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Egnatio Danti as a founder of the authentic theory of artistic perspective (1583) as compared to late Renaissance ideas on the authenticity of texts

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Philology is a mainstream approach to Renaissance scholarship. Today, historians re-apply a modernised version of this humanist activity. But simply looking at the question of who reworked or quoted an earlier text, and when, is not enough to unveil the entire textual practice of that period. To illustrate the limitations of this method we take various excerpts from the literature on perspective, and in particular those of Egnatio Danti (1536-1586), where the same historical quotation is made but the meaning completely shifted. The questions raised therefore are what concept(s) of authenticity guided the humanists and how the notion of *auctoritas* was structured. The discussion is then broadened by considering the reflections of Vincenzo Borghini (1515-1580) on the *litterati*'s position vis-à-vis the question of textual authenticity.

Egnatio Danti fondateur de l'authentique théorie de la perspective artistique (1583): a une comparaison avec les notions sur l'authenticité des textes à la fin de la Renaissance

La philologie est l'une des approches dominantes des recherches sur la Renaissance. En grande partie, les historiens mettent en œuvre à travers elle une formule modernisée de l'activité que les humanistes exerçaient. Identifier quels sont les textes cités, qui les cite et à quel endroit ne peut cependant suffire à dévoiler l'ensemble des pratiques textuelles de cette époque. Pour illustrer les limites de cette méthode, nous avons choisi plusieurs extraits issus de la littérature sur la perspective, en particulier ceux d'Egnatio Danti (1536-1586), dans lesquels la même citation est utilisée mais le sens a complètement glissé. La question qui surgit alors est: quels concepts d'authenticité ont guidé les humanistes? Comment se forge et évolue la notion d'auctoritas? La discussion est enfin élargie par les réflexions de Vincenzo Borghini (1515-1580) sur l'opinion des lettrés à cet égard.

Historians and the "philological comportment"

The premise that Renaissance culture is primarily associated with a renewed formulation of Antique culture is so well-known that it is almost banal. Be that as it may, it is one of the presuppositions that usually guides research on the period. If we return directly to the historiographical origins of this assertion - which lie in the nineteenth century - it becomes clear that it was based on an analysis of a single specific occupation, philology, and mainly limited to a distinct category of individuals, the humanists.¹ By studying the methods of humanist philology (i.e., the collation, editing and dissemination of the writings of the Ancients) for the last fifty years or more, historians have assimilated a historical attitude, the "philological comportment", which they have henceforth applied to Renaissance society as a whole:

books as well as objects are thus seen as an immense library which hold all the keys to understanding the Renaissance world.² In this way scholars have interpreted a past civilisation in terms of their own relationship to knowledge.

The privileged and insular study of philology has therefore led to the creation of the myth of a nearly homogeneous Renaissance culture. The irregular progression of humanism from region to region has indeed been recognised, but it had finally influenced the society as a whole as well as the Christian universe. However, the terms "humanism" and "philology" have undergone a complex historiographical stratification. They have been transformed from the historical phenomena that they once were into daily routines. Scholars study the humanists and judge philological practices with so-called "philological" tools. This apparent symbiosis between the researcher and his or

her object of study may well be delightfully nostalgic, but may do grave harm to the necessary critical distance that any scientific approach requires.

The interests of historians should not be reduced to such a schematic view. It should be remembered that historians have discovered that the literati were not the only people who took part in philological exercises, and that other categories of individuals - whether closely related to the literati, like scientists, or broadly separated from them, like artists - provided contributions of their own, which often proved to be more original or, at any rate, more specific. Similarly, history which has diversified its sources has gone on to show that cultural transmission did not take place solely through texts. Rather, images, material evidence and many other kinds of sources constitute manifold vectors which we should not ignore.

Over time we have perhaps become a bit more aware that new ideas must overcome numerous obstacles before encountering a real echo in society, and that all of the filters which adapt, transform or recast original intentions have a normative function.

These considerations bring about a more global understanding of humanism, which leads to an extension of the traditional vision of the humanist as spokesperson for the collective whole. Surely it is unreasonable to expect the discourses and acts of a single association of individuals to represent the sum total of society. One cannot deny that the humanists contributed progressively to the modification of the universal cluster of relationships that had defined intellectual exchange until then. If one were to express these facts in a way that would not have displeased nineteenth-century thinkers, one could say that the humanists went beyond changing the décor of a symbolic universe

by adding the Capitoline to the canvas of the Celestial Hierarchy. Some of them were also involved in daily life, that is, in the spheres of education, politics, law and the economy. These humanists perhaps aspired to a more secular society than one in which the civic oligarch transcended political power - be it the power of the Roman Catholic Church or the Holy Empire - while remaining under the authority of God or of Constantine, his heir. But the price of receiving this new conception was the renunciation of a powerful ground swell surviving from the Middle Ages in terms of which the temporal presence of the individual and the administration of the community were understood in anagogical terms.

At what moment did all of this begin? One of the difficulties involved in the writing of Renaissance history, is the issue of the historical consciousness of the period. Should one assume that everything began then, and claim that the humanists invented history? Since the victory of Augustine's chronological thought³ over the tradition of Origen,⁴ which postulated that creation had existed for eternity, the passage of time has been divided into stages which are the sources of collective memory. This concept, which has held sway to a greater or lesser degree since the fifth century, constituted one of the foundations of Christian civilisation. Thus, it is not the consciousness of history in general which characterises the era under study, nor is it the consciousness of Antique history in particular, for one cannot seriously deny that men of the Middle Ages had already resolved the contradictory terms of their connection - conflicting but undeniable - with Greco-Roman culture.⁵ As a consequence, the Renaissance merely proposed a new reading of an issue that was particularly ancient and had been universally accepted for a long time.



See Fig. 2 ~~Figure 1~~
~~Bortolommeo Passeotti, Portrait of Egnatio~~
~~Danti. Brest. Musée Municipal.~~

Invention and innovation in the writing of texts

There were multiple modalities of the rapport which linked the Renaissance to the written culture of the past, and they could all be designated by the fashionable term *inventio*. Add the modern meaning of the word to its archaic sense and one gets a sense of its many applications. In actual fact, one should principally distinguish between three different philological practices. Some passionately exhumed texts which were lost, forgotten or unknown. Others practised invention with *ratio disserendi*, as Cicero put it, writing alleged novelties which were, in reality, merely selective rewritings. Finally and most importantly, in certain cases editors accepted publications which were genuinely innovative - that is, they come close enough to meeting our modern understanding of originality. This specificity did not proceed from the *uniqueness* of the object, in the way that a

collector of rare objects might understand it, but rather from the capacity of authors to collect and assemble pieces of scholarship which had been isolated up until that point. By making something new out of old material authors were able to meet the needs of a new audience who could never have been reached by the old texts. The distinction between these three approaches cannot be easily understood if one applies our contemporary values to them. For this reason we have tended to homogenise a cultural production that was ruled by a hierarchy of values different to our own. Thus, the editing of ancient texts or fragments of ancient texts generally superseded the practice of mere quotation as used today.⁶

The purpose of this article is to observe, by means of something of a case study, the scope of this notion of authenticity, which must always be intrinsic to the period of production and to its cultural context. We will see how one of the first practical manuals on perspective aimed at artists and architects,⁷ the *Due regola della prospettiva pratica* (*Two Rules of Practical Perspective*⁸), written by the architect Vignola, then edited and annotated by the mathematician Egnatio Danti (figure 1) who published the manuscript in 1583, compares with contemporary concepts of textuality. The text of the *Two Rules* which is more of a commentary than a critique - using these terms in their modern sense - reveals characteristics belonging to each of the above-mentioned three categories of approach: the annotated publication of an unedited text, the re-exposition and explanation of its content, and the establishment of a new kind of dialogue between two groups, mathematicians and artists. In spite of this structure, which is transparent today, the text comes across as having been inserted into the dominant schema of its age: in order to be able to affirm its "innovative" purpose, Danti shields himself behind the outline of a

manuscript lent credibility by the its author's name.⁹ Vignola's name, not only as that of the primary architect of the Farnese family but also as the person who standardised the Vitruvian orders with the aid of the printing press,¹⁰ had acquired a posthumous social prestige of the highest order. Danti, therefore having established intellectual preeminence, could now venture down less-travelled paths. Within the framework of these mixed practices, one perceives that a system, at first haphazard but eventually more and more fixed, of mediating between the interests of various groups and by compromising values between ancient and modern being established.

Recycling ancient texts: Roger Bacon in the *Quattrocento*

The history of perspective treatises offers us all of the documentation that we need, starting from the beginning of the *Quattrocento*. Even if, strictly speaking, it does not constitute the first document in the series,¹¹ we will take as our starting point a seemingly harmless passage from the third part of the *Commentarii* by Lorenzo Ghiberti. This early Renaissance text on art theory, dedicated to scientific pursuits, holds that:

Aristotle says in the *Metaphysics* that only vision shows us different things, given that through it we explore and we search for a certain knowledge of everything which is on earth and in the heavens. And thus the very numerous philosopher-mathematicians like Archimedes, Anthemios [of Tralles], Asclepius, Ibn al-Haytham, Apollonius, Ptolemy and Witelo.¹²

Of course, scholars have remarked that this phrase did not come directly from the Aristotelean *corpus*, but was in fact borrowed from the *Opus maius* of Roger Bacon. Here is the text:¹³

Aristotle said in the first [book] of the *Metaphysics* that vision alone shows us the differences between things: through it, we search for certain experiences, over all that which is in

heaven and on the earth; in fact, that which is in the heavens may be examined by way of the visual instrument, as Ptolemy and other knowledgeable astronomers have taught.¹⁴

Until now, criticism has generally been employed to explain how a man like Ghiberti, that is to say an artist who did not know Latin, could have served as a witness to such a vast and precise classical culture.¹⁵ However, without the improbable discovery of a document establishing that Ghiberti was able to engage in research in the library of Ambrogio Traversari¹⁶ and that he used Guerruccio di Cione Federighi's Italian translation of Ibn al-Haytham's *Optics*, edited in 1341, this question remains unanswerable. Nevertheless, we are sure of one essential fact: the text existed historically, insofar as its authenticity is not in question. It is linked to the name of Ghiberti; this does not mean, however, that the sculptor is the author in the modern sense of the word.¹⁷

Let us consider the most visible modalities of the textual recycling that we see at work in the preceding citation. One could call the practice clandestine insofar as Ghiberti did not cite his source. The entreaties he makes in this discourse are twofold: he speaks in the name of the artists to whom he addresses himself and whom he claims to represent, but also and equally, in the name of the scientists on whom he claims to depend. As for Bacon, he expresses himself in the name of specialists in optics but also as a theologian, that is to say in his role as censor of the antique heritage. In these two cases, the discourse is made doubly effective by the intersection of interests. In order to gain humanist recognition, Ghiberti uses texts he has not completely mastered. Who could believe that he had read (or had had it read for him, which amounts to the same thing) the texts of Anthemios of Tralles¹⁸ on mechanics, or even the Aristotelian commentaries of Asclepius¹⁹? Be that as it may, he does not require us to believe he is acquainted with these authors. This would have been

virtually impossible in any event, for, in the case of Archimedes, one can say that, for all intents and purposes, nobody in mid-fifteenth century Tuscany was likely to have been able to identify one of these texts with any degree of assurance. This constitutes a problem that was recognised and debated even at the time.²¹ Archimedes, along with many others, still lived on in the phantasms which immediately preceded all historical construction, and all work on the collective sedimentation of knowledge.

So then, how should we align all of these names, as we seek to construct a symbolic bulwark? We have characterised Ghibertian reusage as clandestine, for the only text which he does *not* cite is precisely the text by Bacon from which he borrowed the very content of his discourse. Citation of names without texts and citation of texts without names: this is the reality of his practice at work. In seeking to fill out the framework of his particular understanding by superimposing Antiquity on his cultural references in an imaginary way, Ghiberti seeks to extend his professional territory. He does not attempt to uncover a new piece of information for his readers, but indeed to transform an opinion, so as to acquire a new credibility.²¹ There is some truth in Krautheimer's assertion that "Ghiberti was a humanist and scholar only by ambition."²³ Ghiberti's agenda dovetailed with a social strategy of upward mobility through hard work. It consisted of forcing the entry of artists into the ranks of humanists, by "liberalising" the mechanical arts. But did he have a choice? Surely one cannot regard the desire to move up the social ladder and to extricate oneself from an intolerable situation as contemptible.

The aspiration of artists to be recognised as humanists holds true in the environment of the late *Trecento* and the early *Quattrocento*. But can it be said to apply after that, when widespread secularisation has divided the humanists socially? After the humanists reached a

position at the very centre of the fabric of society, they used of their new knowledge productively. This led to a disruption of the symbolic unity of their community of ideas, and to division between them created by the hierarchy of recognition accorded by the dominant class. Thus, anyone from a sculptor in the low Basilicata to a historiographer of the Grand Duchy of Tuscany was now a product of humanism. But by the end of the sixteenth century these humanists were so different from one another that they had almost become unrecognisable to each other.

That which had previously united and distinguished them - a "passion" for Antiquity - was transformed from what it had been (an instrument to identify people belonging to a restricted circle) into an antiquarians' cult in which the dominant strata of society participated. Institutionally,

[t]he education that was wanted now by intelligent people was not so much one that produced scholars who might happen to be fit to hold their own in affairs, as one that produced capable gentlemen with the adornment of letters (Boyd [1921] 1961: 225).

One could thus say that at the time that Danti wrote his commentary on Vignola's *Rules*, the humanism of discovery had disappeared, leaving in its place various incarnations of humanism that sought to identify the signs of life of an ancient culture which were becoming more and more rare. The aspirations of the original humanism had lain in the instable text, in the desire to explore, in uncertainty and the quest for confirmation, and in the search for a validation that accommodated its own presuppositions. Later, humanism had to perpetuate a tradition only recently established. It had become a rigid and discriminating discipline which imposed choices upon itself. The result was that it distinguished between individuals in terms of the scope of their ideas. There was no longer a general humanist formulation but a plurality of formations with humanist

content.

To translate this into concrete terms and to return to the domain of perspective, one could say that when working with late Renaissance citations, we are not merely required to determine where and when a given text called upon Euclid, Leon Battista Alberti or Ibn al-Haytham, and to go on to draw hasty conclusion about the preferences of an author imbued with so-called authentic antiquity, a *Quattrocento* brimming with inventiveness or a disfigured and neglected Arab Middle Ages. More is required from us: we must qualify the *nature* of these citations.

The same Bacon, a century and a half later

Danti employs numerous references and citations. His honesty in this regard gave him such a singular reputation that he is cited as an example of fair practice as late as the seventeenth century.²³ But what is he *really* citing? It is much more than a happy coincidence that Danti, too, invokes the same passage in Aristotle's *Metaphysics* that was previously employed by Bacon, Ghiberti, and so many others. In the preface of *Two Rules*, he writes:

It is very expedient that a very noble sense [vision] which surpasses in dignity all the others and brings us more discernment of things, gives rise to such dignified works.²⁴

Here the original voice behind the citation is silent: no mention is made either of Aristotle or of Bacon, since Danti no longer *researched* past authors, he *controlled* them. Similarly, his contemporaries did not distinguish between the names that they chose. Here the long list of *auctoritates* in Ghiberti is subsumed under "such dignified works." Danti no longer even cites names as he places himself above citation; their use was considered *passé* and a knowledge of this group of classical authors was henceforth integrated into what was held to be

"common" knowledge. By now, the writings of the Ancients had been totally assimilated and recycled. For this reason, one cannot confidently propose, as Kemp did, that Danti "appears to have been scrupulous in acknowledging his sources."²⁵ To be sure, it does so happen that he refers to Aristotle, but that is always to justify himself within the framework of a specific polemic.²⁶

One may, however, formulate the question about citing sources somewhat differently in order to understand why a mediator such as Danti sometimes uses the Euclid found in the translation of Tartaglia (1543), and at other times in that of Commandino (1575), or yet again the Euclid of the Jesuit, Father Clavius (1574); that is to say, by picking up portions of the texts in different translations he adopts a critical attitude to these translations.

Here, the explanation does not lie in the symbols evoked by the different social positions occupied by the authors, and embodied in a struggle between the self-taught engineer (Tartaglia), the courtly humanist (Commandino) and the teacher of the Colleggio Romano, the training ground of future Jesuits missionaries (Clavius). Similarly, Danti, ecclesiastic that he was, found himself equally attracted to the court at Pitti in Florence and the curia at Belvedere in Rome, to the senate-house of the municipal university at Bologna and the salons of the pontifical legate of Perugia. It is common in Renaissance scholarship that scholars did not choose their cultural references based upon the social position of the authors. Cultural debates occurred in an open intellectual society. Insofar as we know the brief outlines of the story of his life, Danti is associated with a number of projects and enterprises which depended on specific patrons and took place only in certain milieux. It is precisely the context in which one of these theoretical works emerged - a work which led to the historical construction of perspective - that we would like to analyse more globally

now.

Vincenzo Borghini on the authenticity of texts

To regard humanist knowledge as universal is merely an economy of parts; it does not permit one to identify singularities and even less so to delimit groups. There is a rivalry between different agents in the field of neo-Antique knowledge. This rivalry, masked by a façade of consensus, is implicitly formulated but is nevertheless detectable in the historicising writings of the type to be seen in our treatise. In order to proceed, we will identify in a contemporary text some traits inherent to the problem of the transformation of humanist knowledge, and we will study their echo in Danti's own practice.



Figure 2
Federico Zuccaro, *Portrait of Vincenzo Borghini*.
Black and white chalk on paper, 1570-74,
British Museum, London. See Fig. 1

The editing of ancient texts is the main subject of a letter drafted in Florence in the 1560s by Vincenzo Borghini (figure 3). It is true but immaterial that Danti was in Florence at the time, and that he was in

direct contact with the author. After all, he was a stranger to this business: he was not directly concerned with the publication of literary manuscripts in the Italian language. It is not, then, on the activity in itself that we should concentrate, but on the impulse which was not rationally constructed that emanates from the document. It is not so much a question of assuming the traditional position to be found in analyses of artistic theory - that is, one that limits writing to the domain of ideas - as it is of its result in the interference of the theory with the real. If we look at common concepts in perspective in two texts which are destined to be read by different groups, we may avoid the possibility of any direct social rivalry; thus we do not have to linger on situational conflicts which could make our analysis appear too artificial.

The questions raised are the following: how was a humanist led to create an instrument for understanding which was destined to adapt the actual past? How could he constrain it to a preconceived coherence? What was his method, and how did his theoretical process relate to his practice? We do not overlook the conditions under which the text was designed, which seem *a priori* to be exclusively cognitive (a discussion on philology). Yet, in reality, these conditions prove to be an *instrument*, a medium for practical intervention. Borghini discusses only opinions, but he expresses himself in such a way as to counsel the Giunti publishing-house. His "opinion" therefore has the ring of authority. In this sense, it can be compared to Danti's text, which purports to be a summary of facts about the different components of perspective, but which, in reality, functions as a formative, practical handbook for artists, written by someone who was close to Pope Gregory XIII.

Throughout this letter, entitled *Lettera intorno a' manoscritti antichi*,²⁸ Borghini addresses his recipient (whose identity we do not know) on the

transcription and the editing of the works of the first Tuscan authors to write in the vulgar tongue. He deals with the works of Villani and Boccaccio in particular - of which the prior of the Innocents at Florence was one of the finest connoisseurs. However, the manner in which Borghini extends his views, and their theoretical reach, reflect the preoccupations of an intellectual milieu that was in the process of acquiring a new prominence, which is to say, it was fast becoming a discipline with an academic bent.²⁹

To counter his correspondent's scepticism about the possibility of being able to edit an ancient text well, Borghini attempts to provide, by means of examples, some guidelines to follow. The text therefore offers an explicit technical discourse on a practice actively engaged in for a good two centuries prior to then, but which had existed, more spontaneously, from the moment the Ancients had ceased writing. What gives a rejuvenating specificity to this reflection is not only a simple discourse on an activity but his establishment of an identifiable discipline. Beyond the literary specificity of his opinions - even if today some prefer to relegate Villani among the historians - this letter reflects the entirety of the humanist conception comes into play here. This is because of the paralogical reasoning of the late humanists who, considering philology to be an expression of everything that one could know in reality, qualified all serious thought with the word "philological."

As we have seen earlier, here it is not a question of adapting the codicological exercise to the entire cultural production in a tendentious analysis which requires the modern philological method to be applied to the understanding of ancient philological practices. In the arts that depend on *disegno*, as in the sciences and in perspective too, the question of the relationship with the Antique document, whether it be visual or linguistic, constitutes a crucial benchmark for our

reading of it; it has even been suggested that this relationship should be the framework for the study of *all* of Renaissance production.

However, transferring methods from one field to another imposes some serious limits. The intellectual and social independence of artists and writers is not comparable. I am not aiming to show that one can mechanically apply a phenomenon observed among writers to artists. The social stature of the professions and their corresponding knowledge, along with the personal position of the different protagonists, once again shatters the grid that one would have imagined to be all-inclusive. On the problem of the polysemy of signs, one is faced with the obstacle of the conflictual relationship between writer and artist, illustrated so well in the debates on the *Ut pictura poesis*.

For artists, the inquiry into the authenticity of Antique relics was also relevant: what they wished to determine is not so much the unique character of an object, but rather the purity of the idea which engendered by it. Finally, it is in the progressive growth of academism that one is perhaps initially most tempted to steal a glimpse of the most significant differences between literature, the arts, and architecture.

Where does authenticity come from?

For art historians, the notion of authenticity is directly linked to the immediate materiality of the object. This does not apply to historians of literature, except in the case of certain fetishistic collectors of autographs, and those who engage in the genetic study of texts. However, in the sixteenth century, the border between materiality and authenticity was not so clearly demarcated. Giovanni Battista Armenini (1586), one of the authors who was most interested in defining practical procedures, went so far as to write:

There are two usual ways to consider the arts; one is through the necessities of the material, and the other is through the good idea.

One can thus clearly distinguish between the production of a work (a technical operation), and its incarnation (a speculative operation). In contemporary society an idea may be incarnated in an object and leave its visible traces there, but the object is not the idea in itself. However, this clear and sharp distinction, so crucial to today's human sciences, does not take the criteria of the sixteenth century into account. During that period, the work of art in its ontological manifestation was simultaneously and inseparably *both* a material object *and* a concept. At the beginning of this essay, I talked about the ways in which ancient practices have been imported into contemporary sciences (e.g. philology). I now observe a trend in the opposite direction, that is, the projection of contemporary categories onto ancient periods. In essence, there is a similar large-scale historical confusion in both cases.

I will linger momentarily on the second component of the artistic object in the Renaissance - the *idea* - which was strongly determined by the notion of authenticity. Borghini's text poses at least as much of a problem as the material object in respect of its collective symbolic connotation. Confronted with the impossibility of guaranteeing the material purity of the text owing to the modes of its transmission, Borghini tries to define a middle way which reconciles the need for truth in a document with the concrete reality which tends to restrict access to it:

I admit that it is nearly impossible to find a text which is intact and perfect in its entirety: but I vigorously deny that one cannot find good in it; for a changed letter or word here and there, something overlooked by omission or by carelessness and similar small errors, is human and common; they remove neither the name nor the effect of that which is good.³¹

Thus he lays down the criteria for selecting texts. The course he sets is

directed at establishing the truth by way of subjective criteria that are, according to him, related to good judgement: to determine error, oversight and carelessness. However, he says nothing about the way in which the editor - to use a generic term - can identify the *errata* so as to establish the correctness of the text.

And yet, Giacinto Barozzi, Vignola's son writes to Danti:

I will deliver to you the book which belongs to my father of glorious memory; you will verify many differences between it and the copy that Sir Gaddi gave to Your Lordship.

This proves that there were several versions of varying quality. The difference between Vignola's text and the commentary itself is clearly indicated in the published book, by using two distinct fonts to distinguish between Vignola's text and for his own commentary (Danti 1583:1). Furthermore, in many places he allows himself to add, in order to signal them, direct annotations to the manuscript's text, believing that it is necessary to make the meaning of certain words more precise.³² This should be reason enough to trust Danti and to believe that he acted in good faith.

It is hardly necessary to emphasise that Vignola's language is that of building sites; Danti presupposes that this language will be unknown to or ignored by his ideal reader, who belongs in another, certainly more liberal, setting.³³ He praises Vignola for his sound understanding of didactics,³⁴ but he also affirms that it is sometimes necessary to use words to explain what the author has demonstrated through images (Danti 1583:56). Once again, this is evidence of the scholar's natural mistrust of visual culture. Finally, acting as a mathematician, Danti mentions that Vignola's knowledge of Euclidean vocabulary is sometimes inexact and insufficient³⁵.

Borghini, for his part, does indicate criteria for identifying an original text: the

name of its author and the effect produced by the assembled words. Basically, he is excluding the anonymous text. He is not worried about the fact that copyists remain anonymous; that is a simple question of hierarchy, but makes a forced correlation between good texts and good authors. The process of historical construction is extremely powerful and brutal: a good text is a text that has been copied faithfully and that fits into *my* pre-established categories (the image that *I* have of an author) and that, moreover, evokes a positive feeling *in me*. Danti follows the same line of reasoning: if Vignola's text on perspective is good, it is because the architect Vignola is one of the best in his profession. For what other reason does he provide us with this long biographical panegyric which catalogues the socio-professional successes, the greatness of soul and the incomparable virtue of the author at the beginning of the volume? If the structure of the commentary proper is clear enough and profoundly logical, this foreword seems at the very least to extend beyond the scope of the subject. Furthermore, how does one justify Danti's lengthy inventory of Vignola's buildings, when in the same work he explains (in detail and with justice) that the *Two Rules* was intended to be a discussion of painting and not architecture?³⁶

The same phenomenon can be seen in the area of references picked up in the visual culture. According to Danti (1583: 68), the dominant perspectival system at the time was that of Baldassare Peruzzi, "prince of practical perspectivists". His rationale for this argument is that:

a) it was described by the best authors (be they Italian, German, or French) and was the most popular amongst the best painters (Danti 1583: 68),

b) it was used by Baldassare for the Farnesina, an emblematic work of perspective,³⁷

c) it was associated with the name of Baldassare, who worked at a time when the arts were flourishing and not during a

period of decadence (Danti 1583: 68),

d) Baldassare is a close friend of Giulio Danti, father of the commentator and close collaborator of Antonio da San Gallo (Danti 1583: 83),

e) its effect conformed to the rule recommended by the commentator (Vignola's second rule), and thus is excellent (Danti 1583: 101, 108, 110),

f) even though it culminated in the production of figures and not in architectural perspective, it has been transmitted through texts (notably those of Serlio) by writers who had access to Baldassare's manuscripts (Danti 1583: 24, 68, 82).

The tautological circle of self-justification is thus closed. Within a very short time, the process of transforming the nobility of a text into a practice in the workshop is, moreover, crowned with a certain kind of success. In 1606, Pier Leone Casella declares in his essay:

Through clear demonstration, with a heroic hand, [Baldassare] rendered workable the treasures hidden in this art, thanks to perspective.³⁹

It is perhaps interesting to read the introduction to this so-called "ordinary" rule in Borghinian terms:

I will explain the ordinary rule, that of Baldassare of Siena, first written by Piero and then by Sebastiano Serlio. The latter had been Baldassare's student and took all the good things from his books on architecture, as he himself affirms. The book is quite excellent, as are all of the things that Serlio has written on architecture and which came from Baldassare's fine school. One sign of this is that I have never seen an architect who does not make great use of his work, even if rare are those who use it well; his works do not deserve this, and even though one may find some error in them, the utility and the convenience that they have universally brought to the art of architecture will earn them eternal praise (Danti 1583: 82).

In essence, what Danti is telling us is that codicological transmission is unrivalled, not because it comes from Sebastiano Serlio (who, in his eyes, is guilty of a certain number of false

interpretations; Danti 1583:18, 19, 73) but rather because it is verified by the writings of Piero della Francesca, which are entirely trustworthy. The validity of the passages taken by Serlio from Baldassare is implicit.

The prestige of Baldassare's name ensures that a few errors will not invalidate the text: here Danti's rationale is similar to Borghini's on the form of manuscripts.

But Danti also confronts the final result, the consequences of which go well beyond the question of effects. Even if one were to find some minor procedural errors, he claims, the method as such remains valid - an attitude which may seem strange regarding what is basically a mathematical operation. In fact, the hypothetico-deductive character of Euclidean geometry (of which there was little or no awareness in the sixteenth century) disallows the slightest error of this sort: if a link in the chain of reasoning is defective, then, by definition, the result is false. But here Danti treats this scientific rule as if it were a literary rule, in which the sequence of arguments need not necessarily be sound or entirely interdependent. Sometimes, this holds true - especially in the case of logic or morphosyntax - but not always. The possibilities of the syntagmic signification of literature are less rigid than in the case of mathematics. Finally, it is at the very least strange that, in the final passage, Danti describes a rule for painting while explaining its effects on architecture.

The language: an object which is both *form* and *idea*

The success that the Aristotelian concept of the εἶδος (as it was depicted in the *Metaphysics*³⁹) enjoyed in the sixteenth century was not by chance. In order to explain this concept, Aristotle used architecture and medicine as examples - but the uses to which this term was put during the late Renaissance largely went beyond these domains.⁴⁰ A growing interest in the definition of material culture or "mutations

of matter," associated with a profound quest for spiritual universalism, could not but favour the use of conceptual tools which reunited both *form* and *idea* in a non-confrontational way. Because it largely operates within a synchronic vision of events, the εἶδος is less useful in a diachronic vision. In fact, even if it allows one to distinguish between things, approaching the same idea across variable forms remains difficult.

So the humanists about whom we speak, that is, those who pursued a historical construction - were apparently forced to reformulate some of their categories. Using a formulation which will seem somewhat familiar, Borghini explains his enthusiasm for historical reconstruction to his correspondent:

Concerning clothing [...] it is true enough that I clothe myself in today's styles, but if I seek ancient history, you must not think that I would like Cicero with a Florentine cloak and cowl, or with a Venetian *dogalina* and round beret; I would rather have him bare-footed with his toga knotted at the right shoulder. And I will not stand for a Scipio with a robe embroidered in the French style, or a flimsy Spanish cape.⁴¹

And again, marking a certain contempt for the fear of the ephemeral:

Numerous are those who have believed that books and words were like habits and clothes, which is to say that those of the ancients are no longer good during our age; they are perhaps fooled by this popular belief, of which one must speak, and which leads the majority to believe that it is necessary to follow the same thing for the dead as for the living.⁴²

Hence the criteria for authenticity are no longer limited to the provenance of the subject under discussion. Rather, they now relate to the way historians look to the past in order to present or construct their historical object: in other words, the way they "dress" history. And, it seems in this case, that the generic editor may express a certain preference for modernisation or for geocultural transfer which is clearly condemned here. Borghini is saying that

Cicero does not communicate directly with the Florentines or the Venetians, and that Scipio never knew the kingdoms of France and Spain.

In a way, what is at issue is a reaction against the excesses of the first humanism that some had lived as an *imitatio antiquæ*, with all its cloying mystical perfume. While Borghini and his followers propound a powerful ideal determination of the material object, they also seize the object itself and free it as far as possible from their ancestors' way of thinking - a trend which leads to a baffling fusion of ideal and material monads.

It seems that Danti behaves in the same manner, at least when he takes the trouble to expose the terms of the discipline upon which he depends. He refuses to use "disguises," and affirms his desire to deliver Vignola's text in its original purity:

The terms [. . .] are used by artists, and particularly by our author, who always designates them in this way [. . .]. I wanted to leave them as they were written in this first chapter; however, I direct the reader to the definitions that we placed before the demonstrations of the first rule. In the same way, our annotations to the demonstrations will make clear the things which the author imagines as true and well-known (Danti 1583: 99).

Danti boosts the authority of his author, but fallaciously. He places an emphasis on the definitive character of Vignola's choice of vocabulary - a misleading characteristic of scientific prose - but what he actually does hardly confirms this aspiration.⁴³ Nevertheless, he emphatically warns his reader that he will not run the risk of reading confusing concepts, since his own commentaries are intended to make up for all of Vignola's oversights.⁴⁴ The admonition thus appears to have been formulated a little bit oddly: what need would there be to clarify what is already clear? His caution corresponds with Borghini's suspicion of transhistorical concepts. But in these words, the reader finds only the echo of his intentions. The

facts lie elsewhere.

Egnatio Danti versus Leon Battista Alberti

Consider, for example, the relationship between Danti's *Commentary* and the texts of Alberti. At first glance, Danti's genealogy of ideas seems stable and indisputable. He cites the extract from the *De Pictura* in which perspective is said to be the profile of the visual pyramid (Danti 1583:12, 41) and he frequently uses a particular element of Albertian vocabulary related to the horizon-line (Danti 1583:5, 98); both elements are consensual. However, one may be surprised to read that in the preface, Alberti is presented merely as the author of a simple summary of some rules written by Piero della Francesca and others. Danti was familiar with both works, so this affirmation must be more than a banal simplification. Why, then, did he integrate the content of Alberti's rules with Piero's? Each set of rules is compelling in its own way, but is also quite distinct.

Alberti's instructions on applying perspective in painting are brief and occasionally ambiguous.⁴⁵ They spawned a literature both interpretive and contradictory, the production of which began well before Panofsky created his anthropologising discourse on the history of perspective (and which grew only more after the publication of his famous article in 1927).⁴⁶ According to the strictest positivist formulation, theory most often gives rise to practice, and all practice is supported by theory, otherwise it is seen as traditional. Thus the circulation or the transposition of tools may take place indiscriminately in both areas: basically, what we are seeing here is two stages in the development of the same object. Unlike anything formulated by the Renaissance mind, the theory of practice is distinct from the practice of theory. As parallel applications they are not supposed to meet, except perhaps at infinity.

So when Alberti informs his reader that he is speaking as a painter and not as a mathematician,⁴⁷ his intention is simply to clarify which disciplinary category governs the postulates he is using. When he explains his methods in the first person, using the present tense,⁴⁸ this means that he is giving his personal opinion as opposed to describing a universal conception. This does not necessarily mean that Alberti is theorising about his own practices. It may indeed mean that, but the entire text rests on hypothesis and virtuality: one cannot say that it constitutes a narrative account of a historical event. One must consider the fact that, in a way, he is imagining the goal of the theory that he is explaining. That Alberti himself painted “for pleasure of spirit [*animi voluptatis causa*]”⁴⁹ changes nothing. What matters is that he did not engage in painting professionally, which is to say in a manner limited by the objective conditions that would have led him to revise his thesis. In an authoritarian, hierarchical society where categories depicting an illusory indeterminacy comprised the primary identification of individuals on a number of planes, the fact that Alberti officially dealt with painting *as a humanist* and never as a painter is a primary determining factor. For this reason, one could say that Chastel is quite correct in his assertion that Alberti’s treatise was not aimed at painters.⁵⁰

We can confirm this by identifying the different decisive criteria in Alberti’s treatise: the importance of the standard measure (the Florentine *braccio*), linked to anthropometric reflections of Pythagorean origin; an explanation which depends upon proportion; the significance of the positioning of the vanishing point, not only at eye-level but also at the level of the horizon (the point above the human figure which is largest in the painting and closest to the viewer); and the necessity of placing the point of convergence of diagonals outside the frame but on the horizon line. All these indications are quite imprecise,

but yet quite compelling.

Alberti’s practice is confined, as it were, to a theoretical domain. It seeks to influence the manufacture of works (notwithstanding his recommendations for the *studiosi pittori*; Alberti 1547:11r), but it is not a practice in itself. For the humanist, the spirit of perspective is identical to its form, since humanism basically rests on principles. The dominant historiography, with its historicising endeavours, that have tried to relate this theory to experiences, particularly those of Brunelleschi,⁵¹ was based upon nothing more than geochronological coincidences. Chance or *Zeitgeist* had it that Brunelleschi’s practice and Alberti’s theory did not contradict each other, so therefore they have been associated, although this is perhaps not sufficient reason to establish a causal connection between them. In essence, the *De Pictura*, along with the other Albertian works that deal with this subject matter,⁵² offer what is primarily a way of conceiving figuration.

As for Piero della Francesca: his theory is founded on method. It does not proceed from the Albertian analogy of the perspective “cone” of natural vision.⁵³ Rather, it begins with the problem of how to evaluate an angle of vision, and gives an account of the psychophysiological limits of perception.⁵⁴ In both cases, one comes across what is basically the same question and the same response. But for Alberti, the point is to establish the necessary conditions for an understanding, while Piero transforms that understanding into practical terms.⁵⁵

If Alberti rejects the *superbipartiens* construction of the *Trecento*,⁵⁶ it is not because that construction is exclusively arithmetical, but rather because it is abstract. He prefers a measure based on human size, or, more precisely, human height.⁵⁷ Piero, for his part, places the question of the relationship between the spectator and the painting within a completely geometric schema: he intuits a

projective construction and the flattening of dihedrals.⁵⁸ The numerous instances in which he draws a geometrical square (or some other figure) beneath a perspectival square - a kind of drawing made famous by Serlio - demonstrate that the modalities of representing a procedure are neither identical to a geometric reality nor a figurative reality.

There is, then, a clear and practical distinction between the ideal, the translation of the ideal into material, and the material itself. The difference between Piero and Alberti, which Danti pretends to ignore, may be a way of modernising concepts which inevitably gives rise to a more functional reformation of method.

Borghini disapproves strongly of any attempt to modernise the vocabulary of ancient texts. Therefore, he condemns those who change form in order to preserve content:

Everyone who adds some words, it seems to me, is wrong; it seems to them that something is missing in the sentence. Or they transform the words, thinking that there is an error; or finally they change them, thinking to do better by it. Those people do not think they will satisfy readers by providing ancient and rough words, it's for that reason they put them into our time.⁵⁹

What is the goal of this transmission between generations? Is it preferable to preserve form and appearance at the risk of losing content? After all, content that has become incomprehensible is not only simply modified; it actually vanishes. It becomes invisible.

However, "transparent" concepts - even if they no longer directly affect material conditions - play no less of a symbolic role as social identifiers. Thus, we see how Danti is torn between the need for recognition and the desire for readability. In the introduction to his commentary, he insisted on the genealogical continuity of ancient perspectivists: Alberti - Piero - Serlio - Barbaro. Today, this homogeneous reconstruction of history may appear to be

exaggerated, if not incoherent; it is made up of nothing more than a declaration of principles. The need for not breaking with tradition overrides the truth. The workings of the concepts and tools adopted by Danti thereafter, expose the cracks in this artificial coherence. In fact, further on in his text, he draws a legitimate distinction between the different authors. The evolution of knowledge allows for the accumulation of experience; this does not mean that the bases have been modified.

Didactic rewritings on a theme like perspective, allow one to bypass different historical stages in the development of the field without having to recall its limits every time. For example, Danti does not use Alberti's auxiliary construction to demonstrate the rule of degradation of lengths, for it is superfluous. In fact, even if it was useful in a system based on the correspondence between geometry and arithmetics, it was no longer relevant to a system with a projective tendency. In this case, the manner in which the procedure is described has changed, for the consciousness (and not only knowledge) of the phenomenon has deepened. By the end of the Renaissance, perspective was *perceived* as the translation of a virtual image into a material one; whereas for the Alberto-Bruneschellians, the phenomenon was based on the realisation of the painting itself. Without an intersector, there is nothing behind Alberti's mirror, and without Brunelleschi's peephole, one sees the whole square, the sky, the neighbouring roads, and not only the façade of the baptistry.⁶⁰ Danti knew perfectly well that natural vision and perspectival vision are not identical. Our natural vision sees in three dimensions while perspective vision sees only in two.⁶¹ We know this because the only one of Vignola's definitions which he retained (perhaps there were no others available to him in the manuscript?) explains this difference as follows:

With the term 'perspective', one commonly understands this view which represents a certain thing in one glance. But the painters and artists understand instead all the things which are represented in painting or in art by means of lines (Danti 1583:1).

In this passage, there is no trace of the diachronic evolution of the concept, but rather an explanation of how tradesmen (painters and artists) understood perspective differently. This permits us to identify the slippage all the more clearly: the distinction between the perspective of opticians and that of the artists is no longer as important as the fact that, from that point on, artists had begun to remake their concept by way of the opticians' knowledge - and that is what is really at stake in Danti's commentary.

In practical terms, the result was no less similar: artists were working on a modification of the formulation to maintain its content. Even if, at the beginning of the first rule, Danti (1583: 52) tells us once again that geometry and arithmetic are the instruments of truth, he then goes on to announce his intention to concentrate on the rule(s) that correspond to an external criterion: speed of execution. Could the introduction of functional modalities, rather than intrinsic novelty, be another form of "modernity" - one which does not call the traditional, yet uneasy rapport between form and content into question?

Without taking a closer look, one may assume that the origin of the semantic concept is found in Vitruvius' distinction between the *quod significatur* and the *quod significat*.⁶² These two terms are not exact equivalents to the Saussurian "signifier" and "signified," because the first refers to the *fabrica*, the result or material translation of the idea, while the second encompasses the entire action of *ratiocinatio*, the theoretical and scientific description of the phenomenon.

However, this explanation is a step closer to drawing a clear distinction between physical objects and their

linguistic descriptors. In his Vitruvian commentary, Daniel Barbaro (1567) holds that, in essence, language is not a copy of reality. In this same way Danti adds to his commentaries that *painting* is not a copy of reality. Alberti may have believed that painting "is an open window through which one can see history",⁶³ but from now on painting and history become two distinct things.

Danti's text evidences at least two categories for discerning the necessary tools for perspective: those which are really distinct and which one can distinguish through language, and those which are just as distinct but for which nobody yet possesses specific terminology. With the exception of idioms and semantic slippages (which is not a minor exception, to be sure), one may consider the first category to be relatively workable. The second, on the other hand, is more interesting, for it is more difficult to circumvent. The question is centred on the *moment*. This is illustrated in a simple and concrete manner in Borghini's text on ambiguities in codicological transcription:

Villani uses in particular this abbreviation: *FI* for 'son' [*figliuoli*]. This was so common in this era that it was even used orally; this is witnessed not only in the passage of Dante, *for he is the son of [fi'de] Pietro Bernardone*, but also the patronymics still used, to some extent, today, *Fighineldi, Firidolfi, Figiovanni*. But just as often he proves the need to cite *Florence* and the *Florentines* [*Firenze e Fiorentini*]; he uses the same abbreviation then, believing that there will be no ambiguity on whether it should be taken to mean *son* or *Florence*.⁶⁴

Certainly here Borghini does not raise the problem of cultural evolution; he seems to reduce the phenomenon to a mechanical difficulty in understanding texts. In line with his policy, he seeks always to be the closest to "truth," so that his readers, reassured by a logic which transcends and dominates them, can comprehend its content. The need to provide the greatest possible clarity is one of Danti's principal

preoccupations (Danti 1583: preface).

The study of the presuppositions of what is not, apparently, an original late sixteenth-century text has shown how crucial the problem of the historical position of the writers is. In it, the writers take a position not only on Ancient literature but also on early Renaissance metatexts. Although the contents, arguments and excerpts chosen from the *auctoritates* have remained the same, the significance of the text has shifted completely.

Notes

The English text has been produced with the help of Ayse Tuzlak, Estelle Maré and Philippa van Aart.

Unless otherwise indicated, quotations were translated by the author.

1 The diversity of the interests and methods of nineteenth-century historians of the Renaissance is certainly genuine. The motivations which separate them, all the more so. The emphasis here is placed on the historiographical method of philology as a twentieth-century heritage. Insofar as Burckhardt – one of those who otherwise does not recognise the neo-Antique deposit as a structuring force – sees an image as he reads a book, he reduces these two distinct objects to an identical schema of interpretation. Even when a scholar such as Cavalcaselle studies *only* images, he seeks to force them into categories deriving primarily from literature. Naturally, it does not fall within the scope of this article to retrace the entire historiography of terms such as “humanism” and “Renaissance,” or to review the successive ideological connotations which they were subject to since the nineteenth century.

2 P. Francastel has shown how the artistic productions of the Renaissance wove strands of meaning that were altogether more complex than those to which philology normally reduces them. One cannot divide their different components without danger of developing a “figurative blindness” which, in privileging a particular aspect of the work, ignores all others. The critique that he elaborates with regard to philology is also founded in the nature of the objects studied: “car l’homme n’est pas seulement abstraction et discours, il est agent, fabricant d’objets, de symboles, de signes. Il est nécessaire, pour pénétrer la pensée d’une époque, d’avoir recours aux témoins de toutes ses formes d’activité. L’homme instaure non seulement en parlant, mais en créant des formes et des types d’objets qui s’échelonnent de la stricte utilité à la gratuité en apparence la plus totale” (1967: 81).

3 See in particular Augustine 1894: III, 8; 1909: XI, 4; 1981: XI, 11-18.

4 See in particular Origen 1936: Preface, I, 9-10; II, 1-4.

5 On this question, and in particular on the constructions employed by historiography to create a “coherent rupture,” see Weiss 1969: 1-15.

6 For a general presentation of the diverse modalities of citation in the Renaissance, and in particular the problem of its relation to ancient texts, see Compagnon 1979: 235-356.

7 We insist on the didactic quality of this text, and also on its definitive quality. Earlier texts on this subject, beginning with those of Leon Battista Alberti, Paolo Pozzo Toscanelli, or Piero della Francesca, do not speak to the exigencies of elementary education for various reasons. If certain sixteenth-century texts – beginning with that of Pietro Cataneo rather than that of Sebastiano Serlio, for example – more closely approach the model in question, they only constitute partial introductions to the problems inherent within experiments in perspectival technique.

8 Danti 1583. See the modern critical edition of the text: Danti 2003 and Fiorani 2003.

9 A portion of the manuscript, discovered in the Archive of the Accademia di San Lucca in Rome has been published by Roccasecca 2002.

10 In fact, the *Regole delle cinque ordini d’architettura* were published in Venice in 1562, then in 1570, 1582, 1596, 1602 (Rome), 1603, 1617 (Rome), and in a number of important editions until the middle of the nineteenth century. Translations into Spanish (1593), German (1617), and French (first years of the 17th century) were not slow to appear. Aside from the books of Palladio (Venice 1570, then 1581, 1601, 1616, etc.) who addressed himself to another essentially Venetian public, Vignola knew no real rivals in this domain. The work of Labacco (1558) was not usable as a model; that of Serlio (1537, etc.) was too controversial in Italy; and that of Giuseppe Salviati (1552) was distributed in a confidential manner. On the rules of architecture, see Morolli 2003.

11 We deliberately omit treatises from the late Middle Ages of the sort written by Biagio Pelacani of Parma (around 1390), by Dominicus of Clivaxo, or of Heinrich von Langenstein of Hesse (after 1397). On these authors, who are situated in the trajectory of speculative perspective formulated either by Bacon or by Pecham and who are not particularly interested in the question of artistic translation, see Frederici Vescovini 1965.

12 “Aristotile dice nella *Metaphysica* che solo il vedere ci mostra più differentia di cose; imperoché per quello noi investighiamo et cerchiamo certa sapientia di tutte le chose in cielo et terra sono; et però moltissimi phylosophi antichi mathematici, come fu Archymede, Anchymus, Scopinas, Alfantem, Apollonio, Tolomeo, Vitulone nel secondo libro e molti altri dottori” (Ghiberti 1912: vol I, 55).

13 The work of tracing sources for the *Third*

Commentary was begun by Federici Vescovini 1983: 122-140, and completed by Bergdolt 1988.

14 "Aristoteles dicit in primo *Metaphysicæ* quod visus solus ostendit nobis rerum differentias: per illum enim exquirimus certas experientias omnium quæ in cœlis sunt et in terra. Nam ea quæ in cœlestibus sunt considerantur per instrumenta visualia, ut Ptolomæus et cæteri docent astronomi" (Bacon 1900: 2).

15 See Federici Vescovini 1983: 143-168. About Ghiberti's cultural background, see Dubourg Glatigny 1993.

16 "We know that Ghiberti was in touch with Nicoli and his circle of humanists; only in their libraries could he have found and perused the writings of the ancients, and only they could have helped him when his linguistic, philological, and archaeological training failed... He knew Traversari well enough to use him as a middleman in applying to participate in the private interlibrary loan service which played so significant a role in the intellectual life of the early fifteenth century" (Krautheimer 1990: 311).

17 After having tested many citations drawn from the *Commentaries*, D. Raynaud was led to the following conclusion: "Il convient de ne pas rapporter systématiquement les *Commentarii* à l'optique d'Al-Hazen, comme l'a fait Federici Vescovini, en suivant les seuls renvois explicites. Comme nous venons de le voir, Lorenzo est davantage tributaire des traités de perspective conçus à Oxford. "Tributaire" signifie ceci: feuillotez à toute vitesse les *Commentarii*, et vingt pages plus loin, vous serez toujours en compagnie de Bacon" (1998: 178-184).

18 Anthemios of Tralles, sixth-century engineer and architect, is the author of *Problems in Mechanics*, in which he describes the burning-mirror that Archimedes constructed by arranging twenty-four flat mirrors joined by consecutive cords along a conical section. This mirror was designed to burn ships from Marcellus' flotilla, which was encircling Syracuse. Called to Constantinople by Justinian, he was, with Isidore of Millet, one of the first architects of St. Sophia.

19 Asclepius of Tralles (end of the VIth century) is primarily known for his commentary on Aristotle's *Metaphysics*.

21 Archimedes constitutes the typical example of the mythical creation of a document in humanist history: it was used before its discovery. As Commandino has written: "Archimedes is a sort of God" (1558: 2v.), visible and invisible at the same time. The collective desire to know was substituted for the absent document. Petrarch guessed that Archimedes had represented the revolution of the planets better than nature realized; but he had never read him. Expectations were so great that in 1423, humanist Florence was shocked by the imposture of Rinuccio da Castiglione, who claimed to have brought one of Archimedes' manuscripts back from his voyage to Byzantium (see Sabbadini 1967: 49). Archimedes' teachings circulated widely but in the form of manuscripts which were corrupted or amply

adapted and transformed (Clagett 1978). As for authentic texts, there are at Florence at least two Syracusan manuscripts, but they entered the Medici library under Lorenzo (thus after 1449) and were not authenticated until the 1490s by Giorgio Valla. Even if one had known that Guillaume de Moerbeke had finished a Latin version in 1269, it was at Rome, at the initiative of Nicholas V and under the direction of Jacob of Cremona, that a Latin translation of Archimedes saw the light of day, which in turn gave rise to the publication of the *princeps* by Bale in 1544. See Rose 1975: 8, 31, 34-35, 39-44.

21 Raynaud explains Ghiberti's usage of citation by means of the rivalry between the competitors in the contest in 1401 for the first door of the St. John baptistery. He studies in particular the position of the author with respect to Brunelleschi. However, he extends his analysis to the macrohistorical situation and emphasizes the links between politics and scholars of perspective from the Middle Ages. He concludes from this that "dans une telle situation, la culture dominante A [la culture Renaissance pro-impériale] devient une culture *explicite*, alors que les éléments de la culture B [la culture médiévale guelfe] rentrent dans une zone de référence *implicite*" (1998:197-209).

22 Krautheimer 1990: 313. On Ghiberti's procedures for social mobility, see especially Quintavalle 1967: 75-87.

23 In the presentation of his work entitled *Raccolta di diverse regole di prospettiva* (which remained unedited and the manuscript not identified), included in the Preface of his *Le due regole della prospettiva pratica del Vignola compendiate* (Rome 1684), Tiburzio Vergelli made a profession of faith: "Tutte le [...] cose le hò cavate da diversi autori antichi, e moderni, tal'uno ancor vivente, dove dico à ciascuna di esse il nome, e cognome dell'istesso autore e di chi me l'ha data, non appropriando à mè stesso cosa alcuna delle fatiche altrui, havendo ciò imparato dal P.M. [Egnatio Danti] facendo egli stesso il simile".

24 "E cosa se non grandemente conveniente, che intorno a un senso nobilissimo, che di dignità tutti gli altri avanza, e ci arreca cognitione di più differenze di cose, accaschino opere si degne" (Danti 1583: 112).

25 Kemp 1990: 79. One must however recognize that Danti generally cited his sources more rigorously than his contemporaries. In certain works, like the *Primo volume dell'uso et fabbrica dell'astrolabio* (Florence, Giunti, 1578), he even placed his citations in quotation marks, a rare enough practice in the sixteenth century. On the appearance in this period, particularly within French printing, of a distinctive typography for citations, see Compagnon 1979: 40-42, 246-247.

26 Throughout the text, Danti makes a special appeal to the *Nicomachean Ethics*, the *Physics* and the *Metaphysics*, which was not unusual in the sixteenth century. In particular on the subject of the difference in rigour adopted in the debate over the arts with respect to the sciences, see Danti 1883: Preface. On the difference between the geometric line and the

perspectival line see *ibid.*: 2. On the analogy between retinal persistence and the rhetorical method employed in a dispute, see *ibid.*: 11. On the animal as the only seat of the passions and on the sense of transmission of the visual species, see *ibid.*: 12.

27 Contrary to what the bibliography might suggest, Danti knew this edition perfectly well, as the contents of his unpublished letter to Giuliano dei Ricci (Florence), dated 2 November 1575, proves (Florence, Biblioteca Nazionale Centrale, Palatino 1187, fol. 352r.).

28 This text was published for the first time at the beginning of the nineteenth century, in a very free transcription. The autograph belonged to the national collections at least until 1889; its trail was picked up again in 1986, which is when the text turned up for sale in Bologna. Today it is in a private collection. A new critical, philological edition saw the light of day under the supervision of G. Belloni (Rome 1995). For an overview on Borghini, see the exhibition catalogue *Vincenzo Borghini, filologia e invenzione nella Firenze di Cosimo I* 2002.

29 On the modalities of the elaboration of this process at the Roman Academy of St. Luke, see Heinich 1985.

30 "L'arti si sogliono pigliar in due modi, l'uno mediante le necessità della materia, l'altro secondo la bella idea" (Armenini [1587] 1988: 67).

31 "Io confesso che sia quasi impossibile trovarsi un testo che sia intatto et per tutto perfettissimo: ma che è non se ne truovi de'buoni, questo niego io gagliardamente; perché lo scambiamiento talvolta d'una lettera o d'una parola, il lasciarne qualchuna o per dimantanza o per inavvertenza, et simili erroruzzi che sono humani et comuni, non tolgono né 'l nome né l'effetto del buono (Borghini 1995: 28).

32 *Ibid.*: 68. Here he explains why he introduces this internal system of annotation from chapter VI of the First Rule onwards.

33 On the "sagma" of Bolognese artists, see *ibid.*: 122; on the lines said to be "placed by accident" and for general remarks on the vocabulary of artists see *ibid.*: 99; on "elevated" lines, see *ibid.*: 102; on "elevated" and "diagonal" points, see *ibid.*: 110.

34 For the indispensable definition of the object of study, see *ibid.*: 1.

35 On the use of "diameter" for the only parallelograms with four equal sides see *ibid.*: 98. On non-orthogonal figures see *ibid.*: 108.

36 See *ibid.*: *Vita di Giacomo Barozzi*, 1, 2, 39, 81, 86, 87, 89, 90, 94, 96, 97, 122, 134, 137, 139.

37 See *ibid.*: 1. In order to be persuaded, one can refer to the description of the Farnesina by Vasari which insists on the genuineness and the vivacity of the artifice, and on the artist's capacity to treat the problematic of the *paragone* in an ambiguous manner

(Vasari 1906: vol. IV, 593-594).

38 "Sensibili demonstratione, manu heroica, absconditos artis thesaurus in perspectu tractabilis fecit" (*op. cit.* in Gombrich 1987: 224-232).

39 See the entirety of chapter VII, book Z of the *Metaphysics*, notably the passage on the generation of beings, in which a definition of εἶδος is given (Bekker 1032a).

40 In the same book, (Bekker 1032b) writes that "the art of medicine or of building is both the form and idea (εἶδος) of health or the house". For example, he explains his theory further on: "a statue is not called stone, but made of stone [...] and the house is not called bricks, but made of bricks. For if we consider the matter carefully, we should not even say without qualification that a statue is generated from wood, or a house from bricks; because that from which a thing is generated should not persist, but be changed" (Bekker 1033a).

41 "Ben è vero che io mi vestirò a l'usanza d'hoggi: ma s'io vorrò l'historia antica, non pensante già che io ci voglia Cicerone in mantello et in cappuccio alla fiorentina, o colla dogalina et berretta tonda alla venetiana; ma lo vorrò scalzo et con la sua toga annodata su l'humero destro, né vi patirei uno Scipione con la roba a brodori alla franzese o con una cappa lesta alla spagnuola" (Borghini 1995: 36-37).

42 "Molti han creduto che la cosa de'libri et delle parole sia come quella degli habiti o de'vestimenti, cioè che gli antichi non sien più buoni a questi tempi; o forse ingannati da quella comune sententia, che è s'ha a parlare come i più, credono che ella si habbia a osservare così ne'morti come ne'vivi" (*ibid.*: 35-36).

43 It is correct to say that the attempt to distinguish between the five parameters or elements (see *ibid.*: 63-65) is particularly scientific – but what is it worth without a definition, and the examples that Danti is compelled to add (*ibid.*: 64-68)? What then is to be said of the "linea piana" which sometimes designates the ground-line, and elsewhere the horizontal line? This last is occasionally called "vista dell'huomo" later on, which term can also designate the length between the point of sight and the point of distance. Examples are abundant, and they introduce a mighty confusion.

44 On his additions to the text, see *ibid.*: *Dedication to Buoncompagni*, Preface; on his additions to the figures, see *ibid.*: 68, 134, 143.

45 The procedures for sketching perspective on a plane are articulated most clearly in Book I (19, 20), while procedures concerning elevations are found in Book II (33, 34). References of Alberti's *De pictura* are given following the Cecil Grayson's classical edition (New York 1972) used in most of the recent editions and translations.

46 The article "Die Perspektive als symbolische Form" is often cited as dating from 1924-1925, since it appeared in the *Vorträge der Bibliothek Warburg* bearing this date. However, the volume was not

published until 1927. For an enumeration of studies that have a Panofskian bent, see Veltman 1980.

47 See Leon Battista Alberti, *De pictura*, I, 1.

48 See *ibid.*: I, 20-23.

49 *Ibid.*: II, 28.

50 "C'est une erreur lourde de conséquences, que de considérer que le petit traité d'Alberti de 1435 a apporté un code esthétique à la Renaissance. Le but de cet essai était d'encadrer [...] la pratique des novateurs, qu'Alberti, revenu à Florence, découvrait en plein essor. Mais s'adresse-t-il vraiment aux *artifices*? Plutôt au public cultivé qui fournit les commanditaires [...]. Si brillante que soit cette intellectualisation de l'art du peintre, nous n'avons aucune indication invitant à penser que l'opuscule albertien ait été lu dans les *botteghe*" (Chastel 1980: 46-47).

51 See T. J. Kitao 1962: 174; Damisch [1987] 1993: 81-83; Sacchi 1994: 98 *et al.* The reasons for this overinterpretation are explained by Roccasacca 1993: 246-248.

52 See Alberti's *De statua, Ludi rerum mathematicarum* along with other tracts which are sometimes considered apocryphal, such as the *De punctis et lineis apud pictures*

53 See Leon Battista Alberti, *De pictura*, I, 5-17.

54 See Piero della Francesca [1942] 1984: 66-68, 128-129.

55 "Le mot "œil" ou "vision" dans un traité de perspective, n'est pas un traceur discernable: il se retrouve sous toutes les plumes. En revanche une configuration spécifique d'énoncés s'approche de la définition du traceur: il s'agit d'un assemblage de significations discernable et adéquat, bien que peu maniable (cette analyse peut se révéler fastidieuse). Pourtant, une configuration de ce type montre qu'il y a eu échange d'un véhicule matériel et de significations. Derrière elle, existe tout un réseau de connexions effectives" (Raynaud 1998: 44-45).

56 That is to say, the rule of multiplication by one and two thirds of the original number. This method is broadly used by some painters who were Alberti's contemporaries

57 Alberti himself said in *De Pictura*, I, 18: "Sed cum sit homo rerum omnium homini notissimus, fortassis Protagoras, hominem inquiens modum et mensuram rerum omnium esse, hoc ipsum intelligebat rerum omnium accidentia hominis accidentibus recte comparari atque cognosci."

58 In geometry, a "dihedral" is each of two parts of a space limited by two planes *a* and *b*, called "dihedral faces", having as a common origin line *AB*, called the edge of the dihedral. Euclid (*Elements* XI, definition 4) calls them "perpendicular planes": "A plane is perpendicular to a plane when the straight lines drawn

in one of the planes at right angles to the intersection of the planes are at right angles to the remaining plane."

59 "Tutti questi, mi par che per lo più errino, o aggiungendo qualche parola, parendo loro che a fornire la sententia ella vi manchi, o veramente le mutano, pensando di fare meglio; non par loro sadisfare a' lettori, dando loro quelle voci antiche et rozze, et però vi mettono l'usitate di questi tempi" (Borghini 1995: 39-40).

60 On the elements of *ars* as ethical or moral, according to the Alberto-Brunelleschian theory, and on the specific exemple of the dome of Santa Maria del Fiore, see Smith 1988. However, we do not agree with the author when she says that the Italian translation of the *De Pictura* is "itself a manifestation of the dissolution of barriers between the speculative sciences and the mechanical arts, and symptomatic of a redefinition of the kinds of knowledge and activity appropriate for a man of education" (*ibid.*: 317).

61 On the constitution of the semantic field of the word "perspective" in the Renaissance, see Ineichen 1985.

62 Vitruvius, *De Architectura* I, 1, 3: "Cum in omnibus enim rebus, tum maxime etiam in architectura haec due insunt: quod significatur et quod significat. Significatur proposita re, de qua dicitur; hanc autem significat demonstratio rationibus doctrinarum explicata".

63 L.B. Alberti, *De pictura* I, 19: "quod quidem mihi pro aperta fenestra est ex qua historia contueatur".

64 "Il Villani usa particolarmente queste abbreviature: *Fi* per *Figliuoli*, et questa era in qu' tempi tanto comune che ella era messa ancora in pronuntia, il che testimonia non tanto il luogo di Dante, *per esser fi' di Pietro Bernardone*, quanto i nomi comuni parte ancora hoggi in uso, *Fighineldi, Firidolfi, Figiovanni*. Et perché anchora gli viene a ogni punto a bisogno nominar *Firenze e Fiorentini*, egli si serve della medesima abbreviatura, credendosi che e' non sia però un sì tondo di pelo che non sia per conoscere quando ella si ha da pigliar per *figliuoli*, e quando per *Firenze*" (Borghini 1995: 23-24).

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