

FIREWORKS AND ALLEGORICAL FESTIVAL CULTURE IN SIXTEENTH- CENTURY ITALY



By Maria Fabricius Hansen

Fireworks became an important part of festival culture in the sixteenth century, both celebrations at court and festivals connected to religious holidays. This essay considers the forms and uses of fireworks as well as how audiences perceived them. What may today be seen as mere explosions of fire and light tended to be understood allegorically in sixteenth-century Europe. Fireworks contributed to a wider, complex production of meaning at festivals, typical of the visual culture of the period and grounded in reigning concepts of nature and its materials.

Celebrations of worthy individuals and memorable events have presumably existed throughout cultural history. Whereas the Church was responsible for the most significant holiday celebrations in the Middle Ages, the most striking forms of festival culture in sixteenth-century Europe were connected to the courts. These festivals consisted of a wide range of events that took place over the course of days or weeks, both in public spaces and in princely palaces. Festivals typically included a triumphal procession of carts featuring tableaux and fantastically dressed performers, which made its way through town. Such celebratory events could be occasioned by a visit from a foreign prince or by a politically significant wedding, in which the bride-to-be was strategically imported from another princely line. Temporary decorations such as triumphal arches adorned the streets, and the theatrical scenery on the carts themselves presented scenes from ancient myth, as reinterpreted by Petrarch and others from the late Middle Ages onward. Theatrical performances also took place, ideally interrupted by an intermezzo and enlivened by machines

capable of creating apparently magical or miraculous effects.¹ These could include moving clouds, typically lightweight wood constructions covered in painted canvas, around which gods and putti might swing. Or they could include scenery flats, which popped up from or disappeared into the stage floor. We are told of Cupid and other mythological figures flying through the air, of mountains rising up from below or vanishing into gorges, of the winged horse Pegasus, of mobile cloud formations.² Artificial lighting, torches, and smoke effects added to the atmosphere. Fire dancers bearing torches were particularly popular in intermezzi.³ These spectacles were accompanied by music and rich banquets overflowing with inventively shaped food, perfumed water, and garlands of flowers. The aim was to stimulate all the senses.⁴ In the sixteenth century, fireworks began to be included as yet another aspect of these multifaceted celebrations. Substantial quantities of time, precious materials, and the highest level of artistry came to be invested in fireworks, despite their ephemeral nature.⁵

This essay explores the story behind this innovative use of fireworks in festival culture. Taking our point of departure in the festivals of sixteenth-century Florence in particular, we attempt to understand the forms and meanings characterizing fireworks in this period. Just as the festivities as a whole were allegorized and laden with meaning, fireworks were something more than just dramatic explosions and pretty lights, in the manner we conceive of them today. Sixteenth-century fireworks were embedded within a particular understanding of materials and of the world itself. By studying this phenomenon, we can gain a better understanding of characteristics of visual culture in sixteenth-century Europe more generally.

¹ Minor & Mitchell 1968; Strong 1984, 133–144.

² Vasari 1996 2, 962–971.

³ Canova-Green 2004, 150; Minor & Mitchell 1968, 250.

⁴ Vasari 1996 2, 963.

⁵ Christensen 2017, 213–227, shows in his analysis of the Color Chamber (*Farvekammer*) in Copenhagen that, in the time of Christian IV, this royal supply depot provided materials for producing artillery, fireworks, and art – and that fireworks involved considerable labor and material expense. Although Denmark had an especially strong reputation for fabulous fireworks displays, it seems reasonable to assume that the production process and scale of investment in fireworks occurred in a similar manner elsewhere in Europe in the 1500s and 1600s. A review Primaticcio's festival decorations and costumes at the courts of Francis I in Paris and Fontainebleau reveals striking parallels in the sense that large amounts of money and resources were spent on fireworks, Cordellier 2005, 122; for fireworks at the royal Danish court, see Wade 1996, 120–146.

The history of fireworks, in brief

Although fireworks did not become widespread in festival culture before the 1500s, developments were already underway in the late Middle Ages, from around the year 1300.⁶ Fireworks were just one of many technological breakthroughs of the period, many of which were linked with military technology. Gunpowder, the essential ingredient for creating celebratory explosions, was also used in new firearms and cannons. Gunpowder had been known in China since the ninth or tenth century and was there used for both fireworks and weapons. Chinese gunpowder technology presumably reached Europe through Arab traders in the 1200s. Europeans were quick to recognize gunpowder's potential: Various kinds of firearms using gunpowder were used for military purposes already in the second half of the thirteenth century. By the start of the 1500s, firearms were so widespread and technologically advanced as to prompt fundamental changes in the ways in which war was waged, not to mention in notions concerning what honorable, just, and brave combat actually entailed.⁷ In the good old days, when battles were fought between men, it had been quite simple: The strongest and bravest man won. Now, even a cowardly weakling could take down the doughtiest warrior from a great distance. Gunpowder technology also had implications for fortification architecture, which now needed to be designed around the offensive and defensive capabilities of the cannon.

The earliest surviving accounts of fireworks in Europe date from the fourteenth and fifteenth centuries.⁸ It became a tradition in Rome to hold a Girandola (e.g. the launching of fireworks from Castel Sant'Angelo) to celebrate important events, such as the inauguration of a new pope or the celebration of the feasts of Saints Peter and Paul in June. The oldest extant discussion of such a fireworks display dates from 1481.⁹ In Florence, fireworks came to be associated particularly with the feast of San Giovanni, the town's patron saint. The earliest documented account is from 1475, when a fire-breathing dragon – presumably crafted from papier-mâché painted in brilliant colors – was launched.¹⁰ The festival, which is the equivalent of Saint John's Eve, had since ancient times involved burning the effigy of a witch on

⁶ Sievernich 1987, 6–13; for an overview of the history of gunpowder and firearms, see Partington 1960.

⁷ Hale 1965, 113–144.

⁸ Sievernich 1987, 7–9; Béhar & Watanabe-O'Kelly 1999, 647–655; Werrett 2010, 13–45.

⁹ Borgatti 1931, 187; in his *De la pirotechnia* (1540), Vanoccio Biringuccio makes a detailed description of these kinds of fireworks at Castel Sant'Angelo, presumably in the 1530s, Biringuccio 1966, 442–443.

¹⁰ Sievernich 1987, 9.

a bonfire.¹¹ The launching of fireworks can more generally be understood as an expansion of the use of fire at festivals in the form of bonfires, torches, and various kinds of candles.

Among the numerous handbooks published in the 1500s, in the wake of the spread of book and woodcut printing, the earliest to focus exclusively on the processing of minerals, smelting and casting of metals, and other techniques related to artillery production was *De la pirotechnia* by the Siense metallurgist Vannoccio Biringuccio. The book was first published in Venice in 1540, a year after Biringuccio's death. The central element in the book is fire, which was of course necessary for producing firearms, including canons, bombs, and rifles. The book contains a chapter on fireworks, in which Biringuccio covers an impressive range of bombs and rockets: squibs, fire tubes (essentially Roman candles), girandoles, crackers and rockets.¹² The instructions for preparing these fireworks largely replicate those from the chapters on weaponry.

The fact that Biringuccio's handbook was later republished multiple times bears witness to its popularity.¹³ Biringuccio was not, however, the only expert to offer advice on preparing fireworks. The popular *libri di secreti* (instruction manuals), which covered all manner of topics, could provide useful information for festival planners. One example is Giambattista della Porta's bestseller *Magia Naturalis*, which was first published in 1558 but ultimately republished and translated many times. An expanded edition from 1589 offers entries for everything from horticulture and animal husbandry, to cookery and cosmetics, to invisible writing and – in connection with chapters on stones and metals – artificial fire (*De igne artificiali*), a term for fireworks and artillery. Della Porta discusses various aspects of the element of fire and provides instructions for producing gunpowder, fireworks, and firearms. He describes the launching of "fire-balls" that release a stream of flames so that they resemble shooting stars, and he gives instructions for various kinds of flammable material, torches, and items that could be used in connection with festivities.¹⁴

¹¹ Gori 1926, 53–57.

¹² Biringuccio 1977, fol. 165 v: *soffioni, trombe di fuocho, trombe con palle, lumiere, fiamme, girandole, scioppi, and razzi*; English approximate equivalents in Biringuccio 1966, 441; note.

¹³ Smith 1966, xix–xxiii; Biringuccio's book was foundational for the most substantial publication on fireworks in the 1600s, namely Casimir Siemienowicz's *Artis magnaë artilleriæ pars prima*, published in Amsterdam in 1650 and subsequently translated into numerous languages, for instance English in 1729. This is an especially good source on fireworks at courts north of the Alps.

¹⁴ The chapter on fireworks is present in Giambattista della Porta's *Magia Naturalis*, from the 1589 edition and later, in Book 12, Chapters 1–13; see Porta 1658, 289–304, "fire-balls"

Fireworks in the 1500s

Relatively few remains of sixteenth-century festival equipment exist today, and this is, evidently, particularly true for fireworks. After all, in Biringuccio's words, these were fleeting as the kiss a man gives to his beloved.¹⁵ There are nevertheless written and illustrated descriptions that offer insight into the displays. Inasmuch as festive traditions were in many respects similar north and south of the Alps from the 1500s until the mid-1600s, one can cautiously consider material from Northern Europe to learn about Italian court culture. The courts possessed a fundamentally international and period-specific character, in part because their festivals were often linked to marriages between noble families from around Europe and in part because Italian artists were also active as designers of festival decorations and costumes at courts north of the Alps. Francis I's court at Fontainebleau, for example, hosted such artists as Rosso Fiorentino (1495–1540) and Francesco Primaticcio (1504–1570), while Maximilian II's and Rudolf II's courts in Vienna and Prague employed Giuseppe Arcimboldo (1527–1593) as master of festivals and costume design.¹⁶

Printed illustrations from the period grant us an impression of how fireworks were experienced, even if they have limited value as sources of precise, technical details. Woodcuts and engravings were typically produced or printed after the festivities were concluded and were designed primarily to exalt those who organized and sponsored the festival. Written sources were likewise often commissioned by the nobleman who was responsible for the festivities. There were also, however, numerous more independent descriptions written by festival guests such as ambassadors, who sent accounts home to the prince they represented. An important source is, for example, Giulio Alvarotti, ambassador of the Duke of Ferrara, Ercole II d'Este. In 1546, Alvarotti participated in Francis I's masquerades in Paris.¹⁷ Biringuccio gives accounts of large festivals with fireworks in Florence and Rome, stating, for instance, that the Girandola at Castel Sant'Angelo involved both fireworks launched from the fortress and illumination of the fortress itself by arrays of white paper lanterns containing candles. The fireworks were balls of fire (*palle di fuocho*) that shone bright as stars before exploding,

are discussed in Chapter 5, 293; according to Werrett 2015, 177, instructions in this period typically focus on how to create fireworks that imitated natural phenomena, such as stars, rain, and hail.

¹⁵ "ne [...] durassero tanto, che a un'amante un bacio della sua dama", Biringuccio 1977, 165v.

¹⁶ Cordellier 2005, 120–124; Beyer 2007, 243–247.

¹⁷ Cordellier 2005, 121; Croizat-Glazer 2013, 1214–1215; the ambassador of Ferrara's accounts are published in Occhipinti 2001.

followed by a round of rockets with long tails, which gave the illusion of extinguishing themselves before shooting out six to eight new rockets. These were supplemented by smaller fireworks. Then came the pope's coat of arms, crafted out of fire. A great, shining star was affixed to the angel statue's banner atop the fortress.¹⁸ The oldest surviving depiction of such a Girandola at Castel Sant'Angelo is possibly the Portuguese painter Francisco de Holanda's watercolor of the 1538 festival, prepared during his stay in Italy in 1538–1547 [Fig. 1]. The theme is also present in numerous prints [Fig. 2], and its abiding popularity is illustrated by German artist Franz Cleyn's 'A story of fireworks', which was included in a series of paintings commissioned by Christian IV to decorate the Knights' Hall at Copenhagen's Rosenborg Castle around 1619 [Fig. 3]. These visual accounts of Italian festival culture contributed to its dissemination to courts across Europe. It certainly served as a role model for important celebrations connected to the fireworks-loving Christian IV.¹⁹

Coming from Siena as he did, Biringuccio asserted that the tendency to use fireworks was especially strong in Siena and Florence, and he described in detail the construction of a girandola, which was a common piece of festival equipment already by the end of the fifteenth century at the Feast of San Giovanni in Florence [Fig. 4].²⁰ 'Girandola' was not just the name of the fireworks festival at Castel Sant'Angelo in Rome but was also a more general term for a kind of fireworks structure built up around a wooden frame, upon which fireworks were mounted in holders set up sequentially around a central axis. This allowed the girandola to rotate while the fireworks were being lit. In order to enhance the effects of the fireworks, the structure was placed on a pole or suspended by a strong rope. At Palazzo Vecchio in Florence, a mid-sixteenth century fresco depicting Feast of San Giovanni fireworks shows a girandola in the form of a tower-like structure, held aloft by a rope above the

¹⁸ "in aere fanno un fuoco chiaro che pare una stella, & nel ultimo si spezano [...] tirano molti razzi, [...] questi sonno tal modo ordinati che dipoi che sonno andati in alto con una longha coda, & che par che gli habbino finito schioppano e mandan fuore sei o otto razzetti per uno. Anchora vi fanno trombe & girandolini fiamme & luminiere, & sin l'armi del Papa di tale composition di fuochi, & su nella maggiore sommita del castello dove è l'Angelo attacchato a l'arboro del stendardo asattato una forma d'una grande stella che contiene molti razzi", Biringuccio 1977, fol. 166–166v.

¹⁹ The largest festival in Christian IV's reign is the well-documented Great Wedding (*Store Bilager*), the 1634 marriage of Christian IV's son, Prince Christian, to Magdalena Sibylla of Saxony [Fig. 8], see Wade 1996.

²⁰ Gori 1926, 195–196, describes a girandola from the festival in 1498, decorated with figures of giants and of a pig; Biringuccio 1966, 440–442; Vasari 1996 2, 250.

square in front of the city hall.²¹ Among the audience gathered on the square are men with rifles, which were used both for festive salvos and for launching fireworks [Fig. 5].²²

Another important source for both the period's festivals in general and fireworks in particular is Giorgio Vasari, especially the second, revised edition of his set of biographies of artists, *Le vite de' più eccellenti pittori, scultori, e architettori*, from 1568. His biographies habitually discuss the selected artists' contributions to festival decorations, and he describes in detail the festival that he himself helped arrange to celebrate the arrival in Florence of Johanna, Arch Duchess of Austria, prior to her marriage to Francesco de' Medici in 1565.²³ In connection with the biography of the sculptor Niccolò Tribolo, Vasari describes in detail the construction of a girandola and emphasizes the importance of having gunpowder holders radiate upward and outward from the foot of the structure, so that they will burn in the planned order without all being lit simultaneously.²⁴ A single wick – impregnated with a mix of gunpowder, sulfur, and alcohol – was threaded throughout the entire structure, allowing the flames to gradually advance from section to section. A carefully constructed girandola could burn for hours. In an era without electric lights, the ability to illuminate the city's central square in the dark of a summer night was itself spectacular. Beyond the light effects themselves, sound was an important element of fireworks. Vasari described such bangs and explosions as “the most beautiful and joyous noises,” while fire-trumpets were affixed to the ornamentation, for example projecting from the mouths of masks.²⁵

According to Vasari, Cosimo I de' Medici appointed Tribolo to create a girandola for the Feast of San Giovanni, precisely because he was

²¹ Vasari 1996 2, 251, describes a girandola “suspended at a great height from the ground by a double rope that crossed the piazza high in the air”.

²² Both Biringuccio and Della Porta discuss the use of rifles to launch fireworks, Biringuccio 1966, 442–443; Della Porta 1658, 293.

²³ See e.g., the biographies of Bastiano “Aristotile” da San Gallo or Primaticcio in Vasari 1996 2, 431–432, 774. Vasari praises Primaticcio for his many talents as an artist, one who not only mastered architecture, painting, and stucco but also created the most inventive and beautiful parties and masquerades for his patrons, Francis I and then Henry II; Vasari discusses Buontalenti's masquerades in Vasari 1996 2, 882; Buontalenti's highly inventive scenography and sophisticated machines for use at Ferdinando de' Medici's marriage to Christine de Lorraine in 1589 are described in detail in Strong 1984, 133–144; Vasari's account of Francesco de' Medici's wedding is at the conclusion of the 1568 second edition of his book of artist biographies, Vasari 1996 2, 897–1019; the text has been published and translated in Pallen 1999.

²⁴ Vasari 1996 2, 250.

²⁵ Vasari 1996 2, 250.

exceptionally well-regarded for his artistic ingenuity (*ingegno*).²⁶ As it turned out, Tribolo packed the fireworks and wick too tightly, and the explosion was so powerful that everything fired off at once. Worse yet, the wooden structure itself and consequently the rope that was suspending the *girandola* caught fire as well. As Vasari describes it, the occasion was more terrifying than entertaining for audience members.²⁷

According to both Biringuccio and Vasari (who references Biringuccio directly), it was common for the *girandola* to be painted and decorated, making it an ornament in its own right. The decorations were created using flammable materials, such as a wooden frame stuffed with hay and covered with painted canvas or papier-mâché.²⁸ Vasari, who follows his rhetorical habit of praising Tribolo's *girandola* for being more beautifully wrought than anything that had ever come before, notes it was shaped like an octagonal Temple of Peace, decorated with images and ornaments and measuring 20 *braccia* (i.e. over 10 m). Atop the temple stood the figure of Peace in the process of setting fire to a pile of weapons that lay at her feet.²⁹ Other examples of themes that could be applied to a *girandola* were, according to Vasari, a ship, rocks, a city or an inferno – any theme was possible as long as it involved fire.³⁰ It could be Lot and his daughters, fleeing the burning town of Sodoma; Orpheus, returning from the underworld with Eurydice; or the monster Geryon, upon which Virgil rode through Hell in Dante's *Divine Comedy*.³¹

Wedding feasts frequently featured machines formed to resemble a fortress under attack – an excellent excuse for using canons and bombs in the festivities. This was 'The Fortress of Virtue', which was regarded as an appropriate allegory for such an occasion, just as Venus, Psyche, Cupid, and similar mythological figures were common inclusions in festive processions.³² It was likewise popular to devise stories that provided a reason for including fire-breathing dragons in the scenography, such as Apollo defeating the dragon snake Python or Perseus freeing Andromeda from the voracious sea monster.³³ Accounts of French wedding festivities in the first

²⁶ Vasari 1996 2, 251.

²⁷ Vasari 1996 2, 251.

²⁸ Biringuccio 1966, 441; Canova-Green 2004, 149.

²⁹ Vasari 1996 2, 251.

³⁰ Vasari 1996 2, 250–251.

³¹ Vasari 1996 2, 250–251.

³² Vasari 1996 2, 962–971; Starn & Partridge 1992, 178.

³³ On the dragon theme, see Werrett 2010, 49–51 og Werrett 2015, 187–188; for the use of the Perseus and Andromeda theme at a French royal party in 1628, see Canova-Green 2004, 147–148; Apollo's slaying of Python was a theme in Bernardo Buontalenti's *intermezzo* designs (1589) and has been reproduced in engravings, Strong 1984, fig. 90.

half of the 1600s report the use of rockets. When fired, these rockets created the symbol of the French royal family, the fleur-de-lis, and the buds of the flower subsequently opened to create star shapes and monograms, such as for the names of the king and the town.³⁴ In his 1650 book on fireworks and artillery, Polish fireworks expert Casimir Siemienowicz describes how such text could be written with fireworks: A rocket would be constructed to contain a rolled-up frame, to which was affixed letters written in iron thread and wrapped in material soaked in flammable liquid.³⁵ The Danish Royal Library holds two manuscripts, dating back to the time of Frederik II, containing various illustrations by Rudolf von Deventer: *Bericht vom Pulver und Feuerwerken* (dedicated to the king) and *Kunstabuch von allerhandt Kunsten der Argkaley* (1585). These give an impression of how such fireworks might have looked.³⁶ The manuscripts include colored drawings of firework holders shaped like dragons and other monstrous creatures, with rockets shooting out in all directions [Fig. 6]. One page shows a structure surrounding a vertical rod, resembling Biringuccio's description of a girandola that rotated as the fireworks were lit. Both von Deventer's illustrations and the roughly contemporaneous *Artilleriebuch*, written by Walther Litzelman in 1582 and held at the Bavarian State Library in Munich, depict carts bearing rockets and fortress constructions [Fig. 7]. These illustrations are reminiscent of the accounts of fireworks displays that mimic military battles.

Allegorical tendencies

Biringuccio's *De la pirotechnia* is a rather straightforward, practically oriented handbook that takes little interest in magical connections between the worlds of humans and nature. Biringuccio nevertheless ultimately remarks that fireworks are so effective that one might imagine they were the flames of Hell itself:

Thus, in short, when all the fire is lit and the guns go off, and the rockets, fire tubes, squibs, and balls go hither and thither nothing can be seen

³⁴ Canova-Green 2004, 149.

³⁵ Canova-Green 2004, 149; Siemienowicz 1729 (1650), 351.

³⁶ One of Rudolf von Deventer's manuscripts is dedicated to Frederik II (1559–1588), and the other is dated 1585: *Bericht vom Pulver und Feuerwerken* [dedicated to Frederik II], The Royal Library, Copenhagen, NKS 101 folio; *Rudolffs von Deventer, K. M. Argkaley-meister, Kunstabuch von allerhandt Kunsten der Argkaley: Geschutz und Feuerwerk zu Wasser und zu Lande. Subjicitur ad calcem: Bericht von Pulver zu machen* [1585], The Royal Library, Copenhagen, Thott 273 folio.

but smoke and fire, and verily it seems then to be the fire imagined in hell.³⁷

The degree to which sixteenth-century observers experienced fireworks as something more than just aesthetically beautiful displays of light and explosions is striking. The mounting of fireworks on buildings or other flammable structures that were either laden with meaning or formed a platform for a series of mythological or emblematic figures made them straightforwardly allegorical. People understood fireworks in a thoroughly imagistic way. Allegorization was made possible by the audience's willingness to interpret layers of meaning in more or less everything they encountered in their lives. It was hardly a stretch to perceive the lights and sounds produced by fireworks as all manner of violent phenomena that involved fire and explosions: everything from the terrors of Hell to thunder and lightning to war and to cosmic phenomena such as meteors and shooting stars. In 1597, the engraver Giovanni Ambroglio Brambilla's etching of the Girandola at Castel Sant'Angelo was accompanied by the following description:

It seems as if the whole city is on fire [...] as if the sky has opened [...] it seems as if all the air in the world is filled with fireworks, and all the stars in the heavens are falling to earth – a thing truly stupendous and marvelous to behold [Fig. 2].³⁸

This quote shows how contemporary observers associated fireworks with the apocalyptic account of the return of Christ.³⁹ According to the Gospel of Matthew 24:29:

Immediately after the tribulation of those days shall the sun be darkened, and the moon shall not give her light, and the stars shall fall from heaven, and the powers of the heavens shall be shaken.

This was a powerful image with which to welcome the inauguration of a new pope. Other written accounts confirm that fireworks were so effective that

³⁷ Biringuccio 1966, 443; Biringuccio 1977, fol. 166v: "Tal che concludendo el fuoco tutto s'incende, che quando l'artiglierie tirano, & dipoi e razzi, le trombe, li soffioni, le palle, & andare questa in qua & quella in la, l'altro non si vede si non fumo & fuoco, pare proprio allhora quel fuoco che si figura l'inferno"

³⁸ "[...] pare che tutta la città vadi a fuoco [...] pare sia aperto il cielo [...] pare che tutto l'aere del mondo ne sia pieno, et pare che tutte le stelle del cielo cadeno a terra, cosa veramente stupendissima, et molto meraveglia da vedere."; English translation in Werrett 2008, 32.

³⁹ Werrett 2008, 32.

ordinary audience members, who had perhaps never seen anything like them before, fled in terror, believing the end of the world was at hand.⁴⁰

An engraving by Crispin de Pas of the fireworks on the occasion of the so-called Great Wedding (Store Bilager), the 1634 marriage of Christian IV's son, Prince Christian, to Magdalena Sibylla of Saxony, published in the 1635 book *Triumphus nuptialis danicus*, offers an idea of how such an event might have been experienced: The dark of night is illuminated by countless torches and rockets, and in the lower left of the image is seen a pair of monstrous jaws – the entrance to Hell, capable of swallowing up the damned [Fig. 8].

The fact that the fire was burning lent itself to allegorical understandings. The Jesuit Claude-François Ménéstrier (1631–1705), an important source for information on seventeenth-century French court festivals, asserted that feelings of happiness were closely connected with the element of fire inasmuch as “joy sets light to it [fire] amidst the shadows of the night,” and if one cannot find happiness by looking at something, then at least fire can catch one's eye.⁴¹ According to ancient myth, Prometheus had stolen fire from the gods: The element was laden with positive meaning and valued as a precondition for technological progress and life as a whole.⁴² The flames and explosions caused by fireworks thus did not simply represent punishment and destruction; they also – and perhaps most frequently – suggested a process of purging or purification in preparation for a new and better future. Fireworks functioned as a representation of the military and cosmic power of the prince.⁴³

Festive displays, with all their allegories and ambiguities, belonged to a visual system that was characteristic of the sixteenth century and was more closely related to the worldviews of the medieval and renaissance periods than that of the antiquity. Festive processions were called ‘triumphs’ after the ancient Roman custom, and costumes were described as all'antica and took thematic inspiration from ancient myth, yet the allegorical understandings of these themes were rooted in early Christian and medieval worldviews, rather than ancient ones. The festive processions had themselves developed out of

⁴⁰ Canova-Green 2004, 150–152, Werrett 2015, 183.

⁴¹ “Elle [la joie] est neantmoins plus heureuse à se server du Feu que du reste des Elemens; et c'est la cause pourquoy elle a coustume de l'employer dans toutes les Festes publiques. Elle l'allume au milieu des tenebres de la nuit pour en rendre l'éclat plus sensible. Les yeux qui ne sont divertis par aucun autre objet que celui-cy, s'y arrestent sans peine; et les diverses formes des Artifices qui le composent, font une agreable confusion de lumieres diversement distribuées, qui ne plaisent pas moins qu'elles éblouissent.”, Ménéstrier 1660, 5–6, cited in Canova-Green 2004, 145.

⁴² For the importance of the myth of Prometheus in sixteenth-century thought, see Bredekamp 1993, 26–33.

⁴³ Canova-Green 2004, 145, 148; Werrett 2010, 16.

the sacre rappresentazioni of medieval religious festivals.⁴⁴ The festivals were complex, cryptic presentations: The towns, rivers, and places under the prince's rule; various scales of time (days, seasons, stages of human life); virtues; astrological themes; the four elements (fire, earth, water, air); and much else were interwoven into the displays, with chains of internal references leading to the creation of new meanings. Crypticism was valued in its own right: Festival displays were laudable if one could not quite grasp them in their entirety. This was in line with the sixteenth-century fascination with the biblical prescription against casting pearls before swine as well as notions that the gaze of the ignorant must not be permitted to profane the deepest of truths.⁴⁵ Truth should instead be concealed within hieroglyphic incomprehensibilities, paradoxes, and grotesques.⁴⁶ At the same time, however, learned guests should get the impression that the presentation, taken as a whole, was both meaningful and well thought out. Festival organizers faced the balancing act of challenging learned nobles with iconographic details and creating a spectacle that was at least partly comprehensible to the wider audience. The limits to the audience's understanding can be gleaned from an account given by Alvarotti, ambassador of Ferrara, concerning a 1546 wedding feast at the royal French court in Paris. Although Alvarotti provides a highly detailed description of a costume designed by Primaticcio and worn by Francis I himself, he is clearly unaware that the costume was meant to represent a sphinx [Fig. 9]:

What this costume should be called, I leave for your Excellency to determine (some called it a faun, others a satyr).⁴⁷

As a result, princes sometimes published programs in connection with festivals so that the audience could understand what it was all about and so that the event could be documented for a wider range of interested individuals.⁴⁸

⁴⁴ Sez nec 1972, 84–121, Greene 1987, 636–659, Pallen 1999, 36–37, 45.

⁴⁵ Matthew 7: 6; Erasmus treats this theme in his *adagia*, see “Sileni of Alcibiades” (1515), Phillips 1964, 269–296.

⁴⁶ In Francesco Colonna's *Hypnerotomachia Poliphili*, 1499 text and images (woodcuts) involve both allegorical triumphal processions and rebus-like “hieroglyphs” inspired by the then-popular text on hieroglyphs attributed to Horapollo; Hansen 2018, 207–214; Minor & Mitchell 1968, 40–43.

⁴⁷ “Qual sia mo il proprio nome di questo abito, me ne rimetto a Vostra Eccellenzia, [chi lo batezzò un faun, chi un satiro].”, Occhidipinti, 2001, 125; English translation in Croizat-Glazer 2013, 1214–1215.

⁴⁸ Sec nec, 283–285; Canova-Green 2004, 148; Cordellier 2005, 131–132.

Fireworks were thus just one of the many allegorical elements that – alongside processions, costumes, scenery, and machines – characterized this flourishing of masquerade culture.

Rustici's theme parties

If metamorphoses such as those described by Ovid, Apuleius, and others were deemed appropriate literary role models for sixteenth-century festival iconography, it is in large part because they fit with a contemporaneous tendency to embrace multiple meanings, ambiguity, and fluctuation in the creation of images.⁴⁹ The delight taken in transformation is much in evidence in Vasari's biography of the sculptor Giovanni Francesco Rustici (1475–1554). This remarkable account also contributes to our understanding of how fireworks became a vital element in the allegorically grounded festival culture of the period. Vasari relates that, at the start of the 1500s in Florence, there were various confraternities or fellowships of men who enjoyed holding theme parties.⁵⁰ Rustici was a member of the Mason's Trowel (*Compania della Cazzuola*) and the Company of the Cauldron (*Compania del Paiuolo*). Among the other members Vasari names were artists and craftsmen, including the renowned painter Andrea del Sarto, who also worked as festival decorator for the Medicis. We know, for example, from Vasari that Andrea del Sarto and his two artist colleagues Pontormo and Rosso Fiorentino prepared the equipment used for Pope Leo X's arrival in Florence in 1515.⁵¹

Participants at the Mason's Trowel and Company of the Cauldron parties came dressed up and sometimes also brought along food that was, so to speak, in disguise. On one occasion, Andrea del Sarto brought an elaborate model of the Florence Baptistery, constructed solely out of edible materials, with columns of sausages and a choir of delectably prepared little birds, which were arranged so that they appeared to be singing from a book of lasagne, with notes in peppercorn and a choir stall of cold veal.⁵² At a Company of the Cauldron party, the host decorated the dining room as an enormous cauldron, within which guests could sit and simmer.⁵³ This experience presumably prompted dinner guests to feel as if they were participants in Fra Angelico's

⁴⁹ Vasari 1996 2, 247, in the biography of Tribolo, Vasari notes in passing a series of fantastic masquerades, "in that of the bears, in a race of buffaloes, in the masquerade of the ravens, and in others," so that one can imagine the creative animal costumes to which such party themes might have given rise; Vasari 1996 2, 962, states that the wedding party's *intermezzi* are based on Apuleius' *The Golden Ass*.

⁵⁰ Vasari 1996 2, 523–530.

⁵¹ Vasari 1996 1, 834–835.

⁵² Vasari 1996 2, 524.

⁵³ Vasari 1996 2, 523.

Last Judgement, with its visions of Hell, including a cauldron brimming with the damned [Fig. 10]. The theme of a party of the Mason's Trowel was more explicitly the underworld, with Pluto celebrating his marriage to Proserpina.⁵⁴ The monstrous dog Cerberus howled as guests were permitted entry through the jaws of Hell, the sharp teeth of which snapped shut behind each pair of attendees. Servants dressed as devils used tridents to shovel servings of disgusting animals – serpents, lizards, tarantulas, toads, frogs, scorpions, bats – to seated guests. This scene is likewise comparable with a motif in Fra Angelico's Last Judgement, in which the damned are tormented by being served unappetizing animals [Fig. 10]. At the Company of the Cauldron party, however, these repugnant creatures turned out to in fact be carefully camouflaged meat dishes, while the "dead men's bones" served for dessert were crafted from sugar. Among the guests was Il Baia, who Vasari notes was a powder master, a bombardiere. This hellish dinner concluded with Pluto condemning Il Baia to Hell as punishment for his always choosing the Seven Deadly Sins and other Hell-related motifs as themes for his fireworks and girandolas.⁵⁵

Vasari's description of Rustici's unusual theme parties provides a vibrant image of the joy in concealment and masking of various kinds, which was so characteristic of the period. From the anecdote concerning Il Baia's own displays, it is once again clear that fireworks were understood allegorically. The presence of flames and explosions alone were sufficient for the audience to read all manner of violent themes and narratives into the spectacles.

Artificial fire

Alongside fireworks' potential to produce images, people valued their capacity for motion: the arcs, spirals, and zigzags that fireworks appeared to create of their own volition.⁵⁶ As Biringuccio put it:

It was inventive and beautiful to see [the fireworks] make so many effects out of flame as living things make out of themselves.⁵⁷

⁵⁴ Vasari 1996 2, 527–529.

⁵⁵ Vasari 1996 2, 528 ff., 530, Vasari discusses yet another party organized by Rustici together with Giovanni Gaddi, Jacopo Sansovino, and Andrea del Sarto, in which Tantalus (who according to Roman myth challenged the gods at a dinner party) acted as host of the underworldly company. The group's participants were all dressed as gods, and fireworks were also involved.

⁵⁶ Werrett 2010, 30–32; Werrett 2015, 170.

⁵⁷ "[...] che veramente era ingenuosa & bella cosa vederla fare tanti effetti di fuocho come cose vive fare da per loro", Biringuccio 1977, fol. 166; English translation in Biringuccio 1966.

The experience of fireworks hinged on their appearing to be alive. Animation, agility, and activity were coveted in the visual culture of the period. This is evident in the prolific use of *figura serpentinata*, which produced the illusion of figures that transgressed their boundaries and entered the space of the observer.

The importance invested in allegory and movement is explained by the wider understanding of nature and materials during this period. Focus was placed on nature's generative potential as well as on the images that people believed were latent in nature and capable of being released or revealed by the artist. Ideas concerning the transformational potential of natural materials were grounded in the period's all-encompassing alchemical worldview.⁵⁸ For people in the sixteenth century, it was clear that one thing could become something else and that forms and materials could change and transform. This understanding of nature encouraged the tendency to see fireworks as producing meaningful images and movements.⁵⁹

When fireworks were called artificial fire, and when people perceived in them artificial versions of meteors and shooting stars, it corresponded to the concept of *terza natura* (third nature).⁶⁰ In the sixteenth century, the concept was used to refer to that which was created by humans on the basis of natural foundations, thereby uniting art and nature to become something else entirely. This was not about humans mastering and controlling nature, which gradually came to be the ideal of the seventeenth century. It was instead about people's ability to fulfil the potential of nature's materials. It was crucial that a person did not simply take on nature's materials but also adopted nature's methods. By these means, a person could create something hitherto unseen. This notion involved a strong belief in the power of imagination and creativity.

The pursuit of movement in sixteenth-century visual arts was thus about more than just achieving a certain kind of naturalistic style. Festive processions, theatrical presentations, and *intermezzi*, including the use of innovative machines, accompanied by fireworks' dramatic imitations of cosmic phenomena, were all means of bringing visual artists' thematic preoccupations to life. More than just colorful and innocent entertainment, the spectacles' reflections of natural movements confirmed ideas regarding the workings of the world and consolidated the prince's legitimacy within the

⁵⁸ Hansen 2018, 262–279; Newman 2004, 34–163.

⁵⁹ Hansen 2018, 219–279; Werrett 2015, 180–183.

⁶⁰ Werrett 2008, 32; Hansen 2018, 238; Morgan 2016, 9, 53–54.

greater cosmic order.⁶¹ Fireworks were a meaningful expression of the joint creative capacity of humans and nature.

Over the course of the mid-1600s and 1700s, fireworks gradually became more static; the use of complex machines for launching fireworks declined; and allegorical, figurative elements became less significant, at the same time as festival organizers came to appreciate the necessity of putting on shows that the audience could actually understand.⁶² This heralded a new era, one in which people sought enlightenment – including quite literal enlightenment, in the form of fireworks that produced as much light as possible – rather than cryptic, allegorical magic.

⁶¹ Canova-Green 2004, 145–153; Bredekamp 1993, 26–33.

⁶² Canova-Green 2004, 145, 148.

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Illustrations

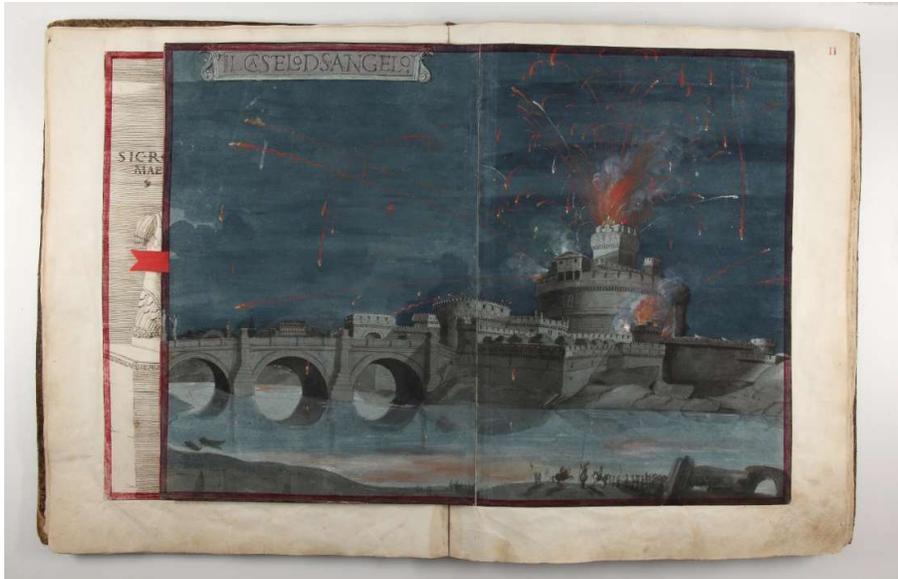


Fig. 1: Francisco de Holanda, the Girandola fireworks at Castel Sant'Angelo, Rome, on the occasion of the 1538 wedding between Pope Paul III's grandson (Ottavio Farnese) and Emperor Charles V's daughter (Margaret). Watercolors on paper. *Os desenhos das antigualhas*, fol. 10bis & fol. 11r. Real Monasterio de San Lorenzo del Escorial, Biblioteca di San Lorenzo.
Photo credit: Patrimonio Nacional, RBME 28-I-20.

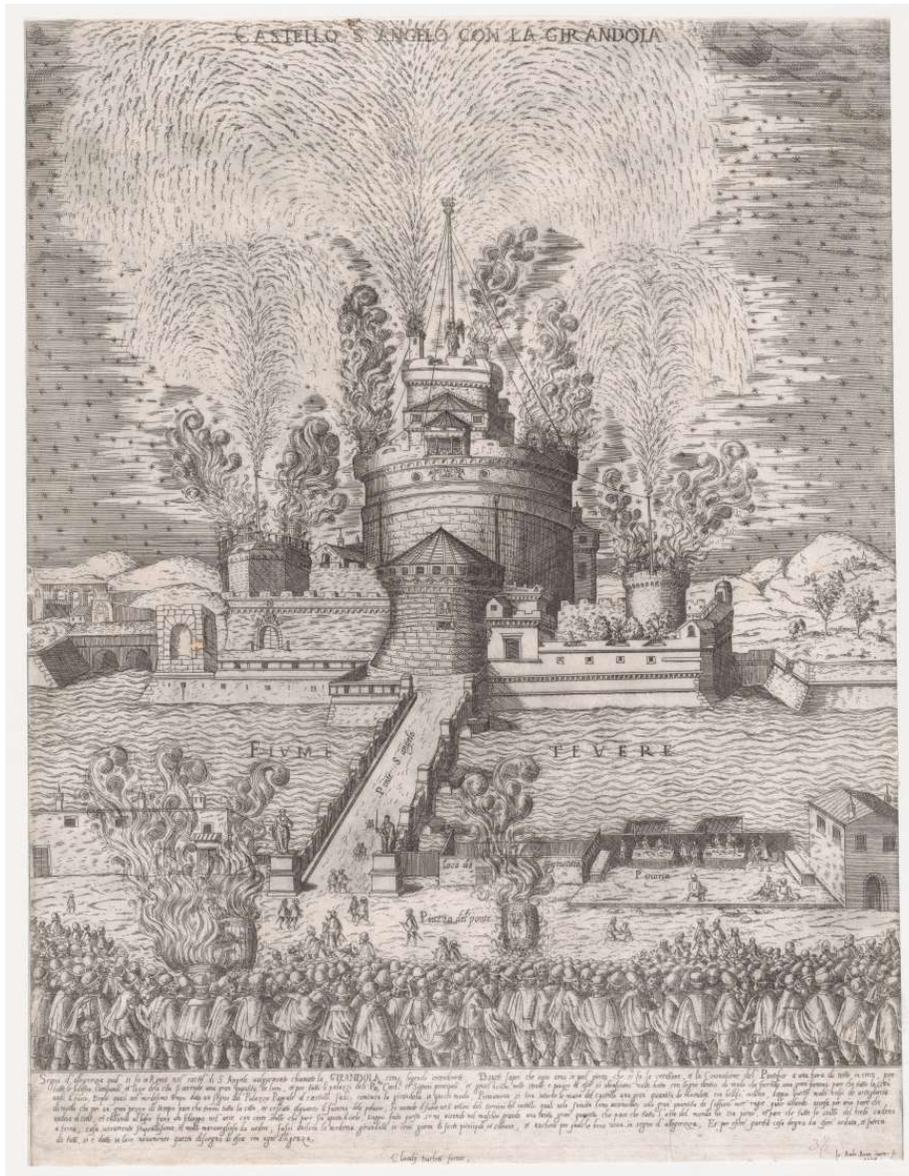


Fig. 2: Giovanni Ambroglio Brambilla, the Girandola fireworks at Castel Sant'Angelo, Rome. Etching from *Speculum Romanae Magnificentiae*, Rome, 1579.

Photo credit: Metropolitan Museum of Art, New York, public domain.



Fig. 3: Franz Cleyn, “A story of fireworks” (Girandola at Castel Sant’Angelo), painted for the Knights’ Hall, Rosenborg, Copenhagen, c. 1619. Kronborg Castle, Helsingør.

Photo credit: Det Nationalhistoriske Museum på Frederiksborg Slot, photo: Lennart Larsen.

LIBRO VLTIMO

longha coda, & che par che gli habbino finito schioppano & mandan fuore sei o otto razzetti per vno. Anchora vi fanno trombe & grandolini fiamme & luminiere, & fin l'armi del Papa di composition di fuochi, & su nella maggiore sommita del castello doue e l'Angelo attacchato a l'arboro del stendardo adattato vna forma d'una grande stella che contiene molti razzi. Talche concludendo el fuocho tutto s'incende, che quando l'artiglierie tirano, & dipoi e razzi, le trombe, li soffioni, le palle, & andare questa in qua & quella in la, altro non si vede si non fumo & fuocho, pare proprio allhora quel fuocho che si figura l'inferno. Et io per quanto mi pare dico di non hauere mai veduto in atto di felta cosa tale, & perche piu ne comprehendiate l'una cosa & l'altra v'andaro qui appresso disegnando.



**DEL FVOCHO CHE CONSVMA ET NON IA
CENERE ET E POTENTE PIV CHE ALTRO
FVOCHO DEL QVALE NE E FABRO
EL GRAN FIGLIOL DI VENERE.
CAPITOLO VLTIMO.**



HA VENDO VI io per tutti li liti della profunda & spatiosa marina de gli eserciti de fuochi materiali cō la mia piccola & debil barcha scriuedo tra corso, tirato dal desiderio che ho oltrechel satisfare alle vostre domade di arricchirui di piu saperi & delle pratiche desfi. Et hora essendo p Dio gra al disegnato termine del mio viaggio arriuato, & nō piu sapedo ne ancho vededo el modo di poter arriuare piu la, Me ero pposito da mainare le

Fig. 4: Two girandolas suspended by a rope. Woodcut in Vannoccio Biringuccio, *De la pirotechnia*, fol. 166v, Venice, 1540.



Fig. 5: Giovanni Stradano (Jan van der Straet) (Vasari's workshop), Girandola fireworks at the Feast of San Giovanni in Florence, 24 June 1558. Fresco at Quartiere di Leone X, Palazzo Vecchio, Florence.
Photo credit: Fototeca Musei Civici Fiorentini.



Fig. 6: Rudolf von Deventer, two illustrations of fireworks from the manuscript *Kunstabuch von allerhandt Kunsten der Argkaley*, 1585, The Royal Library, Copenhagen, Thott 273 folio.



Fig. 7: Walther Litzelman, Festive procession cart, firing rockets and pulled by two demons, from the manuscript *Artilleriebuch*, 1582, Bavarian State Library, München, Cgm 909, fol. 34r.



Fig. 8: Fireworks display representing the battle between vice and virtue, on the occasion of the Great Wedding (*Store Bilager*), the 1634 marriage of Christian IV's son, Prince Christian, to Magdalena Sibylla of Saxony, in the outer courtyard of Copenhagen Castle. Engraving by the Dutch artist Crispin de Pas (II) in the book *Triumphus nuptialis danicus*, Copenhagen, 1635.



Fig. 9: Francesco Primaticcio, Sketch of the French King Francis I's sphinx costume for a masquerade held at Louvre Palace, Paris, 1546. Pen and ink, with wash, on paper, H. 0, 310, L: 0, 219. Stockholm, National Museum, item 872/1863.

Photo credit: National Museum, Stockholm, public domain.



Fig. 10: Fra Angelico, detail of alterpiece *The Last Judgement*, c. 1425-1430, Museo Nazionale di San Marco, Florence.
Photo credit: Wikimedia Commons.

