

Drawing at the Opera. Settings, Evocations and Visual Imagery in the Stage Backdrops of Operas

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Abstract

Opera can be regarded as a total work of art, one of the most multidisciplinary and multimedia forms of performance. In opera, the stage production takes the form of a true artistic synaesthesia, where the languages of music, drama, dance, poetry and the visual arts converge. The latter define the aesthetics of the performance through set design, staging, lighting, make-up and costumes. In the staging of opera librettos, a crucial role is played by images: whether painted or projected, they evoke settings, suggest emotions and stimulate associations, facilitating an understanding of the plot and immersing the audience in the narrative.

Despite the evolution of stagecraft –which has seen the rise of sculptural elements and three-dimensional architecture– drawing and two-dimensional images retain an absolute centrality. Today, however, the tradition is evolving towards digital projections, which offer greater creative flexibility and a reduction in production costs.

This article discusses the contribution of drawing to the success of operas, beginning with a presentation of the long-standing tradition of painted backdrops and extending to an exploration of the most advanced forms of digital projection and rear projection of images onto both opaque and semi-transparent materials, to highlight the relevance of drawing and graphic arts within the performing arts and their ability to adapt to new technologies.

Keywords: opera, images, drawings, stage backdrops, stage projections.

Introduction

“All the world’s a stage,
And all the men and women merely players.
They have their exits and their entrances,
And one man in his time plays many parts”
[Shakespeare 1623, 146-149]

Opera is a form of composite art that integrates music, text, dance, acting, fashion, visual arts, and performance into a single unit. All theatrical performances, operas included, share the fact that they belong primarily to the collective imagination through their narrative plots, character development, and above all through the visual component, which enables the staging of very different worlds

and original settings, transporting the audience beyond theatres and distant places. Opera is therefore also a visual art, in addition to an auditory one. In this regard, the idea of music as a total work of art, known as the *Gesamtkunstwerk*, theorized in the 19th century by Richard Wagner, represents the unification of the arts, where the stage setting or architecture contributes significantly to the construction of the atmosphere (fig. 1). With Wagner, the design of the stage space extends beyond the mere drawing of the theatre and the control of visual dimension, also using painting, which is placed at the service of the dramatic setting [Wagner 1895] for the creation of an immersive experience *ante litteram*.

Throughout its history, opera has been influenced by various artistic trends and, at the same time, has in turn influenced the visual arts. Numerous artists have engaged with this theme [Perrelli 2024]: by way of example, one can cite Giorgio De Chirico's metaphysical backdrops for Mascagni's *Cavalleria rusticana* at the Teatro alla Scala in 1942, Mario Sironi's set designs for Wagner's *Tristan und Isolde* in 1948, also for the Teatro alla Scala, David Hockney's 1978 *The Magic Flute* by Mozart (fig. 2), or Gae Aulenti's 1994 *Elektra* by Strauss. The iconographic documentation of opera – from costume and set design sketches to performance posters – is a fundamental repertoire for understanding how drawing and imagery have contributed to defining the collective imagination of opera. This includes various forms of project drawings, visual testimonies intended for dissemination, and promotional images in posters, each with its own narrative and communicative function in constructing opera as a visual event [Piscitelli 2022].

However, it is in the drawn backdrops that drawing assumes a leading role in the operatic performance, capable of participating in the meaning of the event just as much as music and words. The expression 'scenographic backdrop' (or 'painted backdrop') refers to the surface that serves as a background to the action and gives character to the dramatic space. Historically, this surface was painted with perspective scenes of landscapes, architecture, or narrative settings, allowing the audience to perceive an illusory scenic space represented through perspective techniques [Pagliano 2002]. The backdrop, therefore, must not be understood as a mere decorative apparatus, but as a complex element that actively participates in the production of meaning within the operatic performance [Cruciani 2005]. The iconography of opera is not merely a translation of the libretto; rather, the two components – verbal and visual – are in constant dialogue [Viale Ferrero 2002]. The stage is governed by the principle of semiotization [Zich 2024], whereby every scenic object is not limited to representing itself but becomes a semiotic unit that refers to designated meanings within a network of heterogeneous codes. The scenic image in opera acts as a system of signs that can contrast or work in synergy with the verbal and musical text, creating new levels of meaning [De Martinis 1982]. The scenographic backdrop operates through a function of denotation and connotation. While denotation allows the spectator to identify the location of the action, connotation activates secondary meanings and symbolisms linked to the emotional atmosphere, social condition,

or historical memory of the drama. For the melodrama, scenographic design follows often pre-established visual codes that must make the settings of myth or history immediately recognizable through a precise graphic vocabulary. One need only think of the environmental characterizations of Puccini's *Madama Butterfly* or Bizet's *Carmen*, which must necessarily evoke Japanese or Hispanic stylistic elements respectively, or the celestial atmospheres of the prologue and epilogue of Boito's *Mefistofele* (fig. 1) or Mozart's *The Magic Flute* (figs. 2, 3) contrasted with the infernal ones of the witches' Sabbath in the second act of the same opera. These are ephemeral architectures that have deeply marked the history of performance and drawn architecture, but which have been lost, with the exception of a few episodic drawings that – as hoped by Massimiliano Ciammaichella in his most recent research – deserve forms of protection and systematized archiving within an 'Archive of the Ephemeral' [Ciammaichella 2022; 2024a; 2024b].

From decorative backdrops to perspective backdrops

The first traces of scenographic backdrops can be found in the *pinakes* of Greek theatre – painted panels placed behind the stage dating back to the 5th century BC. Agatharchus of Samos writes about these artifacts; around 460 BC, he created the first treatise on perspective painting for a backdrop by Aeschylus, as reported by Vitruvius in *De Architectura*. This fixed *skene*, decorated with intercolumniations and doors, utilized pseudo-perspective paintings to open the stage space, prefiguring Renaissance illusionism. In Roman theatre, backdrops then evolved with the *trigoni versatiles* – corresponding to the Greek *periaktōi*: rotating prisms with painted faces that allowed for rapid scene changes by integrating botanical or architectural elements. It was later during the Italian Renaissance that painted scenery assumed a more structured form. The earliest evidence reportedly dates to 1508, the year of the performance of Ludovico Ariosto's *Cassaria* in Ferrara [Nicoll 1971, Titomanlio 2019]: on that occasion, there appeared "*una contracta et prospettiva di una terra cum case, hiese, campanili et zardini*" [Campori 1896, p. 49], painted by Pellegrino da Udine. A few years later, in 1513 in Urbino, painted scenery appeared as a background to three-dimensional structures depicting city views for the staging of Bibbiena's *Calandria*. The latter was presented again the following year in Rome with set designs by



Fig. 1. Projections onto transparent backdrops for the prologue to Arrigo Boito's *Mefistofele*, Teatro Lirico di Cagliari, 2023.

Baldassarre Peruzzi, who continued to integrate painted backdrops and scenic architecture [Mancini 1966, Nicoll 1971]. Thanks to the studies on perspective by Filippo Brunelleschi, Leon Battista Alberti, and Piero della Francesca, scenographic technique was subsequently codified, and drawing ceased to be mere ornament to become a 'world-builder'. Perspective thus became the essential tool for producing realistically spatialized set designs [Zammerini 2012]. The transition from a fixed stage to a perspective and illusionistic one is documented by the treatises of the 16th and 17th centuries, particularly that of Sebastiano Serlio. In his *Secondo libro di prospettiva* [Serlio 1545], he systematized the use of perspective as a graphic tool to construct stage designs based on vanishing points, inclined planes, and wings, inaugurating the tradition of scenic design as applied architecture (fig. 4).

From perspective background to atmospheric background

Scenography, which originated in the Renaissance thanks to figures such as Baldassarre Peruzzi, Sebastiano Serlio, Guidobaldo del Monte e Vincenzo Scamozzi, experienced an acceleration during Mannerism. Starting from this phase, the extreme refinement of expressive means would lead to unprecedented complexity: the use of perspectives with multiple vanishing points and bold framings would lead to the disruption of classical rigidity. This process of sophistication anticipated the spatial conception typical of the Baroque, dominated by visual deception and the wonder of illusionism [Pagliano 2011]. With the advent of the Baroque, the focal point of staging shifted toward wonder and dynamism. The drawings of the Galli Bibiena



Fig. 2. David Hockney, *The Queen of the Night*. Set design for Wolfgang Amadeus Mozart's *The Magic Flute* for Glyndebourne Opera, 1977.

family introduced the *veduta per angolo* (scenographic perspective from an angle) [Biggi 2015], breaking away from Renaissance perspective centrality (fig. 5), expanding the narrative possibilities of space, and bringing about a transformation of the theatrical venue into an 'infinite' space [Viale Ferrero 1970]. In parallel, the evolution from Baroque opera to the French *tragédie en musique* marks the transition of scenography from pure architectural illusion to a true dramaturgical instrument. In this context, the drawn scenes constitute an autonomous visual language, where the concept of the 'marvelous' and the use of technology become active poetic elements. Furthermore, documentary sources (scores, librettos, iconographic apparatuses) demonstrate how the transformable stage was a constituent part of the narrative effect; an example is *Thésée* from 1675, where the visual structure anticipates and comments on the musical action [Stevens 2015]. As highlighted by Mercedes Viale Ferrero [1970] in her analysis of Filippo Juvarra, scenic design becomes more ethereal, less bound to structural rigidity, and more inclined toward atmospheric suggestion. It is in this phase that the backdrop ceases to be a 'painted wall' to become, to all intents and purposes, 'atmosphere'.

The Renaissance is also the moment in which the precursors of opera can be traced [Abbate, Parker 2023], and

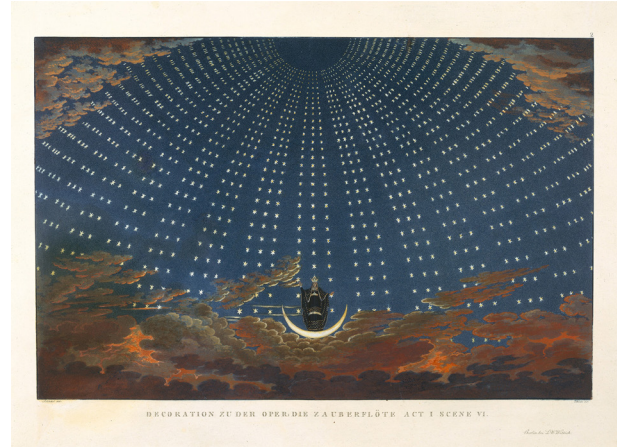


Fig. 3. Karl Friedrich Schinkel, *The Queen of the Night*. Set design for Wolfgang Amadeus Mozart's *The Magic Flute* for the Royal Opera House in Berlin, 1816.

consequently also its link with imagery, when set designers like Bernardo Buontalenti began to design theatrical machinery for the Medici courts, integrating perspective drawings with dramatic music. The Florentine *intermedi* of the sixteenth century, described by Angelo Solerti in *Gli albori del melodramma* [Solerti 1904], combined illusionistic paintings with lyric arias, prefiguring opera as a *Gesamtkunstwerk* as later theorized by Wagner [Bolpagni 2011]. A century later, Nicola Sabbatini's *Pratica di fabricar scene e machine ne' teatri* [1638] constituted the first systematic repertoire of stagecraft, featuring plates that illustrated scene changes, 'natural' effects, and early lighting solutions, demonstrating how the painted backdrop was already conceived to function in interaction with light and machinery. The relationship between drawing and opera becomes particularly evident when scenography emerges as an autonomous discipline. The space of scenic representation becomes a three-dimensional canvas that the set designer creates with the compositional freedom of a painter; while being able to employ a language of images that combine with volumes, plastic masses, and lights, which in turn become dramatic and theatricalizing elements of the performance. Set designers like Pierre-Luc-Charles Cicéri and Philippe Chaperon, active in the 19th century, were not merely technical artisans but creators of theatrical images,

whose scenographic drawings for operatic productions formed an integral part of the construction of opera's identity and its public reception. This is the moment when, with the advent of Romanticism, drawn backdrops oriented themselves toward naturalistic landscapes of great ethereal intromotional impact [Mancini 1966]. Chaperon himself created panoramic backdrops for Wagnerian operas at the Paris Opéra, emphasizing atmospheric suggestions (fig. 6). Thus began that metamorphosis that would take theatrical design from illustrating places to evoking atmospheres and psychological elements. Drawing no longer describes the setting of the action but interprets it. The graphic mark no longer serves to imitate, but to suggest states of mind and the inner torments of the characters.

From atmospheric backdrops to performance backdrops

At the beginning of the 20th century, the drawn backdrop underwent a theoretical assault that would lead to the replacement of pictorial realism with more abstract geometric lines and interplays of light and shadow [Mancini, 1975; Perrelli 2024]. Adolphe Appia, in his *La mise en scène du drame wagnérien* [Appia 1895], criticized static pictorial backdrops, proposing instead dynamically illuminated three-dimensional spaces. In *Die Musik und die Inszenierung* [Appia 1899], Appia himself theorized a scenic image born out of musical rhythm. Influenced by Wagnerian operas in Dresden and his apprenticeship under Hugo Bähr—considered the father of German lighting—Appia proposed a choreography of light and space [Palmer 2021]. In his writings, he rejected pictorial backdrops in favor of experimenting with 'active light' (the directional beam created by shadows) opposed to 'passive light' (fixed and diffused). Appia envisioned projections modulated like music, integrated with scenographic elements into an immersive experience, and proposed replacing static drawing with 'rhythmic spaces' where light draws the atmosphere in real time, conceptually anticipating modern projection. His designs for Wagner's operas replace descriptive detail with the interaction between geometric masses and chiaroscuro [Appia 1899; Palmer 2015] (fig. 7). Against the 'dead canvas' (*tela morta*) of painted backdrops, Appia calls for architectural planes, stairs, and masses [Nicoll 1971] upon which light—whether diffused or concentrated—shapes the action in unity with the actor's body and the music. However, Appia's legacy



Fig. 4. Sebastiano Serlio. A comic scene from *The First Book of Architecture*, 1545. p. 157.

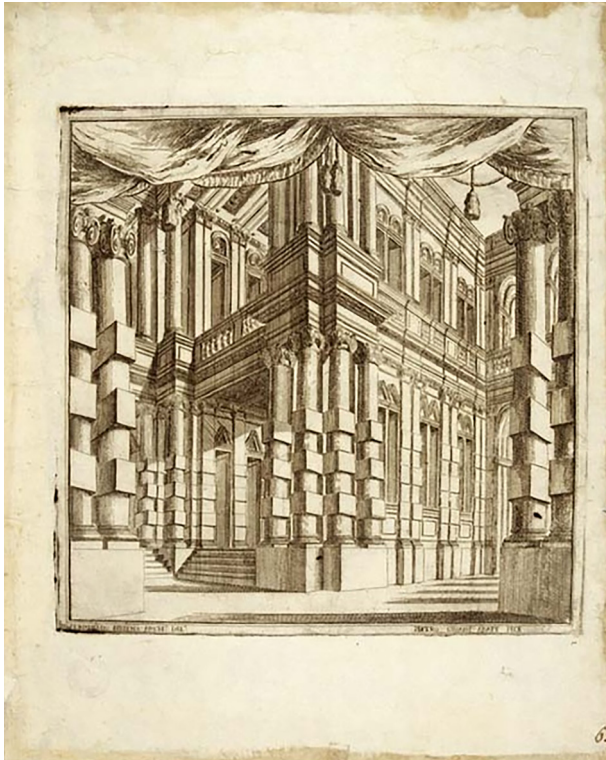


Fig. 5. Ferdinando Galli, known as Bibiena. Stage design for a play, 1718.

does not entirely abolish the painted backdrop [Crabtree, Beudert 2012], but rather relativizes its function, paving the way for luminous and projective backdrops where the image is abstract, variable, and temporal rather than figurative and permanent. Subsequently, Edward Gordon Craig, in his essay *The Art of the Theatre* [Craig 1905], proposed a use of design that leans toward abstraction rather than copying reality, introducing screens –monochromatic or faintly textured mobile surfaces that receive light–, transforming the backdrop into a sculptural presence. A fierce opponent of painted scenery, Craig characterized his stagings with the forceful inclusion of three-dimensional elements and massive symbolic presences composed of elementary solid shapes, within which the movement of the actors was plastically harmonized [Perrelli 2024].

From performative backdrop to projected backdrop

With the advent of 21st-century technological innovations, drawn backdrops lost their centrality in favor of three-dimensional set designs and projected backdrops. Just as architectural scenography has its roots in the Renaissance, as previously seen, the history of projection techniques has far older origins. As early as 1638, Sabbatini, in *Pratica di fabricar scene e machine ne' teatri*, described magic lanterns as a primitive form of projection. Between the 18th and 19th centuries, alongside the painted backdrop, this form of projected backdrop established itself even further. The magic lantern spread as a projection device that –through painted glass plates, sliding mechanisms, and overlays– created animations and luminous transformations on the backdrops. Lighting effects obtained through projection were also present in the diorama introduced by Louis Daguerre; the enormous double-sided painted canvases on translucent supports were illuminated with colored lights that varied over time, anticipating the principle of the backdrop made 'alive' solely through light modulation [Perrelli 2024]. With European shadow theatre, and above all with phantasmagoria, projection became an even more immersive spectacle. Phantasmagoria, developed in the late 18th century, used modified versions of the magic lantern to project spectral and dynamic images onto scrims or stage cloths, creating illusions of movement and the transformation of figures within the scenic space. In the second half of the 19th century, the *Pepper's Ghost* illusion applied



Fig. 6. Philippe Chaperon. Backdrop for Charles Gounod's *Faust* at the Paris Opera, 1865.

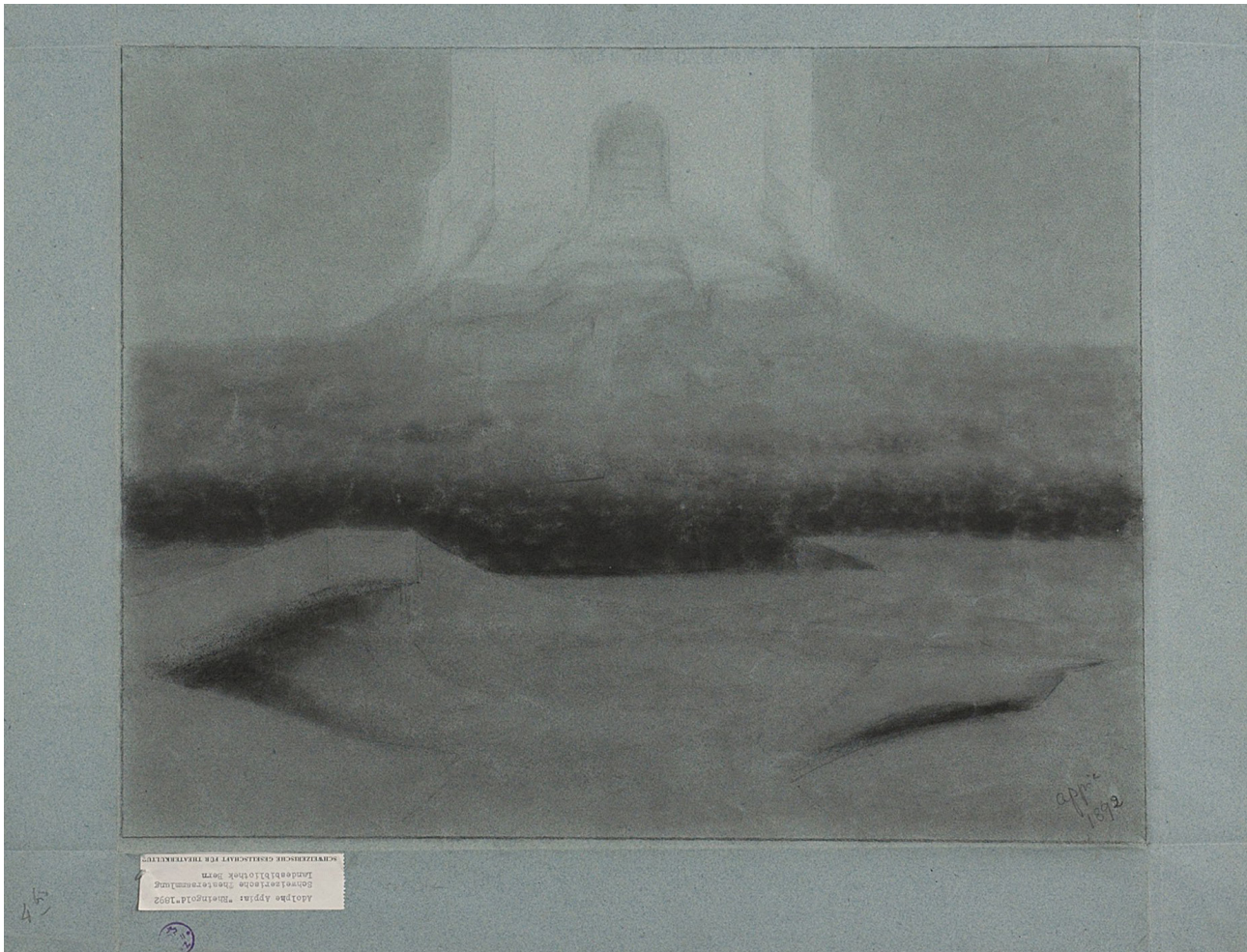


Fig. 7. Adolphe Appia. Stage design for Richard Wagner's *Das Rheingold*, 1892.

the principle of reflected projection to obtain ghostly apparitions that coexisted with real actors, hybridizing the pictorial backdrop and the reflected image on glass [Robinson 2014]. Other forms of optical projection were later found in the animated 'photo-paintings' (*peintures animées*) by Charles-Émile Reynaud, which at the end of the 19th century demonstrated the existence of a primitive form of animated projection; this transformed the scenic surface into a moving visual device through animated projections composed of hand-painted glass plates that showed narrative sequences accompanied by sound.

However, it is with Josef Svoboda that projection became a structural element of scenography. In the 1958 production of *Laterna Magika*, projected backdrops on transparent screens integrated the actors' live performance with film footage, creating multidimensional layers [Titomanlio 2019]. Svoboda introduced the concept of the 'psychoplastic stage', where the design is no longer imprinted on canvas but floats in space through mirrors and reflective surfaces. Svoboda's projected image does not negate drawing; rather, it renders it fluid, allowing the scenography to follow the tempo of the music [Perrelli 2024]. With the adoption of digital technologies and video projectors, the scenographic backdrop has acquired new and unprecedented expressive dimensions [Dixon 2015]. Digital projections now make it possible to transform flat and three-dimensional surfaces into dynamic generative visual environments, characterized by animated images, moving textures, and evolving scenarios. This approach offers the set designer new narrative possibilities, helping define atmospheres, temporalities, and scenic spaces in a more fluid manner compared to static backdrops. Projection transforms the backdrop into a 'mental landscape', where the design can break apart, distort, or fade away in synchronicity with the musical aria [Fuchs 2004].

In opera as well, the use of digital media in scenography transforms drawing into a dynamic image, integrating projections, virtual sets, and interactive surfaces that become an integral part of the performance [Vincent 2021]. Projection surfaces do not completely replace the pictorial backdrop, but integrate and transform its function, turning the theatre into a hybrid visual platform where image, light, and movement dialogue with the performative action. In these contexts, digital projection does not cancel out the presence of pictorial drawing but enriches it visually, conferring movement, depth, and real-time transformation to the stage space. Numerous experiments have led to

the spread and establishment of the hybridization of static images, dynamic projections, and acting even within the context of opera. One need only think of Robert Wilson's 1993 *Madama Butterfly*, which used minimalist projections onto white backdrops (fig. 8); Bill Viola's 2005 *Tristan und Isolde*, which superimposed slow-motion video onto Wagner's music (fig. 9); or Hugo de Ana's 2000 production in Italy, which integrated 3D projections onto painted backdrops for *Aida* at the Arena di Verona. In the 2012 *The Magic Flute* directed by Barrie Kosky, the singers interact instead with animated drawings that echo the aesthetics of silent cinema (fig. 10). In this case, the drawn backdrop has not disappeared but has been made dynamic through digital animation.

Finally, video mapping technology –applied not only to flat surfaces but also to three-dimensional objects and scenic architectures– represents a further frontier for projected backdrops [Monteverdi 2011]. Today, this technique allows for the creation of images that adapt to the physical shapes of the scenic environment, increasing the effect of immersion and integrating animated images into three-dimensional space. The advent of digital projections has not completely supplanted traditional backdrops but has introduced a new synergistic relationship between pictorial surfaces and projection surfaces. Rear-projected backdrops or cycloramas –continuous backdrops often used as a neutral surface for projection– serve as a visual support that combines the tradition of scenic painting with digital imagery.

From projected backdrops to algorithmic backdrops

In recent decades, opera scenography has progressively integrated advanced digital technologies, giving rise to algorithmic backdrops that transcend traditional scenic painting to become dynamic and generative visual environments, capable of evolving in real time in relation to the music, direction, and scenic action. In contemporary opera, projected design can synchronize with the score through sound reactivity algorithms. The use of creative coding software allows the audio frequencies and timbre of the singers to be transformed into inputs for reactive digital stage designs. Rather than merely decorating, these technologies establish an 'aesthetic-mathematical' dialogue between the machine and the opera, pushing Baroque illusionism toward a new frontier: that of a computational spatiality which,

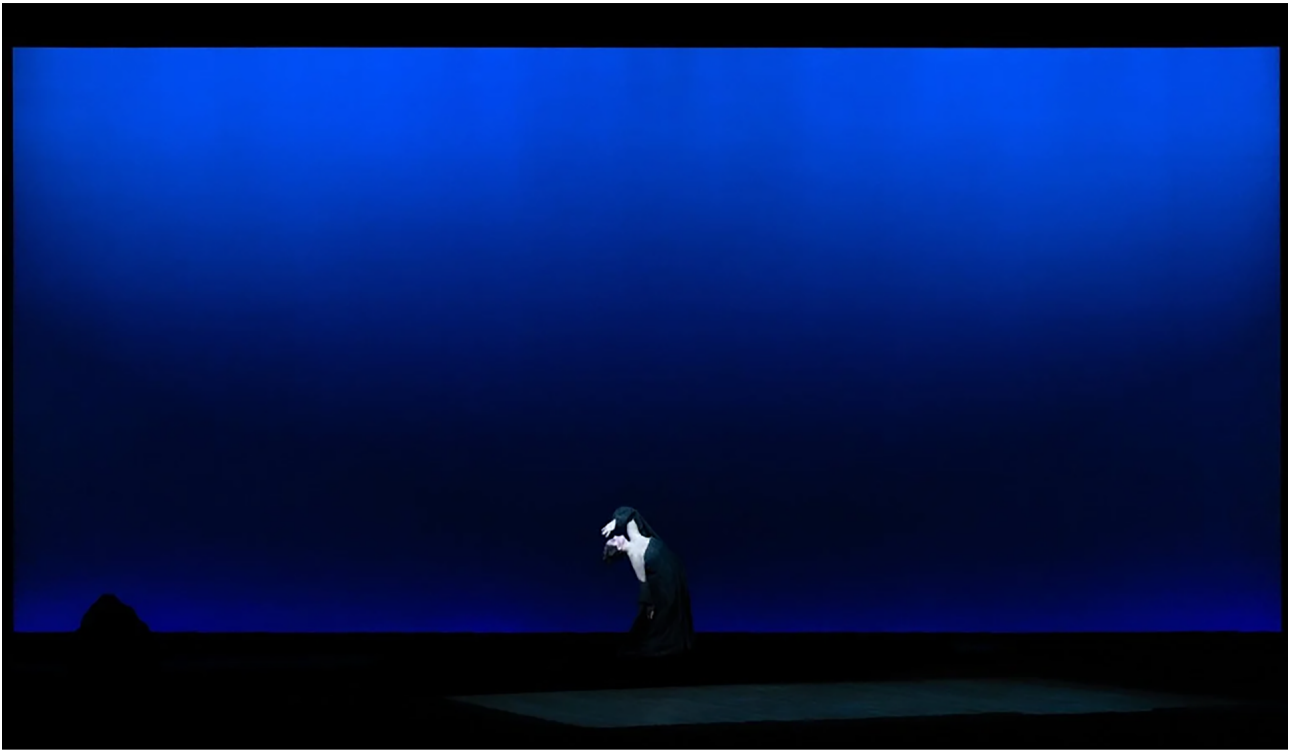


Fig. 8. Robert Wilson. Set design for Giacomo Puccini's *La Madama Butterfly*, at the National Opera in Paris, 1993.

drawing on the principles of generative art, regenerates autonomously at every performance, making each show a unique and unrepeatable visual event. One of the earliest applications of real-time generated, sound-reactive graphics in the operatic field is linked to the production of *Bluebeard's Castle* at the Hungarian State Opera (fig. 11), where Andrew Quinn and Nima Gazestani created generative visuals that reacted to live music via TouchDesigner. In this case, the images on the backdrop are not static but evolve in relation to sound lines and musical events, creating a dynamic correspondence between audio and the visual scene. The integration of algorithmic and generative systems in contemporary scenography marks the transition from a static backdrop to a dynamic visual ecosystem, capable of reacting in real time to

acoustic and performative stimuli. In this context, the backdrop is no longer a pre-established representation, but the result of a computational process.

Algorithmic scenographic backdrops are revolutionizing contemporary opera productions, allowing for the dynamic generation of immersive environments through the use of artificial intelligence and generative algorithms, which integrate traditional elements with digital innovations to amplify the narrative and visual impact. A masterful example is represented by the production of *The Magic Flute* curated by Michael Hansmeyer in 2018 for the Théâtre Royal La Monnaie / De Munt di Bruxelles (fig. 12), where the architectural structure of the stage was generated through complex geometric subdivision algorithms, creating organic shapes impossible to



Fig. 9. Bill Viola. Screenings of Richard Wagner's *Tristan und Isolde* at the Opéra National de Paris, 2005.

design with traditional methods. These examples highlight how the use of digital and algorithmic systems—including real-time video projections, projection mapping, and generative visualizations—is redefining the relationship between scenic space and performance, making it possible to represent abstract concepts, supernatural effects, or impossible landscapes with a degree of fluidity and interaction previously unthinkable in traditional opera productions.

Conclusions

The path traced in this contribution has highlighted how the scenographic backdrop constitutes one of the central elements through which opera constructs its own visual imagination and dramaturgical efficacy. From the first painted surfaces of ancient theatre to contemporary algorithmic environments, operatic design has progressively transformed from a tool of



Fig. 10. Barrie Kosky. Animated backdrops for Wolfgang Amadeus Mozart's *The Magic Flute*, 2012.



Fig. 11. Set designs for Béla Bartók's *Bluebeard's Castle* at the Hungarian State Opera, 2011.

Fig. 12. Michael Hansmeyer. Scenography for *The Magic Flute* for the Théâtre Royal de La Monnaie in Brussels, 2018.

spatial representation into a complex semantic device, capable of engaging in a dialogue with music, words, gestures, and light. The historical evolution of the backdrop shows a conceptual continuity that spans languages, techniques, and technologies: the transition from the decorative backdrop to the perspective, then atmospheric, performative, and finally projective and algorithmic backdrop does not mark a succession of ruptures, but rather a stratification of possibilities. In each phase, scenographic design redefines its role while maintaining a fundamental constant: the ability to evoke worlds, to orient the spectator's perception, and to make visible emotional, symbolic, and narrative dimensions that music and text alone could not fully express. In light of these considerations, the need to grant scenographic design –and particularly backdrops, which are often ephemeral and scattered– an autonomous cultural and historiographical status emerges forcefully. Their documentation, preservation, and archiving do not merely respond to a need to protect theatrical heritage but represent an essential tool for understanding the evolution of visual thought applied to the stage and the way in which opera has contributed, over time, to shaping and transforming the collective imagination. Ultimately, opera continues to be a privileged place of experimentation for design, where tradition and innovation meet, making the operatic stage a space that is always open to the reinvention of the visible.

The introduction of digital technologies and generative algorithms has not nullified the role of drawing; rather, it has expanded its field of action, transforming it into a dynamic and temporal system that is sensitive to musical rhythm and performative variations. The backdrop, from a stable surface, thus becomes a mental landscape and a reactive environment, capable of renewing itself at every performance. The transition from the perspective backdrop to the atmospheric, and finally to the algorithmic one, reveals a precise evolutionary parable: the progressive dematerialization of the graphic mark. If during the Renaissance drawing 'constructed' the world through the geometric rigor of perspective, today computational code 'generates' fluid environments that react in real time to the vibration of singing and music. This evolution has not canceled out the nature of drawing, but has extended its boundaries, transforming it from a static image into a performative event.

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