting. See Quek 2005.

directing wisdom and laboured craft. Argan (1969), Renaissance scholar and once Marxist mayor of Rome, took a more measured view of labour under direction, though he also conceded the significance of change:

> Brunelleschi thought that a new technique could not be derived from the past, but must come from a different cultural experience, from history. In this way he refuted the old "mechanical" technique and created a new "liberal" technique based on those typically individualistic actions which are historical research and inventiveness. He abolished the traditional hierarchical form of the mason's lodge where the head was the coordinator of the specialized work of the various groups of skilled workers who made up the lodge of the masters. Now, there was only one planner or inventor; the others were merely manual labourers. When the master mason rose to the status of sole planner, whose activity was on a par with the other humanistic disciplines, the other members of the team of masons fell from the rank of *maestri* in charge of various aspects of the job to that of simple working men. This explains the impatience of the masons and their rebellion against the master mason who had become "architect" or "engineer."

Brunelleschi started his career as a goldsmith following his father, and was certainly no mason nor from a masonic tradition. His direction of masons however, receives almost hyperbolic treatment in (his biographer) Manetti's account. Notwithstanding, we learn from Manetti that the knowledge of building and the description of specification were still very much dependent on oral skills and in particular eloquence for full and proper explication. In Manetti's words: 'He explained the matter orally much more clearly and fully than he had done in the written account to those who asked and were interested and could comprehend it. He did it in such a way that many, admiringly became quite expert about it. As a consequence he achieved great renown and confidence. His marvellous genius and intellect were proclaimed everywhere.' (Manetti, trans. Engass, 1970).

This is in stark contrast to the modern sense in which design drawings or specifications are predictive communication of what is to come. The oral and the visual work in unison to reveal and to communicate. The etymology of terms is strikingly revelatory. Prediction derives from *prædicere*, and is etymologically *præ-* 'before' and *dicere-* 'speech', viz. pre-diction is pre-speech, speech being the enactment of the event. In contrast, *condicere*, from which the word condition derives, is etymologically *con-* 'together or with' and *dicere-* 'speech'. Brunelleschi's efforts are situated in the condition of making, where the oral '*a boccha*', the visual and conceptual '*disegni*' are simultaneously part and parcel of an effort toward convincing action (Manetti p.77). Mazotta (2001) argues that the centrality of the work of poetic art in cosmo-poetic world of the Renaissance is the symbolic locus where actual, possible and imagined worlds confront each other. Brunelleschi inhabits this locus in his simultaneous action of *disegno*.

The question of Brunelleschi's *ingegno* or innate talent is rather curious. His background in goldsmithing contributed

more than meets the eye. Like Ghiberti, who also had a goldsmithing background, Brunelleschi did not differentiate *disegno* of the portable or small object from large architectural construction. Reliquaries or Cathedrals were one and the same as far as symbolic conditions were concerned (Bucher 1976). Dyson and Thornton (2001) also argue the potency of goldsmithing as a virtuous art as it employs *disegno*. The renaissance goldsmith was likely to be more involved with sculpture. Goldsmithing's connection with precious metals possibly contributed to the fetishisation of the object, but under the cosmological conditions of the Renaissance, this fetishisation does not pose the problem that would arise much later in the post enlightenment era (Koerner 1998; Pietz 1985).[5] Nevertheless, it is recognized that design of the Duomo at Santa Maria Fiore was largely an exercise in completing construction, as its symbolic spatial aspects were mostly already determined. It is tempting to argue that Brunelleschi treated the Duomo more like an object, and less like a *theatrum sacrum* that is more explicity seen in Barqoue domes but that is not the case.

Alberti's treatise *De re aedificatoria* (1452) (Concerning the Making of the Edifice), was already published when Roriczer published his tracts. In fact, Alberti had by this time published on statuary, and painting; dedicating *Della Pittura* to Brunelleschi. In his architectural treatise, Alberti recognises the different concerns of the architect's drawing from the painter's techniques he published in *Della Pittura*:

> The difference between the drawings of the painter and those of the architect is this: the former takes pains to emphasize the relief of objects in paintings with shading and diminishing lines and angles; the architect rejects shading but takes his projections from the ground plan and without altering the lines and by maintaining true angles, reveals the extent and shape of each elevation and side – he is one who desires his work to be judged not by deceptive appearances but according to certain calculated standards. (Alberti, trans. Rykwert et al. 1988)

For Alberti, lines delineate the controlling outline of design, and the measure of lines was controlled by mathematical proportion. Latter day translations of *De re aedificatoria* mostly miss the aspect of edification, and typically reduce the translation to 'art of building' – ignoring that there was for Alberti, a metaphysics of number, and a meaningful purpose beyond objective measure. Antonio Averlino, called Filarete, soon after prepared his treatise for the Duke of Sforza with some scattered drawings, using a mix of techniques available to him, but Filarete adds nothing significant to the development of drawing. It is with Francesco Giorgio di Martini's treatise (1482) on three subjects – Architecture, Engineering and Armaments and Mariano Tacola's Books on Engines and Machines (1449) where architectural drawing moves closer to a visual description of the object sans spatial context. The demands of engineering and armaments weigh heavier in the balance toward the consideration of the portable

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[5] I discuss this and the contribution of goldsmiths and goldsmithing to the cult of the object within architecture in Quek 2011 *Isolated Representation of Architecture*.

object sans context, than with architectural concerns of spatial inhabitation and topographical location, – in so far as drawing as a portable entity is concerned. The rise of this new objectivity is linked to a Cinquecento concern for the preservation of antique Rome, seen in the activity of Raphael.

Raphael, to a greater extent than Brunelleschi perhaps, was the first truly modern designer to emerge from the turn of the Quattrocento to the Cinquecento who operated on the separation of controlling wisdom as knowledge overseeing craft. He controlled design but delegated labour and even craft to collaborators and students, who depended on the portability of drawings as communication of his designs. Holman (1997) describes this modern emergence of *disegno*: 'To devise is the work of the master, the execute is the work of a servant.' Raphael had many assistants operating in various disciplines, such as Raimondi who did sculpting, Giulio Romano and Antonio Sangallo the younger who drew and painted, Baldasarre Castiglione who wrote, etc. Of particular interest is his collaboration with Angelo Colocci, a scholar and poet, who was close to the Pope. Colocci and Raphael's relationship reveals the parity of rhetorical interest in painting, architecture, writing and speaking. 'The intertwining of art and learning in the Renaissance stems in great measure from the fact that art, speaking, and writing all subscribed to a single aesthetic, this itself rooted in Rhetoric. Thus Raphael practiced a literary or poetic art because he practiced art; his learned friend Angelo Colocci, practiced art because he 'perceived measure equally in the spatial length of the Roman foot and the temporal length of the iambic foot, and was expert about both.' (Rowland 1994). Measure and reckoning were one and the same.

Raphael's famous letter to Leo X in 1519, drafted with Castiglione and Colocci, is the turning point. This letter strived to argue the cause of preservation of old Rome, but it also proposed to record the monuments by 'new' visual techniques of recording.

> Thus having been sufficiently clear concerning which ancient buildings in Rome we wish to demonstrate, and also how easy it is to distinguish them from the rest, all that remains is to tell you of the way in which we decided to survey (*misurare*) and draw (*designare*) them, so that whoever wishes to work in architecture will know how to do both one and the other without making mistakes. Be well aware that in our drawing up of this work we did not allow ourselves to be governed by chance or practice alone, but we worked with excellent theory. As for the method we used – surveying with a magnetic compass (*bassola della calamita*) – since I have never seen it mentioned nor learnt of its use by any of the ancients, I think it was invented by the moderns. (Raphael Sanzio et al. Trans. Hart 2006)

The letter was to be supported by some of the earliest three-dimensional drawings of architecture as objects without settings. These illustrations were often of fragments of buildings. They were not *scaenographia*, they were often isolated architectural objects as a form of reference for study. They were well known and were influential on

evidence of numerous successive copies. Prominent examples of this practice of study-copying are the drawings in the Codex Coner. The trabeation of the Theatre of Marcellus, Codex Coner, [Fig. 1] is properly a primitive axonometric drawing, in which one plane remains planimetric, viz. open to linear measure, whilst the third dimension varies and is often a reduced scalar measure as opposed to a true linear measure, for optical purposes of looking 'correct'.
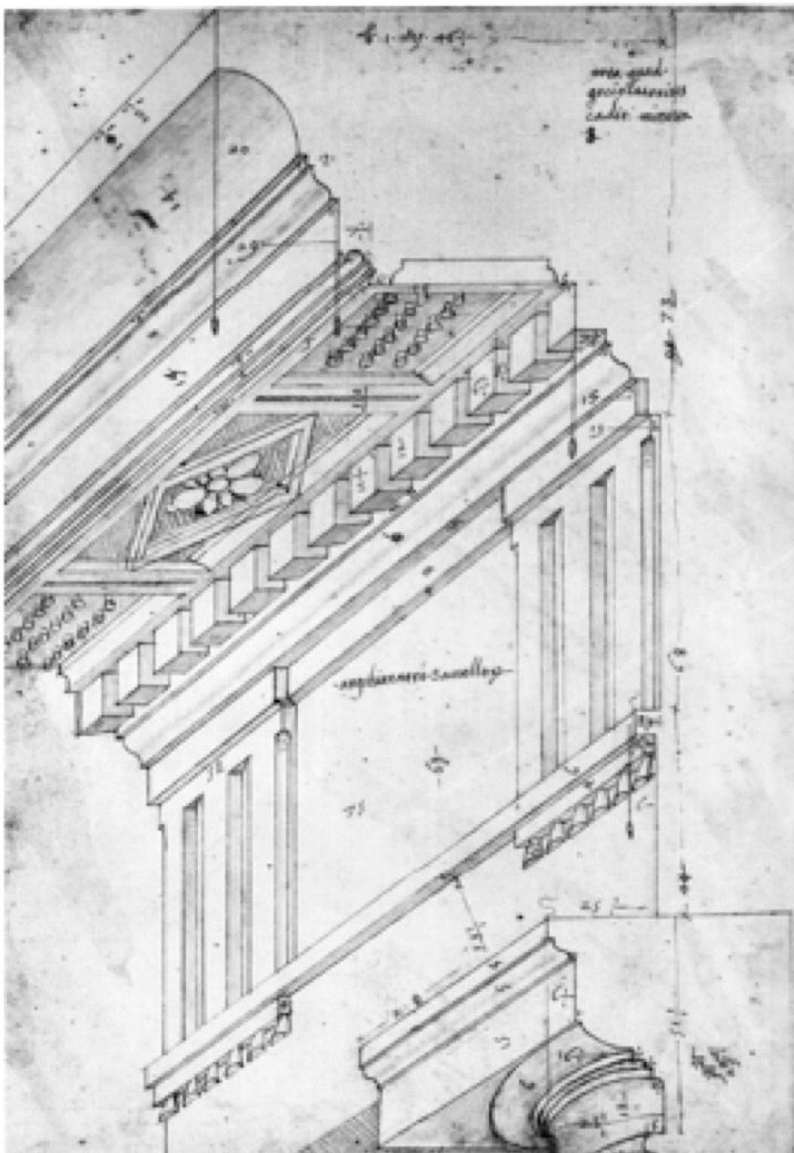

Fig. 1 - Bernardo della Volpaia, Primitive axonometric of trabeation of the Theatre of Marcelus, Codex Coner, Soane Museum, London fol. 76.

It is at this point where it might be argued that the first contest between qualitative measure, based on rhetorical reckoning, and quantitative measure, based on measurable communication, takes place. These *disegno* carry both idea

and value. These *disegni*, and associated models were part of the process toward realisation; they were certainly not relegated to predictive descriptors of the construction process. This newfound portability of *disegno*, differing from portability of drawings before, exposes the vulnerability of *disegno*'s constitution of both drawing yoked to design, and judgement yoked to design. The constitution of the condition of making as *condicere*, is now vulnerable to its contrast, *praedicere* (prediction).
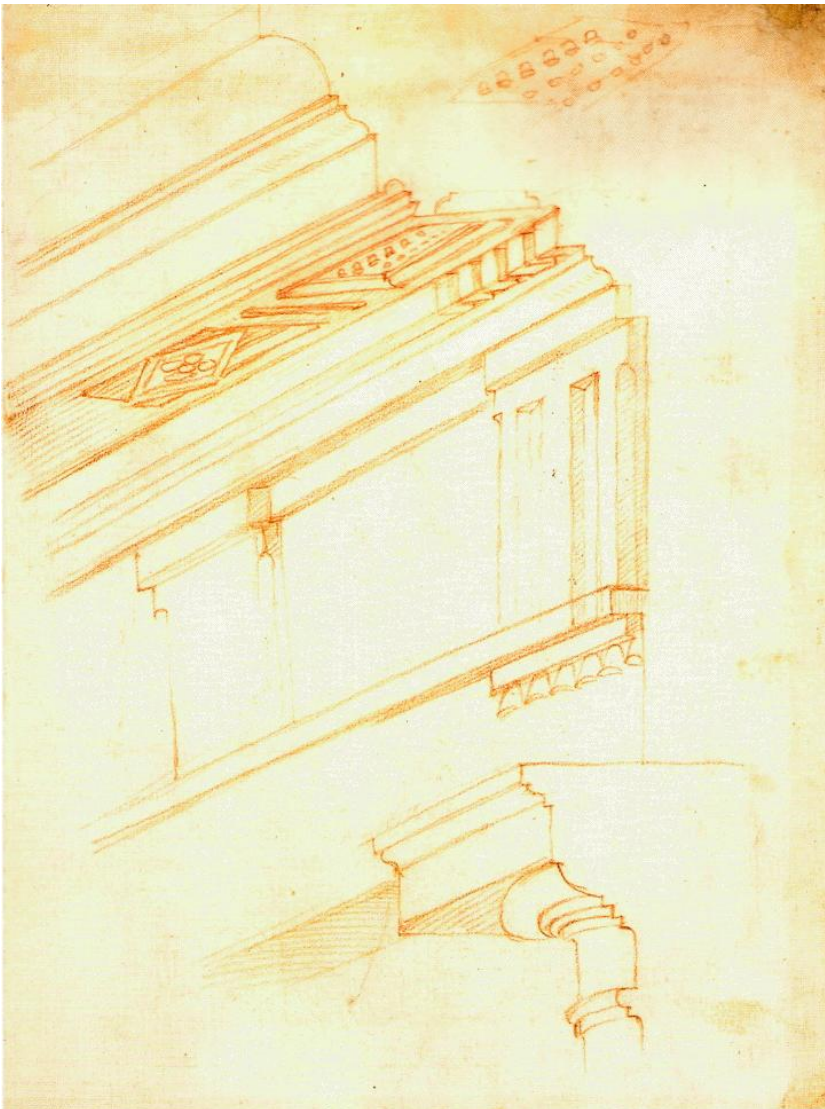

Fig. 2 - Michelangelo, copy after Codex Coner, British Museum, inv.1859-6-25-560r. Permission granted by British Museum Board of Trustees.

The illustrated Architectural treatise was the culmination of these developments. They were the first forms of the portable communication of Design with both text and *disegni*. They were intended to communicate a paradigm of architecture, supported by visual descriptions. When Fra Giocondo, Cesare Casariano and Sebastiano Serlio

published illustrations in their *trattati* the vulnerable potential toward reification of communicative judgement, style and method, the potential stifling of creativity and the rise of objectivity was already realised, by Vincenzo Danti, amongst others. Danti was scathing that anyone could copy pattern books: 'anyone who can draw two lines can become an architect because of the rules I mentioned above'. (Danti 1567, my trans.) Interestingly, Michelangelo's copy [Fig. 2] of the Volpaia rendering of the trabeation is without indication of measure, as are typical of so many of his *modani* or preparatory drawings. The process of copying drawings of architecture introduces an aspect of drawing as a revelation of knowledge that was hitherto uncommon – architecture is isolated as an object. (Quek 2011)

Though a fundamental relationship in the Renaissance for art and learning was well established on oratorical exemplars, this has a curious reciprocity with architectural order. The art of memory, so important to the orator, often drew from a visual recollection of architectural design. Recollected fragments in an overarching architectural order served a greater purpose in organising an analogy of stored information to aid the construction of an eloquent speech from memory (Carruthers 1998; Yates 1966). From the Cinquecento onwards, following Alberti and the humanists in Florence, the newly elevated mechanical arts which included architecture, modelled itself on the art of the ideal orator, which measured value in invention, content and expressive quality.[6] The orator and the visual artist shared common terms in invention and content. In the third aspect, the skill in rhetoric is oral eloquence. In the visual arts, this eloquence is transformed into a measure of reckoning. Incorporated within *disegno* is the innate ability for *guidizio*, the capacity for judgement of excellence (Quek 2007, 50). In the notion of *disegno*, both senses of drawing and design are inextricably linked: drawing and design do not exist independently, as in the modern senses of a visible but meaningless doodle and an invisible cerebral intent. *Disegno* exists simultaneously as visual manifestation with a considered intent. This capacity for judgment in the Renaissance was based on Rhetoric, it was never objective but was always a persuasive act. Art has quality not because it bears objective truth but because it convinces truth.

Disegno, Anatomia and *Elocutio*: Excellence of Execution

Michelangelo was central to the institutional formulation and development of *disegno* as a foundation of the arts based on the *Studia Humanitatis*. The first show of organised artistic ambition striving toward the structure and ambition of the *Studia Humanitatis* was the Accademia del Disegno in Florence. The plan was to create a *studium* for the arts of disegno, distancing itself from the guilds. Michelangelo's champion, Giorgio Vasari, was the principal of the Accademia del Disegno. *Disegno* was the foundation of the three arts that were taught at the school: Painting, Sculpture and Architecture. The Accademia developed from a confraternity, one that was established to emancipate

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[6] This cannot be said of traditions in other regions outside of the Florentine influence. Francesco Giorgio di Martini, operating in Urbino, for example, does not make much distinction between architecture and armaments as they belonged to the same lower class of the mechanical arts.

artists from undue control by the guilds, and to confer to artists a higher status equitable to members in the other traditional academies of the liberal arts.
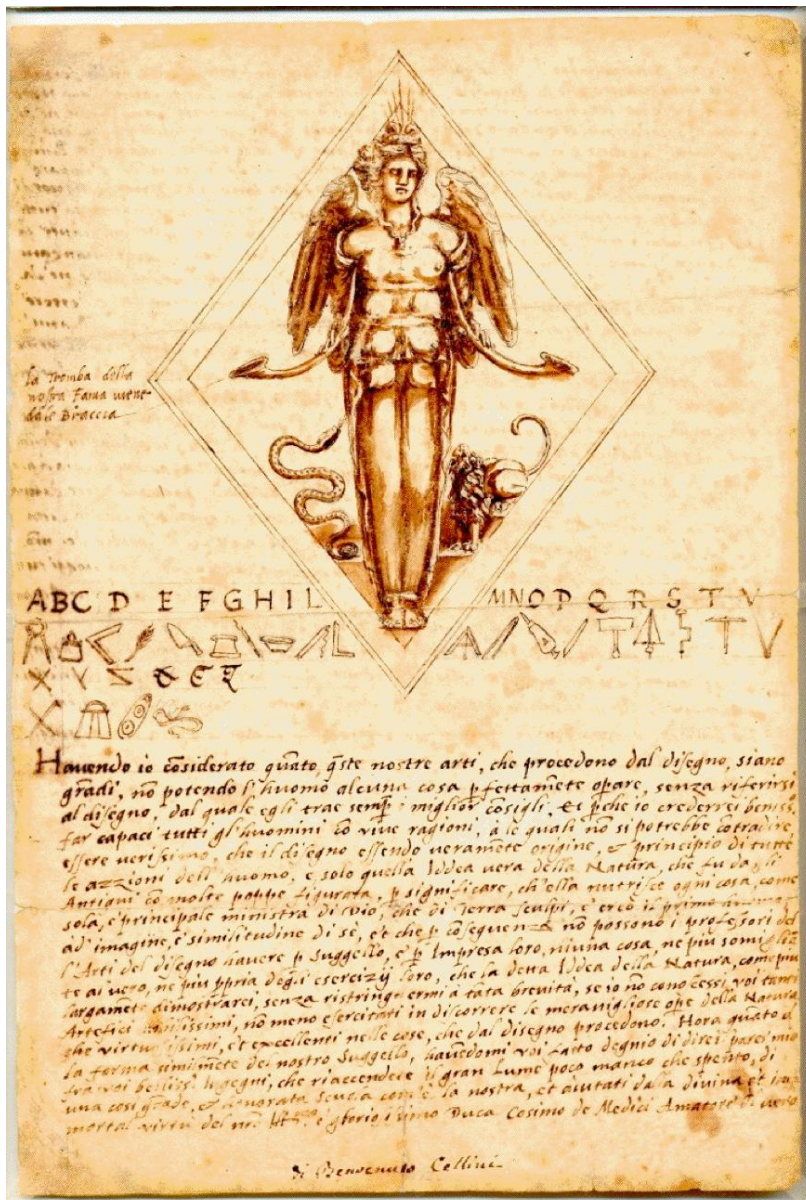

Fig. 3 - Benvenuto Cellini, Proposed Impressa of the Accademia del Disegno, 1563. Permission granted by British Museum Board of Trustees.

The school had some difficulty selecting an *impressa*, or official seal. (Quiviger 1995). Some drawings for this seal are presently extant, and five are attributed to the hand of Benvenuto Cellini, some very clearly with his signature. Cellini and Vasari did not get along, to put it mildly; this perhaps explains the many versions and the difficulty in selecting an *impressa* (Reilly 2004). Cellini's studies vary somewhat, but the most elaborate of these *disegni* is the one

in the British Museum. [Fig. 3] It addresses the academicians with the epithet "*voi artefici nobilissimmi*" (you noble creators), with the emphasis on nobility. The central figure is Diana of Ephesus, a multi-breasted figure, a goddess of Nature and motherhood, who nourishes all things and from whom originates the true and perfect ideas of *disegno*. Rays of light emanate from her crown, symbolising fame with wings and trumpets. The serpent and lion refer to Prudence and Fortitude, and also allude to Cosimo Medici (serpent) and the city of Florence (lion) (Veen, 2006). To the sides are Roman letters, correlated to various instruments used by artists. As oral language has a vocabulary that derives from elemental items, as in the case of the *literati*, the alphabet; so too should it be in the case of the visual arts, with instruments of visual creation as elemental items. The aim here is clearly to match the arts to the world of lettered scholarship, but more significantly the correspondence of the tools of the ideal artist with the tools of the ideal orator. The curriculum at the school required a foundation in mathematics, following Alberti; and the study of the human form. The capability to reproduce the human form in painting and in sculpture to perfection was already recognised in Michelangelo, as was his capability to create architecture of equal mastery.

The study of anatomy reveals more about the nature of creative invention, and oddly the role of eloquence in *disegno*. Six months after the institution of the Accademia del Disegno, the statues recorded a change – it mandated compulsory attendance at an annual winter anatomical dissection, at the hospital of S. Maria Nuova. This six-month lead is significant as it was six months before Michelangelo's demise. Anatomical dissection was said to reveal 'The amazing and divine work of God the creator', and to disclose the mysterious profundities of nature (cited in Jacobs 2005). Vasari's push for these studies recognises three aspects: First, Michelangelo was superior to all other artists in the depiction of the human form; his work was perfect and paradigmatic. Secondly Michelangelo's perfection reflected a profound knowledge of the human anatomy. Third, a study of Michelangelo would ostensibly allow the members of the accademia to perfect their craft. He was after all elected in absentia as ' …*capo, padre et maestro di tutti…*' (As Chief or head, father and master of all) (cited in Wazbinski 1987, my trans.)

In 1547, Benedetto Varchi delivered two consecutive lectures at the Accademia Fiorentina. Varchi's first lecture was mainly an exegesis of a sonnet by Michelangelo on the perfect artist. (Mendelsohn 1982). Michelangelo, still in his prime, wrote a short letter of commendation of the lecture. The first Varchi lecture on the perfect artist was the basis for the second lecture's content, which was in three parts. It dealt with the nobility of the arts, the comparison of sculpture and painting, and the comparison of poetry and painting. In short it was a classic lecture on the *paragone*, and more significantly in was the highest profile lecture on the subject that elicited written responses from Vasari, Cellini, Pontormo, Bronzino etc. on the subject of the *paragone*.[7]

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[7] Vasari's letter (Feb 12, 1547) reveals that he had not quite developed fully his ideas on *disegno*. Cellini had argued a year earlier, in 1546 to Varchi in writing, that sculpture was superior to painting. A year later, Vasari, in 1547, argues that Painting is superior. He declares that *disegno* is the mother of Architecture, painting and Sculpture, but considered *disegno* more appropriate for painting than for sculpture. In this declaration, he takes after Boethius' consideration of *Philosophia* as the matriach of the Liberal Arts. He stopped short of the elevated status that he

Although medical illustrations were indeed prepared by artists for the medical study of anatomy, the goals were not the same. The ability of the artist to exhibit *ingegno* in his prized status as *maestro di disegno* was lauded from Pollaiuolo to Michelangelo (Wright 2005). Three treatises of the era give treatment to the problem of 'artistic anatomy': Benvenuto Cellini's *On the Principles and Method of learning the Art of Drawing*; Alessandro Allori's *Discussion on the rules of Disegno*, and Danti's *Il Primo Libro*. Danti promised fourteen more books, eight of which were to deal with dissection and anatomy, but only completed one. These were published in a surge between 1564 and 1565, and were all perhaps clamouring for priority in the wake of Michelangelo's death in 1564. In life Michelangelo personified the perfect artist, and the ideals of the academia. In death he became their symbolic ideal of paramount achievement. The three-ring motif, representing simply the unity of the three arts of *disegno,* can be seen adorning his tomb in the Basilica Santa Croce.

Fig. 4 - Federico Zuccaro, Michelangelo conducting a lesson in anatomical drawing amongst artistic luminaries, 1575, Cartoon, Louvre.

would eventually accord to *disegno* in his 1568 edition of the *Vite*. Three years after this letter to Varchi, he would publish in 1550 the first edition of his *Vite*. Varchi's lectures were also published in the same year.

A more curious celebration and depiction is Federico Zuccaro's visualisation of Michelangelo conducting an Anatomy lesson, both in cartoon and in painting [Fig. 4] some ten years after the competing *trattati*.[8] Based on a description by Vasari in the *Vite*, 'the divine Michelangelo Buonarroti, prince and guide to all of them and with three rings in his hand (his ancient emblem) … gestures toward Andrea del Sarto, Leonardo da Vinci, Pontormo … all the famous artists and learned men take instruction from Michelangelo.' They all learn that to create, the artist must disassemble to re-assemble; in this case the human cadaver is taken apart so that art can achieve its goal of re-animating a lifeless corpse. Vasari raised the idea that God's 'forming of man' was the paradigmatic creative act, underscoring the analogy of the Divine in Michelangelo and the Dues Artifex. He explained how Raphael and Leonardo were also 'able to breathe life into their works'. This *Pneuma*, spirit or 'breath' is the artistic parallel of eloquence. The artwork has the capacity to convince if it had the breath of life, as eloquence convinces the orator's audience. As the orator depends on architectural structuring in the art of memory to re-assemble an eloquent argument; likewise the artist depends on the elemental components to re-constitute a work of art with *Pneuma*. Like eloquence, it is contextual but more importantly also *temporal* (our italics) as an activity. Renaissance terminology on lifelikeness spans a plethora of terms and ideas: *anima, spiritus, psyche, pneuma, vivace,* etc. in a host of discussions, arguments, treatises and so forth (Jacobs 2005; Kenda 2006). *Elocutio* as the re-animation of inanimate constituents brought whole in the visual arts has been somewhat obscured with the general artistic fetish of the object and its description. The search for secrets of re-animating life even stretched to the darker aspects of the occult, even Cellini was openly involved in necromancy. (Cellini, trans. Bondanella, 2002)

In painting and sculpture the eloquence of colour (Lichtenstein 1993, trans. McVarish) or the re-animated perfected contortion of the body, as the *figura serpentinata*, can be clearly understood and their goals easily appreciated. In architecture, invention has similar aims but this may not be seen as easily. Danti's *il Primo Libro*, (1567) addressed the difference between replication (*ritarre*) and creative mimesis (*imitare*): 'By the term ritarre I mean to make exactly as another thing is seen to be, by imitare I similarly understand that it is to make a thing not only as another has seen the thing but to make it as it would have been in order to be of complete perfection.' (Danti 1567, my trans.). He recognised that Painting and Sculpture could imitate the image of life. Architecture, however, does not imitate the appearance of human form, nor even makes visible the idealisation of the appearance of things, but rather embodies the activity of the artist. Danti notes that unlike painting, and sculpture, the paragon of architecture is not artificially perfected nature, but the activity of nature. The architect does not imitate as in *natura naturata*, visible nature, but *natura naturans*, the activity of nature. Like nature, the architect imposes form on matter. His measure of

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[8] The cartoon in the Louvre has been ascribed to Bartolomeo Passarotti (*Michel-Ange donnant une leçon d'anatomie à des artistes de son temps*; INV 8472, Recto). Herrmann Fiore (2001) argues that the painting and the cartoon are both of the hand of Federico Zuccaro. The painting is in the Galleria Borghese. We agree with Hermann-Fiore though it is noted that Passarotti was well acquainted with the Zuccari brothers.

excellence is in active invention in contextual situation, the equivalent of creative eloquence, an ability to 'breathe life in the artwork'.

In rhetoric as in the visual arts, invention ranks high. Vasari describes *disegno* as the father of the arts, but *invenzione* as the mother of the arts. He was not as bold to speak of inventive creativity, as did Federico Zuccaro, who would eventually discuss *disegno interno* and *disegno esterno*, one as creative spark, and the other as manifestation. This set the scene for the possibility in the modern era for *disegno* to split into modern drawing without intent, and intent or idea without appearance. In many practices, split it did, losing any foundational strength as the unifying aspect over the arts and perhaps losing its sense of embedded 'creative eloquence'. In the modern era, many have recognized the split and also recognised the lack of unity, notably seen in the efforts of Richard Wagner, Bruno Taut and a young Walter Gropius – all of whom subscribed to the possibility of unity in the arts in the *gesamtkunstwerk*. For Wagner and Taut, the theatrical arts, which included music and poetry, were part of a possible re-unification. In Gropius's version of this, seen in the declaration of the Bauhaus, the arts included industrial design and crafts. This curious hybrid returns strangely in the early 20th century to the Italian language as *disegno industrialle,* distinguished from the original, *disegno.*[9]

So what is at stake when translating objects into words? In the modern context our lessons from *disegno* are threefold: one, it is more valuable taken simultaneously, as idea and technique – split, it is weakened; two: it is carries the capacity for judgement (*guidizio*) that is both qualitative reckoning and quantitative measure; three, this judgement is based on a rhetorical model for which the art of eloquence or its equivalent, is a crucial measure. Eloquence perhaps reveals more to us about how we can understand and value a work of design from an era gone past: we value Michelangelo but we could not possibly repeat his work. Speech is only potently relevant in the moment of conversation and communication. Hence a joke or witty remark which might have been humorous in an era or time gone past; might not be so in the present, or a different context of time and space. Eloquence is eloquent only within its relevant spatial and temporal context. As much as poetics is phenomenological, the capacity to write about design is as well. We value design too much in the present day in the mode of quantifiable measure as objects, but not the qualitative reckoning of how the object has communicative presence in space and time, equivalent to an oratorical 'how it was said, when it was said, and where it was said'.

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[9] This is an oddity where Italian, Spanish and Portuguese are spoken and written. *Disegno industrialle*, or industrial design, including product and graphic design, are often discussed as ideas that make an entrance to the scene as it were, sometime during the 20th century. At the last Design History Society Conference in 2009 (Writing Design, Hertfordshire), at least 3 papers discussed this issue. One focussed on the problem of industrial design in Portugal and the other in Brazil. See: Eduardo Côrte Real and Lara Reis, 'Reading Early Modern Design History, English Dictionaries, Literature and Design, 1604 to 1830', (paper developed for publication in this volume); Lara Reis, 'Writing Portuguese Design History: A Window into Portugal's First Designers' thoughts', unpublished paper; Luz Garcia Neira, 'Textile Design in Words: Social Adjectives in Brazil's late 19th Century', unpublished paper.

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