

The Psychology of Perspective and Renaissance Art

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Contents

1	The Arrow in the Eye	1
2	The elements of perspective	17
3	Brunelleschi invents perspective	27
4	Brunelleschi's peepshow	31
5	The robustness of perspective	41
6	Illusion, delusion, collusion, & paradox	49
7	Perceive the window to see the world	61
8	Marginal distortions	73
9	The Brunelleschi window abandoned	87
10	The psychology of egocenters	101
11	Perspective & the evolution of art	107

List of Figures

1.1	Mantegna, <i>Archers Shooting at Saint Christopher</i>	2
1.2	Mantegna, <i>Archers Shooting at Saint Christopher</i> , detail	3
1.3	Taddeo Gaddi, <i>The Presentation of the Virgin</i>	4
1.4	Piero della Francesca, <i>Flagellation</i>	5
1.5	Masaccio, <i>Tribute Money</i>	5
1.6	Piero della Francesca, Brera altar-piece	6
1.7	Domenico Veneziano, <i>Martyrdom of Saint Lucy</i>	7
1.8	Raphael, <i>Dispute Concerning the Blessed Sacrament</i>	8
1.9	Domenico Veneziano, <i>La Sacra Conversazione</i>	9
1.10	Pietro Perugino, <i>Virgin Appearing to Saint Bernard</i>	10
1.11	Copy after Mantegna, <i>Archers Shooting at Saint Christopher</i>	11
1.12	Mantegna, <i>Saint Christopher's Body Being Dragged Away after His Beheading</i>	12
1.13	Alberti, <i>Tempio Malatestiano</i>	12
1.14	Alberti, <i>Tempio Malatestiano</i> , niche	12
1.15	Mantegna, detail of Figure 1.12	13
1.16	Alberti, Self-portrait	13
2.1	Masaccio, <i>Trinity</i>	18
2.2	Alberti's window	18
2.3	Camera obscura	19
2.4	Geometry of the camera obscura	19
2.5	Main features of central projection	19
2.7	Jan van Eyck, <i>Annunciation</i>	21
2.8	Mantegna, <i>Martyrdom of Saint James</i>	22
2.6	The Flying Fish of Tyre (ca. 1170)	23
2.9	Vanishing points	23
2.10	Definition of the horizon line	23
2.11	Plan and elevation of Masaccio's <i>Trinity</i>	24
2.12	Perspective representation of a pavement consisting of square tiles	25
2.13	Leonardo da Vinci, Alberti's <i>costruzione legittima</i>	26
3.1	Depiction of Brunelleschi's first experiment	28
4.1	Wheatstone's stereoscopic drawing	32

4.2	Fra Andrea Pozzo, <i>St. Ignatius Being Received into Heaven</i>	33
4.3	Mantegna, ceiling fresco	35
4.4	Peruzzi's <i>Salla delle Prospettive</i> seen from center of room	35
4.5	Peruzzi's <i>Salla delle Prospettive</i> seen from center of projection	36
4.6	Focus and depth of field	37
4.7	Experimental apparatus for Smith and Smith's experiment.	39
5.1	La Gournerie's inverse projection problem	42
5.2	Jan Vredeman de Vries, architectural perspective	44
5.3	Stimuli in the Rosinski et al. (1980) experiments	45
5.4	Displays in the Rosinski et al. (1980) experiments	45
5.5	Data of Experiment 1 of Rosinski et al.	46
5.6	Modified data of Experiment 1 of Rosinski et al.	47
5.7	Data of Experiment 2 of Rosinski et al.	47
5.8	Stimulus for Goldstein's (1979) experiment: Rousseau, <i>The Village of Becquigny</i> (1857)	48
5.9	Data from Goldstein's (1979) experiment	48
6.1	Stimulus for observing Emmert's law	50
6.2	A classification of trompe l'œil pictures	52
6.3	Carlo Crivelli (attrib.), <i>Two saints</i>	53
6.4	Antonello da Messina, <i>Salvatore Mundi</i>	53
6.5	Jan van Eyck, <i>Portrait of a Young Man</i>	53
6.6	Francisco de Zurbarán, <i>Saint Francis in Meditation</i>	54
6.7	Laurent Dabos, <i>Peace Treaty between France and Spain</i>	54
6.8	Jacob de Wit, <i>Food and Clothing of Orphans</i>	54
6.9	Cornelis Gijsbrechts, <i>Easel</i>	54
6.10	Jean-Baptiste Chardin, <i>The White Tablecloth</i>	55
6.11	J. van der Vaart (attrib.), <i>Painted Violin</i>	55
6.12	Jacopo de'Barbari, <i>Dead Partridge</i>	55
6.13	Edward Collier, <i>Quod Libet</i>	55
6.14	Samuel van Hoogstraten, <i>Still Life</i>	56
6.15	Trompe l'œil (early nineteenth century)	56
6.16	Drawing used by Kennedy	56
6.17	The vase-face reversible figure.	57
6.18	A Necker cube formed by phenomenal contours	58
6.19	The vertical-horizontal illusion	59
6.20	The double dilemma of picture perception	59
7.1	Donatello <i>The Feast of Herod</i>	62
7.2	Perspective drawing of a figure and determination of center of projection	63
7.3	How to project a transparency	65
7.4	Photograph of a photograph (Time, March 29, 1968)	65
7.5	We can only compensate for one surface at a time: stimulus	66
7.6	We can only compensate for one surface at a time: what you see	66
7.7	Plan of Ames distorted room	67
7.8	Distorted room as seen by subject	67

7.9	Views of John Hancock Tower, Boston.	68
7.10	Drawing of unfamiliar object that we perceive to have right angles	68
7.11	Drawing of impossible object that we perceive to have right angles	68
7.12	Drawing of cube indicating angles comprising fork juncture and arrow juncture	69
7.13	Drawing that does not look rectangular and does not obey Perkins's laws	69
7.14	Irregular shape seen as a mirror-symmetric — it obeys an extension of Perkins's laws	69
7.15	Figure that looks irregular because it does not obey extension of Perkins's laws	69
7.17	Shepard and Smith stimulus specifications	70
7.16	Objects used in the Shepard and Smith experiment	71
7.18	Results of the Shepard and Smith experiment	72
8.1	Two central projections of a church & cloister	74
8.2	Oblique cubes under normal perspective	74
8.3	Oblique cubes under exaggerated perspective	74
8.4	Marginal distortions of cubes seen from above	75
8.5	Four displays and response keys used by Sanders (1963)	75
8.6	Median reaction time for Sanders (1963) experiment	75
8.7	How Finke and Kurtzman (1981) measured the extent of the visual field	76
8.9	Raphael, <i>The School of Athens</i> (1510–1) Fresco. Stanza della Segnatura, Vatican, Rome.	77
8.8	Marginal distortion in spheres and human bodies	78
8.10	Detail of Figure 8.9 showing Ptolemy, Euclid, and others.	78
8.11	Marginal distortions in columns	79
8.12	Paolo Uccello, <i>Sir John Hawkwood</i>	81
8.13	Diagram illustrating argument about perspective made by Goodman	84
9.1	Edgerton's depiction of Brunelleschi's second experiment	87
9.2	Droodle	88
9.3	Kenneth Martin, <i>Chance and Order Drawing</i>	89
9.5	Marcel Duchamp, <i>Bottlerack</i>	90
9.4	Jean Tinguely, <i>Homage to New York</i> (remnant)	91
9.6	Advertisement for a 3-D (stereoscopic) film	93
9.7	Andrea Mantegna, <i>Saint James Led to Execution</i>	94
9.8	Central projection in Mantegna's <i>Saint James Led to Execution</i>	94
9.9	Leonardo da Vinci, <i>The Last Supper</i>	96
9.10	Perspective construction of Leonardo's <i>The Last Supper</i>	97
9.11	Plan and elevation of room represented in Leonardo's <i>The Last Supper</i>	98
9.12	Leonardo's <i>Last Supper</i> seen from eye level	99
9.13	How the architecture of the refectory relates to Leonardo's <i>Last Supper</i>	99
9.14	Leonardo's <i>Last Supper</i> , cropped	100
9.15	Leonardo's <i>Last Supper</i> , cropped, top only	100
10.1	Definitions of two elementary camera movements: pan and tilt	102
10.2	The moving room of Lee and Aronson (1974)	104
10.3	Predictions for speed of "reading" letters traced on the head	105
10.4	The Parthenon	106
10.5	Horizontal curvature of Parthenon	106

11.1	Paolo Uccello, Perspective Study of a Chalice	110
11.4	Kasimir Malevich, two Suprematist drawings	112
11.5	Piero della Francesca (?), <i>Perspective of an Ideal City</i>	113
11.6	Gentile Bellini, <i>Procession of the Relic of the True Cross</i>	113
11.2	Sol LeWitt, untitled sculpture	114
11.3	Leonardo da Vinci, A War Machine	114

List of Tables

11.1 Gablik: cognitive development & megaperiods of art history	111
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List of Boxes

- 2.1 Drawback of the pinhole camera 19
- 2.2 The distance between the vanishing point and a distance point equals the distance between the center of projection and the picture plane 26
- 4.1 Photographing illusionistic walls 34
- 4.2 Viewing from the center of projection vs. the removal of flatness information 37
- 7.1 How the visual system might infer the center of projection 63
- 9.1 The aleatory process that generated Figure 9.3 89

Chapter 3

Interlude: Brunelleschi's peepshow and the invention of perspective

The masters of the subtle schools
Are controversial, polymath.

T. S. Eliot, from "Mr. Eliot's Sunday Morning Service," 1920 (Eliot, 1963, p. 58)

At least a decade before Alberti's theoretical work, Filippo di Ser Brunellesco (1377–1446) painted two panels in the course of an experiment that according to Edgerton "marked an event which ultimately was to change the modes, if not the course of Western history" (1975, p. 3 see also De Santillana, 1959).¹ Although these two panels have not been preserved, we know that they are the first paintings to correctly embody linear perspective. The first panel was a view of the church of San Giovanni di Firenze, later known as the Florentine Baptistery, as seen from a point about five feet inside the portal of the as yet unfinished cathedral of Florence, Santa Maria del Fiore, across the Piazza del Duomo. According to Brunelleschi's biographer of the 1480s, Antonio di Tuccio Manetti, in order to constrain the viewer to place his eye at the center of projection, Brunelleschi

had made a hole in the panel on which there was this painting; . . . which hole was as small as a lentil on the painting side of the panel, and on the back it opened pyramiddally, like a woman's straw hat, to the size

¹Gioseffi (1966) estimates Brunelleschi's first panel to have been done between 1401 and 1409; according to Kemp (1978), it is prior to 1413; Edgerton (1975) puts the date at 1425.

of a ducat or a little more. And he wished the eye to be placed at the back, where it was large, by whoever had it to see, with the one hand bringing it close to the eye, and with the other holding a mirror opposite, so that there the painting came to be reflected back; . . . which on being seen, . . . it seemed as if the real thing was seen: I have had the painting in my hand and have seen it many times in these days, so I can give testimony. (Trans. by White, 1968, pp. 114–17)

Figure 3.1 shows a reconstruction of the first panel and how it was held. In Chapter 4, we will see that this method, Brunelleschi's peepshow,² is an effective method for the creation of an illusion of depth.

Manetti and Vasari thought that Brunelleschi had gone beyond this brilliant demonstration; they claimed he had invented perspective. Here is Manetti's account:

Thus in those days, he himself proposed and practiced what painters today call perspective; for it is part of that science, which is in effect to put down well and within reason the diminutions and enlargements which appear to the eyes of men from things far away or close at hand: buildings, plains and mountains and countrysides of every kind

²As Arnheim (1978) called it.



Figure 3.1: Depiction of Brunelleschi's first experiment. Mirror was probably considerably smaller than panel, for optics require it to be only about half panel's size, and good mirrors were very difficult to make in the fifteenth century.

and in every part, the figures and other objects, in that measurement which corresponds to that distance away which they show themselves to be: and from him is born the rule, which is the basis of all that has been done of that kind from that day to this. (Trans. by White, 1967, p. 113)

Manetti and Vasari notwithstanding, the current consensus is that he did not know the *costruzione legittima*.³ It would take us too far afield to discuss the various ingenious reconstructions of the method Brunelleschi used in painting these panels without using the *costruzione legittima*. But because there are some tantalizing clues to why his method did not become public knowledge, I would like nevertheless to explore the question of Brunelleschi's priority.

Mariano Taccola reported Brunelleschi to have said:

Do not share your inventions with many. Share them only with the few who understand and love the sciences. To describe too much of one's inventions and achievements

³Recent reconstructions of his methods are in Arnheim (1978), Edgerton (1975) Kemp (1978), Lynes (1980), and Pastore (1979).

is one and the same thing as to abase your talent. (Quoted in Kemp, 1978, p. 135)

Maybe he was loath to reveal his method, just as a magician is loath to disclose his gimmick.⁴ According to Taccola, Brunelleschi had complained that

many are ready, when listening to the inventor, to belittle and deny his achievements, so that he will no longer be heard in honourable places, but after some months or a year they use the inventor's words, in speech or writing or design. (From *De ingeneis* see trans. by Prager and Scaglia, 1972 pp. 11–12).

Why would Brunelleschi be afraid that people would belittle his achievements? Perhaps, as Lynes (1980) thinks, Brunelleschi had good reason to be secretive: He had used an empirical, not geometric, method to create his panels; but he deceived his contemporaries and claimed to be the originator of the *costruzione legittima*. This is not inconsistent with Vasari's (1965) Adlerian analysis of Brunelleschi:

There are many men whom nature has made small and insignificant, but who are so fiercely consumed by emotion and ambition that they know no peace unless they are grappling with difficult or indeed almost impossible tasks and achieving astonishing results. (p. 133)

In all fairness, we should note, however, that Vasari also wrote:

Filippo was endowed with ... such a kind nature that there was never anyone more gentle or lovable ... He never allowed his own advantage ... to blind him to merit and worth in others. (pp. 133–4)

This encomium does little to mitigate the impression of Brunelleschi's ruthlessness left by Vasari's gripping description of his rivalry with Lorenzo Ghiberti over the assignment of the latter to share the

⁴I will discuss this idea further in Chapter 9.

commission to raise the cupola of Santa Maria del Fiore in Florence.

The story of this rivalry, as told by Vasari (1965), opens in 1417. Brunelleschi was among the several Florentine architects consulted on the difficult problem of raising the cupola. After Brunelleschi had worked out an approach to the problem,

he took it into his head to return to Rome; . . . for Filippo thought that he would be valued more highly if he had to be sought after than if he stayed in Florence . . . [The consuls and wardens] wrote to Filippo in Rome, begging him to return to Florence; and this being just what Filippo wanted, he very politely did what they asked. (p. 142)

After Filippo returned, he presented his ideas to the consuls and wardens and suggested that architects from Florence, Tuscany, Germany, and France also be consulted. Although his scheme was well-received, he was asked to make a model for the consuls to study. “However, he showed no inclination to provide one; and instead he took his leave of them, saying that he had been approached by letter to go back to Rome.” The wardens begged him to stay, had his friends plead with him, offered him an allowance; but Filippo left for Rome. In 1420, Filippo and the foremost architects of his day were assembled to present their plans. Because Filippo’s plan was by far the simplest, he was called “an ass and a babler” and dismissed from the audience. But Filippo refused to leave and “he was carried out by the ushers, leaving all the people at the audience convinced that he was deranged. “Nevertheless, Filippo managed to have another hearing called. At the meeting, he persisted in his refusal to present a model, but challenged

the other masters, both the foreigners and the Florentines, that whoever could make an egg stand on end on a flat piece of marble should build the cupola, since this would show how intelligent each man was. So an egg was procured and the artists in turn tried to make it stand on end; but they were all unsuccessful. Then Filippo was asked

to do so, and taking the egg graciously he cracked its bottom on the marble and made it stay upright. The others complained that they could have done as much, and laughing at them Filippo retorted that they would also have known how to vault the cupola if they had seen his model or plans. And so they resolved that Filippo should be given the task of carrying out the work. (pp. 146–7)

But a group of workmen and citizens managed to persuade the consuls that Filippo should be given a partner. When Filippo heard that his friend Lorenzo Ghiberti, whom he had assisted in polishing the superb reliefs Lorenzo had made for the doors of San Giovanni, had been selected as his partner and was to receive a salary equal to his own,

he made up his mind that he would find some way of insuring that Lorenzo would not last too long on the job. One morning or other [in 1426] Filippo . . . bandaged his head and took to his bed, and then, groaning all the time, he had everyone anxiously warming plates and cloths while he pretended to be suffering from colic . . . After Filippo’s illness had already lasted more than two days, the steward and many of the master-builders went to see him and kept asking him to tell them what they should do. But all he answered was: “You have Lorenzo; let him do something.” (pp. 150, 152)

Seeing that the work on the cupola had almost come to a standstill, the wardens complained to Filippo, who said:

“Oh, isn’t that fellow Lorenzo there? Can he do nothing? I’m astonished — and at you too!” The wardens answered: “He will do nothing without you.” And then Filippo retorted: “I would do it well enough without him.” (p. 153)

Filippo returned to work believing that he had persuaded the wardens to dismiss Lorenzo. But he was wrong; they didn’t. And so “he thought of another

way to disgrace him and to demonstrate how little knowledge he had of the profession" (p. 153). He proposed to the wardens in Lorenzo's presence that the next stage of the work be divided between them. Lorenzo was in no position to disagree and was allowed to choose the task he preferred. When Filippo had finished his part, Lorenzo had barely finished a fraction of his, and Filippo let it be known that Lorenzo's work was not competent. When the wardens caught wind of this, they asked him to show them what he would have done. Filippo's response impressed them so deeply that "the wardens and the other artists ... realized what a mistake they had made in favouring Lorenzo." Filippo was made "overseer and superintendent for life of the entire building, stipulating that nothing was to be done save on his orders" (p. 155). Although Lorenzo was disgraced, he continued to draw his salary for three years, thanks to his powerful friends.

This episode is sufficient, I think, to undermine Vasari's depiction of Brunelleschi as a kind, gentle, and lovable genius who never was "blind to merit and worth in others." It is difficult to see him only as a victim, as Vasari concludes, "in some respects unfortunate" who "was always having to contend with someone or other." Even though Vasari testifies to Brunelleschi's good moral character, and claims that Brunelleschi only defended what was legitimately his against Lorenzo, there are nagging doubts: If Filippo had been Lorenzo's faithful friend, why did Lorenzo agree to share an honor he had not earned? And why was Brunelleschi so secretive? Did he really have a reason to fear plagiarism? After all, the other architects were willing to present their models and discuss their plans in public. Furthermore, we know that his secretiveness was not an attempt to hide incompetence; he was probably the only architect who knew how to raise the cupola of Santa Maria del Fiore.

But it may be that Brunelleschi's strange behavior in the episode of the cupola was the outcome of an attempt to hide the fact that his creativity was intuitive rather than analytic. Twice Brunelleschi did not give a theoretical account of a major achievement of his. Perhaps he knew how to erect the cupola but could not explain why this method was correct, just as he knew how to paint startlingly realistic and perspecti-

vally correct panels without knowing the rules of the *costruzione legittima*. When Brunelleschi invented perspective and when he sought the commission for the erection of the cupola, he may have been behaving as he had during the episode of the egg; that is, he may have invented a trick to paint pictures in perspective without having developed the underlying geometric theory, and he may have come up with methods to erect a tall cupola without having a rigorous rationale to offer. Perhaps in both cases he allowed people to infer that he understood the process more conceptually than he really did, and in both cases he was unreasonably worried about having allowed people to believe that he knew something that no one could legitimately expect him to know. As a result, he allowed people to think that he was mad rather than present his plans for the cupola; perhaps for the same reason he destroyed the panels, in order to take his secret with him to the grave. Thus I believe that Alberti, and not Brunelleschi, invented perspective as a communicable set of practical procedures that can be used by artists. Otherwise Brunelleschi, driven by ambition as he was, would have made sure that Alberti did not receive acknowledgment of priority in the discovery of the *costruzione legittima*. So Filippo was not only an extraordinarily ambitious, competitive, secretive, slightly paranoid, cunning, somewhat manipulative genius. He was, if my speculative analysis of his personality is correct, a man deeply concerned with disguising the nature of his creativity, afraid that he would not be held in high esteem unless he was thought to possess abstract theoretical knowledge.⁵

⁵I wish to thank Michael Sukale for suggesting that Brunelleschi may have only intuited the technique of raising the cupola without having formulated the underlying theory.