

Spectacles of Fire and Water: Performing the Destructive Forces of Early Modern Naval Battles

Felicia M. Else

When it comes to the expressive power of performance and spectacle in Early Modern Europe, the naval battle, sometimes dubbed with its ancient moniker, *naumachia*, was surely one of the most complex and arduous, speaking to pretensions of political power in this age of territorial expansion and conflict. Tuscany serves as a good case in point, exemplified by the famous *naumachia* set in the Palazzo Pitti courtyard put on for the 1589 wedding of Ferdinando I de' Medici and Christine of Lorraine and reproduced in a well-known

engraving by Orazio Scarabelli (Fig. 1).

Scholars of art and festivals have rightly emphasized the manipulation and visual splendor of water in such impressive maritime displays, and J. R. Mulryne's fine study of this Medici spectacle points out the vivid, borderline unpleasant sensual experience that audience would have felt in such an enclosed space¹. This study takes inspiration from Mulryne's work by looking specifically at the pairing of water and fire in sixteenth-century representations and performances of naval battles, efforts that required an astounding level of manipulation and choreography to bring together two unpredictable and dangerous opposing elements of nature. Spectacles staged

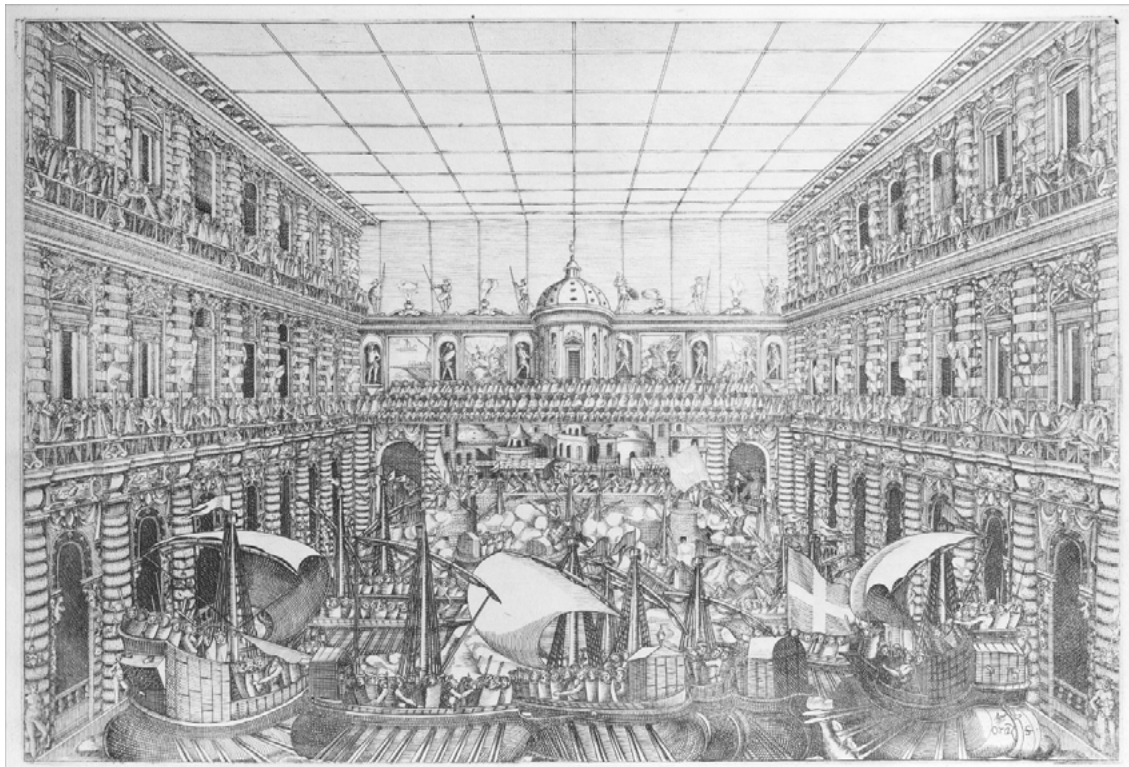


Fig. 1. Orazio Scarabelli, *Naumachia in the Courtyard of Palazzo Pitti*, 26.1 x 38.6 cm, engraving, 16th century, Metropolitan Museum of Art, New York. (Work in the Public Domain via Creative Commons and Metropolitan Museum of Art, New York).



Fig. 2. Giorgio Vasari, *Emperor Maximilian Lifting the Siege of Livorno*, fresco, Salone dei Cinquecento, Palazzo Vecchio, Florence, 1563-65 (Alinari/Art Resource, NY).

in Reims, Lyons, Nantes and Ferrara, among others, present vivid examples. Naval battles in festivals struck contemporaries in their wondrous but terrifying displays of fire on water, whether in the form of fireworks, firearms or, in some cases, water literally set on fire. Sources reveal how such spectacles of water and fire conveyed a performance of destructive power, one altogether fitting given the terrifying experience of real maritime warfare underway at this time.

The sixteenth century saw a great many important naval battles as Western forces fought the Ottoman Turks and each other. Accounts of actual naval battles provided contemporaries with an impression of destructiveness wrecked by the forces of fire and water – ships afire tossed in a watery landscape – visible in dramatized painted representations like Giorgio Vasari's *Emperor Maximilian Lifting the Siege of Livorno* in the Palazzo Vecchio and Andrea Vicentino's *Battle of Lepanto* (Figs. 2-3)².

In real naval battles, ship combatants faced the perils of artillery fire and unfriendly seas. In the Battle of Lepanto of 1571, historian Niccolò Capponi references the Ottomans' use of flaming pots and fire tubes and how the relentless fire of the Venetian galleasses appeared as "all one flame". A passage he cites by Giovanni Battista Contarini references how men fell by the forces of fire and water:

There happened a mortal storm of harquebus shots and arrows, and it seemed that the sea was aflame from the flashes and continuous fires lit by fire trumpets, fire pots and other weapons [...] many Turks and Christians had boarded their opponents' galleys fighting at close quarters with short weapons, few being left alive. And maces, daggers, axes, swords, arrows, harquebuses and fire weapons. And besides those killed in various ways, others escaping from the weapons would drown by throwing themselves into the sea, thick and red with blood (Capponi 2007: 267 and 273-74)³.

Throughout the foreground of Vicentino's painting can be seen bodies strewn about the water; another painting by Vasari, *The Defeat of the Turks at Piombino*, shows the head of a drowned Turk next to a classicizing personification of the Tyrrhenian Sea in the foreground (Figs. 3-4).



Fig. 3. Andrea Vicentino, *The Battle of Lepanto*, Palazzo Ducale, Venice, 1595-1605, (Scala/Art Resource, NY).



Fig. 4. Giorgio Vasari, *The Defeat of the Turks at Piombino*, 1563-65, Salone dei Cinquecento, Palazzo Vecchio, Florence (Alinari/Art Resource, NY).

Erudite Latin poems about the Battle of Lepanto similarly evoke death and slaughter among the forces of fire and water, sometimes hailing classical subjects. One epic poem composed by Juan Latino, a black African former slave who worked his way to become a professor of Latin in Granada, praised the deeds of one of the battle's key commanders, Don Juan of Austria, likening him to Neptune. Latino describes the battle scene with the Genoese commander Andrea Doria: "Culverins sank countless ships with sulfurous fire while the arquebus issues a stream of bullets... Volleys of flaming tow launched with Vulcan's art scatter sparks at the Turks to ignite their ships." At one point, John of Austria gazes at the torches and firestorms on the water, decrying "What of the lightning that bursts from the cannons and flashes across the water?" In addition to the expected glorification of the Christian forces, scholars have also noted Latino's sympathetic portrayals of the Muslim adversaries, including the Ottoman admiral Ali Pasha. He described the point of

view of Pasha in the face of Don Juan's ships – "he [Pasha] shudders at the powers of the sea, the fickle dieties, Neptune's realm turned against him". Latino then has the Ottoman admiral, if faced with survival but defeat, boldly proclaim "if as leader and Pasha, I survive the battle, I pray... Let Scylla crush me, let merciless Charybdis herself swallow me alive in her whirlpool, and drown me in her massive vortex"⁴. Another similar poem brings out the violent spectacle of the dead in the water: "See how in retreat the infidel's ship was plowing stained with blood that the drowned barbarian corpses had shed... Phoebus dipped his light and Neptune sank bodies under the red waves"⁵.

In the realm of festivals, staging naval battles formed an important part of the idealized political image promoted by such spectacles, and it was a genre especially tied to violence and danger as well as loud noises and showy pyrotechnics. Several examples, particularly in France, struck viewers with their juxtapositions of the destructive forces of water and fire. In Richard Cooper's study of French festivals, he described a scene of acrobatics among fire and water at the coronation of Henri II at Reims in 1547. A boat manned by dark-skinned sailors of African origin, dubbed by contemporaries as "Sauvages", engaged in a precarious river battle, and Cooper cites a French contemporary:

they finally came into his Majesty's view, and secured the ships to each other with grappling irons to allow hand to hand combat; they performed wonders of defending themselves, each side firing flames and rockets like spears, and other fireworks, with the result that the ship's mast, its top and its pilot were all artfully shot into the air, whilst the Sea monsters and the Savages were suddenly diving underwater one after the other, so as not to be harmed by the flames (translation by Cooper (Cooper 2013: 23-24)).

The *naumachia* performed for Henri II at Lyons in 1548 was described in terms that, as Margaret McGowan points out, "simulated real warfare". She points out how the description by the festival organizer Maurice Scève highlighted the pandemonium, the noise of trumpets and firearms, the flames erupting across the water and the intense emotions, including fear, felt by the spectators from this violent spectacle whom, she points out "expected fatalities, their feelings vying between intense joy and overwhelming fright". Scève made sure to conclude his description with

a reassurance that “thus ended the naval battle without hurt to any person whatsoever”, a state that, of course, could not apply to real naval battles (translation by McGowan (McGowan 2013: 44)). Henri was so impressed that he ordered another naval battle for his entry into Paris in 1549. In this case, no less than thirty large galleys were launched to attack a bastion on the Isle of Louviers on the Seine. Defenders wound up setting the tower on fire to block the entrance to the port, and the noise of the artillery was so strong that, according to a contemporary, the stained-glass windows of a nearby church fell out, and, despite safety precautions, there were several casualties⁶. River battles were featured on several occasions at Nantes, and one staged in 1551 deserves special attention because of its reference to a noteworthy fire-related naval weapon. Magnificently-decorated galiots, galleons and a rowing barge pitted Bretons against “moors and other foreigners”. A contemporary Bonaventure Coppegorge described the combat:

Then the trumpets sounded and those combatants began to dart about and rush at each other, firing artillery and, rowing hard, to engage, grapple, attack, sound the alarm, throw spears, light flares and Greek fire, which burned as well on the water as it would have done in dry straw, not without danger to these combatants...all of which was very good to see and hear⁷.

Greek fire references a material developed and used by Byzantine naval forces. As Coppegorge’s description suggests, Greek fire was a liquid substance that once ignited, could burn on water, and in fact attempts to douse it with water only intensified its burning. Historians have pointed out that the formula for Greek fire was lost in the sack of Constantinople in 1204, and even today some believe its exact composition remains uncertain⁸. However, a source from Venice provides some clues to what sixteenth-century audiences might have known. As Paul Hills observed in his study of the Venetian fascination with the interplay of fireworks and water, Girolamo Ruscelli sought to take advantage of this interest by publishing in 1572 a compilation drawn from earlier texts on the pyrotechnics of weaponry, including a section on “Making a type of fire ball that can burn in water”. Woodcut illustrations feature a variety of fearsome flammables, including incendiary barrels, balls and arrows (Fig. 5)⁹.

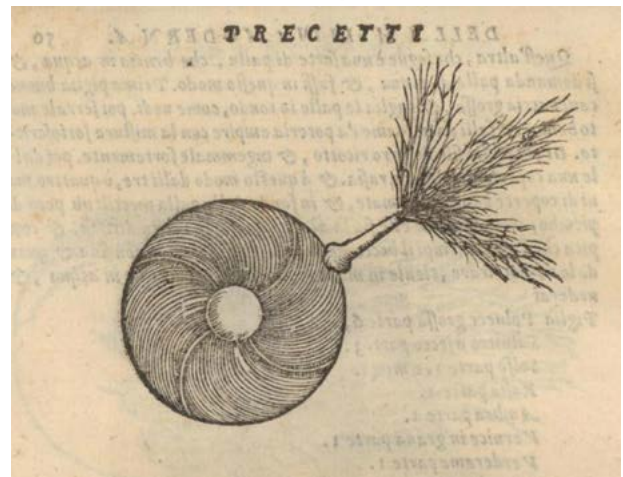


Fig. 5. Woodcut illustration of artillery ball that can burn in water from Girolamo Ruscelli, *Precetti della militia moderna, tanto per mare, quanto per terra*, Marchiò Sessa, Venice 1572: 50r (Opal Libri antichi, University of Turin, Work in the Public Domain via Creative Commons and Internet Archive at <https://archive.org/details/imageAVII436MiscellaneaOpal>)

What the festival organizers at Nantes had used remains unknown, but it clearly drew on a fascination that audiences felt about such unusual weapons, ones that allowed for fire and water to co-exist beyond their natural boundaries. Such spectacles of water and fire and the panoply of sensory overload that accompanied them had an appeal well beyond France. For the wedding of Prince Elector August of Saxony and Anne of Denmark at Torgau in 1548, ships stormed a fortress on the Elbe with combatants dressed as “Turks”, “Tartars” and “Germans” and an astonishing display of pyrotechnics – over 2,000 charges in the castle alone – which, as Mara Wade emphasizes, was enhanced by the water’s surface¹⁰. In Edinburgh for the wedding of John Fleming to Elizabeth Ross in 1562, Mary Queen of Scots included a naval assault on a fort on Duddingston’s Loch complete with fireworks and artillery shots, intended to evoke the 1560 Siege of Leith where Scottish and French forces were successful against the English¹¹. Closer to Florence, Alfonso II d’Este staged an elaborate aquatic tournament in Ferrara for Archduke Karl of Austria in 1569. On a moat outside the walls of Ferrara, fifteen “monster-boats”, that is, water vessels constructed to resemble hybrid mythological figures such as Glaucus, Tritone and Forco, contained seamen with devices to shoot fire for an attack on a castle on an enchanted island. The spectacle presented

a fantastic panoply of fire and water – the boats appeared lit from inside with colored flames scattering around them as well as from the island (Marcigliano 2003: 60-63; 74-75; and 106-08).

When Grand Duke Ferdinand I de' Medici planned for his wedding to Christine of Lorraine, a French royal princess of the house of Valois and granddaughter of Catherine de' Medici, he would have been building on a robust legacy of naval battles and waterworks in festival celebrations. Florence may have been a sophisticated player in the arts, but when it came to maritime displays of power, like naval battles, this inland city was very much a newcomer¹². The political incentives were considerable – as Arthur Blumenthal argues, “more blatantly than any previous festival, the occasion was used for political ends: to impress the royalty of Europe with the status of the house of Medici” (Blumenthal 1990: 97). An impressive staff of humanist writers, artists, musicians and organizers was brought together, and the result was a landmark achievement that was copiously documented and disseminated. Mulryne's study of the *naumachia* builds on an equally copious record of scholarship on this event – the *intermezzi* alone dubbed by Paul Kafno as “the most described theatrical production in history”¹³.

Two naval battles were staged, both differing in their settings but both building on the earlier traditions that featured the forces of fire and water together. As Christine journeyed from Marseilles to Pisa, she was treated to a sumptuously-outfitted flagship and impressive displays of naval power, waterborne floats, magnificently-adorned ports and a battle between Christian and Turkish fleets on the Arno. The naval battle in Pisa, referred to as the Battle of the Galleon was a deliberately public affair, set along a popular course of the Arno, and it broke new ground in the tradition of festivals put on by the Medici, the first of its kind in Tuscany¹⁴. Descriptions by contemporaries such as Giovanni Cervoni and Raffaello Gualterotti noted how the audience ranged from members of the court on balconies to untold numbers of boats (“*infiniti Navicelli*”) loaded with all sorts of persons, all encouraged not just to watch the proceedings but to participate (Cervoni 1589: 17 and Alberti 2010: 6). At nightfall, two galiots (a vessel smaller and faster than a galley) manned with figures dressed in Turkish clothing and weaponry simulated a pirate attack by firing artillery at the Torre del Ponte a

Mare (Cervoni 1589: 17 and Alberti 2010: 7)¹⁵. Sailing to the rescue was a large, magnificently-equipped Galleon bearing the *impresa* of the House of Lorraine and the Medici. The fight took dramatic turns, as the Turks proved masterful in defending their galiots from boarding and carried out four attacks on the Galleon. As Maria Alberti has shown in detail, the naval battle combined fictive scenography with verisimilitude, an elaborate display of staged combat resembling a kind of “nautical choreography” (“*coreografia nautica*”) but using maneuvers based on the practices of real maritime warfare as well as authentic costumes, armaments and sailors. Cervoni emphasized the lifelike quality of the event to actual battles, and Alberti highlights details such as the tactics of on-board combat, the sending of parties by small boats to confer over terms, the taking of prisoners and the use of heavier artillery by larger ships (Alberti 2010: 6-14). As summed up by Maria Ines Aliverti, the festival was part of “the Grand Duke's strategic plan...to win regal sovereignty for Tuscany...counting precisely on maritime ports and shipyards and on the prestige of the Order of Santo Stefano, that is, on Livorno and Pisa respectively” (Aliverti 2013: 124-25). Fire and water were part of this remarkable, politically-charged display. Gualterotti describes the veritable transformation of the course along the Arno by torchlight, noting how the “many lights” (“*molti lumi*”) made shine the Arsenale, the tower and the whole city so that “it seemed that the rooves, the windows and the terraces all burned so that the beautiful sight...extended along the Arno” and the many artificial fires (“*fuochi artificiosi*”) and fireworks (*girandole*) served “to drive away the night” (“*discacciar la notte*”). In addition, artillery fire was abundant, one episode lasting for an hour. As the battle reached a climax, Gualterotti described a dangerous maneuver, resulting in “shots and flames worked up in such abundance and so large that the galiots, Galleon and the river seemed entirely one flame (*tutto un fuoco*)” (Author's translation from Gualterotti 1589: 17-18).

After Christine made her procession through Florence, she and select wedding guests were treated to another naval battle, this one in the private courtly residence of the Palazzo Pitti courtyard. This *naumachia* began with an element of surprise. Guests dining inside the



Palace were interrupted by the sounds of military instruments and artillery fire. Abandoning their meals, they returned to their places to find the courtyard, which only hours before was empty and host to a land-based tournament, had somehow been transformed into a veritable “sea” (“veramente il mare”), the entire grounds filled with approximately four feet of water and bearing eighteen ships, both large and small¹⁶. Orazio Scarabelli’s engraving of the Florentine *naumachia* of 1589 shows densely-packed rows of spectators, lit torches, and, along the central wall facing the viewer, a fortified Turkish castle. As Mulryne points out, Scarabelli’s “motorway pile-up” of ships may have evoked a general sense of the violence, noise and congestion described by chroniclers, but it is a far from accurate rendering of the event. The image, created a few years after the wedding, does not give any sense of the different types of ships, relying instead on a generic “stock of images” used in prints in general. The sails billow in contrary directions; the depth of the water is insufficient; the varied costumes and armaments of the participants are indistinguishable and the crammed arrangement of ships gives no indication of any credible maneuver or assault. With regard to the dynamics of fire and water, the lack of color and atmosphere is particularly misleading. Scarabelli’s crisp, linear panorama would have been shrouded in nocturnal darkness punctuated by cannon blasts, smoke and the flickering lights of over 80 torches, all set below a rose-tinted canvas covering above and the reflective surface of water below (Saslow 1996: 96; Mulryne 2013: 160-62 and 169-70).

Scholarly documentation on the Pitti *naumachia* has been rich and extensive with research from scholars like Mulryne, Alberti, James Saslow and Annamaria Testaverde among others, showing the effort that went into producing a magnificent and vividly lifelike display¹⁷. The sailors themselves comprised actual seamen, many professionals employed at Pisa but also some from locales across the Mediterranean. Contemporaries noticed authentic details such as the cries in Turkish during the battle (Saslow 1996: 169; Alberti 2010: 23-24). The vessels themselves were actual functioning ships as opposed to superficial ephemeral crafts¹⁸. Scholars agree that the setting of this watery field of battle put this event on the map. Despite the pleas of his provveditore to host the battle on the

Arno like at Pisa, Ferdinand insisted on placing it inside the courtyard, thus recreating of one of the most incredible water-related feats of Ancient Rome, the flooding of inland structures, most notably the Colosseum, for naval battles. This was very much a culmination of the Medici’s efforts to harness the forces of water in the realms of art, water management and festivals¹⁹. Not only was this new to Florence, but the Pitti *naumachia* may be one of the first, if not the first European naval battle spectacle since antiquity in which a full – scale architecturally – defined space on land was flooded in a brief period of time. As Alberti suggests, Ferdinand must have wanted the Pitti *naumachia* not to repeat the publically-oriented event at Pisa but to show Florence as a distinct centre of power, staging a more technically and visually innovative version to a more restricted, elite audience²⁰.

The battle itself was suitably dramatic, as Turkish and Christian forces took turns dominating the field, and the spectacle swirled with the destructive forces of fire and water. Contemporary Giuseppe Pavoni describes one engagement with the enemy galleys that suggests the effects of Greek fire, where “artificial fire was employed which burned all the way to the water”, and one heard “cries in Turkish of those who were wounded and fell into the water” where they continued to battle with Christians who had fallen earlier (Pavoni 1589: 40-42 and Alberti 2010: 24). When the Christian armada attacked the castle, a great cacophony of artillery fire followed – “noise so great that it seemed the heavens might fall and fill up the sea, and the air was filled with smoke so that no one could see anything, and it was judged that...in this assault had been fired off over three thousand shots”. In the din and the smoke, the Christian forces scaled the walls with rope ladders and faced off against Turks who used intense firepower to repel them back into the water. In the end, the Christians finally persevered, seizing the fortress²¹.

In this and other examples, it is certainly clear how such spectacles of water and fire in sixteenth-century naval battles were performances of destructive forces and expressions of political power. This final example would have especially highlighted these effects being set within an enclosed space. As Alberti put it, Ferdinand and his team of artificers were “shutting the Mediterranean within the interior of a princely

palace courtyard” (“rinchiudendo il Mediterraneo all’interno del cortile del palazzo principesco”), intensifying the effects of light, sound and water (Alberti 2010: 25 and Mulryne 2013: 170). As Mulryne astutely pointed out, the awning above, the torches and the flames and artillery within would have been reflected by the water-filled courtyard below, casting shades of red and yellow throughout, and “the damp atmosphere [that] must have created conditions that made an audience uneasy”. Mulryne rightly surmised that Christine was surely thinking about such an unpleasant experience when she decided to set the next *naumachia* in Florence, not in the Pitti courtyard but in daylight and “on the less potentially threatening confines of the river Arno” (Saslow 1996: 96 and Mulryne 2013: 160-62 and 169-70).

Bibliography

Primary Sources

- Cavallino, Simone, *Raccolta di tutte le solennissime feste nel sponsalizio della Serenissima Gran Duchessa di Toscana*, Rome, Blado, 1589.
- Cervoni, Giovanni, *Descrizione [sic] de le pompe e feste fatte ne la città di Pisa per la venuta de la Serenissima Madama Christierna de l’Oreno [sic] Gran Duchessa di Toscana*, Florence, Giorgio Marescotti, 1589.
- Gualterotti, Raffaello, *Descrizione del regale apparato per le nozze Cristina di Loreno moglie del Serenissimo Don Ferdinando Medici III Gran Duca di Toscana*, Florence, Padovano, 1589 under British Library, *Treasures in Full: Renaissance Festival Books*, <http://special-1.bl.uk/treasures/festivalbooks/BookDetails.aspx?strFest=0204>.
- Pavoni, Giuseppe, *Diario descritto da Giuseppe Pavoni delle feste celebrate nelle solennissime nozze delli serenissimi sposi il Sig. Don Ferdinando Medici, e la Sig. Donna Christina di Loreno Gran Duchi di Toscana*, Bologna, Giovanni Rossi, 1589.
- Rossi, Bastiano de’, *Descrizione dell’apparato e degl’intermedi fatti per la commedia rappresentata in Firenze nelle nozze de’ Serenissimi Don Ferdinando Medici e Madama Cristina di Loreno, Gran Duchi di Toscana*,

Florence, Padovani, 1589.

Ruscelli, Girolamo, *Precetti della militia moderna, tanto per mare, quanto per terra*, Venice, Marchiò Sessa, 1572.

Secondary Sources

- Alberti, Maria, “Battaglie navali, scorrerie corsare e politica dello spettacolo: Le Naumachie medicee del 1589”, *California Italian Studies*, vol. 1, n. 1, 2010: 1-33.
- Aliverti, Maria Ines, “Water Policy and Water Festivals: the Case of Pisa under Ferdinando de’ Medici (1588–1609)”, *Waterborne Pageants and Festivities in the Renaissance. Essays in Honour of J. R. Mulryne*, Ed. Margaret Shewring with Linda Briggs, Farnham, Surrey and Burlington, VT, Ashgate, 2013: 119-41.
- Allegri, Ettore - Alessandro Cecchi, *Palazzo Vecchio e i Medici. Guida storica*, Florence, Studio per edizioni scelte, 1980.
- Bandara, Pesala, “Mary, Queen of Scots’ Aquatic Entertainments for the Wedding of John Fleming, Fifthe Lord Fleming to Elizabeth Ross, May 1562”, *Waterborne Pageants and Festivities in the Renaissance. Essays in Honour of J. R. Mulryne*, Ed. Margaret Shewring with Linda Briggs, Farnham, Surrey and Burlington, VT, Ashgate, 2013: 199-209.
- Bietti, Monica - Annamaria Giusti (eds.), *Ferdinando I de’ Medici 1549–1609 MAIESTATE TANTUM*, Livorno, Sillabe, 2009.
- Blumenthal, Arthur R., “Medici Patronage and the Festival of 1589”, *IL 60. Essays Honoring Irving Lavin on his Sixtieth Birthday*, Ed. Marilyn Lavin, New York, Italica Press, 1990: 97-106.
- Blumenthal, Arthur R., *Theater Art of the Medici*, Hanover, New Hampshire and London, University Press of New England, 1980.
- Butters, Suzanne B., “Magnifico, non senza eccesso; riflessioni sul mecenatismo del cardinale Ferdinando de’ Medici”, *Villa Medici. Il sogno di un cardinale. Collezioni e artisti di Ferdinando de’ Medici*, Ed. Michel Hochmann, Rome, Edizioni Polistampa, 1999: 23-45.
- Butters, Suzanne B., “Princely Waters: An Elemental Look at the Medici Dukes”, *La civiltà delle acque tra medioevo e rinascimento*, Eds. Arturo Calzona and Daniela Lamberini, vol. 1, Florence, Leo S. Olschki, 2010: 389-411.



- Capponi, Niccolò, *Victory of the West. The Great Christian-Muslim Clash at the Battle of Lepanto*, New York, Da Capo Press, 2007.
- Chatenet, Monique, "Parisian Waterborne Festivals from Francis I to Henri III", *Waterborne Pageants and Festivities in the Renaissance. Essays in Honour of J. R. Mulryne*, Ed. Margaret Shewring with Linda Briggs, Farnham, Surrey and Burlington, VT, Ashgate, 2013: 51-66.
- Cooper, Richard. "French Renaissance Waterborne Festivals in the Sixteenth Century", *Waterborne Pageants and Festivities in the Renaissance. Essays in Honour of J. R. Mulryne*, Eds. Margaret Shewring and Linda Briggs, Farnham, Surrey and Burlington, VT, Ashgate, 2013: 9-36.
- Crowley, Roger, *Empires of the Sea. The Siege of Malta, the Battle of Lepanto, and the Contest for the Center of the World*, New York, Random House, 2008.
- Else, Felicia M., *The Politics of Water in the Art and Festivals of Medici Florence: From Neptune Fountain to Naumachia*, Abingdon, UK and New York, Routledge, 2019.
- Fenlon, Iain, *The Ceremonial City. History, Memory and Myth in Renaissance Venice*, New Haven and London, Yale University Press, 2007.
- Garbero Zorzi, Elvira - Mario Sperenzi, "L'apparato architettonico per le nozze del Granduca Ferdinando I con Cristina di Lorena - 1589", in *Teatro e spettacolo nella Firenze dei Medici*, Eds. Elvira Garbero Zorzi and Mario Sperenzi, Florence, Leo S. Olschki, 2001: 169-89.
- Guilmartin Jr., John Francis, *Gunpowder and Galleys: Changing Technology and Mediterranean Warfare at Sea in the Sixteenth Century*, Cambridge, Cambridge University Press, 1980.
- Hills, Paul, "Titian's Fire: Pyrotechnics and Representations in Sixteenth-Century Venice", *Oxford Art Journal*, vol. 30, n. 2, 2007: 187-204.
- Katritzky, M. A., "Aby Warburg and the Florentine Intermedi of 1589: Extending the Boundaries of Art History", *Art History as Cultural History: Warburg's Projects*, Ed. Richard Woodfield, Amsterdam, G+B Arts International, 2001: 209-58.
- Konstam, Angus, *Renaissance War Galley 1470-1590*, Oxford, Osprey, 2002.
- Marcigliano, Alessandro, *Chivalric Festivals at the Ferrarese Court of Alfonso II d'Este*, Bern, P. Lang, 2003.
- McGowan, Margaret M., "Lyon: a Centre for Water Celebrations", *Waterborne Pageants and Festivities in the Renaissance. Essays in Honour of J. R. Mulryne*, Ed. Margaret Shewring with Linda Briggs, Farnham, Surrey and Burlington, VT, Ashgate, 2013: 37-49.
- Muccini, Ugo, *The Salone dei Cinquecento of Palazzo Vecchio*, Florence, Le Lettere, 1990.
- Mulryne, J. R., "Arbitrary Reality: Fact and Fantasy in the Florentine Naumachia, 1589", *Waterborne Pageants and Festivities in the Renaissance. Essays in Honour of J. R. Mulryne*, Ed. Margaret Shewring with Linda Briggs, Farnham, Surrey and Burlington, VT, Ashgate, 2013: 143-75.
- Nagler, A. M., *Theatre Festivals of the Medici, 1539-1637*, New Haven and London, Yale University Press, 1964.
- Petrioli Tofani, Annamaria, "Nozze di Ferdinando I dei Medici e Cristina di Lorena-1589", *Feste e apparati medicei da Cosimo I a Cosimo II*, Eds. Giovanna Gaeta Bertelà - Annamaria Petrioli Tofani, Florence, Leo S. Olschki, 1969: 67-85.
- Poole, Katherine, "Christian Crusade as Spectacle: the Cavalieri di Santo Stefano and the Audiences for the Medici Weddings of 1589 and 1608", *Push Me, Pull You: Physical and Spatial Interactions in Late Medieval and Renaissance Art*, Eds. Sarah Blick - Laura D. Gelfand, vol. 2, Leiden and Boston, Brill, 2011: 383-420.
- Pryor, John H., "From Dromōn to Galea: Mediterranean Bireme Galleys AD 500-1300", *The Age of the Galley: Mediterranean Oared Vessel since pre-classical Times*, Ed. Robert Gardiner, London, Naval Institute Press, 1995: 101-16.
- Saslow, James, *The Medici Wedding of 1589*, New Haven and London, Yale University Press, 1996.
- Strong, Roy, *Splendor at Court. Renaissance Spectacle and the Theater of Power*, Boston, Houghton Mifflin Company, 1973.
- Testaverde Matteini, Annamaria, "L'officina delle nuvole. Il Teatro Mediceo nel 1589 e gli Intermedi del Buontalenti nel Memoriale di Girolamo Seriacopi", *Musica e Teatro (Quaderni degli amici della Scala)*, vol. 11, n. 12, 1991.
- Wade, Mara R., "Waterfront Entertainments in Saxony and Denmark from 1548-1709", *Waterborne Pageants and Festivities in the Renaissance. Essays in Honour of J.R. Mulryne*, Ed. Margaret Shewring with Linda Briggs, Farnham, Surrey and Burlington, VT, Ashgate, 2013: 329-58.
- Warburg, Aby, "I costumi teatrali per gli intermezzi

del 1589. I disegni di Bernardo Buontalenti e il Libro di Conti di Emilio de' Cavalieri (1895)"; *Gesammelte Schriften*, Eds. Fritz Rougemont - Gertrud Bing, vol. 1, Leipzig, 1932; reprinted Liechtenstein, Kraus, 1969: 259-300.

Wright, Elizabeth R. - Sarah Spence, - Andrew Lemons (eds. and trans.), *The Battle of Lepanto*, Cambridge MA and London, Harvard University Press, 2014.

Notes

1 Mulryne and Else provide analyses and bibliographies on the use of water in this event (Mulryne 2013; Else 2019: 163-79).

2 On the Vasari, see Allegrì-Cecchi, 1980: 260-61 and Muccini 1990: 147-49. For the Vicentino, see Fenlon 2007: 172-73 and Crowley 2008: plate 16.

3 Crowley also cites similar passages, titling his chapter on Lepanto "Sea of Fire" (Crowley 2008: 266-77).

4 Wright - Spence - Lemons 2014: ix-x; 296-97; 312-15; 344-45; 356-57; 360-61; 428 and 484.

5 Wright - Spence - Lemons 2014: 108-9.

6 McGowan 2013: 44-45 and Chatenet 2013: 54-55. On galleasses, see Konstam 2002: 18-19.

7 Translation by Cooper (Cooper 2013: 24-26). Other naval battles at Nantes took place in 1548 and 1565.

8 Likened to napalm, substances such as red phosphorus, pine resin or naphtha, a petroleum-type material, have been suggested but still remain speculative (Guilmartin 1980: 60). John Pryor illustrates a manuscript from the twelfth century showing a Byzantine dromon with a siphon spewing this Greek fire on to another ship (Pryor 1995: 105).

9 Author's translation from Ruscelli, "A fare una sorte di palle d fuoco, che bruciano in acqua" (Ruscelli 1572: 31v). On Ruscelli and the woodcut illustration, see Hills 2007: 194-99 and Ruscelli 1572: 54r.

10 Wade 2013: 338-40.

11 Bandara 2013: 203-05.

12 Else discusses the theme of water, art and festivals in Medici Florence (Else 2019).

13 The Kafno quote appears in a study by Katritzky on Aby Warburg's influence (Katritzky 2001: 213). Primary sources include Gualterotti 1589; Cavallino 1589; and Rossi 1589. Major secondary sources include Warburg 1969: 259-300; Nagler 1964: 70-92; Petrioli Tofani 1969: 67-85; Strong 1973: 172-96; Blumenthal 1980: 2-27; Blumenthal 1990: 97-106; Testaverde Matteini 1991; Saslow 1996; Garbero Zorzi - Sperenzi 2001: 169-89; and various essays and catalog entries by Anna Maria Testaverde, Silvia Castelli, Monica Bietti, Margherita Cinti (Bietti - Giusti 2009: 50-125).

14 Saslow gives an overview of the various stages of Christine's journey (Saslow 1996: 121-32). See also Cervoni 1589; Gualterotti 1589: 17-18; Alberti 2010: 1-33; Aliverti 2013: 123-25; and Poole 2011: 405-08.

15 On the Barbary galiot in the sixteenth century, see

Konstam 2002: 45.

16 The exact height of the water remains unclear because sources give contradictory figures (Pavoni 1589: 36 and 40; Cavallino 1589: 44). Testaverde Matteini proposes a dramatically lower height of just under one meter based on the quantity of wood requested to support the enclosure as well as a reference in an anonymous description (Testaverde Matteini 1991: 141-42). Mulryne cites Gherardo Silvani's biography of Buontalenti which claims the courtyard was flooded to the depth of a man's height. This study accepts the approximate figure of four feet put forth by Mulryne, as anything too much lower would not have allowed the ships to maneuver (Mulryne 2013: 156-60 and 166).

17 Alberti notes, the 'alla greca' style references not classical but contemporary Greece under Ottoman control (Alberti 2010: 21-22). Saslow discusses the different sources for the event as well as the costumes and fabrics for the wedding in general (Saslow 1996: 3-5; 58-72 and 169). Testaverde Matteini supplements her analyses with a transcription of Seriacopo's *Memoriale* (Testaverde Matteini 1991: 146 and 176-249).

18 Some of the new vessels are identified as being built at Livorno and some in a Florentine workshop, possibly under the carpenter Fossetta, as recently proposed by Aliverti and Lucia Nuti in Mulryne's study (Mulryne 2013: 164-65). Alberti identifies six boats used at Pisa, including Osmeo's Galleon serving as the Galleon with three masts and the corsair galleys, two of the Turks and two of the Moors serving, as the four large galleys. Alberti and Aliverti discuss the important links between the naval spectacles at the two cities, calling the Pisa battle an 'anteprima' to that of Florence (Alberti 2010: 22-25; Aliverti 2013: 123-25).

19 Mulryne notes that even modern scholars could not conceive of how a vast space like the Colosseum could be flooded for such a temporary event though recent archaeological work has shed light on the credibility of this feat (Mulryne 2013: 152-56). Butters argues that the *Pitti naumachia* was Ferdinand's own invention, drawing on his earlier experience in Rome (Butters 1999: 40-41; Butters 2010: 408).

20 Entry to the event was heavily guarded and required a ticket made from porcelain (Saslow 1996: 165; Testaverde Matteini 1991: 146 and Alberti 2010: 19).

21 Author's translation from Pavoni, "un romore d'artiglierie tanto grande, che pareva il ciel cadesse, empiendosi il mare, e l'aria di fumo, che più non si scorgeva cosa alcuna: e fù giudicato che...in questo assalto fosse sparato più di tre mila tiri" (Pavoni 1589: 42-43).