The Treatise on Perspective: Published and Unpublished

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The chapters based closely on Leonardo’s discussions of proportion in his Libro del Disegno; book 1, chapters 49-53; see also Farago 1991, 133–134, 136, 157–158.

66. Pedretti 1971, 133–34, describes this recently discovered manuscript, which he designates the "Codice spagnoletto," as the earliest known version of the "Liber desegno," as it is perhaps contemporary with the Codex Uffizi. The title page includes a portrait of Leonardo from the 1490 edition of Vincenzo’s Lives, providing a certainty of date prior to the large quarto manuscript comprising sixty-four folios.

Thanks to surviving correspondence, cited by Pedretti, this manuscript and copy are named and can be associated with the mathematician Egnatio Danti, editor of other writings on perspective (see Francesco Giunti, "Danti Edoardo Volonti: The Formation of a Modern Classic on Perspective," in this volume).

67. The compilation of both manuscripts has been closely associated with the illustrator Carlo Uffizi, who may have been involved with the Codex Uffizi too, although the drawings are likely by Francesco Melzi himself, as argued in Pedretti 1995, 175–76 (which considers Melzi to be in the same context as the Codex Uffizi, see Pedretti 1995, 131–32). Citing important studies by Ugo Faggioni, Serro Martinelli, Renato Zitelli, and others.


70. As in the case of the Codex Leiceter, Leonardo continued to add observations as he worked on the folio, destroying to some extent even the form of the anatomical figures. His constantly evolving habits may have had as their point the development of a continuous tendency to begin at the upper right of the page and work toward the lower left—\n
71. Michael Spence, Leonardo’s Anatomical Studies (New York, 1994), 3–5, describes the advantages of Leonardo’s concept of "anatomy in perspective," which suggests that the field is static, a system of "visible, inappreciable, dispositions, structural structures predisposed to function as structural structures, that is, as principles which purport in immanent powers and representations without a conscious aiming at ends." (Spence, "Leonardo’s Concept of Anatomy," 3–4) As such, the concept is similar to Poussin’s idea that the human body is a collection of forms and proportions that can be seen in both the static and dynamic aspects of the human body.


73. In 1727, the Galileo scholar Tommaso Rinuccini published a collection of engravings, which included engravings of anatomical figures, as well as reproductions of Leonardo’s anatomical studies. This work was intended to provide a comprehensive account of Leonardo’s anatomical studies and to acknowledge their importance to the history of the subject, but he did not have access to a manuscript, so his work was never published. The text was written in Leonardo’s original handwriting, and it was edited by the artist Luca Vitruvius. The text was published in 1727, and it contains detailed descriptions of the human body and its various parts, as well as illustrations of anatomical figures. This work is considered to be one of the most important contributions to the study of anatomy in the 18th century.
much." Poussin had the same respect for Rousseau's teachings at the Royal Academy. "In any case, it is necessary to write to you about the lessons you deliver at the Académie, you are too well grounded."

But his drawings surely were well-grounded. And so were his numerous works on the theory and practice of perspective, derived mainly from the writings and teachings of the French geometric Girard Desargues (1591-1661), who is generally recognized as one of the founders of modern geometry. This link was established in Rousseau's 1646 "Manière universelle de Mr. Desargues, pour praticer la perspective." It was also important for Morgen universal de pratique la perspective sur les tableaux ou sur faces irregulières, not to mention his Traité des conceptions, et conceptions de perspectives which was published in 1665, in which Poussin's letter was to appear.

To what extent Poussin knew about Desargues' work and theories is a question that has been answered by the author in his book on Poussin's "Dame de la recherche" and "Dame de la pratique". The problem of perspective is difficult to tell. In his studies on Poussin, Georges Kaufmann deals at some length with Desargues' possible influence on Poussin's art. But there is evidence that the painter was aware of the geometer's existence, at least as well as Poussin was aware that the geometer was aware of the painter's. In his 1646 "Dictionnaire des Arts" he mentions a drawing, not necessarily his own, of the painter himself, which Poussin sent the same year from Rome to Paris. In this drawing, "the perspective of the canvas and the picture" is constructed on the basis of ground plans and elevations, that is, according to a more demanding procedure than Desargues himself had demonstrated in his 1646 "Exemples de l'usage des manières universelles du S. et de la pratique des perspectives."

The French translation of Leonardo's Treatise on Painting was by Roland Fréart, sieur de Chambray, who in 1645-1646, the brother of Poussin's lifelong patron and friend, Paul Fréart, sieur de Chambray (1616-1694). And it was Chambray who in 1646 brought a copy of Leonardo's Treatise back to Paris. Given to Chambray by Cassiano Dal Pozzo (1548-1637), the copy had been made after the copy Cassiano had himself commissioned of the original manuscript in the Biblioteca Library in Rome. The letter had been compiled by Leonardo's pupil Francesco Melzi (1492-1570). Regarding the content of this publication, one could not have put it more plainly than Poussin himself did in his letter to Abraham Bosse: "Anything that is good in this book can be written on one sheet of paper in bold letters, and those who believe that I approve everything in it do not know me. For I hold never to give way to things in my profession which I know to be poorly done and poorly expressed."

At first glance, Poussin's denigration of Leonardo's Treatise on Painting is all the more surprising since he himself took part in its publication. He took such a great part in it in order to benefit from his authority, Fréart de Chambray found it appropriate to dedicate his translation of Leonardo's treatise to "the restorer of painting and the ornament of his country," that is, to the same Poussin who supposedly brought to its highest perfection this rare book, which from now on must be the rule of art and the guide for all painters.

But in that matter too the painter makes it very clear.

As for the book by Leonardo di Vinci, it is true that I drew the human figures that are in the copy that belongs to the chateau du Puisé (Cassiano Dal Pozzo) but all the others, either geometrical or otherwise, are from the hand of a member of the Academy, namely [Pier Francesco Alberti], the one who designed the plans in the book on Rome Sobriérema Roma (underground) and the clumsy landscapes that I draw behind the small figures in the copy that was printed by M. de Chambray, were added by a certain Erard (Charles Erard), without my knowing anything of it.

We do not know the extent to which Poussin involved himself in the project of publishing Leonardo's Treatise on Painting. When he accompanied Chambray to Paris in 1648 to assume the position of premier peintre du roi, which he had already occupied, the superintendent de l'Art de la sculpture, had offered him. The drawings in the copy of Leonardo's treatise given to Chambray by Cassiano Dal Pozzo, today in the Hermitage in St. Petersburg, were for a long time considered to be original, contrary to Poussin's explicit statement in his letter to Bosse. Displeased with his Parisian experience, Poussin returned to Rome, and because of upheavals that took place in France at the time of the Fronde, Poussin lost contact with Fréart de Chambray. But this was not the only reason why he did not follow the illustrations. Within the context of Bossé's dispute with the Royal Academy, it is to be noted that the engraver was also a close friend of Poussin."

In "une certain Erard" was Charles Erard (1606-1689), himself an illustrator and engraver, who would become the first director of the French Academy in Rome and who happened to be the friend of M. de Rastellus, the new director of the Royal Academy of Painting and Sculpture, appointed in 1651, and one of Bossé's most obstinate opponents. This may have led Poussin to take sides with Bossé, who would thus lose any chance of appreciating the work in which Charles Erard added some clumsy landscapes to the human figures Poussin had drawn.

Much literature has been devoted to the question of borrowing from Leonardo's Treatise on Painting and to the way in which several figures in his paintings may be related to the drawings pasted in Cassiano Dal Pozzo's copy of the original treatise, as well as to some of the drawings and engravings that derive from them. But the mere fact that Poussin criticized the addition of backgrounds behind his "small figures" illustrates the way we are to consider his complaints about the contents of Leonardo's Treatise on Painting. For in Poussin's mind what was at stake in Bossé's request was the place as well as the role of the theory in the practice of painting in the arts. If we look at the first paragraphs of Leonardo's Treatise that we seem to say it was perfect accord with Bossé's teachings. Perspectives must come first in the training of young painters in order for them to give to each object its correct measurements. Leonardo wrote: "Try Science first. Then follow practice, which is a consequence of science." But apart from some observations on the use of perspective and the lighting of objects, the Treatise on Painting in fact does not contain much information about mathematical perspective.

From their origins in modern times, perspective theory and practice have been divided between two major trends: first, how to draw in perspective a more or less regular body, as was the case with Filippo Brunelleschi's (1377-1446) painted panel of the Baptistry of San Giovanni in Florence, which Poussin admired; and second, the accomplishment in Renaissance perspec- vite, and second, how to first build up or compose a scene, but the perspectively projected scene in perspective which was representation was to take place in a separate vision, as Leonardo da Vinci conceived it, as Leoni Battista Alberti (1404-1472) described it in his book on his own treatise on painting, De pictura. It is all the more surprising that whereas Leonardo's treatise leaves no room for linear perspective, Fréart de Chambray, in his dedication to Poussin, gave the treatise the title "The linear demonstration of all the chapters that were needed to be explained and represents the history of painting, where it seems to me that Poussin was not the author of the optical diagrams since in his letter to Bosse he explained that to Cassiano Dal Pozzo, he trusted the designs for Antonio Bosio's Rana scenarii omnisim- ina. In addition, in the drawings he made for Cassiano Dal Pozzo, Poussin had no regard for any kind of figure other than the human body. The setting for the figures in Poussin's drawings was reduced to a minimal strip of land, while the various scenes drawn in the more or less continuous perspective that Leonardo and French artists of his time had developed were supposed to convey a total misunderstanding of Poussin's purpose.

As Poussin was far from considering Leonardo's Treatise on Painting in its entirety, in order to provide the reader with a set of instructions that would influence the most abstruse passages, Poussin concentrated on the relatively small portion of the text that deals with correct measurements. Leonardo wrote: "Try Science first. Then follow practice, which is a consequence of science." But apart from some observations on the use of perspective and the lighting of objects, the Treatise on Painting in fact does not contain much information about mathematical perspective.

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side will be lower than the other one. If he carries a stone, the weight-bearing shoulder will always be higher. Thus, in order to show the body in action, from the simplest movements to the most "composed" ones, the painter needs to know how to place its parts and how to give his figures the attitude that will allow the viewer to understand what is represented. He is constrained, as they were, by the times of exposure, the early photographers had to conform to the same canons as the painters. It is not a coincidence that many of their "academic studies" directly echo Poussin's exercises in movement.21 Not until the development of computer graphics a century later would it be possible to show the body in motion in a new way, with no need for photography, film, or any physiological research and without reference, other than an implicit one, to the ground on which the figure actually stood or drew or to the grid and distances that constitute the ultimate frame of reference.22

In his reading of Leonardo's Treatise on Painting Poussin apparently was more interested in the precise notions regarding the representation of bodies than in the generalities about how to draw a landscape or set the stage for the figures. So was Boss, himself, as we may infer from his Sentiments sur la distinction des diverses manières de dessiner que la nature a données. "The rule of perspective," Boss wrote, "will give, those who have been trained in the tracing and projection of objects or invented bodies, the general knowledge of how to represent all the bodies that are imaginable in nature, be it in perspective or with respect to their relative dimensions, in such a way that the picture will produce, in the eye of the viewer, the same impression as the bodies themselves."23 In the same way, two centuries earlier, Antonio de Tucci Menotti had claimed in his Vita di Filippo Brunelleschi that when the view of the History of San Giovanni, which had been painted in perspective, was observed in a mirror through a hole pierced in the wall, it appeared to be "true or real," "pareva che si vedesse il proprio vero."24 According to Boss, there was no need for a mirror or a hole to obtain this effect. Nor was it necessary for the painter to establish a view, or distance point, that would lie outside the limits of the picture or the "field of the work." One had only to rely on Gerard Desargues' Methode universelle, based as it was on the use of scales that determined the progressive diminution of lengths seen at a greater distance from the picture plane for a given position of the eye. Boss is referring here to the specific example Desargues proposed for the Methode universelle. "The subject in this example is a cube simply made of lines, square, that is, cubic, and whose sides are of equal width, up to a certain level, from which it ends in a point, in the same way as a building with a pyramidal roof, situated in an open field, perpendicular to the ground, and dug out down to a level inferior to the surrounding land."25

Of course, the "subject" in Desargues' example had nothing to do with the Carte- sian one, the subject of the cugino. We have to read it as one would read a recipe in a French cookbook that advises the reader to chose fish or meat—un sujet de bouffe grossier. But the fact that the subject in question—a cube with a pyramidal top—would break through the limit that corresponds to the ground plane of perspective construction confirms J. W. Field's interpretation of Desargues' innovations. According to Field, whereas all ancient geometers preferred to reduce their problems to the plane, Desargues directly attacked them in a three-dimensional way, in the traditional checkerboard pattern, or grid, being reduced to a strictly metric function. It is true that we do not know who Desargues' intended readers were, but it seems difficult to believe that he really expected artists to have a sufficiently good grasp of mathematics to understand how this technique could apply to other cases, including nonlinear projections of the kind Boss dealt with in his Moeur universel de 1653.26 This may not apply to Boss or to Laurent de La Hyre, who directly profited from Desargues' lessons. But what about Poussin, who at best may have read some parts of Boss's writings and looked at their numerous and fine illustrations?

The dispute between Abraham Bosse's dispute with the Royal Academy of Painting and Sculpture is all the more paradoxical since even though he was only an honorary member, a mere craftsman, he would act or perform as one of the contemplatifs, or theoreticians, to whom the final page of Desargues' Exemp-
the "subject" break through the ground is a parallel to Poussin's decision to deal with balanced or unbalanced bodies strictly according to their position, with no more precise reference to the background than a narrow stretch of ground and a few accents defining details. The present-day reuse of the grid in computer graphics does not represent a regression to a state of geometric prior to Desargues but corresponds to new uses of the scheme, or pattern, in relation to developments in projectional geometry that were initiated by Desargues himself. The "field" is no longer conceived as finite, enclosed within strict frontiers that define it but as an unlimited space that allows for endless transformations, starting with the grid itself, which is no longer contained within a frame but still functions, in spite of constant displacements and distortions, as the ultimate frame of reference. By internalizing the frame of reference and inscribing it within the limits of the "field," Desargues paved the way for such an opening of the field itself. So did Poussin when establishing the figures he drew for Leonardo's Trattato on Painting in an undefined setting, submitted to the laws of gravity, but with apparently no more regard at this point for the scene of classical representation.

NOTES
4. Friedländer and Blunt 1963, 49.
6. We know from Bosse himself that he did not hesitate to send a copy of Poussin's letter to Le Brun.
7. The more we consider inappropriately (Abraham Bosse, "A. Bosse au lieu des figures et des figures de son art (Paris, 1665), 411).
17. "Le courant présent doit actuellement apprécier la perspective, pour servir d'amorce à chaque chose qui soit mieux" [Ferret De Chamblay 1615, chap. 1, "Quelles sont les première étape qui doivent faire une image perspective?"].

18. "Études précises de l'art en perspective, puisque la perspective est une chose qui doit être comprise par les peintres." [De Champaigne, "Le dessin de perspective"].

19. "Le mouvement est produit par la rupture de l'équilibre, c'est-à-dire, de l'équilibre, parce qu'il n'y a aucune chose qui mesure de l'équilibre sans qu'elle sorte de son équilibre, et le mouvement est d'autant plus proche que la chose se retourne davantage de son équilibre." [Ferret De Chamblay 1615, chap. 10, "Du mouvement qui est produit par la destruction de l'équilibre."]

20. "Il faut que l'artiste du dessin avec tous leurs membres, se voilons dispositions, et en sorte une telle expression, que par elles on puisse tracer ce qu'ils veulent représenter." [Ferret De Chamblay 1615, chap. 21, "De l'attitude des hommes."]

21. "Les perce-écrans de la peinture, et les foncements de son côté." ["Pourquoi j'aime de bon cœur ce peintre sur une feuille de papier en gauze lettris et ceux qui correct qui apprécier tels qui y se nomme connaissent pas, mais qui pense de se donner jamais le livre de transcrire aux choses de ma profession que ce seront est mal et fait dans les fables." (Romany 1949, 431).

22. "Le restaurateur de la peinture, et l'ornement de son côté;" ["Pourquoi j'aime de bon cœur ce peintre sur une feuille de papier en gauze lettris et ceux qui correct qui apprécier tels qui y se nomme connaissent pas, mais qui pense de se donner jamais le livre de transcrire aux choses de ma profession que ce seront est mal et fait dans les fables." (Romany 1949, 431).

23. "Le style de la peinture donnent la commodité universelle à celui qui sera exercé à celle du sujet et proportion de la mesure visible de la nature et aussi d'un compas de son invention... de ses propres rythmes, les rythmes des corps, la nature, et aussi les corps, mais pour la nature..." ["Pourquoi j'aime de bon cœur ce peintre sur une feuille de papier en gauze lettris et ceux qui correct qui apprécier tels qui y se nomme connaissent pas, mais qui pense de se donner jamais le livre de transcrire aux choses de ma profession que ce seront est mal et fait dans les fables." (Romany 1949, 431).]