

1.1 Gianlorenzo Bernini, *Self-Portrait*, 1625–30. Oil on canvas, 39 × 31 cm. Rome: Galleria Borghese. Photo: ICCD Rome.

BERNINI'S LIGHT

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Domenico Bernini's biography of his father Gianlorenzo, first published in 1713, can be traced back to a manuscript which was prepared within inner family circles during the sculptor's own lifetime.¹ Written against the background of the unfortunate circumstances beginning in the late 1660s and constructed as an elaborate apology, Domenico's biography forwards an argument which frames the artist's life and work in terms of a dynamic interplay between inner creative spirits, the spirits of life and imagination (*spiriti vitali* and *spiriti animali*). These spirits possessed the sculptor to an unprecedented degree and externally manifested themselves by means of his hands, animating not only insensible stone but also the endangered bodies of the basilica of St Peter's in Rome and the *Urbs*,² ultimately expanding into the more distant realm of France. For the author, these spirits were fundamentally *spiriti d'amore*. No fewer than three nouns are employed to describe different aspects of the sculptor's *ingenio*: *spirito*, *calore*, *luce*. The partial identity of these concepts is the principal concern of this analysis.

MOSTRO D'INGENIO

Domenico perceives Gianlorenzo's temperament as a mirror of his *virtù*. In the biography's conclusion, the artist is described as dark-skinned, black-haired and with piercing eyes – the classic features of a choleric, or fiery temperament.³ Bernini represented himself in precisely these terms in numerous self-portraits (plate 1.1).⁴ That he was inflamed (*infiammato*), to an uncommon degree, with an impassioned ferocity that was the vital basis of his artistic drive, is a point that the sculptor himself emphasizes in a quote in Domenico's biography.⁵ Driven to surpass himself, he strove to instil in each new work, through the transmission of his innate *spiriti*, an increasingly vibrant living presence.⁶ That the process by which Gianlorenzo enlivened his works was through the active transmission of his *spiriti* is illustrated by Filippo Baldinucci, who writes that it was from the eyes of the ecstatic sculptor that his brilliant *spiriti* first broke forth into the visible world.⁷

How close Gianlorenzo's art approached the miraculous, how far, after the spectacular *vivacità* of his early works, it was thought that he was capable of manipulating life's forces (*spiriti*) is illustrated by the first detailed account contained in the *Vita*: the events following the papal election of Maffeo Barberini.

Because it was widely believed that Barberini was dead, the appearance of Bernini with the newly elected pope on the Loggia of Benediction led the people to conclude that Gianlorenzo had revived Barberini's corpse through his art.⁸ Only after the date for Barberini's coronation was announced did the disquiet among the population subside. The pope himself would later recall the incident *come per ischerzo*. Domenico's construction of these events is admirably bold, as the pope, who was allegedly brought back to life by Gianlorenzo, later repaid the gesture by restoring the *spiriti* of his second Michelangelo, which were waning as he worked on St Peter's, bringing him near death.⁹ As a restorative, Urban sent him a potent *liquore* which miraculously replenished his energy, although the pope would not have hesitated to embalm the *living* Bernini to *immortalize* him.¹⁰ The linking of these two events is all the more astonishing in light of the fact that Bernini would later portray the pope so animated upon his tomb that the presence of *mors* was needed to confirm that he was dead.¹¹

In Domenico's biography the media, the subject and the *spiriti* of Gianlorenzo act together to form an animate and dynamic dialogue. Gianlorenzo's amorous spirits are identified as the brilliant *vehiculum* of his artistic ideas, capable of embodying the physical vitality and *virtù* of other personalities. Bernini stroked the stone, but his hands were guided by St Bibiana, for instance, who seemed, as the sculptor himself declared, to create herself in stone. The artist is cast in the role of a midwife, the work a sacred icon.¹² Gianlorenzo would later relate to Chantelou a similar experience, describing how the *persona* of Louis XIV settled within him and found pure and full expression in his sculpted bust.¹³

As the fame of this *mostro d'ingegno* spread,¹⁴ letters from kings and statesmen flattered the artist. Yet instead of responding to the illustrious appeals for his services (and the desire of his illimitable *spiriti*), Bernini remained in Rome, concentrating all his *spiriti* on a single work: the tomb for the dying Urban who, because of his powerful constitution and subsequently long pontificate, was hated by those who had not found his favour (plate 1.2). This work, 'cosa veramente superiore ad ogni arte', confronts death with an unprecedented vitality and, as Cardinal Panzirolo observed,¹⁵ in doing so forces death itself into the circle of Bernini's manifestations. But, Domenico writes, the artist's luck suddenly turned – as if Gianlorenzo had committed blasphemy, Fortune broke in with all her might. Bernini fell into disgrace during the following Pamphilj pontificate and was threatened with inactivity. But Bernini was not deterred and continued to work on the sun-like 'Truth' and on his depiction of the luminous ecstasy of St Theresa. His *virtù* did not suffer from his humiliation; on the contrary, he created 'le più belle opere, che facesse giammai!'¹⁶ Bernini's urging, burning and dazzling *spiriti* resisted restraint. Even Innocent X fell under their spell, lingering ecstatically before Bernini's competing model for the Four Rivers Fountain. On the occasion of the unexpected deluge of rushing waters following his blessing, Innocent admitted that Bernini has prolonged his life, too.¹⁷ The commission for portraits in a range of materials, which followed his return to favour, represents nothing



1.2 Detail of Gianlorenzo Bernini, *Tomb of Pope Urban VIII*, completed 1647. Marble and bronze. Rome: St Peter's. Photo: the author.

more than the patron's attempt to garner jealously the *spiriti* of the genius.

During the pontificate of Alexander VII Chigi (1655–1667) Gianlorenzo's abilities once more received unreserved appreciation. Despite his lack of formal academic training, the sculptor, through his natural *ingegno*, inflamed every discussion (*infiamma discorsi*) – truly a phoenix reborn out of the flames, according to Bernini's friend, Cardinal Sforza Pallavicino.¹⁸ Domenico's example does not stray from this vitalistic analogy. As painters displayed portraits of the pope, the sculptor pointed to a fly, which happened at that moment to crawl across the table, as a better representative of the pope than any *ritratto dipinto* (significantly, there is no talk of sculpture). The almost frivolous *rebus* was solved immediately by the assiduous Jesuit Pallavicino who discovered the *tertium comparationis*: animation, the proportionality of movement and organic perfection.¹⁹

With Alexander's twelve-year pontificate Gianlorenzo's enormous heart expanded to embrace the entire city of Rome. It created a colossal breast, Piazza S. Pietro – a *gran seno* – the place where love abides and attracts all of humankind.²⁰ The square, built with stones from the bowels (*viscere*) of the hills around Tivoli, was to be completed in time to embrace a royal conquest of triumphant love – Christina of Sweden. Domenico does not hesitate to connect the arrival of this imperial convert in Rome with that quality which would be of central importance for Bernini's residence at the French court – *charisma*, the heavenly gift to heroes, their mysteriously perceptible mark of recognition.²¹ Already praised by his former enemy, Innocent X, as one who was able to move easily within the most elite social circles,²² Gianlorenzo was perceived by Christina as her equal. Her reception coach, the Porta del Popolo, the residence of the queen were all created by Bernini. Now, casting her gaze over an anonymous mass of people, she recognized him without hesitation; one is tempted to add that their *spiriti* sought and found one another naturally. Christina honoured Bernini even further during her visit to his atelier: when Bernini appeared in his artist's smock, she, in turn, touched it with her fingers.²³

A short time later Domenico describes a similar royal encounter at St Germain: Gianlorenzo immediately recognized, without doubt, the face of Louis XIV, who gazed at him curiously through a gap in the door.²⁴ In response, Bernini, Chantelou tells us, placed his *esprits vifs* at the young monarch's disposal.²⁵ The inborn *charisma* of the French ruler, activated through his anointment with holy oil, met Bernini's *spiriti*. The artist acceded to the king's wish to be portrayed, despite his 'debolezza di vista e del polso'.²⁶ What the painful journey of the old artist to France seems to suggest becomes increasingly obvious: having restored Rome for the heir of St Peter, Bernini brought to the Sun King his dwindling powers.

The process of portraiture itself is implicitly described in procreative terms. The diarist Chantelou tells us that Bernini wished to create an original, not a copy (plate 1.3) of the king. To this end, he conceived (*concepisce*) the external characteristics of his subject (*fatezze*), in particular, his movements, features and gestures, with the aid of sketches, and then absorbed them into his *fantasia*. He



1.3 Gianlorenzo Bernini, *Bust of Louis XIV*, 1665. Marble. Versailles: Musée nationale du chateau. Photo: Alinari (25588).

'imbibed' and 'drew' them into his mind,²⁷ in order finally to give birth (*parto*) to the work in marble.²⁸ The erotic topoi of this analogy are quite evident. For example, when Bernini, as Chantelou relates, admitted to the king that while portraying him he was stealing a part of him (*sto rubando*) with his eyes, the king replied, flatteringly, that he hoped what was stolen (implicitly – his *spiriti*) might in some way be returned to him. Bernini replied modestly but, at the same time, subtly invoking the topoi of cruelty in amorous discourse, declaring coquettishly that he took more than he was able to give in return.²⁹ The bust (now the king's 'copy') was excessively praised by the queen because she was, as Bernini observed, *innamorata* with the 'original'.³⁰ The gaze of the lover recognized the loving substance which enlivened the work. Equally, the parting glance between the king and Bernini betrayed to those who beheld them the extent to which they had grown to love one another (how *innamorati* they were).³¹



1.4 Gianlorenzo Bernini, Model for the *Equestrian Statue of Louis XIV*, c. 1669/70. Clay. Rome: Galleria Borghese. Photo: ICCD Rome.

In light of this affinity, the intrigues which awaited Bernini in Rome, which aimed to divide him from the Sun King, were all the more cruel. Compelled to prove his love, the sculptor dedicated the next eight years to the realization of the equestrian colossus of Louis (plate 1.4), uniting once more, as with the monument for Pope Urban, 'tutti spiriti & il più vivo dell'arte'.³² He burnt (*arde*) to realize the work and was prepared to die while working on it.³³ It is precisely in this context that he made the important and much discussed observation that he aimed to unify (*accoppiare*) painting and sculpture.³⁴ What he meant by this comment is illuminated by the apologetic context in which it was stated. A critic of the monument observed that the depiction of the king's apparel was defined with too many intricate folds, defying the rules (*regola*) of ancient sculpture. Bernini, in response, insisted that this was not a fault but in fact reflected his ability to bend marble like *pasta*. This talent enabled him to surpass the work of ancient sculptors who, he contended, did not have the *heart* – in other words, the passion and courage – to work with stone as freely as he

did.³⁵ Aside from the calculated *difficoltà* in the *paragone* with antiquity, the *Vita*'s leitmotif is, once again, plain. Only a sculptor with a large and loving heart, a vessel of immeasurable *spiriti*, is in a position to bend stone, actually to soften it. Bernini's virtuoso handling of the stone becomes the litmus test of his heart; to manipulate the medium in his way requires a more intense inner fire than that of the sculptors of antiquity. Consistent with one of the oldest *topoi*, the stone is cast in the role of the beloved, who 'melts' at the sight of the lover.³⁶

Yet even the most lively of *spiriti* must in time weaken. To reconcile this inevitability, the ageing Bernini stressed that *disegno* could, at least to some degree, compensate for the diminishing forces of the artist's heart ('la debolezza del polso').³⁷ From this perspective, he was able to complete one final sculpture, his 'beniamino':³⁸ the bust of Christ for Queen Christina.³⁹ But, to protect his vulnerable architectural *riputazione* in a *nebbia di malevolenza*, he used the builders' scaffolding to repair the Palazzo della Cancelleria, against the wishes of his numerous natural children. There, the *athleta amoris* succumbed to a fatal illness: significantly, a cold which led to a final 'heating' (*riscaldamento*)!⁴⁰ Gianlorenzo's death was, for Domenico, a slow decline following a light fever (*lenta febre*). Gianlorenzo who, according to the testimony of his friend the Jesuit general Giovanni Paolo Oliva, always displayed a burning passion when discoursing on religion, as well as a subtle and heavenly inclined *ingenium*, felt the gradual retreat of his *spiriti* from the extremities of his body. He sensed, first of all, the loss of the vital creative force of his right hand and then the fading of his voice. But Domenico is careful to tell us that the indwelling *spiriti* of the sculptor did not abandon him entirely and continued to flicker in the eyes of the dying man just as they had always captivated his audience and animated stone.⁴¹ For Baldinucci, it was Bernini's death itself which illuminated his life and work.⁴²

SPIRITS

Domenico Bernini's *Vita* of his father does justice to its title. It is a literary construction which aims to subsume his talent, works and biographical circumstances under the leitmotif of life itself. For Domenico, the life of the artist is composed of three dynamic elements: heart, flame and *spiriti*. But we must ask ourselves whether these elements are simply metaphors? Their obvious redundancy, which itself negates their rhetorical ambitions, suggests that something more than mere ornamental language explains the stereotypes of warmth and light. That this is the case is suggested by the fact that not only contemporary descriptions of Bernini's works but also the other principal biographical sources were deeply influenced by identical concepts.⁴³ Filippo Baldinucci's biography, already published in 1682, articulates a fundamentally Neoplatonic theory of talent which is also at the centre of Domenico's account. In descending from the heavenly into the material world, the soul takes with it, as *occulti semi*, imponderables (*spiriti*), which shall be bearers of its particular talents on earth. These seeds enter the body but are unable, as *scintille d'animo*, to harmonize

completely with earthly matter. This highly charged tension between the heavenly and the earthly is evident for Baldinucci not only in the almost unbearable shining of Bernini's eyes, but also in his words, gestures and physical movements.⁴⁴ The luminous *spiriti* agitate the body and are visible in the flashes – as light – from Bernini's eyes. Through the pursuit of *studi*, Bernini is able to harness the force of his *spiriti* and through them brings the insensible stone to life.⁴⁵

Both Baldinucci and Domenico drew precisely on a tradition which, in light of the editorial origin of the texts, Gianlorenzo Bernini himself most likely also made use of. The *spiritus* (or else, the *pneuma*), as *vehiculum animae*, connects the body and soul, informing, since Aristotelian biology, Galenic medicine and Neoplatonic philosophy, two thousand years of natural philosophy, and being only completely superseded in the nineteenth century by mechanistic monism.⁴⁶

The history of the idea of the *spiritus* has from its origins been closely connected with the enigmatic vehicle of life. It was conceived as a substance which was fine enough to be distributed throughout the entire organism and which, at the same time, might be causally linked to the chief characteristics observable in a living being – breath and bodily warmth. Air and fire were thus 'the two elements in which, from the beginning, the medium of life was sought after'.⁴⁷ In antiquity, medicine led, on the one hand, to the concept of a *pneuma*, which was contained in the breath and was the bearer of life and sensation as well as consciousness. On the other hand, it led to the theory of 'inborn warmth' (*emphyton* or *symphyton thermon*; *calor innatus* or *nativus*), which allowed for independent movement and stimulated the metabolism.⁴⁸

Thomas Fuchs has pointed out that, in the later history of life's substance, *calor innatus* and *spiritus* were intimately intertwined.⁴⁹ What the multifaceted concepts share is the belief that a fine-particled substance, an imponderable, overcomes the principal difficulty within the complex history of the soul, that is the connection between the corporeal and incorporeal.⁵⁰ In all dichotomous systems, the *spiritus* marks that point of transition where the main elements inevitably enter into relationship with one another and through which processes might be explained and antagonisms mediated. The *spiritus*, as such, occupies a central position in all dualistic cosmologies, whether recognized or hidden, which explains the striking fact that not only does it function in antique medicine as a tried and proven *deus ex machina* for a variety of somatic processes, but also assumes a place of honour in Neoplatonic and Christian philosophies.

Since Empedocles, the *calor nativus* as a fundamental of life and consciousness has been linked to the function of the heart. For Aristotle, the heart was an oven which, through its warmth (initiated at the embryonic stage), acts as a catalyst in that it 'cooks' (*pepsis*) heterogeneous elements (that is, different *dynameis*: wetness, cold, heat, dryness).⁵¹ Furthermore, it condenses parts of the blood into perceptible *spiritus*. Galen, who practised in Rome in the second century CE, developed a consistent system from these premises. From blood and breath, the heart produces *pneuma zotikón*, 'the fire of the heart, which later became known as

spiritus vitales – the bearers of warmth and life – from which the still finer *pneuma psychikón* (*spiritus animales*) evolves in the brain, transmitting the higher functions of the soul through the nervous system'.⁵²

WARMTH

The further development of the theory of *spiritus*, with its complexly postulated, but never consistently articulated, differentiation (mostly in Christian theology) into fine-particled and incorporeal substances, cannot be discussed here, nor can its renewed flowering in the Neoplatonic natural philosophy and anthropology of the Renaissance. How little the two major Bernini *Vite* stray from the framework of contemporary theories of *ingenium* is, for instance, illustrated by the *Cannocchiale Aristotelico* of 1654, by Emanuele Tesauro, one of the most significant aesthetic texts of the seventeenth century.⁵³ Taking his lead from Aristotle's *Poetics*, Tesauro traces the *argutia* of human intellect, which manifests itself especially in the invention of metaphors, back to three sources: a divine (*furore*), a natural (*ingegno*) and a human one (*esercitio*). But Tesauro's construction of human wit is heavily influenced by the concepts of traditional faculty psychology and therefore by the theory of the *spiriti*.⁵⁴ In its very conventionality, Tesauro's treatise provides a key to interpreting the theory of talent and creativity found in Baldinucci and Domenico Bernini. For Tesauro, the senses ignite the *spiriti* and these, in turn, the *intelletto*,⁵⁵ which discovers what is similar in the seemingly dissimilar. His theory of metaphors is thus everywhere embedded in *non-metaphorical*, material processes inside and outside the human body. While, for example, the metaphor of the *spirito bollente* might once have appeared together with *costumi dolci* or *anima nera*, it is, according to the theorist, the completely unmetaphorical warm *spiriti* and *fantasmi* which actually make possible the construction of metaphors.⁵⁶ Tesauro thus points to spirit-laden wine as a vehicle to find metaphors, one which is even capable of reversing the fading *ingegno* characteristic of the *cooling* that comes with age.⁵⁷ For Tesauro, therefore, the process of discovering metaphors is consistently described in terms of the 'meta-metaphor' of insemination, fertility and parturition: the metaphor is 'il più ingegnoso & acuto [...] il più facondo & fecondo parto dell'humano intelletto'.⁵⁸

At the same time, erotic contexts are associated with the concept of the *hegemonikon* of the heart, the place where the fiery *spiriti* dwell. Fire inhabits the heart, but it is also the fire of love. 'Amore e' l'cor gentil sono una cosa' – so writes Dante in his *Vita Nuova* (XX). The studies of Robert Klein, Ioan P. Couliano and, most recently, Maria Ardizzone have demonstrated that the theories of love in the late middle ages and early modern times are consistently based upon the concept that love is actually the 'transformation' of a *spiritus*-based 'picture' of the beloved which has entered the heart of the lover.⁵⁹ The close and material connection between the *spiritus vitales* and *animales* becomes apparent. Apart from the perception, the latter animates the image-generating powers of the *phantasia*, a faculty of the soul localized in the brain, which receives the illustrations of things upon the 'pure mirror' of the *spiritus animalis* and prepares them to be processed

by the higher cognitive stages within the brain. It is precisely at this point, with the Neoplatonic discourse on love, that the close relationship between *fiamma*, *spiriti*, *cuore* and *amore* – which lies at the core of the artistic appraisal of both the major Bernini *Vite* – finds its place in the history of ideas. The great heart is the life-enabling and universally animating organ of the *ingenium*.⁶⁰

INNER LIGHT

However, it is also *light* that lives within the heart, the 'sun of the body'.⁶¹ Certainly, both Domenico Bernini's and Filippo Baldinucci's *Vite* emphasize, drawing on flame, heat and life, the *calor-nativus* aspect of the *spiritus*. Even so, references to Bernini's luminary nature are not few, especially in the solemn prologue to Baldinucci's *Vita*. Here it is light which characterizes the almost intolerable shining of Gianlorenzo's eyes, from which the *spiriti* spark and which brings stone to life.⁶² But also the trope of gaze that casts an arrow of light has a long tradition in love poetry, based on Cant. 4:9: 'vulnerasti cor meum in uno oculorum tuorum.'⁶³

The discourse on love parallels an older optical concept, which, in the course of the late middle ages, under the influence of the Arabian optical concepts of Alhazen, was relegated more and more to the background: the idea that the eye itself sends out luminous substances in order to perceive (the extramission theory).⁶⁴ Among the chief advocates of this theory was Plato who, in *Timaeos* 45 c, argues that the inner fire of the soul (the *pneuma*) shines through the eyes as a shaft of pure light onto the external world, where it mixes with ambient light to form a 'single body'. Plato's theory of sight was modified by the younger stoics, but the character of the extramission theory was retained through their view of inner light as a fine-particled *spiritus*. Since the authoritative Franciscan scientists of the thirteenth century and Kepler's theory of sight, the extramission theory has survived, apart from in the shadowy world of love, with its rich metaphors, only in the popular ideas about the *malocchio* and the eyes of such nocturnal creatures as cats.⁶⁵

It is thus unsurprising that, precisely in his theory of love, Marsilio Ficino discusses the nature of the light of the eye. His commentary on Plato's *Symposion*, a late fifteenth-century work probably owned by Bernini,⁶⁶ underlines that the beams of light which emanate from the eyes of lovers (Amor's arrows) are flashing 'carri degli spiriti, scagli quel sanguigno vapore al quale spirito chiamiamo.'⁶⁷ At the same time, it is Ficino who makes reference to the analogy of the heart and the sun. Just as the sun sends out light, so the heart sends out fine, brilliant *spiriti*. The emissions of the sun, composed of light, warmth and *spiritus*, are, for Ficino, who was deeply influenced by the Arabian *spiritus* theory of Alkindi,⁶⁸ liminal substances. They are at once corporeal and incorporeal.

The correlation between light and *spiritus* is an old one. Both occupy a liminal position between body and soul. For Augustine, for example, light is the finest corporeal substance connected to the soul. It shines from the eyes in order to be able to perceive external objects.⁶⁹ Just as the *spiritus*, light is poised on the border between the material and immaterial, its speed approaches the instantaneous.⁷⁰

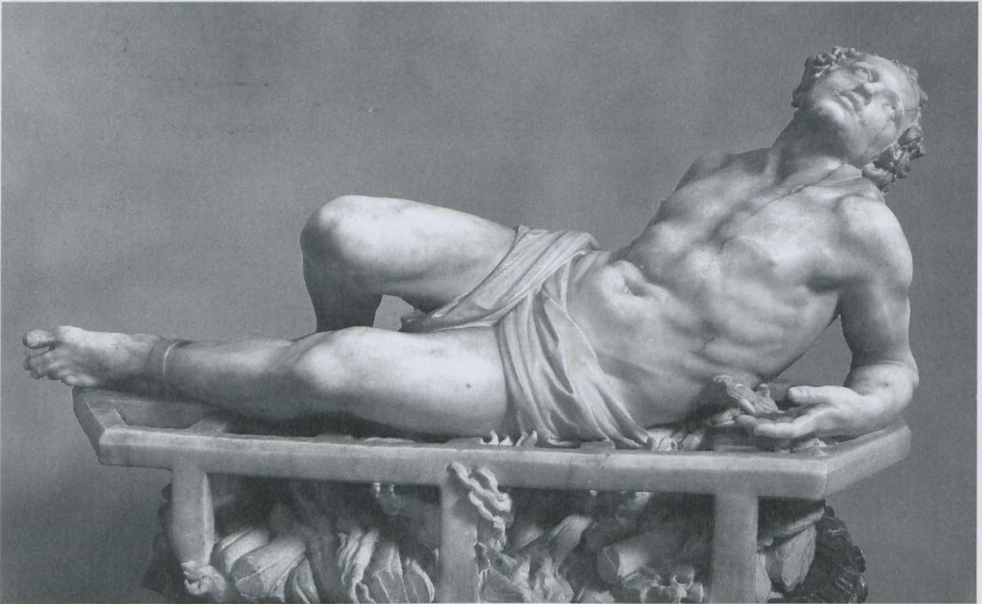
Thus the *spiritus* sparkles.⁷¹ With this concept, Augustine found common ground with, for example, the Aristotelian tradition. In his biological writings, Aristotle characterizes *pneuma*, the bearer of *thermon*, as glimmering, placing it in the category of shining substances, such as oil, which contain a great deal of *calor nativus*.⁷² The conviction that the eye simultaneously both emanates and absorbs *pneuma* (*quinta essentia, spiritus*) is still apparent in the scientific poetry of the sixteenth century.⁷³

Baldinucci's report, that, until Bernini reached forty, the physical strain of his *spiriti* caused him to suffer frequent headaches and, in turn, to shield himself from sunlight and its reverberations (*reverberi*) is understandable.⁷⁴ The inner *spiriti*, produced in the heart (the body's sun), cannot bear the excess caused by the external spirits of sunlight; the head, the vessel of the *spiriti animali*, threatens to 'burst'. Bernini was only able to bear the light of the sun once his inner *spiriti* began to cool with age.⁷⁵

THE LIGHT OF SCULPTURE

That practically no other sculptor, besides Bernini, placed such importance on light as an artistic material is well documented,⁷⁶ as is the fact that he was among the first not only to situate sculptures in a proper light, but to have them actively *responding* to real light.⁷⁷ Bernini, who united the permanence of his media with the transitory effects of light, accepted the verdict, deriving from the *paragone*, that, in contrast to painting, sculpture does not display its own light.⁷⁸ In our own age of spectacular lighting, this fact is even more apparent. For this reason Bernini sculptures are rarely cast in the light for which they were originally intended. This is the source of their fragility and may also explain why, until now, no one has investigated the relationship between light and sculpture as an historical problem.⁷⁹

Already, as a young artist, Bernini treated light as an artistic problem and as 'partner' in his sculptures. Initially, however, his figures owe their animation above all to a complex play of features or expressive gestures such as enlarged eyes⁸⁰ or the transitory state of someone at the beginning or end of a speech (an example that Bernini himself formulated)⁸¹ as well as a refinement of the differentiated surface. With the early *Laurentius on the Grill* (plate 1.5), Bernini suggests, with his flames of stone, how the bright and burning fire at once softens and enlivens the material itself, generating an ambivalence between permanence and transience, between stone and flesh. This ambivalence is emphasized thematically by the state of the saint himself – between life and death. Similarly, if not quite so prominently, in the group of *Aeneas, Anchises and Ascanius* (plate 1.6), a torch (later to become the fire of Vesta) burns playfully below the left foot of the grandfather Anchises and serves an equal function. The torch is carried during the nocturnal flight from the burning Troy by the living guarantee of the survival of the *stirps*: Ascanius.⁸² One is invited to ask whether the foot next to the burning torch is the senseless, numb bone of the partly lame Anchises or its 'living' counterpart – a play highlighting the animation of Bernini's art, which is even able to suggest a sense of feeling in the dead (the stone) or a sense of lifelessness in the living (the numb leg). In his *Imagini de gli dei de gli antichi* (1608),



1.5 Gianlorenzo Bernini, *St Laurentius on the Grill*, 1616–17. Marble. Florence: Uffizi Gallery. Photo: Kunsthistorisches Institut, Florence.

Vincenzo Cartari, following the Aristotelian tradition, compares the fire of Vesta to the *calor nativus*, which guarantees the existence and animation of all things.⁸³

Through such apparent combinations of animated and animating fire and stone, Bernini proceeded, particularly in his religious sculptures, to a more pronounced consideration of the effects of real light. The early altar statue of *Saint Bibiana* (plate 1.7) is an outstanding first example. The remains of the saint, who had been whipped to death, were rediscovered during Urban VIII's pontificate and 'reunited' by Bernini's lifesize statue. The white marble sculpture,⁸⁴ tinted by Bernini with a subtle brownish patina, rests in a dark niche and is struck diagonally by the northwest light, which enters through an opening in the vault above. The entire figure is affected by this event which may be described in terms of impact, response and levitation. It is already apparent from the nave of the church that this light is gentle and caressing, highlighting just two features of the statue: her cheek and throat. The light's intensity culminates here and transforms what, from below, appears to be a gradual increase in the brightness of diffuse light into a brilliant light.⁸⁵ The head, the raised arm and, to a slightly lesser extent, the breast of the saint are the most brightly illuminated. Light strikes, impacts and forms the figure. It projects the saint to the right of centre of the narrow niche.⁸⁶ Her face and hair especially are animated by the power of light. Accentuating this effect, the small pillar upon which the saint supports herself, a duplication of Bibiana's whipping column, preserved for devotion in the church, also projects slightly to the right, as does the golden palm branch in her hand. This impact of light is met by equally clear responding signs of affirmation; the smile on the

1.6 Gianlorenzo Bernini, *Aeneas, Anchises and Ascanius*, 1618. Marble. Rome: Galleria Borghese. Photo: ICCD Rome.

illuminated side of the saint's face, her raised right hand, balancing the work, the direction of the golden palm branch, and even the miraculously healing leaves of sage on the plinth. Like a living plant, this herb grows diagonally towards the light. From its base upwards, the sculpture appears almost to levitate. A prominent fold in the dress on her thigh seems to rise against gravity. This effect is echoed by the saint's right leg, which extends upwards and is continued by her bright and open hand, her uplifted head, and, finally, her heavenward gaze. The pillar, 'actually' serving as a *tronco*, loses its weight and becomes a light accessory.

With *St Bibiana*, Bernini discovered what would become an abiding artistic theme: that light has an active power; it animates the stone, brings it to life and renders it weightless. Entering the crossing of St Peter's from the nave, *St Longinus* (plate 1.8) appears to lean back diagonally into his niche, a colossus pushed back by an overwhelming force. Frontally oriented, he is a testimony of faith, his pose recalling the crucifixion, an effect made even more emphatic by the light playing across his breast, arms and head. How important light was to the planning of sculpture is illustrated by Francois Duquesnoy, who bitterly protested against the relocation of Bernini's statue of *St Andrew*.⁸⁷ Allotted the northeastern niche of the church, *St Longinus* is illuminated by the south and southwest light that streams into the dome in the afternoon. This





1.7 Gianlorenzo Bernini, *St Bibiana*, 1624–26. Marble. Rome: S. Bibiana.
Photo: the author.

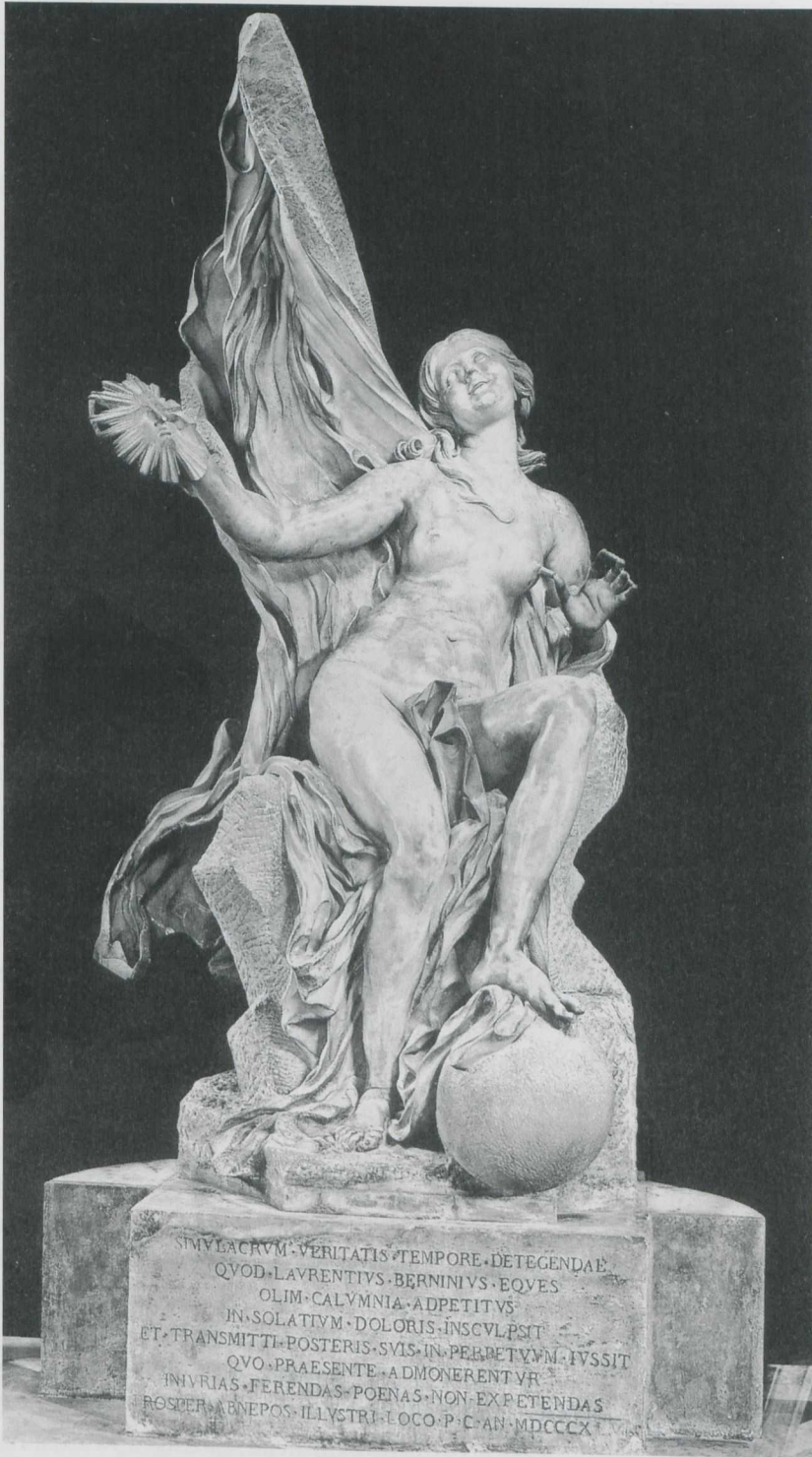


1.8 Gianlorenzo Bernini, *St Longinus*, completed 1638. Marble. Rome: St Peter's. Photo: the author.

corresponds to the light which shone (and faded) during the hours of the crucifixion. Between the saint and this light stands the cross crowning the baldachin, towards which the once almost *blind* man directs his healed eyes. The brightness of the statue is concentrated in his enormous eyes framed in their dark sockets. The saint submits to the impact of light and opens himself to it. At the same time, the light emphasizes the saint's upper body, by increasing in brightness from the base of the statue to its top.

During and after the crisis of the first years of the Pamphilj pontificate, Bernini was able to intensify the connection between light and sculpture. His *Veritas* (plate 1.9), intended as an allegory of virtue, is, at the same time, an allegory of the 'truth' of sculpture (as opposed to the *bugia*, or the 'lie', of painting) – it is, in other words, an allegory of the artistic genre.⁸⁸ The complex content and artistic theory represented by this figure has not yet been fully explored.⁸⁹ First of all, light is both visibly and thematically of central significance. The entire body of the massive figure appears smooth and relatively free of shadow in any common lighting situation, reacting positively to the light of its environment, reaching up with a slightly elongated arm to display the sun's disc. The whole sculpture is as 'light' as its smile.⁹⁰ But at whom is she smiling? Originally, Bernini intended to place the God of Time above the figure, who would have embodied both the unveiling of truth and destruction. But Baldinucci offers a fascinating explanation for the figure's absence, derived from Pier Filippo Bernini, which Domenico Bernini also repeats: Chronos himself joins the circle of beings over whom Bernini rules; the god is not permitted to emerge from the stone. Bernini denies his appearance, although the universal destroyer (*crudel Tiranno*) eagerly awaits Bernini's enlivening strokes ('piombar sopra di me colpi vitali').⁹¹ The co-actor of 'truth' has become another – but who has he become? Until now, the fact that the allegory is the only incomplete monumental work by Bernini has been overlooked. The overwhelming importance Bernini himself attached to this work, which was executed without a commission and was forever excluded from sale, stands in stark contrast to his customary ideal of perfection. Was this because of a literal lack of 'time', as Domenico Bernini, commenting on the untouched block of the God of Time, wonders?⁹² This is unlikely; the incomplete state of the work as a whole is too carefully calculated. For example the 'bridges' between Truth's fingers, between her breast and thumb, her hair and the veil, and the rays of the sun are left intentionally intact. Signs of incompleteness are to be found all around the periphery of the sculpture, most clearly on the flame-like point of the enormous stone veil, at the point where the stone is 'held' by a visibly absent force.⁹³

It is the sculptor's art itself, eternalized in the figure's incomplete state, to which 'Truth' exposes herself. The almost completed figure of 'Truth' awaits the animating sculptor's strokes, which were equated with Bernini's light and *spiritus*. The actual light, to which the bright allegory turns and at which she smiles, becomes palpable as the light of the creative *ingenium*, just as the rough, heavy stone suspended over 'Truth' seeks definition. This stone waits for Bernini's



1.9 Gianlorenzo Bernini, *Veritas*, 1646–52. Marble. Rome: Galleria Borghese.
Photo: Soprintendenza speciale per il polo museale romano.



1.10 Francesco Baratta (after Gianlorenzo Bernini), *Rio della Plata*, 1648–51. Marble. Rome: Fountain of the Four Rivers. Photo: the author.

'bending' and softening to overcome its weight. Bernini's 'Truth' eternalizes the very process of sculptural enlivening. 'Time' is invisibly present as a perpetually creative, rather than destructive, force. 'Truth' awaits to be completely 'unveiled' by the skill of the artist, who acts as an eternalizing agent against the transience of 'Time' – 'creation as a *faciendum* rather than a *factum*'.⁹⁴

Bernini's use of light becomes more sophisticated during and after the 1640s. The sculptor meditates, probably together with Athanasius Kircher, on the fact that, in antiquity, Piazza Navona was allegedly used for chariot races in honour of the sun god, and that its obelisk symbolizes a sunbeam. The *Fountain of the Four Rivers* portrays the drama of the sun's diurnal course – the tension maintained by the delicate equilibrium between antagonistic elements.⁹⁵ This drama culminates with the 'Rio della Plata', at the northwest corner of the square (plate 1.10). The river god throws himself, as if blinded, from his rocky seat and appears as a wildly gesticulating figure, with an almost bald head, gazing upwards. It is precisely at this point, that the sun, shortly before midday, shines over the obelisk and the river god so that he is forced to avert his eyes. In his somewhat earlier



1.11 Gianlorenzo Bernini, *St Theresa in Ecstasy*, 1647–51. Marble.
Rome: S. Maria della Vittoria. Photo: ICCD Rome.

Triton fountain in the Piazza Barberini (1642–43), Bernini mixes light with water, clothing his sea god in a shimmering and sparkling ‘skin’.

Bernini continued his earlier manipulations of direct and indirect daylight (such as St Peter’s throne in the Baptisterium of the Basilica; the Cappella Raimondi in S. Pietro in Montorio; and the Confessio of S. Maria Nova)⁹⁶ with the chapel of St Theresa in S. Maria della Vittoria. Over the altar, the visionary group is placed in an aedicula and is illuminated by a partly obscured light from above (plate 1.11). Before the chapel, in the late afternoon, without the ‘cacophony’ of modern-day spotlights, the visitor, who is acquainted with the sculpture from photographs, is surprised by the warm, mysterious light (almost twilight) in which it is bathed. From an oval opening in the vault, a southwest light filters into the church and illuminates the group indirectly. Originally still more subdued,⁹⁷

the light spreads evenly over the agitated surface of *Theresa's* robes, highlighting the saint's face. The illumination here, as with *Bibiana* (and the stigmata relief of the Raimondi chapel), is once again equated with an effect of weightlessness (levitation), exactly as the saint describes her levitations being accompanied by a flash of light.⁹⁸ Its brightness culminates on the cheek, on the breast and on the raised arm of the angel, whose smile remains mysteriously half in shadow. Illuminated by the golden light filtering through the window above, the upper portion of the group becomes slightly cast in warm gold, while the lower part retains its cool, marble tones.

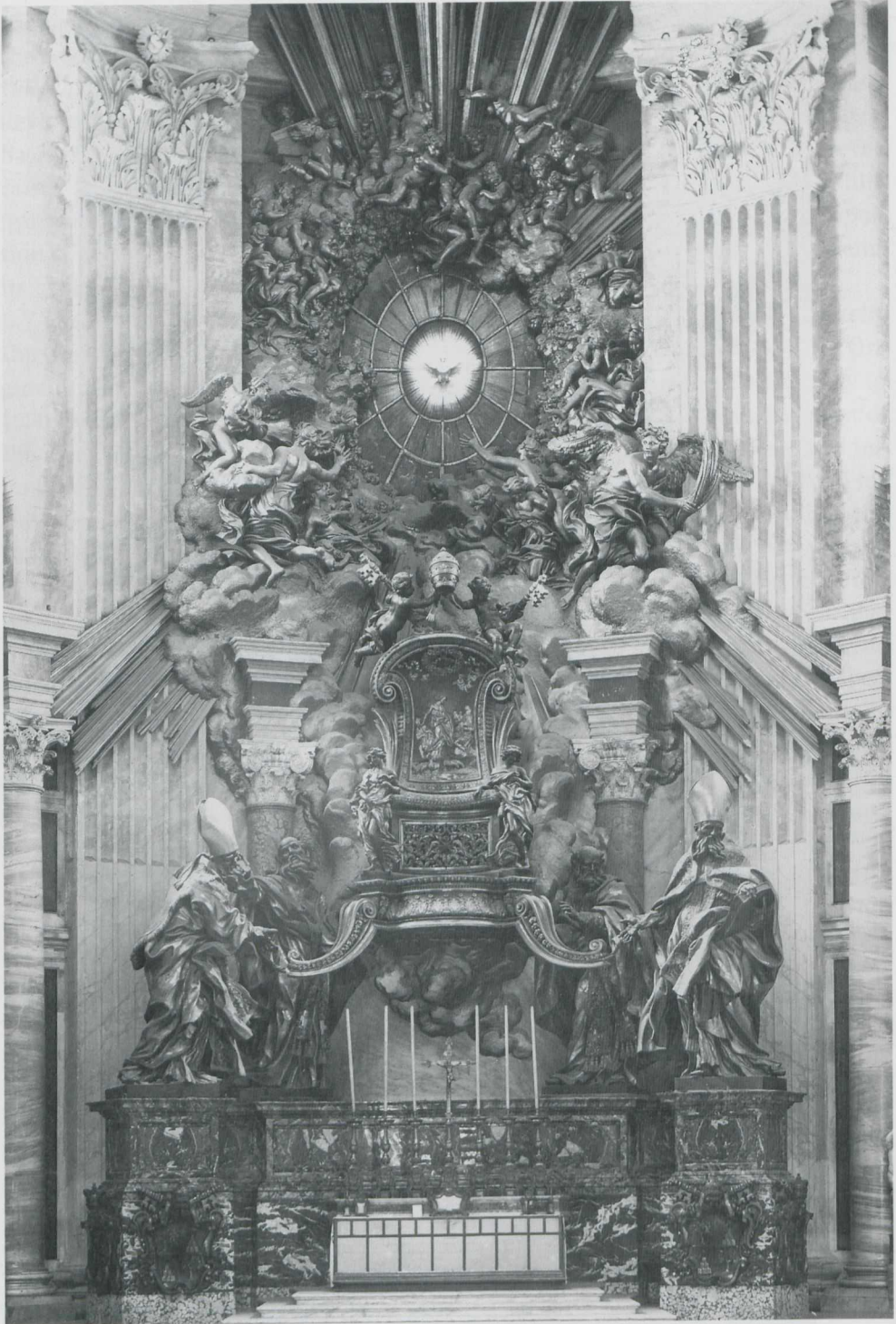
The equestrian statue of Constantine was commissioned by Innocent X, exactly thirteen hundred years after the emperor's victory over Maxentius (354 CE). Originally intended for the interior of St Peter's, it was completed by Bernini only in 1670 for the Scala Regia (plate 1.12). The relief exploits the same dramatic light of the *Longinus*, with its powerful effect, both animating and simultaneously immobilizing, as if 'turning to stone'. Two principal points of view were intended for the monument: the Scala Regia and the narthex of St Peter's.⁹⁹ First, climbing the steps of the basilica, the visitor becomes aware of the most fully plastic element of the colossal relief – the raised and open right hand of the emperor, upon which light gathers. Then, the head of the rearing horse becomes visible, turning away in panic, and finally *Constantine's* own head, bathed in light. The lunette window, with its visionary symbol of the cross, is placed behind the spectator, casting bright light from the east. For the visitor viewing the work frontally (the view from the narthex), the monumental curtain behind the equestrian group seems to be pushed aside, in the direction of the falling light, as if by some tremendous force. As first observed by Hans Kauffmann, in the morning light, a long, vertical fold appears as a beam of light, which points to the emperor's head.¹⁰⁰

Bernini's final arrangement of the apse of St Peter's – the reliquary of the *Cathedra Petri* (plate 1.13)¹⁰¹ – surpasses, with its exploitation of light, all his previous efforts. As far away as the main door, the west light from the central window can be seen between the twisting columns of the baldachin, which themselves seem to soften and be set in motion.¹⁰² It is a light exploding with golden angels, clouds and spectacular three-dimensional sets of golden stucco rays. Its effect is to enter into the physical space of the church. It shines and flows like a glowing material over the dark bronze of the reliquary container and the golden bronze of the church fathers, who are set into shivering, even shattering movement. Most importantly, the special light from this window is dominated, at its centre, by the white shape of the Holy Ghost, through which the untainted daylight of the windows of St Peter's is echoed.¹⁰³

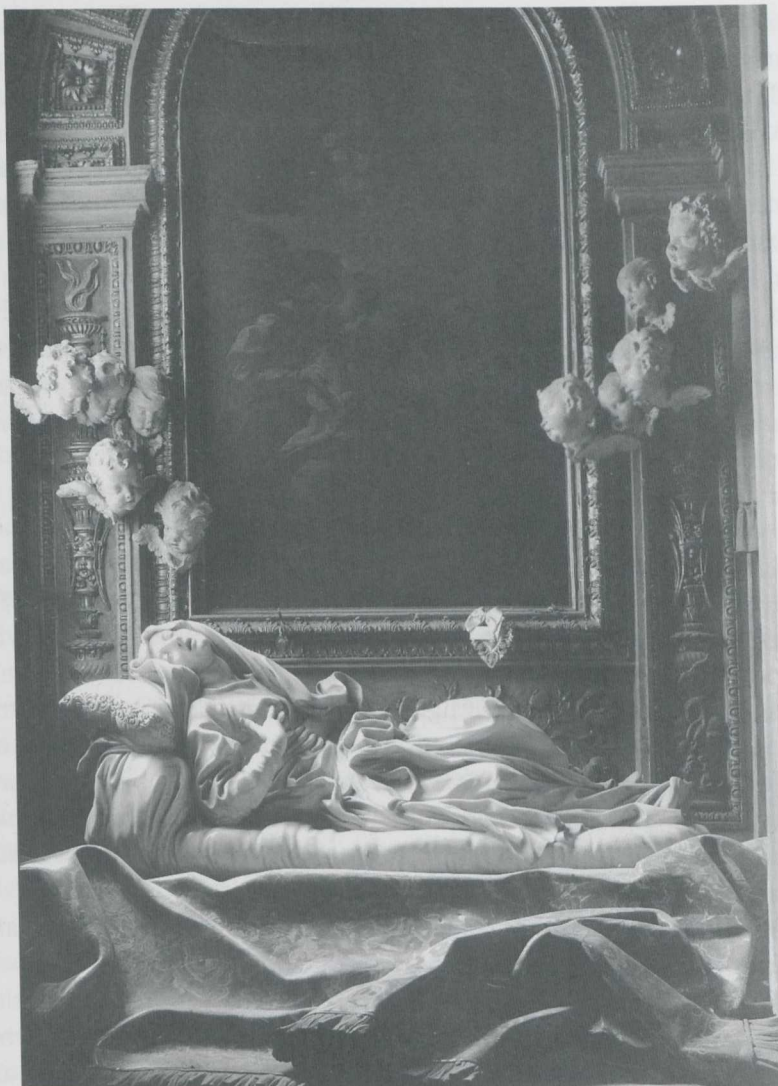
In 1674 Bernini completed his work at the chapel of the Blessed Ludovica Albertoni in S. Francesco a Ripa (plate 1.14).¹⁰⁴ A hybrid between tomb and altar monument, *Ludovica* is laid upon a marble bed.¹⁰⁵ Originally, two large windows, not visible from a distance, let in clear daylight – *lume vivo* (Vincenzo Scamozzi).¹⁰⁶ Today, the left window is the sole light source, but probably it played a



1.12 Gianlorenzo Bernini, *Equestrian Statue of Constantine the Great*, completed 1670. Marble. Rome: Vatican. Photo: the author.



1.13 Gianlorenzo Bernini, *Cathedra Petri*, 1656–63. Marble, bronze, stucco, stained glass.
Rome: St Peter's. Photo: Alinari (5923).



1.14 Gianlorenzo Bernini, *The Blessed Lodovica Albertoni*, completed 1674. Marble. Rome: S. Francesco a Ripa. Photo: Bildarchiv Foto Marburg.

dominant role from the beginning.¹⁰⁷ It illuminates, in particular, *Ludovica's* forehead, right hand and knees. The velvety, almost ivory quality of the brilliant surface of this late sculpture is astonishing. The light is generous, 'domestic', and intimate. But it is also intense. The blessed subject responds to its impact with an almost cramped gesture in her abdomen¹⁰⁸ and an affirmative turn of her head towards the northwestern window, implicitly directed towards St Peter's. At the same time, her lower body is caught in a forceful movement towards the light, extending through her raised legs to her toes. A deeply cut fold, which extends from *Ludovica's* legs to the middle of her body and is gathered in her left hand, is

particularly eloquent. It makes clear that sculpture as sculpture stands in a special relationship to light, because there, where its plasticity is particularly emphasized, the 'lightest' parts of the figure are to be found, as well as those most strongly marked by the contrast between light and shadow. It appears as if light actually models the body, generating a rhythmical correspondence between the light and the figure.¹⁰⁹ This accounts for the astonishing brilliance of the entire space above *Ludovica*, with its porous, cloud-like stucco angel heads, recalling particles of dust suspended in the light.¹¹⁰ *Ludovica's* parted lips do not suggest a final sigh, but rather an animated, passionate breath, which reverberates through the light-filled space, rhythmically accompanying the convulsive interaction between the flood of light and the responding motion of the sculpture. It is a work about *transition*: 'Bernini's most complete realisation of his talents and ambition to bend the marble itself'.¹¹¹

METAPHOR AND ANALOGY

With reference to Bernini's religious and allegorical works, art historians have frequently interpreted his treatment of light from a dualistic perspective. The altar aedicula of the Cornaro chapel possesses 'rays of (...) heavenly light'¹¹² as opposed to 'daylight'. The light in the space of the chapel itself is described as 'Eigenlicht als Stätte höherer Sendung', or 'sacred light',¹¹³ 'immaterial rays sent from above',¹¹⁴ 'daylight (...) in golden rays, condensed into heavenly light';¹¹⁵ 'rays of "true light"'.¹¹⁶ The *Cathedra Petri* is described in similar terms: its light is 'incorporeal', its luminosity 'immaterial', its light source, 'transcendent'.¹¹⁷ In the chapel of the Blessed Ludovica Albertoni the light is 'heavenly'¹¹⁸ and the light of *St Bibiana* is seen as 'transmitter of the spiritual illumination she is experiencing'.¹¹⁹

One of the major methodological problems of art history is that, after the 'discovery' of iconology and the adaptation of related methods of interpretation (allegory and polisemy), art historians have seldom really explained their understanding of visible phenomena.¹²⁰ Different semantic paradigms, which are rarely defined, are often employed, especially sign, representation, allegory, analogy, metaphor and symbol. Howard Hibbard, for instance, describes the light of the *Cathedra Petri* as a 'visible symbol of the stream of God's grace',¹²¹ while Carlo Del Bravo speaks of an '*allegoria luminosa*' with respect to Caravaggio and Bernini.¹²² For Rudolf Preimesberger, the different kinds of light of the Cappella Cornaro – ranging from the painted light through the natural, yellow-tinged illumination to the three-dimensional light of the golden rays – all represent the same thing: light.¹²³ But when light, whether natural or fictive, is meant to signify something other than light itself then consideration of the concept of metaphor is almost too obvious. Kauffmann, Irving Lavin and Preimesberger do exactly this, largely assuming that the visual operations at work in Bernini's art operate metaphorically. In Preimesberger's admirable response to Lavin's groundbreaking book about the Cornaro Chapel, the sculptured cloud, for example, is interpreted as a metaphor for heaven, which, in turn, becomes a metaphor of

Theresa's love wound. The entire chapel (*corpo*) is interpreted, through its inscription (*anima*) at the top of the arch, as a monumental metaphor (*impresa*) of the claims of the Discalced Carmelites.¹²⁴

It is self-evident that historical interpretation should concern itself with aesthetic and semantic theories which relate to the historical context in which a subject was conceived. But when the physical light of Bernini's religious works is explained as a metaphor for divine light, the historical meaning and application of the term demands closer analysis. For this, Emanuele Tesauro's theory of metaphors from 1654 is an important point of reference.¹²⁵ For Tesauro, the creation of metaphors is an inventive process, requiring *ingenium* in order to unify (*accoppiare*) separate entities.¹²⁶ This requires a kind of playful creative process, which generates something out of nothing (*di non ente fa ente*), and creates an affinity between two previously unrelated things.¹²⁷ According to Tesauro, however, the process of *ingenium* – 'trovando in cose dissimiglianti la similitudine',¹²⁸ 'vedere in un vocabolo solo, un pien teatro di meraviglie'¹²⁹ – is limited by two principles: the first – *decorum* – he names,¹³⁰ the second – comparability – he implies but never discusses. Beginning with the *Poetics* of Aristotle (§ 21), Tesauro traces the simple metaphor back to an abbreviated syllogism, in which the starting and end term share a common *genus*. Metaphorically, a 'shield' can be referred to as a 'cup', as both belong to the *genus* 'roundness'. The higher rank of this *genus* orders the two subordinate terms, whose identities are linked by the metaphor.¹³¹ This inherent link marks, for Tesauro, a kind of veiled truth. The metaphorical process is thus connected to a (para-) logical operation, which demands that the virtuoso in metaphors discovers correspondences between widely disparate things. In creating a new relationship – a metaphor – he has to accept, however, the limits of the *sensus communis*, in order to be successful.¹³²

Basically, in this context, much depends upon a preliminary metaphysical decision – determining how far the 'invented' relationship presupposes *ontological* participation.¹³³ Tesauro 'lascia alle spalle la rappresentazione e imprende a rifare il mondo',¹³⁴ although he still admits that truth shines through allusive speech as through a veil ('*come per velo*').¹³⁵ Sforza Pallavicino hints exactly at this point by emphasizing the 'hidden traces of friendship even between contraries', discovered by the gift of nature, called *ingegno*.¹³⁶

The ontology of similitude was notoriously neglected by Aristotle because of his rejection of Plato's philosophy of ideas. Aristotle did not distinguish between the construction of a metaphor as a horizontal play between separate entities and a vertical dependency upon which the compared relies, postulated by the Platonic concept of *analogy*. In Plato, the relationship between the individual elements making up the comparison are endowed with an ontological dimension, a hierarchy of participation, which conceives identity and difference in terms of substantial *derivation*.¹³⁷

Anne Eusterschulte has recently shown that the history of the analogy is, at the same time, the history of the Platonic idea of participation, that is *methexis*.¹³⁸

This was essentially unravelled by the Neoplatonic philosophy of emanation. In contrast to the metaphor, which, according to Aristotle, should permit either a reversal of terms, or else represent a qualitative (proportional) analogy (fin:fish = wing:bird), analogy is for Plato, 'the most beautiful of all bonds'.¹³⁹ The references to similitude depend upon the 'origin' (*ekgonos*) of the derivative in the prototype. In this perspective, light offers its brightness only because of its 'derivation' from the One.¹⁴⁰ The sun – 'offspring' of the idea of goodness¹⁴¹ – is, therefore, really the agent between *sensibilia* and *intelligibilia*. 'This relationship prohibits interpreting the parable of the sun exclusively as a symbolization of intelligible notions through visual models.'¹⁴² If, however, the transcendence of the idea is not total, but only modal, then sensory perception gains new value. Its deficit is, at the same time, evidence of the presence of the idea in the realm of the senses. For, as Ernst Gombrich has suggested,

... if the visual symbol is not a conventional sign but linked through the network of correspondences and sympathies with a supracelestial essence which it embodies, it is only consistent to expect it to partake not only of the 'meaning' and 'effect' of what it represents but also to become interchangeable with it.¹⁴³

It is the Idea itself, conceived as an entity, which, through these images tries to signal to us and thus to penetrate through our eyes into our mind.¹⁴⁴

The paradigm of this participation, which evolved as a result of the Neoplatonic theory of emanation (with its emphasis on analogy) into a genetic, anthropological and historical perspective, is light. Light is more than just an 'absolute metaphor', which saves from a 'logical embarrassment' (Blumenberg).¹⁴⁵ Rather, as Anne Eusterschulte has written,

The chasm between sensory perception and intellectual operations is, in this way, bridged. Sensory perception, indirectly participating in the intelligible world, is related to intellectual operation, which in turn perceives directly the intelligible light.¹⁴⁶

Reference has already been made to the 'iridescent' evaluation of light in the Neoplatonic-Christian tradition. For instance, Augustine, who has often been wrongly dismissed by art historians as a protagonist of trivial dualisms (because of his easily misinterpreted theory of the *genera visionum*),¹⁴⁷ describes light in his commentary of the book of Genesis (VII 19, 25) as something finely particled, capable of linking the senses and the immaterial.¹⁴⁸ Dealing with the analogy of light and mind, Plotin creates the paradox of 'unseparated separation'.¹⁴⁹ In so doing, he has the unity of immanence and transcendence in mind, which would influence not only the further history of the metaphysics of light but, for a very long time, the history of the physics of light as well.¹⁵⁰ When Scotus Eriugena declares, 'omnia, quae sunt, lumina sunt', he hints at the fundamental way in which light appears, namely, always referring what is illuminated back to the

source of light.¹⁵¹ It is thus 'dependent' on its source, and so turns the Neoplatonic scheme of cosmological progress, *unitas – alienatio – reditus*, into a sensory phenomenon. Whoever tries to 'cut off' light from its source will be disappointed, because, as Plotin remarked, cut off from its source, light turns to shadow, and darkness.¹⁵² A light source without its rays, its emanations, is inconceivable.

The subsequent history of the metaphysics of light and, especially, since the High Middle Ages, the extremely close connection between the metaphysics and physics of light, cannot be pursued here.¹⁵³ Of particular importance in this respect, however, is the dual nature of 'physical' light which, as the finest, fastest and, in its movement, geometrically most transparent of substances, is always to be found at the limits of the corporeal. It is this dual nature which, in the case of light, continually threatens the analogy through univocity, leading to 'a convergence of the levels of being, which annuls (...) the analogy' as a consequence.¹⁵⁴ Physical light is, paradoxically, always more than just physical light.

SCIENCE

How did Italian, and especially Roman philosophers and scientists, think about light in the seventeenth century? As is well known, traditional Aristotelian and Neoplatonic natural philosophy had already become defensive in this century. Scientists were forced to take into account the new mechanistic, corpuscular theories of Galileo, Torricelli, Descartes, Christian Huygens and, lastly, Newton. Maria Grazia Ianniello, Ugo Baldini and Thomas Leinkauf¹⁵⁵ have shown that Jesuit science and natural philosophy, dominant in Rome, reacted to these new challenges in a variety of ways. A central role was given to phenomena which could scarcely, if at all, be challenged by the anti-metaphysical mechanistic approaches. Aside from the seminal and growth-related processes in biology (Kircher, Bonanni), scientists focused on magnetism, heat conduction, electricity and, naturally, optics, the pride of Jesuit physics (De Dominis, Biancani, Cabeo, Riccioli, Grimaldi, Casati, Eschinardi, Lana Terzi).¹⁵⁶ The approximate instantaneousness of light movement and its capacity to penetrate the hardest material, such as diamonds, were powerful arguments against atomistic objections.¹⁵⁷

It is well known that Bernini, particularly as he grew older, developed a strong affinity with the Jesuit order. He was, for instance, a close friend of the head of the Jesuits, Giovanni Paolo Oliva, and of Cardinal Sforza Pallavicino. He built the church of the order's novitiate, S. Andrea al Quirinale. Furthermore, Bernini was not unaware of the scientific debates of his time. Around 1650 he designed the frontispiece for the optical treatise of another close friend, the Jesuit Niccolò Zucchi: *Optica Philosophia* (1652).¹⁵⁸ In this work, too, the continuity between light, warmth, *spiritus* and life is emphasized. Two section headings of the first volume make explicit the connection between light and warmth: 'Nihil in Universo cognoscitur propriam luce lucere, quod non sit formaliter calidum' – 'Lumen a luce proveniens non est calor; est tamen productivum caloris in subiecto apto.'¹⁵⁹ Later on, Zucchi confirms the luminous nature of the

*spiritus*¹⁶⁰ and underlines the enlivening effect of light through warmth.¹⁶¹

In 1646 Bernini began to work at the Cappella Cornaro and at the same time the Jesuit Athanasius Kircher, a central, though controversial, figure of the Collegio Romano, published his monumental compendium on optics, the *Ars magna lucis et umbrae* (plate 1.15). Four years later he published his detailed account of the hieroglyphics on the obelisk in the Piazza Navona, an important document which underlines Kircher's connections with Bernini.¹⁶² In the 1660s both men collaborated on the obelisk project in front of S. Maria sopra Minerva.¹⁶³ Kircher's ideas are based upon a solid synthesis of sources which is heavily indebted to Neoplatonic beliefs, and which he generously endows with individual observations. Nature is understood as a *palatium* or *templum dei*, a space for emanations, transferences and miracles.

For Kircher, *light* is of central philosophical importance. Beginning with the Neoplatonic credo: '*Deus lux est*',¹⁶⁴ and the principal references in James (1:17) – 'omne datum optimum, & omne datum perfectum descendens a Patre luminum' – Kircher looks for the emanative ways of God's presence in the world. At the very beginning of the *Ars Magna*, he states: '*Nihil in intimo mundanae molis recessu, quod ex luce & umbra, suae compositionis principia & elementa non haberet.*'¹⁶⁵ The more intensely the corporeal participates in light, the more perfect it is.¹⁶⁶ Light – 'almost a visible divinity, and image of God'¹⁶⁷ – illuminates, warms and, at the same time, forms all things created. Warmth is conceived as the lowest level of light's emanations. With his theory of the three 'realms' of light, Kircher is following, as Leinkauf has demonstrated, the authority of Francesco Patrizi.¹⁶⁸ In as far as the unified, sensuous light substance is divided – according to its origin (the sun): *lux prima*; its rays: *radius, lux secunda*; and luminosity: *lumen* – it is a perfect analogy of the triadic, emanative nature of God (*pater = lux; filius = lumen; spiritus sanctus = calor, ignis*).¹⁶⁹ Kircher directly quotes extracts from Patrizi's *Nova de universis philosophia* of 1591, in which the rays of light are described as an incorporeal–corporeal, spiritual–material entity, as neither *substantia*, nor (as Aristotle affirmed) *accidens* – as '*tertium entium genus*'.¹⁷⁰ Physical light is only a part of the chain of light concentrations, which, becoming graduated and ever weaker (*debilius*), penetrates the entire hierarchy of Being (*ordo rerum*).¹⁷¹

When, however, light, like *spiritus*, presents itself as both incorporeal and as a presence in the physical world (*spiritus materialis, vapor spirituosus*),¹⁷² when physical light is understood as something more than a physical phenomenon – a perceptible liminal substance, a manifestation of the divine, an observable paradigm of the emanative presence of the angels and the Trinity – then dualistic interpretations of Bernini's use of light cannot but be recognized as inadequate.

This remains true even in more orthodox Aristotelian perspectives. Nicola Zucchi's two-volume optical treatise of 1652, to which Bernini contributed, advances a detailed argument against mechanistic theories of light. '*Repraesentativa coloris lucentis, & illustrati non sunt corpuscula substantialia, ab illis*



1.15 Frontispiece of Athanasius Kircher, *Ars magna lucis et umbrae*, 1646. Engraving. Rome: Scheus.

diffusa, aut genita in medio, aut excitata.¹⁷³ Zucchi's objections to corpuscular theory were widely diffused. The velocity of light, the integrity of optical representations, the permanency of emanative forces in illuminated objects, for instance, could hardly be explained within corpuscular premises.¹⁷⁴ In Zucchi's view, as well, light escapes the opposition between the material and the immaterial. He ascribes an equal capacity to warmth, which dwells first in the sun, second in the sublunary sphere of fire, and third in the luminous, warm and animating *spiritus*: 'Tertio spiritus in animalibus, qui est substantia calida, & tenuis, si in aliqua copia colligatur, sit cum luce spectabilis. ...'¹⁷⁵

CONCLUSION

Gianlorenzo Bernini and the authors of Bernini's *Vite* should not be isolated from the theological and philosophical environment of which they were an active part. Following the 'spiritual naturalism' of Cinquecento Italian philosophy,¹⁷⁶ Jesuit science of the seventeenth century sought evidence of God's presence in the world (identifying sometimes even space and God).¹⁷⁷ Philosophers and scientists found this evidence in the puzzling liminal substances of light, in the magnet, or in the 'seeds' of life.¹⁷⁸ To interpret Bernini's light as a mere metaphor for 'divine light' means to reduce an extremely rich subject in the history of ideas to a bloodless abstraction. The light of Bernini's sculptures – 'da troppo tempo costretta sul letto di Procuste della metafora', to paraphrase Pierantonio Frare¹⁷⁹ – does not 'hint' at the unrepresentable; rather it is, itself, a forming, moving and animating power.¹⁸⁰

Bernini's unprecedented use of large-scale gilded stucco rays is an eloquent example of how the artist found a vehicle to express simultaneously the materiality and immateriality of light. Deriving from church furniture such as monstrances of the late sixteenth century (and already employed, less prominently, in architecture by Carlo Maderno),¹⁸¹ Bernini used them to show light not as a metaphor, but as an active and powerful force. The gilded stucco 'represents' rays of light, and in doing so makes visible their rectilinear and instantaneous movement. These stucco rays, at once, signify and produce light. At the same time, the phenomenon of this brilliant golden light is more strongly connected to its material support, in contrast, for instance, to stained-glass windows. This leads to an oscillation between physical and optical fact, between the static and the instantaneous – *corpora incorporea*. This does not cancel their materiality but instead creates a visual paradox.

In the end Bernini's sculptures, and especially his chapel arrangements, are also perpetuations of that flashing and glowing *spiritus* to which they owe their existence.¹⁸² The light to which these works respond is nothing other than an analogy of the *ingenium* of its creator, with which light displays substantial identity. Nicola Zucchi, too, comments on the analogy between the emanation of light, magnetic forces, *spiritus* (living in the eye as *spiritus animalis*),¹⁸³ and the dynamic quality of the *impetus*. As light, the *impetus* transfuses moving power from an active into a passive agent.¹⁸⁴ Zucchi's example for this transfusion of qualitative powers – the hand that throws a stone – links light and physical labour. From the beginning of his voluminous discourse, Zucchi combines light, beauty, warmth, fertility and life, offering a contemporary clue to Bernini's work and to the comments of his biographers.¹⁸⁵

Still today, Bernini's sculptures are touched by light, that liminal entity which radiated from the artist's eyes and guided his hands. Through his *spiriti*, Bernini instilled the substance of life in his medium, conquering it and softening it with its glow, in accordance with the topical analogy between *spiritus*, *ingenium*, light, warmth and life.

Notes

This article is a result of my broader interest in animation ('enlivening') as an aesthetic category in the history of Western art. Cassandra Sciortino not only thoroughly corrected my English text, but also sharpened its argument. I would also like to thank Michael Cole, Heiko Damm, Charles Davis, Lilo Ernst, Antje Fehrmann, Arnold Nesselrath, Ulrich Pfisterer and some anonymous readers for comments, help and bibliographical advice. Susanne Vogt assisted me in editing the manuscript. While writing the paper I was generously supported by a grant of the Fritz Thyssen-Stiftung, Cologne.

- 1 On the chronology of the Bernini biographies, see Cesare D'Onofrio, 'Priorità della biografia di Domenico Bernini su quella del Baldinucci', *Palatino*, 10: 3-4, 1966, 201-208. For the first sketches of Bernini's biography, written by his son Pier Filippo, see Felicità Audisio, 'Lettere e testi teatrali di Bernini: una postilla linguistica', Marcello Fagiolo and Maria Luisa Madonna, eds, *Barocco romano e barocco italiano. Il teatro, l'effimero, l'allegoria*, Rome and Reggio Calabria, 1985, 26-43; Tomaso Montanari, 'Sulla fortuna poetica di Bernini: frammenti del tempo di Alessandro VII e di Sforza Pallavicino', *Studi secenteschi*, 39, 1998, 127-64; Tomaso Montanari, 'Bernini e Cristina di Svezia. Alle origini della storiografia berniniana', Alessandro Angelini, ed., *Gianlorenzo Bernini e i Chigi tra Roma e Siena*, Cinisello Balsamo, 1998, 328-477 (esp. 385-425); Tomaso Montanari, 'Pierre Cureau de La Chambre e la prima biografia di Gian Lorenzo Bernini', *Paragone*, 50, ser. 3:24-5, 1999, 103-132.
- 2 See the preface of the editor, 'Pro re Romana, pro Majestate Parentum/Magna Berninus pugnat uterque manu;/Sed tantum praestat Natus Patri, incluta quantum/Firmior est saxis, nobiliorque Fides', Domenico Bernini, *Vita del Cavalier Gio. Lorenzo Bernino*, Rome, 1713, n. p.
- 3 Bernini, *Vita*, 177. See Maria Grazia Bernardini, "'Il gran Michelangelo del suo tempo": la vita, il personaggio', in Maria Grazia Bernardini and Maurizio Fagiolo dell'Arco, eds, *Gian Lorenzo Bernini. Regista del Barocco*, Geneva and Milano, 1999, 39-46. Gianlorenzo is actually depicted as an anti-type of Bellori's (and Baglione's) Caravaggio, similar in his 'dark' complexion, but different in his affinity to light. On Caravaggio, see Philipp Sohm, 'Caravaggio's deaths', *Art Bulletin*, 84: 3, 2002, 449-68. On the choleric complexion, see Raymond Klibansky, Erwin Panofsky, Fritz Saxl, *Saturn and melancholy. Studies in the history of natural philosophy, religion and art*, London, 1964; Domenico Laurenza, *De Figura Humana. Fisiognomica, anatomia e arte in Leonardo*, Florence, 2001, 66-70, 169-70. For the hagiographic tradition, see Cynthia Hahn, *Portrayed on the heart. Narrative effect in pictorial lives of saints from the tenth through the thirteenth century*, Berkeley, Los Angeles and London, 2001.
- 4 Kristina Herrmann-Fiore, 'Tre ritratti dipinti da Gianlorenzo Bernini nella Galleria Borghese', Anna Coliva and Sebastian Schütze, eds, *Bernini scultore. La nascita del Barocco in Casa Borghese*, Rome, 1998, 233-9. See also the section, 'Il volto del genio' in Bernardini and Fagiolo dell'Arco, *Bernini*, 295-305.
- 5 See Bernini, *Vita*, 177. See also Filippo Baldinucci, *Vita del Cavaliere Gio. Lorenzo Bernino*, Florence, 1682, 65-6.
- 6 'tanto affaticava la natura, che pareva, che allora spirasse, in atto di mandar fuori tutti i suoi spiriti per render viva la sua operazione.' Bernini, *Vita*, 180.
- 7 Baldinucci, *Vita*, 65. See Paul Fréart de Chantelou, *Journal de voyage du Cavalier Bernin en France*, ed. Milovan Stanic, Paris, 2001, 116 (12 August 1665): 'qu'il [Bernini] avait une extrême vivacité'.
- 8 Bernini, *Vita*, 33-6. On the healing and reanimating powers of heroes in ancient biographies, see Dagmar Stutzinger, 'ΘΕΙΟΣ ΑΝΗΡ. Einleitung. Die Vorstellung vom außergewöhnlichen, göttlichen Menschen', *Spätantike und frühes Christentum*, exhib. cat., Frankfurt: Liebighaus, 1983, 161-75 (167-8).
- 9 'e particolarmente quel continuo lavoro in Marmo, in cui era così fisso, che sembrava anzi estatico, & in atto di mandar per gli occhi lo spirito per render vivi li Sassi, fu in lui gran causa di male, che l'abbattè nel letto con fibre acutissima, & accidenti mortali.' Bernini, *Vita*, 48.
- 10 'quel Pontefice, che, se gli fosse stato possibile, haverebbe voluto imbalsamare, e rendere eterno il Bernino.' Bernini, *Vita*, 49.
- 11 Bernini, *Vita*, 73.
- 12 'non haver'esso fatta quella Statua, mà la Santa medesima essersi da sè medesima scolpita, & impressa in quel marmo.' Bernini, *Vita*, 42.

- 13 See Chantelou, *Journal*, 115–16 (12 August 1665): 'sur l'image qu'il en avait formée et imprimée dans son imagination ... qu'il ne les [preparatory sketches] avait faits à diverses fois que "per inzupparsi et imbeversi dell'immagine del Re"', ce sont ses propres mots.' On the credibility of Chantelou, see Sandrina Bandera, 'Bernini e Chantelou: Affinità elettive ante litteram', *Paragone*, 50, 1999, 57–81. See Bernini, *Vita*, 134: 'rispose, che i Modelli gli erano serviti per introdurre nella fantasia le fattezze di chi egli doveva ritrarre, mà quando già le haveva concepite, e doveva dar fuori il parto, non gli erano più necessari.'
- 14 See Bernini, *Vita*, 19.
- 15 Bernini, *Vita*, 73.
- 16 Bernini, *Vita*, 80.
- 17 Bernini, *Vita*, 90–1.
- 18 Bernini, *Vita*, 97.
- 19 'dimostrando la uniformità del moto, l'attitudine delle parti, la proporzione delle operazioni, e la sensibilità degli organi esterni, & interni, co' quali negli occulti principii molto più si assomigliava quel vivente Animaluccio a quel vivo Monarca, che ogni qualunque insensata tela di ben disposti, mà morti colori.' Bernini, *Vita*, 96. Marten Delbeke discusses this event in detail, in both Pallavicino's and Domenico's versions, 'The pope, the bust, the sculptor and the fly', *Bulletin de l'Institut Historique Belge de Rome*, 70, 2000, 179–223. On the relationships between the sculptor and the cardinal, see Tomaso Montanari, 'Gian Lorenzo Bernini e Sforza Pallavicino', *Prospettiva*, 87–8, 1997, 42–68. (on Pallavicino's version of the event, 57).
- 20 Bernini, *Vita*, 100.
- 21 See Sergio Bertelli, *The King's Body*, University Park, 2001 (on anointment, 21–28; on subjects forbidden to look at the king without permission, 29; life's force or generative power [testimonium fortitudinis] as testimony of sovereignty [plenitudo potestatis]: 168); *Le sacre des rois (Actes du colloque international d'histoire sur les sacres et couronnements royaux, Reims, 1975)*, Paris, 1985. On the diffusion of the topos in ancient biographies (for example, Iamblichos, Philostratos, Plutarch), see Stutzinger, 'Vorstellung', 1983, 165. On a miniature showing the king (Charles v of France) as a source of light (New York, Pierpont Morgan Library, M. 456 fol. 26v, c. 1360), see Michel Camille, 'The king's new bodies', Thomas Gaetgens, ed., *Künstlerischer Austausch. Akten des 28. Internationalen Kongresses für Kunstgeschichte*, vol. 2, Berlin, 1993, 393–405 (esp. 396, 404); on the comparison with the shining corpses of saints, Camille, note 18. On the 'shining crown', see Carra Ferguson O'Meara, *Monarchy and consent. The coronation book of Charles v of France*, London, 2001, 49.
- 22 Bernini, *Vita*, 88.
- 23 Bernini, *Vita*, 103–104. For the context, see Claudio Donati, *L'idea di nobiltà in Italia. Secoli XIV–XVIII*, Rome and Bari, 1988.
- 24 Bernini, *Vita*, 127.
- 25 Chantelou, *Journal*, 48 (6 June 1665); see 117 (12 August 1665): '... que le travail lui avait épuisé les esprits'.
- 26 Bernini, *Vita*, 132.
- 27 Chantelou, *Journal*, 116 (12 August 1665); see 98 (30 July 1665).
- 28 Bernini, *Vita*, 134. See Chantelou, *Journal*, 115 (12 August 1665): '... l'image qu'il en avait formée et imprimée dans son imagination'. On artistic and epistemological 'parto' (with references to Ficino, *De amore* and *De vita*), see Maria Ruvoldt's recent analysis, 'Michelangelo's dream', *Art Bulletin*, 85:1, 2003, 86–113. (esp. 105–107).
- 29 Chantelou, *Journal*, 65 (27 June 1665).
- 30 'V.M. loda tanto la copia, perche è inammortata [sic] dell'originale.' Bernini, *Vita*, 136.
- 31 'Onde perche in quell'atto dimostrò qualche espressione di tenerezza, negli occhj [sic] ancora, il Rè rivolto all'Abbate Buti suo confidente disse in lingua Francese, e con voce alquanto sommessa, "Questo grand'Huomo mi ama, mà lo sono maggiormente innamorato di lui, di quanto dimostro."' Bernini, *Vita*, 140. See Pierre Cureau de La Chambre's account of 1681, 'il luy échappoit souvent de dire "ch'era innamorato del Re di Francia"', Montanari, 'La prima biografia', 1999, 116.
- 32 Bernini, *Vita*, 148.
- 33 Bernini, *Vita*, 149.
- 34 '... & haver con ciò saputo accoppiare in un certo modo insieme la Pittura, e la Scultura.' Bernini, *Vita*, 149. Irving Lavin, *Bernini and the unity of the visual arts*, New York and London, 1980; Rudolf Preimesberger, 'Berninis Cappella Cornaro. Eine Bild-Wort-Synthese des siebzehnten Jahrhunderts. Zu Irving Lavins Bernini-Buch', *Zeitschrift für Kunstgeschichte*, 49:2, 1986, 190–219.
- 35 '... esser forse provenuto dal non haver loro dato il cuore di rendere i sassi così ubbidienti alla mano.' Bernini, *Vita*, 149. See also Pierre Cureau de La Chambre's account of 1681/85: '... et qu'il est arrivé à la perfection pour un chemin tout differens de celui des anciens. ... Il semble mesme qu'il n'à quitté le goust antique que pour donner à ses figures plus de mouvement et de vie, plus de tendresse et plus de verité. Il est certain ... qu'il a osté, pour ainsi dire, la dureté au marbre (qui s'ammolitoit sous

- son ciseau), qu'il luy a donné de la legereté et de la transparence'. Montanari, 'La prima biografia', 1999, 125-6.
- 36 See Plutarch, *Moralia* 681 AB. It seems to be no coincidence that the flaming heart almost became Bernini's signature: see, for example, the heart-shaped opening of the altar in the Cappella Albertoni, and, most significantly, on the panels under the windows; furthermore, the gate of the Cappella Cornaro and the frieze in the Cappella Raimondi, San Pietro in Montorio. See Shelley K. Perlove, *Bernini and the idealization of death: The Blessed Ludovica Albertoni and the Altieri Chapel*, University Park, 1990, 18.
- 37 'Un' Artefice eccellente nel Disegno dubitor non deve al giunger dell'età decrepita di alcuna mancanza di vivacità, e tenerezza, perche è di tanta efficacia la pratica del Disegno, che questo solo può supplire al difetto degli spiriti, che nella vecchiaja languiscono.' Bernini, *Vita*, 167. Baldinucci reports the sculptor's comment more explicitly: 'che una tal sicurezza nel disegno possa assai bene supplire al difetto degli spiriti, i quali coll'aggravar dell'età si raffreddano, ciò che egli diceva aver osservato in altri Artefici,' *Vita*, 59.
- 38 Baldinucci, *Vita*, 132.
- 39 Bernini, *Vita*, 167.
- 40 Bernini, *Vita*, 169.
- 41 'Come, ch'èi avanti la sua malattia haveva concertato il modo col P. Marchese di essere inteso senza parlare, stupore in tutti fù, come ben a lui si facesse intendere col moto solo della sinistra mano, e degli occhj: Segno manifesto di gran vivacità di sentimenti, quali nè pure allora mostravan di cedere, benche mancasse la vita.' Bernini, *Vita*, 175. On the literary construction of Bernini's death and his last works, see Irving Lavin, 'La morte di Bernini', Bruno Contardi et al., eds, *Le immagini del SS.mo Salvatore*, Rome, 1988, 229-58. Recently, Philip Sohm commented on the *topos* of the artist's death as a clue to aesthetic response ('Caravaggio's deaths', 2002).
- 42 'morte, la quale veramente apparve agli occhi nostri qual fu la vita,' Baldinucci, *Vita*, 61.
- 43 Apart from the biography of Filippo Baldinucci, who uses the same materials as Domenico, the principal sources are the diary of Paul Fréart de Chantelou and the short biography of Pierre Cureau de La Chambre.
- 44 Baldinucci, *Vita*, 2. This refers to the Neoplatonic concept of *logoi spermatikoi*; see Maryanne C. Horowitz, *Seeds of Virtue and Knowledge*, Princeton, 1998; Carol V. Kaske, 'Ficino's pre-incarnational scenarios', Liana de Girolami Cheney and John Hendrix, eds, *Neoplatonism and the Arts*, Lewiston, 2002, 53-64; Hiroshi Hirai, 'Concepts of seeds and nature in the work of Marsilio Ficino', Michael J.B. Allen et al., eds, *Marsilio Ficino. His theology, his philosophy, his legacy*, Leiden, 2002, 257-84; Daniel P. Walker, 'The astral body in Renaissance medicine', in *Journal of the Warburg and Courtauld Institutes*, 21: 1-2, 1958, 119-33. See Chantelou, *Journal*, 86 (23 July 1665; on the astrology of fame). See also Pierre Cureau de La Chambre's characterization of 1685: 'Le cavalier Bernin estoit ... d'un temperament tout feu, fort et robuste. ... dès qu'il ouvroit la bouche c'estoit un charme que de l'entendre, d'autant plus qu'il accompagnoit tout ce qu'il disoit de certains gestes merveilleusement expressifs. ... d'humeur ... vive, prompte, brusque et impetuese, principalement le dernier', Montanari, 'La prima biografia', 1999, 125-6.
- 45 Undoubtedly, the model for Baldinucci's account is Vasari's life of Michelangelo ('il benignissimo Rettore del cielo [...] mandare in terra uno spirito [...]'), Giorgio Vasari, *Le Vite de' più eccellenti pittori, scultori e architettori nelle redazioni del 1550 e 1568*, ed. Rosanna Bettarini, comm. Paola Barocchi, 9 vols, Florence, 1966-1987, vol. 6, 3. See Catherine Sousloff, 'Imitatio Buonarroti', *Sixteenth-Century Journal*, 20, 1989, 581-602; Montanari, 'Pallavicino', 1997, 58-60. On Michelangelo's hagiography, see David Summers, *Michelangelo and the Language of Art*, Princeton, 1981, 56-59, 103-143; David Summers, *The Judgment of Sense. Renaissance Naturalism and the Rise of Aesthetics*, Cambridge, 1989, 14-32. On Renaissance *ingenium*, Martin Kemp, 'From "mimesis" to "fantasia": The Quattrocento vocabulary of creation, inspiration and genius in the visual arts', *Viator*, 8, 1977, 347-97; Martin Kemp, "'Equal excellences': Lomazzo and the explanation of individual style in the visual arts', *Renaissance Studies*, 1, 1987, 1-26; Ulrich Pfisterer, 'Künstlerische "Potestas Audendi" und "Licentia" im Quattrocento. Benozzo Gozzoli, Andrea Mantegna, Bertoldo di Giovanni', *Römisches Jahrbuch der Bibliotheca Hertziana*, 31, 1996, 107-147. On the notions of the genius's inner fire, see Perrine Galand-Hallyn, Fernand Hallyn and Jean Lecointe, 'L'inspiration poétique au Quattrocento au XVIe siècle', Perrine Galand-Hallyn and Fernand Hallyn, eds, *Poétiques de la Renaissance. Le modèle italien, le monde franco-bourguignon et leur héritage en France au XVIe siècle*, Geneva, 2001, 109-147. For the seventeenth century, see Giulio Marzot, *L'ingegno e il genio nel seicento*, Florence, 1944. See also Roland Kanz, *Die Kunst des Capriccio. Kreativer Eigensinn in Renaissance und Barock*, Munich and Berlin, 2002, 54 ff. (on Juan Huarte, *Examen de ingenios para las ciencias* [1575], who describes the 'warm' and 'damp' complexion of the genius and of imagination, the place where

- metaphors are 'composed'). See further Deborah J. Haynes, *The vocation of the artist*, Cambridge, Mass., 1997 and Noel L. Brann, *The debate over the origin of genius during the Italian Renaissance. The theories of supernatural frenzy and natural melancholy in accord and in conflict on the threshold of the scientific revolution*, Leiden and Boston, 2002. On the medical tradition of *spiriti* that shape the bodies of artists and also their works of art, see Laurenza, *De figura umana*, 120-1.
- 46 Most important on *pneuma* and *spiritus*: Franz Rüsche, *Das Seelenpneuma. Seine Entwicklung von der Hauchseele zur Geistseele*, Paderborn 1933; Gérard Verbeke, *L'Évolution de la doctrine du pneuma du stoïcisme à S. Augustin. Étude philosophique*, Paris and Louvain 1945; Owsei Temkin, 'On Galen's pneumatology', *Gesnerus*, 8, 1951, 180-9; Augusto Marinoni, *I rebus di Leonardo da Vinci. Raccolti interpretati. Con un saggio su 'Una virtù spirituale'*, Florence, 1954; Marie-Dominique Chenu, 'Spiritus: Le vocabulaire de l'âme au XII siècle', *Revue des sciences philosophiques et théologiques*, 41, 1957, 209-232; Ermenegildo Bertola, 'Le fonti medico-filosofiche della dottrina dello "spirito"', *Sophia*, 26, 1958, 48-61; Marielene Putscher, *Pneuma, Spiritus, Geist*, Wiesbaden, 1973; Marie E. Isaacs, *The Concept of Spirit. A Study of Pneuma in Hellenistic Judaism and its Bearing on the New Testament*, London, 1976; Marta Fattori, ed., *Spiritus. Quarto colloquio internazionale*, Rome, 1984; James J. Bono, 'Medical spirits and the medieval language of life', *Traditio*, 40, 1984, 91-130; Daniel P. Walker, *Music, Spirit and Language in the Renaissance*, London, 1985; Eugenio Garin, 'Il termine "spiritus" in alcune discussioni fra Quattrocento e Cinquecento', *Umanisti, artisti, scienziati*, Rome, 1989, 295-303; Franz Dünzl, *Pneuma. Funktionen des theologischen Begriffs in der frühchristlichen Literatur*, (*Jahrbuch für Antike und Christentum, Ergänzungsband 30*), Münster, 2000; Charles Dempsey, 'Donatello's spiritelli', Victoria v. Flemming and Sebastian Schütze, eds, *Ars naturam adiuvans. Festschrift für Matthias Winner*, Mainz, 1996, 50-61; Ulrich Pfisterer, *Donatello und die Entdeckung der Stile 1430-1445*, Munich, 2002, 133-46; Walter Stephens, *Demon Lovers. Witchcraft, Sex, and the Crisis of Belief*, Chicago and London 2002, esp. 61-9, and Michael Cole, 'The demonic arts and the origin of the medium', *Art Bulletin*, 84, 2002, 621-640.
- 47 Thomas Fuchs, *Die Mechanisierung des Herzens*, Frankfurt, 1992, 33.
- 48 See Gad Freudenthal, *Aristotle's theory of material substance. Heat and Pneuma, Form and Soul*, Oxford, 1995; on the tradition of the theory through Galen: Everett Mendelsohn, *Heat and Life. The development of the theory of animal heat*, Cambridge, Mass., 1964; also Heinrich C. Kuhn, *Venetischer Aristotelismus im Ende der aristotelischen Welt. Aspekte der Welt und des Denkens des Cesare Cremonini (1550-1631)*, Frankfurt, 1996, 264-90 (with extensive bibliography). On the central importance of *calor nativus* in early modern sexology (Michele Savonarola, Giovanni Marinello, Girolamo Mercurio, Lorenzo Gioberti/Laurent Joubert), see Rudolph M. Bell, *How to Do It. Guides to Good Living for Renaissance Italians*, Chicago and London 1999, chaps 2 and 3. On the connections with the 'liveliness' of colour, see Frank Fehrenbach, 'Calor nativus - Color vitale. Prolegomena zu einer Ästhetik des "Lebendigen Bildes" in der frühen Neuzeit', Ulrich Pfisterer and Max Seidel, eds, *Visuelle Topoi. Erfindung und tradiertes Wissen in den Künsten der italienischen Renaissance*, Berlin and Munich 2003, 151-170.
- 49 Fuchs, *Mechanisierung*, 33.
- 50 See, as *pars pro toto*, Agrippa von Nettesheim, *De occulta philosophia*: 'Therefore the soul is connected with the body only by means of the spirit of life, and the mind with the spirit of life only by means of the soul.' (*Die magischen Werke*, Wiesbaden, 1982, 82-3.)
- 51 See Aristotle, *De anima* 2.4, 416a9-18; 1.5, 411b7-8; 410b12-13; *Meteorologica* 4.3, 380b16-17; 381a10 ff.; 381b4; on the *punctum saliens* of the embryo: *De generatione animalium* 2.6, 743b20; see Freudenthal, *Aristotle's theory*, passim. For Aristotle's treatise on the soul, see Karen Gloy, 'Aristoteles' Konzeption der Seele in "De anima"', *Zeitschrift für philosophische Forschung*, 38: 3, 1984, 382-411.
- 52 Fuchs, *Mechanisierung*, 35.
- 53 See Joseph A. Mazzeo, 'Metaphysical poetry and the poetic of correspondence', *Journal of the History of Ideas*, 14, 1953, 221-34; Eugenio Donato, 'Tesauro's poetics: Through the looking glass', *Modern Language Notes*, 78, 1963, 15-20; Klaus-Peter Lange, *Theoretiker des literarischen Manierismus. Tesaurus und Pellegrinis Lehre der 'acutezza' oder von der Macht der Sprache*, Munich, 1968; Ernest B. Gilman, *The Curious Perspective. Literary and pictorial wit in the seventeenth century*, New Haven and London, 1978, esp. 67-87; Ezio Raimondi, *Letteratura barocca. Studi sul seicento italiano*, Florence, 1961; M. Costanzo, *Critica e poetica del primo seicento*, 3 vols, Rome, 1969-71, vol. 3, 91 ff.; Claudio Scarpati and Eraldo Bellini, *Il vero e il falso dei poeti. Tasso, Tesaurus, Pallavicino, Muratori*, Milan, 1990, 35-71. For an exhaustive contextualization of Tesaurus's *opus majus*, see Pierantonio Frare, 'Per istraforo di prospettiva'. Il 'Cannocchiale Aristotelico' e la poesia del Seicento, Pisa and Rome, 2000.
- 54 '[Metaphors] movano altrettanto la Imaginativa, & questa mova la Mente'. Emanuele Tesaurus, *Il*

- cannocchiale aristotelico: *O sia idea delle argutezze heroiche vulgarmente chiamate imprese*, Turin, 1654, 360. See E. Ruth Harvey, *The Inward Wits. Psychological theory in the middle ages and the Renaissance*, London, 1975; Summers, *Judgement of Sense*; Leen Spruit, *Species intelligibilis. From perception to knowledge*, 2 vols, Leiden, 1996; Mario Klarer, "'Ekphrasis'", or the archeology of historical theories of representation: medieval brain anatomy in Wernher der Gartenaere's "Helmbrecht", *Word and Image*, 15: 1, 1999, 34-40; Michel Camille, 'Before the gaze. The internal senses and late medieval practices of seeing', Robert S. Nelson, ed., *Visuality Before and Beyond the Renaissance*, Cambridge, 2000, 197-223.
- 55 Tesauro, *Cannocchiale*, 129.
- 56 Tesauro, *Cannocchiale*, 339.
- 57 Tesauro, *Cannocchiale*, 133.
- 58 Tesauro, *Cannocchiale*, 336. See 138-9; furthermore 574-5, where Tesauro mentions the 'seed' of the simple metaphor, germinating in the *metafora continuata*; or 580, where argumentation, as the highest level of metaphoric speech, is called 'parto di quella terza facultà della humana mente'.
- 59 Robert Klein, 'Spirito peregrino', *La forme et l'intelligible*, Paris, 1970, 31-64 (esp. 55); Ioan P. Couliano, *Eros and magic in the Renaissance*, Chicago and London, 1987, esp. 55-7; Maria L. Ardizzone, *Guido Cavalcanti. The other middle ages*, Toronto, 2002. See also John Ch. Nelson, *The Renaissance Theory of Love. The context of Giordano Bruno's Eroici Furori*, New York, 1958; Ruth Kline, 'Heart and eyes', *Romance Philology*, 25, 1972, 263-97; Lance K. Donaldson-Evans, *Love's Fatal Glance: A study of eye imagery in the poets of the 'Ecole lyonnaise'*, University of Mississippi, 1980.
- 60 For the religious tradition and seicento mystical literature linking heart, heat and love, see Bert Treffers, 'Il cuore malato', Sergio Rossi, ed., *Scienza e miracoli nell'arte del '600*, Milan, 1998, 146-56.
- 61 On the Aristotelian analogy of heart and sun and its reception (for example, in Pietro Torrigiano, *Plus quam commentum in parvam Galeni artem*, Venice, 1512), see Martin Mulsow, *Frühneuzeitliche Selbsterhaltung. Telesio und die Naturphilosophie der Renaissance*, Tübingen, 1998, 276.
- 62 For the analogy of life and (physical) light, see, for example, Ps.-Aristotle, *Liber de causis*, vol. 15, 137: 'sicut vita et lumen et quae sunt eis similia sunt causae rerum omnium habentium bonitates.'
- 63 See Dante, *Divina Commedia*, Paradiso 4, 139-42. As a later *pars pro toto*, Giambattista Marino, *Adone*, 3, 105 (on Marino's books in Bernini's possession, see Sarah McPhee, 'Bernini's books', *Burlington Magazine*, 142, 2000, 442-8). On the tradition of the allegory, see Gudrun Schleusener-Eichholz, *Das Auge im Mittelalter*, 2 vols, Munich, 1985, vol. 2, 759 ff. and 853-4; more recently Julian Kliemann, 'Kunst als Bogenschießen. Domenichinos "Jagd der Diana" in der Galleria Borghese', *Römisches Jahrbuch der Bibliotheca Hertziana*, 31, 1996, 273-311. (esp. 299-309); and Shigeo Suzuki, "'Through my heart her eyes' beamy darts be gone". The Power of Seeing in Renaissance Poems and Emblems of Love', Wolfgang Harms and Dietmar Peil, eds, *Polyvalenz und Multifunktionalität der Emblemik. Acts of the 5th International Congress of the Society for Emblem Studies*, 2 vols, Frankfurt, 2002, vol. 2, 725-34.
- 64 David C. Lindberg, *Theories of vision from Al-Kindi to Kepler*, Chicago, 1976, is unsurpassed. On antique optics in a poststructuralist perspective: Gérard Simon, *Le regard, l'être et l'apparence dans l'optique de l'antiquité*, Paris, 1988.
- 65 See Siegfried Seligmann, *Der böse Blick und Verwandtes. Ein Beitrag zur Geschichte des Aberglaubens aller Zeiten und Völker*, 2 vols, Berlin, 1910 (reprint Hildesheim 1985), vol. 1, 249; Schleusener-Eichholz, *Auge*, vol. 1, 129 ff.; 238 ff.; Couliano, *Eros and Magic*, 52 ff.
- 66 See McPhee, 'Bernini's books', 2000.
- 67 Marsilio Ficino, *El libro dell'amore*, ed. Sandra Niccoli, Florence, 1987, 205. See Baldassare Castiglione, *Il libro del Cortigiano*, ed. Ettore Bonora, Milano, 1972, 271 (III, 66), a work also owned by Bernini (see McPhee, 'Bernini's books').
- 68 See Couliano, *Eros and Magic*, 178 ff. See also (commenting on Aristotle, *Physics* II, 26: 'Sol et homo generant hominem') Francesco Patrizi, *Nova de universis philosophia*, Ferrara, 1591, fol. 76vb: 'Sol enim, et homo hominem generant. Et calor qui in animalibus est, elemento respondeat stellarum: attemen si quando diutius nos ferit sol, res a segenitas etiam consumit. Et ab Hippocrate scitissime est pronunciatum. Idem calor, qui nos constituit, etiam consumit. Sed animi rerum, calor, ignisque, vigor nempe vivificus, quo rebus omnibus, quibus ipse iunguntur, vitam tribuit, et animatione'.
- 69 Augustinus, *De Genesi ad litteram* XII, xvi, 32 (Jean P. Migne, ed., *Patrologiae cursus completus [...] series latina*, 221 vols, Paris, 1844-96, vol. 34, col. 466).
- 70 See Aristotle, *De sensu*, 447a2-4. David C. Lindberg, 'Medieval Latin Theories of the Speed of Light', *Roemer et la vitesse de la lumière* (Centre national de recherche scientifique, Collection d'histoire des sciences 3), Paris, 1978, 53-56; Fabio Frosini, 'Pittura come filosofia: note su "spirito" e "spirituale" in Leonardo', *Achademia*

- Leonardi Vinci, no. 10, 1997, 35–59. (esp. 51).
- 71 See Verbeke, *L'Évolution*, 507.
- 72 See *De generatione animalium*, vol. 2, 3, 736b; Freudenthal, *Aristotle's theory*, 125, 178–80. Similarly Marsilio Ficino (*De vita*, vol. 3); see Hirai, 'Concepts', 269 ff.
- 73 For instance in René Bretonnayau, *La Generation de l'homme et le Temple de l'Ame* (1583); on his notion of the eye as an active 'pneumatic' organ, see Albert-Marie Schmidt, *La poésie scientifique en France au XVIe siècle*, Mulhouse and Lausanne, 1970, 354 ff.
- 74 The model for this account seems to be Bellori's description of Caravaggio's death, caused by a fever following a sun stroke; for this, see Sohm, 'Caravaggio's deaths', 2002, 456–9. In Vasari, for example, the analogy between *ingenium* and light has already begun to become a topos; see, for example, Vasari, *Le vite*, vol. 2, 43 (1550). In the edition of 1568, the lume of Giotto surpasses that of Cimabue. See Roland Le Mollé, 'Significato di luce e di lume nelle Vite del Vasari', *Il Vasari storiografo e artista. Atti del congresso internazionale nel IV centenario della morte, Arezzo and Florence, 1974*, n.d., 163–77. On the topos of the artist as light (Boccaccio, Francesco Villani etc.), see Michael Baxandall, *Giotto and the Orators*, Oxford, 1971, 73–4.
- 75 Baldinucci, *Vita*, 64–5.
- 76 Particularly convincing observations are made by Hans Kauffmann, *Giovanni Lorenzo Bernini. Die figürlichen Kompositionen*, Berlin, 1970, and Irving Lavin, *Unity*, who emphasizes the dynamic connection between sculptural three-dimensionality, brightness and levitation.
- 77 On predecessors (for example, Nicolas Cordier, S. Sylvia; S. Gregorio Magno), see Lavin, *Unity*, 34; for painting, see Fabio Barry, 'Lux and Lumen. The Symbolism of Real and Represented Light in the Baroque Dome', *Kritische Berichte*, 30: 4, 2002, 22–37; Gabriele Wimböck, *Guido Reni (1575–1642). Funktion und Wirkung des religiösen Bildes*, Regensburg, 2002, 204–207. On Bernini's careful choice of subdued light, see Chantelou's report, *Journal*, 225 (5 October 1665) and 255 (13 October 1665).
- 78 See, for instance, Leonardo da Vinci, *Libro di Pittura*, ed. Carlo Pedretti, Florence, 1995, § 42.
- 79 For the history of sculpture and architecture, a thorough study as Wolfgang Schöne's work on the light of painting has yet to be written (*Über das Licht in der Malerei*, Berlin, 1954); see recently Charles Davis, 'Architecture and light: Vincenzo Scamozzi's statuary installation in the Chiesetta of the Palazzo Ducale in Venice', *Annali di Architettura*, (Centro Internazionale di Studi di Architettura 'Andrea Palladio'), 14, 2002, 171–93. (193, note 56 with bibliography).
- 80 See Chantelou, *Journal*, 205 (26 September 1665).
- 81 Chantelou, *Journal*, 154 (4 September 1665).
- 82 See Rudolf Preimesberger, 'Pignus imperii. Ein Beitrag zu Berninis Aeneasgruppe', Friedrich Piel and Jörg Träger, eds, *Festschrift für Wolfgang Braunjels*, Tübingen, 1977, 315–23 (esp. 319); Ulrike Müller Hofstede, 'Künstlerischer Witz und verborgene Ironie. Zu Berninis Aeneas und Anchisesgruppe und Bagliones "Cupido cruciatur"', Christine Göttler et al., eds, *Diletto e meraviglia. Ausdruck und Wirkung in der Kunst von der Renaissance bis zum Barock*, Emsdetten, 1998, 103–27 (esp. 107).
- 83 See Müller Hofstede, 'Künstlerischer Witz', 107 (but translating *calor* unspecifically with 'heat' ['Hitze']).
- 84 For related problems of the monochrome sculpture, see Patrik Reuterswärd, 'The breakthrough of monochrome sculpture during the Renaissance', *Konsthistorisk tidskrift*, 69, 2000, 125–49.
- 85 This was already observed by Kauffmann, *Bernini*, 79.
- 86 On the material conditions, see Vitaliano Tiberia, *Gian Lorenzo Bernini, Pietro da Cortona, Agostino Ciampelli in Santa Bibiana a Roma. I restauri*, Todi, 2000, 24–77.
- 87 'mutargli il lume e la veduta, convenendosi ora girare per vederla in faccia' (after Bellori), Kauffmann, *Bernini*, 102.
- 88 See Chantelou, *Journal*, 228 (6 October 1665). Leonardo da Vinci criticizes sculpture for appearing only as that which it is ('dimostrando all'occhio quel, che quello è'; *Libro di Pittura*, § 35), a verdict, already transformed positively by Pomponius Gauricus as the higher 'truth' of sculpture with regards to poetry; see *De sculptura*, eds André Chastel and Robert Klein, Geneva, 1969, 43.
- 89 See the groundbreaking interpretations of Kauffmann, *Bernini*, 194–221 and Matthias Winner, 'Berninis "Verità" (Bausteine zur Vorgeschichte einer Invenzione)', Tilmann Budensieg and Matthias Winner, eds, *Munuscula Discipulorum. Kunsthistorische Studien. Hans Kauffmann zum 70. Geburtstag*, Berlin, 1968, 393–413; Matthias Winner, 'Veritas', Coliva and Schütze, *Bernini*, 290–309.
- 90 'L'espressione beata della Verità del Bernini nel momento della percezione della luce ispira una fiducia che trascende la sfera umana (...)' Kristina Herrmann Fiore, 'La Verità', in Claudio Strinati and Maria Grazia Bernardini, eds, *Gian Lorenzo Bernini. Regista del Barocco. I restauri*, Geneva and Milan 1999, 27–35 (34). For smile as the shining of the 'inner' light, see Dante, *Divina Commedia, Purgatorio*, 11, 79–84, and *Convivio*, 2, viii, 11; for the celestial light as 'smile'

- of the heavens, see Marsilio Ficino, *De lumine*, 5, 16.
- 91 See Baldinucci, *Vita*, 35–6; Bernini, *Vita*, 81–2: 'Dall'antica mia rupe, / Per darmi spirito e voce, / M'ha non pur voce, e spirito, e moto, e volo, / Fabro, che al Mondo è solo, / Trassemi un giorno, e già volea la mano / ... Piombar sopra di me colpi vitali'
- 92 'ò altra grave occupazione ne distogliesse il lavoro,' Bernini, *Vita*, 81.
- 93 This is a significant reversal of Michelangelo's practice, just as Pier Filippo Bernini's poem is a reversal of Michelangelo's famous sonnet fragment: 'Dagli alti monti e d'una gran ruina, / ascoso e circumsritto d'un gran sasso, / idiscesi a scoprirmi in questo basso, contr'a mie voglia, in tal lapedicina. / Quand'el sol nacqui, a da chi il ciel destina' (Michelangelo Buonarroti, *Rime*, ed. Enzo N. Girardi, Bari, 1960, 131). For the intertextual connection of both poems, see Giancarlo Maiorino, *The Cornucopian Mind and the Baroque Unity of the Arts*, University Park and London, 1990, 23–5. On the other hand, Bernini's sculpture is also a commitment to Michelangelo's famous sonnet 'Non ha l'ottimo artista alcun concetto / c'un marmo solo in sé non circoscrive' (*Rime*, 82); see Sforza Pallavicino's statement in *Del bene*: 'Così diciamo che fu perfezionato quel sasso dallo scarpello del Bernino, da cui fu ridotto in una graziosissima statua. E pure ciò non ha fatto il Bernino, se non tagliando d'intorno al sasso molti pezzi a lui simili di sostanza che gli stavano congiunti, la qual congiunzione meglio si conformava colla naturale inclinazione e col mantenimento del sasso.' (Montanari, 'Pallavicino', 1997, 60). For the *paragone* with Michelangelo, see also Herrmann Fiore, 'Verità', 33–4, and her observation on the contrast between highly finished and unfinished parts: 'Questo contrasto aumenta l'effetto di irradiazione della superficie cristallina della Verità, ed è quindi funzionale al tema.' (33)
- 94 Maiorino, *Cornucopian Mind*, 116. 'tuttavia ò fosse sdegnò del medesimo Tempo, che mobile di sua natura non volle eternarsi per le mani del Bernino', Bernini, *Vita*, 81. Bernini emphasized this point. Until the death of the sculptor some thirty years later the gigantic block intended for 'Time' could be seen on the street, leaning against Bernini's house; see Winner, 'Veritas', 296. On Pallavicino's and Chantelou's accounts of Bernini's appreciation of *fragmented* antique sculptures (Torso of Belvedere, Pasquino), see Montanari, 'Pallavicino', 1997, 58.
- 95 See Frank Fehrenbach, "'Discordia concors'". Gianlorenzo Bernini's "Fontana dei Quattro Fiumi" (1648–51) als päpstliches Friedensmo-
nument', Heinz Duchhardt, ed., *Der Westfälische Friede. Diplomatie – Politische Zäsur – Kulturelles Umfeld – Rezeptionsgeschichte*, Munich, 1998, 715–40; Frank Fehrenbach, *Mikrokosmen. Gianlorenzo Bernini's "Fontana dei Quattro Fiumi" und Nicola Salvi's "Fontana di Trevi" in Rom. Kunst, Naturphilosophie, Topographie*, Berlin and Munich, 2005 (forthcoming). See also Rudolf Preimesberger, 'Obeliscus Pamphilius. Beiträge zu Vorgeschichte und Ikonographie des Vierströmerbrunnens auf Piazza Navona', *Münchener Jahrbuch der Bildenden Kunst*, 1974, 77–162.
- 96 On the typology (the Pantheon, as well as Giacomo Vignola's S. Andrea in Via Flaminia, the Cappella della Madonna della Strada of the Gesù and Pietro da Cortona's model for the high altar of S. Giovanni dei Fiorentini, 1634), see Lavin, *Unity*, 34, and Davis, 'Architecture and Light' (with exhaustive references to Serlio).
- 97 See Lavin, *Unity*, 104. The outer window of the chapel was originally much smaller than it is today, as an etching by Piranesi illustrates. For interesting observations on additional light devices in the chapel, see Livia Carloni, 'La Cappella Cornaro in Santa Maria della Vittoria: nuove evidenze e acquisizioni sulla "men cattiva opera" del Bernini', Strinati and Bernardini, *I restauri*, 37–46.
- 98 See Susanne J. Warma, 'Ecstasy and Vision. Two Concepts connected with Bernini's "Teresa"', *Art Bulletin*, 64: 3, 1984, 510.
- 99 See Tod A. Marder, *Bernini's Scala Regia at the Vatican Palace*, Cambridge, 1997, 165–212.
- 100 Kauffmann, *Bernini*, 287.
- 101 On the history of the Cathedral, see Ann Sutherland Harris, 'La Cattedra di San Pietro in Vaticano: dall'idea alla realizzazione', Maria Grazia Bernardini, ed., *Bernini a Montecitorio*, Rome, 2001, 115–28.
- 102 See Bernini's draft in the Vatican, coll. Chigi (Heinrich Brauer and Rudolf Wittkower, *Die Zeichnungen des Gianlorenzo Bernini*, 2 vols, Berlin, 1931, cat. no. 74b), and the drawing by Borromini in the Albertina, Vienna (Heinrich Thelen, *Francesco Borromini. Die Handzeichnungen*, Graz, 1967, cat. no. C. 68).
- 103 Patrik Reuterswärd demonstrated that, in the middle ages, celestial light was often represented by red or blue colours ('What color is Divine Light?', Thomas B. Hess and John Ashbery, eds, *Light, from Aten to Laser* [Art News Annual 35], 1969, 109 ff.). But John Gage emphasized how white, in the garment of the transfigured Christ, signified the light of heaven as well (*Colour and Culture. Practice and Meaning from Antiquity to Abstraction*, London, 1999, 60). On white as the origin of colours (following Aristotle, Albertus Magnus et al.), see Gage, 141. On

- the colour of light (white), see also Alida Cresti, *Mitografia di luce e il colore degli angeli. Simboli e figure della sacralità luminosa*, Rome, 2002, 37 ff.
- 104 See Kauffmann, *Bernini*, 329 (with reference to the typological model, Pietro da Cortona's design for the high altar of SS. Martina e Luca, Rome).
- 105 For an alternative identification (St Anne), see Marcello Beltramme, 'G.L. Bernini a San Francesco a Ripa. Una rilettura per una nuova proposta tematica', *Studi romani*, 1998: 1-2, 29-59. For the carpet, reminiscent of a funerary drapery, see Michela Ulivi, 'La Cappella della beata Ludovica Albertoni nella chiesa di San Francesco a Ripa', Strinati and Bernardini, *I restauri*, 85-95 (90).
- 106 See Davis, 'Architecture and Light', 172-3.
- 107 Due to a newly constructed oratory, the right window was closed twenty-one years after the artist's death (1701), the same year in which the originally wooden drapery, among other interventions, was substituted by the precious marble structure. The amendments were sponsored by Angelo Paluzzi Albertoni, commissioner of Bernini's original work; see Federica Di Napoli Rampolla, 'Cronologia delle ristrutturazioni della Cappella della beata Ludovica Albertoni a San Francesco a Ripa', Strinati and Bernardini, *I restauri*, 97-110 (app. doc. n. 7). I do not share Michela Ulivi's conclusion: 'La chiusura della finestra nel 1702 ... ha indubbiamente provocato la perdita della completezza della progettualità berniniana.' ('La Cappella', 95, note 33). The only surviving preparatory sketches by Bernini (Leipzig, Museum der bildenden Künste, inv. no. 7813 verso and 7850) indicate a major light source from the left, as does Giovanni Battista Gaulli's altar panel, executed after Bernini's sculpture, and his drawing after the Ludovica (Bibliothèque interuniversitaire, Montpellier; c. 1674). Obviously, it was always Bernini's intention to let the western window play a dominant role.
- 108 Perlove, *Bernini*, 30, traces the gesture back to accounts of the saint's life that emphasize charity as inflaming her heart ('She does not breathe other than the amorous exhalation of the flame nurtured in her bosom.' Bernardino Santini, *I voli d'amore*, Bologna, 1673, 11). See also Frank Sommer, who suggests that the saint is suffering from an attack of *incendium amoris* that even colours the drapery beneath her bed ('The Iconography of Action: Bernini's *Ludovica Albertoni*', *Art Quarterly*, 36, 1970, 30-8).
- 109 This may be compared to the report of a biographer (Giovanni Paolo) who describes how the continuously growing inner light of the saint became, at the time of her death, so intense that a bright aura appeared about her face (see Perlove, *Bernini*, 32 and 43 for observations on the sculpture's 'absorptive rather than reflective, [...] looming' appearance). See also Ulivi, 'La Cappella': 'La costruzione dei volumi di quel panneggio in tumulto è studiata da Bernini anche negli effetti che la luce vi avrebbe "scolpito".' (89)
- 110 On the entrance of the angels with light, see Perlove, *Bernini*, 16 and Howard Hibbard, *Bernini*, Harmondsworth, 1965, 220.
- 111 Kauffmann, *Bernini*, 333. Similar observations on the process of dying depicted by Bernini, linking it typologically to the 'languid death' in Perlove, *Bernini*, 24-7, 38. The author also forwards an illuminating interpretation of the Janus heads at the pilasters, referring to Janus as guardian of the doors of night and day, that is, of light; as deity of the month in which Ludovica died (January); and as the main god of the *rione* in which Ludovica lived and died (Trastevere/ Ianiculum), 41.
- 112 Rudolf Wittkower, *Gian Lorenzo Bernini. The Sculptor of the Roman Baroque*, London, 1955, 28-9.
- 113 Kauffmann, *Bernini*, 106, 142, 157.
- 114 Lavin, *Unity*, 105.
- 115 Preimesberger, 'Cappella Cornaro', 208.
- 116 Winner, 'Berninis "Verità"', 305.
- 117 Kauffmann, *Bernini*, 274.
- 118 Hibbard, *Bernini*, 222.
- 119 Lavin, *Unity*, 34.
- 120 An important exception is Ernst H. Gombrich, 'Icones Symbolicae. Philosophies of Symbolism and their Bearing on Art', *Symbolic Images. Studies in the Art of the Renaissance II*, London, 1972, 123-91. Gombrich states apodictically: 'For where there is no clear gulf separating the material, visible world from the sphere of the spirit and of spirits, not only the various meanings of the word "representation" may become blurred but the whole relationship between image and symbol assumes a different aspect. ... Warburg described as "Denkraumverlust" this tendency of the human mind to confuse the sign with the thing signified, the name and its bearers, the literal and metaphorical, the image and its prototype. We are all apt to "regress" at any moment to more primitive states and experience the fusion between the image and its model or the name and its bearer.' (125). My article comments critically on this statement from a historical point of view, emphasized by Gombrich himself (172). I am following Horst Bredekamp's objections to an overly dualistic understanding of 'Neoplatonism', still dominant in texts on baroque art history ('Götterdämmerung des Neoplatonismus', A. Beyer, ed., *Die Lesbarkeit der Kunst*, Berlin, 1992, 75-83).

- 121 Hibbard, *Bernini*, 160 (my emphasis).
- 122 Carlo Del Bravo, 'Sul significato della luce nel Caravaggio e nel Bernini', *Le risposte dell'arte*, Florence, 1985, 179–88 (185; my emphasis).
- 123 Preimesberger, 'Cappella Cornaro', 209.
- 124 Preimesberger, 'Cappella Cornaro', 218. See also Perlove, *Bernini*, 32: 'The worshipper ... looks toward the light-filled niche, from darkness to light, retracing in metaphoric terms the enlightenment of the *beata's* soul'. See Perlove, *Bernini*, 34: 'God speaks directly to the soul, imparting to it an "intellectual vision" not perceived by the senses.' Interpreting Bernini's *Ludovica Albertoni*, Sommer mentions 'the Divine Light symbolized by the physical light coming from the concealed window to the left', 'Iconography of Action', 35.
- 125 Lavin, *Unity*, 157; Preimesberger, 'Cappella Cornaro'. See also Axel Müller, *Die ikonische Differenz. Das Kunstwerk als Augenblick*, Munich, 1997, chap. 1 ('G. L. Bernini: Die Metaphorisierung des Körpers'), who deals, however, not with the subject of light. On the usefulness of Tesauro's theory of metaphors for baroque art history, see Christoph Lademann, 'Der Flug der Taube. Die illusionistische Architekturmalerie des 17. Jahrhunderts als materielle Metapher', Göttinger et al., *Diletto e meraviglia*, 129–45. For the philosophical and linguistic context, see Peter M. Daly and John Manning, eds, *Aspects of Renaissance and Baroque Symbol Theory 1500–1700*, New York, 1999. Pierantonio Frare has convincingly demonstrated that it is misleading – due to Benedetto Croce – to identify seicento poetics with Tesauro's ('nemmeno tra i trattatisti la metafora gode di particolare considerazione: il Peregrini la dedica uno spazio ristretto e comunque subordinato all'acutezza, il Pallavicino addirittura la sottometta alla similitudine, il trattato del Meninni non la elenca tra le voci analizzate.' Frare, *Cannocchiale Aristotelico*, 91).
- 126 Tesauro, *Cannocchiale*, 119.
- 127 For the aspect of play in creating and detecting metaphors, see Mario Zanardi, 'Metafora e Gioco nel "Cannocchiale aristotelico" di Emanuele Tesauro', *Studi secenteschi*, 26, 1985, 25–99.
- 128 Tesauro, *Cannocchiale*, 336.
- 129 Tesauro, *Cannocchiale*, 338.
- 130 Tesauro, *Cannocchiale*, 342.
- 131 Tesauro, *Cannocchiale*, 353–4; see 585. For Tesauro's eight classes of metaphors, see Scarpati and Bellini, *Il vero e il falso*, 66–8.
- 132 Aristotle, *Poetics*, 1459a. But see Agostino Mascardi's warning against the excessive use of metaphors, comparing them (metaphorically!) to salt in a meal (*Prose vulgari*, Venice, 1630, 109; see Philipp Sohm, *Style in the Art Theory of Early Modern Italy*, Cambridge, 2001, 76–7). On the still unresolved philosophical problem of the constitution of metaphors, see Ekkehard Eggs, 'Metapher', Gert Ueding, ed., *Historisches Wörterbuch der Rhetorik*, vol. 5, Tübingen, 2001, col. 1099–1183, who exhaustively refers to the present debate (col. 1157–69).
- 133 With his removal of any barriers to metaphor, Tesauro draws a parallel (prepared through the work of P. Ramus, A. Fouquelin, O. Talon) to the conceptual rationalism of Port-Royal, for which the references to similitude are products of the mind, see Eggs, 'Metapher', col. 1137–38. On the theory of metaphors, see Giuseppe Conte, *La metafora barocca. Studio sulle poetiche del seicento*, Milan, 1972; Philipp E. Wheelwright, *Metaphor and Reality*, Bloomington, 1973; Umberto Eco, 'Metafora e semiotica', Umberto Eco, *Semiotica e filosofia del linguaggio*, Turin, 1986; Gerhard Kurz, *Metapher, Allegorie, Symbol*, Göttingen, 1997; Anselm Haverkamp, ed., *Theorie der Metapher*, Darmstadt, 1996; Anselm Haverkamp, ed., *Die paradoxe Metapher*, Frankfurt, 1998.
- 134 Scarpati and Bellini, *Il vero e il falso*, IX. On the fundamental problem of truth and fiction in Seicento poetics, see Scarpati and Bellini, *passim*.
- 135 See Scarpati and Bellini, *Il vero e il falso*, 70. For sharp observations on the tensions between *metafora* and *argutia* and on the prevailing use of simple metaphors in Marino and Tesauro, see Frare, *Cannocchiale Aristotelico*, 85–99: 'Entrambe le modalità qui elencate – si tratti di presenza del metaforizzato o di ostensione del "ground" – avvicinano ... la metafora alla similitudine e con ciò stesso tendono a provarla del valore entimematico necessario alla costruzione dell'arguzia.' (90)
- 136 'Quel dono di natura che si chiama ingegno consiste a punto in congiungere, per mezzo di scaltre apprensioni, oggetti che pareano affatto sconnessi, rintracciando in essi gli occulti vestigi d'amicizia fra la stessa contrarietà, la non avvertita unità di special simiglianza nella somma dissimilitudine, qualche vincolo, qualche parentela, qualche confederazione dove altri non l'avrebbe mai sospettata.' (Sforza Pallavicino, *Del bene*, Rome, 1644, 470). It is no coincidence, then, that Pallavicino refers programmatically to Plato in his analysis of poetics and prefers 'similitudine' to 'metafora'. Fantasy represents spiritual images of the intellect 'con le meno dissomiglianti forme che poté accattar dagli obbietti sensibili' (*Arte della perfezion cristiana*, Rome, 1665, 59; see Scarpati and Bellini, *Il vero e il falso*, 73–189, esp. 107 ff. [cit. 164]). For a deeper understanding of Tesauro's conception of 'truth' in metaphors,

- referring to Augustine, see Frare, *Cannocchiale Aristotelico*, 131–55.
- 137 On the adjacent concept of metonymy in style, see Sohm, *Style*, 74–8.
- 138 Anne Eusterschulte, *Analogia entis seu mentis. Analogie als erkenntnistheoretisches Prinzip in der Philosophie Giordano Brunos*, Würzburg, 1997. See Maiorino, *Cornucopian mind*, 60–1 (emphasizing the 'point where the image of light became light itself'); Maarten J.F.M. Hoenen, 'Analogie', Ueding, *Rhetorik*, vol. 1, Tübingen, 1992, 498–514 (also on the debate of the sixteenth and seventeenth centuries between the proponents of the 'Aristotelian' analogy of proportion [Caietan] and the 'Platonic' analogy of attribution [F. Suarez and the Jesuit school], col. 510). On analogy as a paradigm of early modern 'episteme', see Michel Foucault, *Les mots et les choses*, Paris, 1966, 32 ff. See, however, the thorough critique of Foucault's concept of analogy by Stephan Otto, *Das Wissen des Ähnlichen. Michel Foucault und die Renaissance*, Frankfurt, 1992, esp. 34–5.
- 139 Plato, *Timaios*, 31 cd.
- 140 Eusterschulte, *Analogia*, 117.
- 141 Plato, *Politeia*, 6, 508bc.
- 142 Wolfgang Wieland, *Platon und die Form des Wissens*, Göttingen 1982, 200; see Eusterschulte, *Analogia*, 122.
- 143 Gombrich, 'Icones Symbolicae', 172 – 'Quid enim mirum est, si inferioris virtus contineatur in superiori et excellentiori?' Gasparo Contarini, *De elementis*, 1571 (Mulsow, *Telesio*, 211).
- 144 Gombrich, 'Icones Symbolicae', 177 (significantly in the paragraph on 'Apparitions and Portents').
- 145 See Hans Blumenberg, 'Licht als Metapher der Wahrheit', *Studium Generale*, 7, 1957, 432–47.
- 146 Eusterschulte, *Analogia*, 122–3; see Hampus Lyttkens, *The analogy between God and the world. An investigation of its background and interpretation of its use by Thomas of Aquino*, Uppsala, 1952, 2.
- 147 To clarify this point, see Margaret R. Miles, 'Vision: The eye of the body and the eye of the mind in Saint Augustine's "De trinitate" and "Confessions"', *Journal of Religion*, 63:2, 1983, 125–42.
- 148 On the different aspects of light in Augustine, see François-Joseph Thonnard, 'La notion de lumière en philosophie agustinienne', *Recherches Augustiniennes*, 2, 1962, 125–75. Bernini presumably owned a copy of *De civitate Dei*; see McPhee, 'Bernini's books'.
- 149 Plotin, *Enneads*, vol. 6, 9, 5, 16.
- 150 On the metaphysics of light, see Franz J. Dölger, *Sol Salutis*, Münster, 1925.
- 151 *Expos. s. ierarchiam cael. I, 1* (Migne, *Patrologia latina*, vol. 122, col. 128); see Werner Beierwaltes, 'Licht', Joachim Ritter and Karlfried Gründer, eds, *Historisches Wörterbuch der Philosophie*, vol. 5, Basel and Stuttgart, 1980, col. 282–6.
- 152 Plotin, *Enneads*, vol. 1, 7, 1, 23; see Eusterschulte, *Analogia*, 196.
- 153 See Lindberg, *Theories*; Schöne, *Licht in der Malerei*, 55 ff. For the Renaissance, and especially for Leonardo, see Frank Fehrenbach, *Licht und Wasser. Zur Dynamik naturphilosophischer Leitbilder im Werk Leonardo da Vincis*, Tübingen, 1997, 115–92. On the sixteenth century, see the outstanding monograph of Urszula Szulakowska, *The Alchemy of Light. Geometry and optics in late Renaissance alchemical illustration*, Leiden, 2000 (with extensive bibliography).
- 154 Rainer Schmid, *Lux incorporata. Zur ontologischen Begründung einer Systematik des farbigen Aufbaus in der Malerei*, Hildesheim and New York, 1975, 14.
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- 157 For the anti-atomistic impact in Jesuit science (Cosimo Alamanni, Gabriele Beati, Niccolò Cabeo, Giovanni Antonio Caprini, Fulgenzio Castiglione, Giovanni Battista Giattini, Silvestro Mauro, Giuseppe Polizzi), see Baldini, 'Jesuitenorden', 718–19. For Sforza Pallavicino's rejection of mechanistic physics, see his *Philosophia manuscripta*, 3 vols, Ms. Biblioteca Nazionale Centrale Vittorio Emanuele, Rome: San Bonaventura 24–6; vol. 3, fol. 164r–184v; Baldini, 'Jesuitenorden', 723. For Jesuit use of military metaphors regarding scientific debate ('hostile attacks', 'strongholds' etc.), see, for instance, Francesco Eschinardi, *De impetu*, Rome, 1684, 183.
- 158 See Irving Lavin, 'Bernini's Cosmic Eagle', in *Gianlorenzo Bernini. New aspects of his art and thought*, University Park and London 1985, 209–14. Also, Harriet Feigenbaum Chamberlain, 'The Influence of Galileo on Bernini's "Saint Mary Magdalen" and "Saint Jerome"', *Art Bulletin*, 69:1, 1977, 71–84. On the astonishingly rich scientific section of Bernini's library, see recently McPhee, 'Bernini's books'.
- 159 Nicola Zucchi, *Optica philosophia experimentis et ratione a fundamentis constituta*, Lyon, 1652, pars I, caput VIII, sectio I and II.
- 160 'Denique similem substantiam spiritosam agnoscere in aliqua copia gemmis, quae dicuntur nocte lucere, intra quas inclusa, dum transpirare prohibetur, & ab ambiente intra poros illius servatur, diutius exhibere suum fulgorem valet.' Zucchi, *Optica philosophia*, vol. 1, 48.
- 161 'calor, cuius pariter per lumen propagatio totam oeconomiam inferioris mundi ad mixtionem elementorum, & omnium vitam viventium esset completura.' Zucchi, *Optica philosophia*, vol. 1, 56.
- 162 Athanasius Kircher, *Obeliscus Pamphilius, hoc est, interpretatio nova & hucusque intentata obelisci hieroglyphici* [...], Rome, 1650. See Ingrid Rowland, "'Th' united sense of th' universe", Athanasius Kircher in Piazza Navona', *Memories of the American Academy in Rome*, 46, 2001, 153–81, and Fehrenbach, *Mikrokosmen*, part 1.
- 163 William S. Heckscher, 'Bernini's Elephant and Obelisk', *Art Bulletin*, 29, 1947, 155–82.
- 164 See Leinkauf, *Mundus combinatus*, 216.
- 165 Kircher, *Ars magna*, Praef. ad lect. fol. 2.
- 166 Kircher, *Ars magna*, 49.
- 167 'quasi visibile quoddam Numen, Deique simulacrum', Kircher, *Ars magna*, 49.
- 168 For continuities and transformations of the concept of *imponderabilia* in the 'new' (corpuscular, mechanistic) science, see Brian Copenhaver, 'The occultist tradition and its critics', Daniel Garber and Michael Ayers, eds, *The Cambridge History of Seventeenth-Century Philosophy*, 2 vols, Cambridge, 1998, vol. 1, 454–512.
- 169 On a similar scheme in Ficino's *Timaios* commentary (chap. 10), see now Hirai, 'Concepts', 264.
- 170 The relevant passage in Patrizi reads: 'Radii ergo, & corpora, & incorporei sunt, & substantiae, & formae simplices, non quales physicae, materia ut sint egentes. Neque formae, quales divinae, penitus incorporeae, & immensae, sed mediae inter utrasque.' *Nova de universis philosophia*, Ferrara, 1591, I. See also fol. 1v: 'A luce inquam, quae Dei ipsius, eiusque bonitatis est imago. Quae omnem supramundanam, omnem corcummundanam, omnemque mundanam, illustrat regionem. Quae sese per omnia permeat. Per omnia se fundit. ... Omnia permeando format, et efficit. Omnia vivificat. ... Omnia congregat. Omnia unit. Omnia disgregat.' See Mulsow, *Telesio*, 379.
- 171 Kircher, *Ars magna*, 919. See Leinkauf, *Mundus combinatus*, 339. On Neoplatonic sources (Iamblichos, Proclus), see Mulsow, *Telesio*, 322. An analogous formula in Francesco Sansovino's popular medical treatise: 'La luce è differente dal lume, perche il lume, procede dalla luce. Quella è la causa quest'è l'effetto.' (*L'edificio del corpo humano*, Venice, 1550, fol. 8v).
- 172 A. Kircher, *Mundus subterraneus*, 2 vols, Amsterdam, 1665, vol. 2, 327.
- 173 Zucchi, *Optica philosophia*, vol. 1, caput V.
- 174 See esp. Zucchi, *Optica philosophia*, vol. 1, 9ff.
- 175 Zucchi, *Optica philosophia*, vol. 1, 47.
- 176 See Mulsow, *Telesio*, 239.

- 177 See Giuseppe Polizzi, *Philosophicarum disputationum*, Palermo, 1675/76, vol. 2, esp. 287–91; Fulgenzio Castiglione, *Cursus philosophicus*, Venice, 1690, esp. 405–409. On Jesuit theories of analogy, see Eric J. Ashworth, 'La doctrine de l'analogie selon quelques logiciens jésuites', Luce Giard, ed., *Les jésuites à la Renaissance*, Paris, 1995, 107–127.
- 178 See Sforza Pallavicino's apology of the eye in *Arte della perfezion cristiana*, 88 and 310; and Scarpati and Bellini, *Il vero e il falso*, 172–3.
- 179 Frare, *Cannocchiale Aristotelico*, 99.
- 180 Similar observations on seventeenth-century painting pertaining in particular to the assimilation of sacred, natural, and artificial luminosity are made in Schöne, *Licht in der Malerei*, 154–5. See Treffers, 'Cuore malato': 'Quell'annegare nel sangue di Cristo ... non è solo una metafora, ma, nell'esperienza mistica, una realtà vissuta letteralmente. ... Tutte le metafore usate per descrivere le esperienze arcane del misticismo venivano vissute corporalmente, nella propria carne.' (147)
- 181 On the ceiling *stucchi* of the Cappella Paolina of the Quirinal, see Kauffmann, *Bernini*, 157.
- 182 This is a variant on the notion, still popular in the seicento, that every artist depicts himself; for documents see Sohm, 'Caravaggio's deaths', 2002, 467–8, note 97.
- 183 See Zucchi, *Optica philosophia*, vol. 2, Tract. I ('De naturali oculorum constitutione', esp. cap. I, sect. II and Parergon).
- 184 Zucchi, *Optica philosophia*, vol. 1, 13–17.
- 185 'Conueniens autem fuit haec foecunditas luci in luminis productione, per quam omnis pulchritudo universi, vel exhibetur, vel completur; & simul omnis caelestium corporum virtus: sicut perficitur omnis inferiorum foecunditas, & vita per calorem consequentem ex lumine.' Zucchi, *Optica philosophia*, vol. 1, 17.