

In my End is my Beginning
Dialectical Images in Times of Crisis
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Andrea Golfetto, Maria Novella Tavano

Crumbling Polyhedra Perfection Falling to Pieces

Anna Bernante

Università Ca' Foscari Venezia, Italia

Abstract The representation of regular and irregular solids in perspective is one of the hallmarks of Renaissance visual culture, accompanied by a rediscovery of ancient texts which emphasise the symbolic meaning of the *scientiae mathematicae*. Polyhedra are thought to be a visible representation of the harmony of creation, a mediating tool for approaching the very mind of God. What is the significance, then, of the depiction of crumbling polyhedra, shown as subject to fracture and disintegration? After investigating their meaning within intellectual, philosophical, and theological contexts, we will examine some case studies (paintings and woodcuts) in which specific apocalypses manifest as crumbling polyhedra.

Keywords Polyhedra. Perspective. Renaissance. Visual culture. Crisis.

Summary 1 Polyhedra as Epitomes of Perfection. – 2 Perfection Falling to Pieces. – 3 The Fragment as Subject, the Fragment as Corollary.

1 Polyhedra as Epitomes of Perfection

The presence of geometrically and visually complex solids in the visual culture of the Renaissance is one of the symptoms of the renewed interest in mathematical studies, encouraged at the end of the fifteenth century by the rediscovery of scientific texts from Antiquity. Euclid's theorems fascinate not only mathematicians and philologists, but society as a whole, as Euclid redefined the innate concepts of beauty and harmony according to geometric-mathematical



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principles. Or rather, those who study ancient writings realise that the aesthetic idea inherent in each one surprisingly matches ratios and proportions that can be precisely defined by calculation and drawing. Formalised thousands of years earlier by Greek scholars, these principles are still valid. Their eternity, timelessness and ubiquity drive the perfection of mathematics and geometry to the supreme perfection of God: by studying the *scientiae mathematicae*, in fact, one can approach the divine mind as never before, recognising its traces in the creation. Referring back to ancient philosophy and in particular to Plato (428/7-347 BC), who transited into the Christian era through Neoplatonism, mathematicians pay special attention to the five regular polyhedra. In the *Timaeus* (ca. 355-350 BC) they are associated with the five elements: to fire corresponds the tetrahedron, to earth the cube, to air the octahedron, to water the icosahedron, and to the quintessence of the heavens the dodecahedron, all inscribed in the sphere, which represents the cosmos, “the most perfect of all figures and the most similar to itself” (Plato, *Timaeus*, 33b).¹ These forms are characterised primarily by beauty and “[to] no one [...] could we grant that there are more beautiful visible bodies than these” (53e). For Plato, however, these are not forms that can be visualised in their uniqueness (56c), since they are imperceptible particles, exiled from the world of perception. Having established the meaning and highly symbolic essence of the five solids, it is Euclid (active ca. 300 BC) who provides a geometric description of them, giving substance to Platonic ideas. Euclid’s thirteenth book of the *Elements*, in fact, plays a central role for Piero della Francesca, Luca Pacioli, Albrecht Dürer, and Daniele Barbaro, who devote some of their treatises to Platonic polyhedra.

The interest of artists and intellectuals is not limited to the five regular bodies, but investigates also the so-called *corpora irregulata*, or Archimedean solids. The first in antiquity to examine exhaustively these polyhedra is Pappus of Alexandria (ca. 290-c. 350) in the *Mathematical Collections* (ca. 320), in which he credits Archimedes with their discovery. Knowledge of Pappo’s text, however, is not attested either in the fifteenth or sixteenth century, and the treatises that bring to light the *corpora irregulata* seem to arrive independently at their discovery, manipulating (often by truncation) the five Platonic solids (Field 1997, 244). Artists play a major role here, since - from the late fifteenth century onwards - many of the Archimedean solids come to light thanks to their peculiar visual imagination. It was not until 1619 that the thirteen Archimedean polyhedra received their first mathematically and geometrically complete treatment since Antiquity, when Johannes Kepler described them in

¹ The edition used here is Plato 2003.



Figure 1 Jacopo De' Barbari (?) or Jacometto Veneziano (?), *Portrait of Luca Pacioli and Disciple*. 1495. Oil on panel, 98 × 108 cm. Naples, Museo di Capodimonte, CC-BY 4.0. <https://tinyurl.com/5c52fxkv>

Harmonices mundi libri V (242). Until the second half of the sixteenth century, in fact, it was thought that these bodies could be obtained in an infinite number by successive truncations of the five Platonic solids. Therefore, the extent of stereometric representations of the perfect mathematical universe was potentially unlimited.

In the illustrations of the Renaissance treatises, *corpora regularia et irregulata* appear side by side, as an integral part of the intellectual and visual culture of the Renaissance. Their representation becomes the epitome of the geometric-mathematical proficiency of those who depict them and of those who are portrayed with them (Andrews 2022, 13). The portrait [fig. 1] of one of the protagonists of the rediscovery of regular and irregular solids, the mathematician Luca Pacioli (ca. 1445-1517), for example, includes a wooden model of the Platonic dodecahedron and a glass rhombicuboctahedron, suspended from the ceiling by a thin thread. However, what fully justifies the widespread interest in these polyhedra is not so much that they symbolise a full appropriation of the sciences per se, but rather their role as concrete visualisations of the perfection of the divine laws that govern reality. This, in fact, is the theme that Pacioli,

the greatest populariser of mathematics at the turn of the fifteenth and sixteenth centuries, insisted upon most, delving into solids in his treatise *De divina proportione* (Venice, Paganino Paganini 1509). Initially conceived, around 1498, as a manuscript work destined for a restricted elite of nobles – Ludovico il Moro, Galeazzo Sanseverino and Pier Soderini – (Dalai Emiliani 1984), the text is then printed some ten years later, testifying to the existence of a wider public interested in the subject. The central theme is the golden section, called “divine” by the author because its characteristics and properties bring it close to those of the Trinity (Pacioli 1956, 20-1). The greater part of the work, however, is dedicated to the regular solids and the “infinite other bodies called dependent” (22), to which the golden ratio is inseparably linked and which, therefore, are also co-participants in the visible representation of the essence of the Divine. It is thanks to the *divina proportio*, in fact, “that so many diversities of solids, both of size and of multitude of bases, and also of figures and forms with a certain irrational symphony between them [are] accorded”, producing “the stupendous effects [...] [that] are not natural but truly divine” (23). It is essential for the construction of the pentagon, with which “the noblest solid among all the others called dodecahedron” is formed, associated by “divine Plato” with the heavens because it is the only one that can contain within itself all the other regular bodies (43-4). Pacioli frequently and explicitly cites the *Timaeus* as a starting point to corroborate his own intuitions: he intends to bring the symbolic power of the Platonic solids back into vogue, sustaining the topicality of the philosopher’s teachings since they allow, through visible forms, the investigation of the invisible, with obvious repercussions on the visual universe of his audience. Like Plato, the mathematician repeatedly emphasises the “sweetest harmony” and the “worthy *convenientia*” (8, 46) of polyhedra, considering their observation and contemplation so important that the treatise is accompanied by a concrete visualisation of the solids in no less than two ways. In fact, he constructs three-dimensional models for the three recipients of the manuscript work, as he recounts in the printed edition,² considering them an integral part of the treatise. Pacioli, however, aware of the limited circulation possibilities of stereometric models, decided to also include the corresponding graphic representation in fifty-nine plates by the hand of

² Pacioli 1509, c. 28v: “E le forme de dicti corpi materiali bellissime con tutta ligiadria quivi in Milano de mie proprie mani disposi colorite e adorne e forono numero 60 fra regulari e lor dependenti. El simile altre tanti ne disposi per lo patrone S[ignor] Galeazzo Sanseverino in quel luogo. E poi altre tante in Firenze ala ex[celenti]a. del nostro S[ignor] Confalonieri perpetuo P[ier]. Soderino quali al presente in suo palazzo se ritrovano”.

Leonardo da Vinci,³ reproduced as woodcuts in the printed editions. The innovative perspective rendering of the three-dimensional models is not only an appendix to the text, but represents “[a] characteristically Renaissance mode of expression in which illustrations can carry information not found elsewhere” (Field 1997, 265). Pacioli exploits the persuasive power of perspectival figures and insists on the symbolic and theological significance of solids, disseminating these concepts not only through printed books. From the 1470s to the 1480s, the mathematician resides in Borgo Sansepolcro, Rome, Perugia, Zara, Naples, Milan, Florence, Pisa, Bologna and Venice, earning him great notoriety. His teachings truly reach everyone, as Pacioli also gives public lectures. This is the case of the inaugural *lectio* of the academic year of the Rialto School held in the church of San Bartolomeo in Venice on 11 August 1508, in the presence of no fewer than five hundred spectators, when he discusses some of the main themes addressed in *De divina proportione* (Benzoni 2014; Black 2013).

His popularity, the reception of his treatises, the close ties with the artistic world and his strong bent for theological-symbolic interpretation are the reasons why *De divina proportione* can be seen as an emblematic text for understanding the reception and role of the *corpora regularia et irregulata* in the Italian Renaissance.

2 Perfection Falling to Pieces

The context outlined above meets the “two limiting demands” placed by Michael Baxandall to establish the actual presence of a connection between ideas and painting:

First, the science or philosophy invoked must be made to entail fairly directly a particular thing about visual experience and so about possible pictorial character. [...] Secondly, I shall demand some indication that it was conceivable, in the period, for the two universes to be brought into sort of relation. (1986, 76)

All the more significant, therefore, is the voluntary destruction of this “sweetest harmony” (Pacioli 1956, 8) that originates from the contemplation of the perfection of polyhedra. The literature⁴ has not

³ On the actual authorship by Leonardo of the drawings contained in the two of the three surviving original copies of the manuscripts of the *Compendium de divina proportione* see De Toni 1911; Speziali 1953; Castiglione 1954; Marinoni 1974; Dalai Emiliani 1984; Daly Davis 1996; Field 1997; Nakamura 1997; Ciocci 2009; Ulivi 2009; Bambach 2019, 41.

⁴ Daly Davis 1980; Richter 1995; Field 1997; Farhat 2004; Andrews 2022.

yet analysed a phenomenon that is part and parcel of what Baxandall (1986, 77) would call a “vulgar” appropriation of the theological-philosophical bearing of the *corpora regularia et irregulata*: the conscious corruption of the flawless geometrical bodies and its powerful symbolic meaning. The representation of crumbling polyhedra cannot disregard this aspect, which characterises this visual representation as an indicator of crisis in the reading of the painting. Choosing to crumble these symbols into pieces, whose representation on a plane in perspective is particularly demanding for artists, uncovers a clue of anxiety and bewilderment, as well as a rupture in the immaculate universe of geometry.

The intention here is not to pursue an exhaustive survey of all Italian Renaissance paintings in which this type of representation appears. By limiting the analysis geographically and chronologically to Northern Italy between the end of the fifteenth century and the first half of the sixteenth century, we will consider three case studies in which the viewer’s attention is intentionally led to the ruined solid, which embodies the rupture of a harmonic system. In consonance with the subject of the painting, the corrupted polyhedron concentrates the ultimate meaning of the work of art or betrays the state of crisis to which the narrative content alludes. In the eyes of the public for whom the painting is intended, visual habit has deposited the perfect image of these forms, as rendered by the inlays of the wooden choirs, and in the memory of most of them the solids are brought back to the geometry and practical mathematics acquired in the widespread abacus schools,⁵ depositing themselves – in their standard *facies* – as familiar images. Moreover, the case studies that will be analysed all bear a religious subject, an element that makes even more immediate the connection with the philosophical-theological substratum that we have seen permeating Luca Pacioli’s *De divina proportione*. The special combination of mathematics and the Divine is a *topos* of the so-called Renaissance of mathematics (Rose 1975), and it is particularly interesting to investigate the meaning concealed in the denial of the incorruptibility of *certitudo mathematicae scientiae*. We will thus see how the concepts of crisis and rupture combine with sacred history and at the same time carry within them the seed of the hope of rebirth and redemption that the Gospels promise. Each case study will present a different way of corrupting geometrically-connoted solids and testify to the presence of an interest in the symbolic power of these figures, without them becoming the exclusive protagonists of the works – as happens, for example, in the inlays – but as elements which intensify the message of the figurative theme.

5 Van Egmond 1980, 13, 32; Baxandall 1986, 107-8; Gamba, Montebelli 1987; De Laurentiis 1995, 97; Ulivi 2008; Trachtenberg 2019, 26.

3 The Fragment as Subject, the Fragment as Corollary

The first case we consider is the *Meditation on the Passion* (ca. 1494-96) [fig. 2] by Vittore Carpaccio (1460/6?-1525/6). The panel is characterised by dense symbolism, which unfolds both in the foreground and in the landscape, crowded with animals, buildings, and natural elements. Christ, at the centre, is depicted as a *vir dolorum*, his gaunt yet serene face framed by a transparent halo. His eyes are closed, while his slightly open mouth suggests a state of drowsiness rather than death, which is instead evoked by the blackened stigmata and the dried blood trickling from the wound in the chest. Seated on a throne of sumptuous polychromy, yet in ruins, with the crown of thorns at his feet, he occupies the central third of the painting, flanked by two other figures, both characterised by the same lean and emaciated physique. On the left is Saint Jerome, covered by a simple blue tunic, his left hand placed on his chest in a gesture of penance, and directing his troubled gaze toward the viewer, while a placid lion emerges from behind a weathered pillar. On the right, Saint Job, with only a red loincloth remaining to cover his body worn by age and suffering, lowers his absorbed eyes, in a contemplative and meditative attitude, while pointing with his right index finger to something outside the painting. Although it has been suggested that the work may have been commissioned by the Scuola di San Giobbe, the relatively small format, the intimate and non-narrative subject matter, and the complex web of symbolic elements suggest instead that it was intended for a private devotional context (Humfrey 2022, 151; Sgarbi 1994, 158-60). The patron, likely the one toward whom Saint Job's deictic gesture is directed, could closely examine the details scattered across the surface of the panel, using them to guide his or her meditative path during personal prayer. The attention to detail is extreme and this meticulous treatment invites a thorough examination of all the elements in the painting, legitimising our search for a precise intention on the part of Vittore Carpaccio and his patron in the selection of gestures, animals, and objects. Moreover, this is a non-narrative subject, emphasising the symbolic and mediative nature of the image, designed to foster the concentration of the worshipper.

The theme of fragmentation recurs insistently in the foreground, emerging behind Saint Jerome, framing the entire figure of Christ, and serving as a seat for Saint Job. The pillar and throne, though characterized as ruins, do not stylistically resemble the ancient, but instead suggest comparisons with contemporary architecture: the rich polychromy, the red and grey-blue marble framing, the circular decorative elements bordered in white, and the low-relief decoration on the lower part of the throne recall some of the most distinctive features of Lombardesque architecture like the church of



Figure 2 Vittore Carpaccio, *Meditation on the Passion of Christ*. Ca. 1490. Oil and tempera on wood, 70.5 × 86.7 cm. New York, The Metropolitan Museum of Art. <https://tinyurl.com/yp6rxafx>

Santa Maria dei Miracoli and the façade of the Scuola Grande di San Marco. Therefore, Carpaccio does not intend to depict pagan architecture in decline, but rather modernity assuming the guise of antiquity via the dignity of the ruin, which, together, crumble in the face of the mystery of Christ's death and resurrection. This approach, which Lorenzo Pericolo suggests naming a "heterotopia" (2009, 2-4), reveals the level of cultural sophistication of the patron and adds value to the concept of fragmentation employed by the artist. One final element in the foreground is depicted in a state of deterioration: the cube on which Saint Job sits. However, this object differs from the previous architectural elements for several reasons, suggesting that a different interpretation should be applied to this detail. From the late fifteenth century onwards, emphasis is placed on

the visualisation of *corpora regularia et irregulata*, as evidenced by Piero della Francesca's studies in his *Libellus de quinque corporibus regularibus* (Cod. Vat. Urb. Lat. 632), inaugurating a line of research that would continue to be fruitful until at least Daniele Barbaro's *La pratica della prospettiva* (Venice, Camillo and Rutilio Borgominieri, 1568), naturally exerting influence over artists. Carpaccio too insists on the precision used in rendering the stereometric form of the solid, further highlighted by the contrast with the irregular clump of grass and rock under Saint Jerome, a visual counterpart to the Old Testament saint. The uniqueness of the piece is accentuated by the choice of blue, intensified by the contrast with the saint's orange loincloth, which gives the marble block an almost unreal appearance. Carpaccio further emphasises the observer's attention to the cube by placing his signature on the face of the block, where he applies the *cartellino*.⁶ The conspicuous inscription in pseudo-Hebrew characters⁷ also contributes to drawing attention to the cube, which is bisected by the dark shadow of Saint Job's bent leg. The solid stands out for another aspect of singularity: one of its edges is broken. Unlike the other ruined elements, however, the missing piece is present and perfectly fits, as if the break occurred recently and was not the result of gradual wear over time. As we have previously seen, the cube is the solid Plato associated with the earth because it "has the firmest foundations" (Plato, *Timaeus*, 55e), a characteristic that gives it particular stability. Luca Pacioli also emphasises this aspect, noting that there is nothing "more fixed, constant, and firm than the earth" (1956, 104). In Renaissance thought, if the cube represents the earth, the break in one of its edges carries a strong sense of precarity. This interpretation aligns with the story of Job: a righteous and God-fearing man, he experiences a complete reversal of fortune at the hands of Satan, losing his material possessions, children, and health. Everything that was solid and certain for him is completely swept away, leaving him devoid of any sense of security and stability. Only God can intervene to restore what Job has lost, beyond any logical explanation attempted by him and his friends. Job's meditation is centred on suffering and undeserved evil, much like the suffering endured by Christ,⁸ who is the

⁶ Humfrey 2022, 152 fn. 5.

⁷ Evelyn Cohen, along with Andrea Bayer and Dorothy Mahon, confirmed that the text is primarily pseudo-Hebrew, and that only the word 'Israel' can be identified with certainty (<https://www.metmuseum.org/art/collection/search/435851>).

⁸ The interpretation of Job as a prophet of the resurrection is found in Saint Jerome's *Commentarii in Librum Job*, in Gregory the Great's *Moralia in Iob* (Gregorio Magno 1486, l. I, cap. 1, f. f8v), and reappears in the popular devotional text *Le devote meditazioni sopra la passione del nostro Signore Iesu Christo* by Pseudo-Bonaventure (Venice, Hieronymus de Sanctis, 1487) (Mori 1990, 185, 199 fn. 78).

focal point of the painting. The breaking of this chain of anguish, of this deep crisis that touches every person, is possible and lies in the resurrection of Christ: His depiction as the *vir dolorum* foretells salvation from sin and, at the same time, the shared participation of the Son of God in human suffering. The cube is broken, the earth trembles, and the rocks split, as described in the Passion according to Matthew (27:50-2), but from this, God can create a new order, a new life, establishing a renewed harmony.

Carpaccio is also the author of another painting featuring a shattered solid. *The Preparation of Christ's Tomb* (ca. 1505) [fig. 3] is a work of equal symbolic complexity and richness in detail, which prominently features, right at the centre, a broken column with an octagonal base. Although it is not a true *corpus regularium*, the attention to columns with regular bases is evident in *De divina proportione*, where they appear not only in the textual discussion (chapters 58-63) but also among the depictions of solids in perspective in the full-page illustrations that conclude the work. Gioia Mori (1990) has extensively discussed the devotional significance of the painting, particularly highlighting the relevance of the figures of Nicodemus and Job for interpreting the image in a soteriological context. According to the author, the column should be interpreted as the stone broken by the insertion of Christ's cross and stained with His blood, a relic venerated in Jerusalem and described in von Breydenbach's *Peregrinatio in Terram Sanctam* (183). Regardless of the validity of this interpretation, our interest here lies in the artist's choice to depict this column as a solid in perspective, with evident geometric perfection compared to the other elements in the painting, and at the same time deliberately crumbled and corrupted. Moreover, three-dimensional models of polyhedra are considered as objects of great intrinsic value, which "deserve to be adorned with precious metals and refined gems, rather than humble materials" (Pacioli 1956, 138). Therefore, choosing to break into pieces the fine red marble of the column is even more significant. As in the previous case, the central theme is the meditation on the mystery of Christ's death and resurrection, emphasising the apocalyptic nature of the event, as suggested by the human and animal remains surrounding the altar on which lies the Son of God, and the devastated appearance of the landscape. The perfect solid falling to pieces condenses and amplifies a sense of crisis, and Carpaccio places it once again in a highly significant position within the compositional space, using colour to capture the viewer's attention and create internal references within the painting. The presence of both paintings in the collection of Marquis Roberto Canonici, as documented in the 1632 inventory (Menato 2016, 28), suggests that they originally came from the same location, and it is therefore possible that they were commissioned, albeit at different times, by the same person. The patron must undoubtedly have been



Figure 3 Vittore Carpaccio, *The Preparation of Christ's Tomb*. Ca. 1505. Canvas, 145 × 180.5 cm. Berlin, Staatliche Museen zu Berlin, Gemäldegalerie, CC BY 4.0. <https://id.smb.museum/object/867231/die-grabbereitung-christi>

a figure of refined culture, and the presence of a crumbling polyhedron in both works, occupying a key position in the compositional space, is not insignificant.

The final case we consider does not involve a painting but two woodcuts, united by the persistent presence of geometric fragments. Engraved by the enigmatic and prolific Nicoletto Rosex da Modena (active from around 1497 to around 1522)⁹ in first decade of the sixteenth century, they depict the Nativity [figs. 4-5].¹⁰ In these scenes,

⁹ For an in-depth study of the figure of Nicoletto, see Licht 1970; Lüdemann 2007; Waldman 2007; Girondi, Crespi 2011; Bartlett-Rawlings 2019; 2023.

¹⁰ Hind 1970, 118, 127-8. A state of the woodcuts is preserved in the British Museum (1845, 0825.629; 1845, 0825.628).



Figure 4 Nicoletto Roselli da Modena, *Nativity*.
Ca. 1500-10. Engraving, 40.5 × 30.5 cm.
New York, The Metropolitan Museum of Art, OA.
<https://tinyurl.com/mrrbztb4>



Figure 5 Nicoletto Roselli da Modena, *Adoration of the Shepherds*.
Ca. 1500-10. Engraving, 24.9 × 18.3 cm.
Cleveland, The Cleveland Museum of Art, OA.
<https://www.clevelandart.org/art/1925.164>

the narrative focus is clear: Mary, Joseph, the Child, the ox, the donkey, and the adoring shepherds. The architectural setting is one of the key elements within the composition, dominating over the group of figures. It takes the form of a hybrid between a stable and a modern church, uncovered and reduced to ruins. From this perspective, there are no particularly new or complex elements. However, this widely represented subject is accompanied here by a persistent use of solids as fragments: in the foreground, almost like a still life, incoherent geometric forms pile up, amplifying the sense of precarity expressed by the architectural ruin. In Renaissance visual culture, geometric still life especially inhabits the perfect and unreal space of the wooden *tarsia*, as in *Santa Maria in Organo* in Verona, the cathedral in Lodi or the Abbey of Monte Oliveto Maggiore (Baldasso, Logan 2017, 134), or marble floor decorations, as in the case of the polyhedron at the left portal of the façade in the Basilica di San Marco, traditionally attributed to Paolo Uccello (Field 1997, 289). Expertise in the

practice of perspective is undoubtedly a fundamental prerequisite for the creation of these solids:¹¹ *intarsiatori*, not by chance, were called *magistri perspectivae* (Ferretti 1982; Haines 2001; Bagatin 2004) and Paolo Uccello, Piero della Francesca and Carpaccio, artists who frequently depict complex stereometric forms in their work, have been always praised for their skill in perspective drawing. However, until Daniele Barbaro's treatise, published at the end of the 1560s, *corpora regularia et irregulata* do not appear in texts dedicated to perspective and the necessary information to represent them *in perspectiva* often lack (Field 1997, 253, 262, 267, 277, 284, 286, 289). Piero della Francesca does not examine polyhedra in *De prospectiva pingendi*, Pacioli includes them in a treatise dedicated to the supernatural properties of the golden section and even Dürer, who initiates the geometric-perspective virtuosity of the Germanic countries (Richter 1995, 95; Andrews 2022, 17-24), in his *Underweysung der Messung* (Nürnberg, H. Andreae, 1525) only shows the so-called 'net' of the solids and the their inscription in the circle on the plane, emphasising its geometric component rather than its potential as a perspective exercise (Dürer 1525, 142-56; Fara 2008, 126). It is likely, therefore, that, looking at polyhedra, the most immediate connection in the viewer's mind was with its meaning of harmony and superior beauty, rather than with the author's practical ability. In these engravings Nicoletto does not include solids to make a statement about his drawing expertise – as they are not challenging perspective exercises –, but he certainly includes them for another reason. The engraver must have been aware of the visual habit of his public to see geometric still lifes in perfect *tarsie* and deliberately decide to alter them and hence their meaning. Whereas in the previous case studies we encountered individual broken or crumbling polyhedra set within highly symbolic contexts, which acted as protagonists in the pictorial layout, here the solids serve as a backdrop to the theme of the engraving. More distant from a direct relationship with the textual sources of Plato's *Timaeus*, Euclid's *Elements*, and *De divina proportione*, they nonetheless testify to the spread of the same semantic content, simplified and vulgarised. The birth of Christ is the event that most profoundly disrupts human history, ending the world as it was known, which, like the architecture inhabited by the figures, is on the verge of collapse. The solids in the foreground – at the bottom in the first example, at the top in the second – resemble architectural elements but simplify their forms, emphasising their geometric nature. This reduced form exemplifies the deconstruction of the world *sub lege*, whose basic elements become, together, building materials for the era *sub gratia*.

11 Vasari [1568] 1966-67, 61; Daly Davis 1980, 188; Field 1997, 283; Daniele 1998, 32; Andrews 2022, 17.

In the cases we have examined, the crumbling polyhedra contribute to amplifying ruptures in history: the solids become almost iconic images, which, through their disintegration, draw the observer's gaze and disorient it. Once mastery over the complex representation of these bodies is achieved, polyhedra are no longer just Platonic ideas but become concretely part of the finite world, subjected to its ephemerality and the corruption of form to which all things are exposed. Artists, therefore, use them as carriers of meaning, even in the opposite sense from the original, reworking their perfect form in an antithetical manner to materialise a crisis. Their destruction, however, as Plato also suggested in the *Timaeus* (53e), is also synonymous with rebirth and the revelation of something other and new, perfectly embodying the original meaning of apocalypse: an unveiling that, though traumatic, allows access to a higher level.

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