# Space, Light and Sound: The Rise of the All-Embracing Experience in Roman Baroque Architecture

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Ladies and gentlemen, dear colleagues,

neither the word nor the notion of a ‘Gesamtkunstwerk’ (in the Wagnerian sense) did exist in 17th century Italy. Reflections on aesthetic experiences are rare, only sometimes we get a glimpse of artistic reasoning in the sources. Nevertheless a powerful tendency towards creating all-embracing aesthetic sensations can be observed in Roman Baroque architecture.

The main experimental field for this kind of artistic expression was the church interior. In baroque Rome, religious architecture was extended forcefully following the concept of the ‘teatro sacro’: We all know the spectacular creations by Giovanni Lorenzo Bernini, the Four Rivers fountain, the Cornaro Chapel or Piazza San Pietro.

A sense of unity and totality was achieved by the visual arts joining forces under the primacy of architecture. Space was formed by means of plasticity and colour, while light was used to enhance the spiritual drama created by sculpture and painting. Carefully directed lighting produced visual effects of spiritual transcendence.

\* One element that has rarely been taken into consideration in this context is music. Although we have practically no contemporary accounts, we can imagine that the appreciation of a building was thoroughly deepened by the performance of sacred music, for example during a ceremony on a special occasion like the consecration of the building, or on the feast day of a patron saint.

Sixteenth-century Rome can be considered the foremost capital of sacred music. The classical polyphonic a-cappella technique, performed by small, but powerful groups of professional singers developed here and reached its climax in the work of Giovanni Pierluigi da Palestrina, whose compositions set the paradigm for catholic church music up to the 19th century. What Palladio is for Early Modern architecture, Palestrina is for music.

Therefore let me start with a brief overview of how religious music was incorporated into Roman architecture from the Renaissance period onward. It all starts, of course, with the Sistine chapel erected in the late Quattrocento. As you may know, this name refers not only to the chapel located inside the Vatican Palace and used for conclaves and private Papal masses, but also to a college of 12 singers, founded at the same time by pope Sixtus IV. As a 16th century engraving shows, the balcony for the singers is located asymmetrically in the side wall inside the sanctuary behind the marble screen. Balconies of this kind stayed common in churches - in Rome, too.

\* The singers stood on both sides of a large wooden music rest in the middle of the balcony.

\* The same pope created a similar arrangement for his burial chapel attached to the nave of St. Peters, where the canons regularly met for office and were seated around the pope's tomb. The music balcony was placed over the entrance door to the chapel.

About 20 years later, Sixtus’ nephew, Pope Julius II, outplayed his uncle. He started the reconstruction of the ancient basilica on such a large scale that the main presbytery would house the entire cathedral chapter, surrounding a magnificent tomb designed by Michelangelo. Julius II likewise founded a singer's band, the Cappella Giulia, which was to be placed in the giant colonnaded window niches of Bramante’s new choir.

\* Julius II did not finish Saint Peter's, and the unfinished tomb was transferred to his former titular church, San Pietro in Vincoli. Michelangelo installed the remaining sculptures into a gigantic façade, constructed around the key figure of Moses. Behind and above the sculptural screen, a cantoria was installed, where music could be performed during the memorial services. Sound and light diffused into the church space through small windows and a large semicircular opening between the screen and the vault.

\* The next step in the integration of music into church space was taken by the foremost protagonist of the Tridentine reform, Saint Charles Borromeo, the famous reformer of catholic church music of the 16th century. He had the presbyteries of his titular church S. Prassede and of S. Maria Maggiore redesigned with symmetrical balconies on both sides of the altar so that antiphonies and double-choir works could be performed, filling the space with sound from opposed directions. During this period, Palestrina was active at Santa Maria Maggiore, too.

\* Small rooms for performing vocal music, called "coretti", were regulary incorporated into church spaces by the Jesuits, starting with the mother church of the order, Il Gesù in Rome. In the final state, a total of 10 balconies could be used for singing during masses, but of course also for memorial services of the church founder, cardinal Alessandro Farnese, whose tomb lies under the dome.

\* Form this point on, regularly layed-out coretti theat were integrated into the architectural ensemble became a standard feature in Roman church building all through the 16th and 17th centuries. In this late example (S. Maria della Luce) you will note particularly well how light and sound complement each other in filling the space with atmosphere.

\* A second genre of music originated in Rome in the 16th century in the circle of another popular religious figure, San Filippo Neri. You may know Händel's Messiah and Bach’s Christmas oratory, but perhaps you weren't aware that this genre of sacred music takes its name from the place were it was first performed: The Roman oratory. An oratory was a simple rectangular space which hosted religious events with devotional readings, sermons and music, for audiences ranging from laymen to theologians to cardinals. Services of this kind were often sponsored not by the clergy, but by the "borghesia".

\* The Oratorians of San Filippo Neri for their part got an audience hall only in the second quarter of the 17th century, when the musical genre was already firmly established. Their architect Francesco Borromini placed coretti on both narrow sides of the space: For the musicians two coretti on mezzanine level and for the singers a gallery above the altar (the organs were put in later).

\* The balconies on the entrance wall, which are still preserved in their original form, were reserved for distinguished listeners. In a stunning way Borromini paralleled the openings for sound and light to fill the space. Notice the sensitive framing of the arch and the exquisite balustrades that seem to perform a kind of rhythmical dance while filtering the atmosphere transparently.

The same animated plasticity of the wall can be observed on the outside, where - as Borromini wrote - a softly curved facade invites the spectator with open arms to enter the building.

\* Borrominis masterpiece is the university chapel of Sant'Ivo alla Sapienza. It was built as the final component of the Renaissance university building. I won't bother you with the details or the complicated design process, but draw your attention immediately to the aspect of music.

\* The interior is a centralized space of unusual features. It is almost impossible to photograph, so I show you a contemporary engraving done after a perspective drawing by Borromini himself. The magnificent architectural decoration unfolds as a giant screen in front of the beholder. Notice the two music balconies on both sides of the altar, which are located in curved wall segments protuding into space.

\* The geometry of the church follows a strict three-part symmetry, therefore a third balcony of the same kind is located over the entrance door. Its back wall is opened up by a large window. Once again, light and sound enter the interior in perfect consonance, flooding the space with transient vibrations.

\* Only when looking up into the dome, the spectator is able to appreciate the spectacular, if complicated geometric beauty of the plan. It is based on an equilateral triangle, the points of which are cut off by circle segments. Semicircular apses are added to each of the three sides. Let me draw your attention again to how musical sound fills the space of the dome from three directions, while the triangle base is slowly transformed into a hexagonal, umbrella-shaped structure, permitting light to flow in from six directions. Cherubim over the windows and seraphim floating below the apex of the dome seem to form a choir of angels surrounding the space.

\* Fortunately we are informed about the ceremony of the opening mass which was held in 1661 in the presence of pope Alexander VII. The musical composition performed on that occasion is preserved. It is a mass for three a-cappella choirs with four voices each, commissioned from the well-known Roman composer Orazio Benevoli. We also have the list of the singers. All of them were male, and they were borrowed by the university from other institutions like the Cappella Sistina, the Gesù, the Oratory of San Filippo Neri, but also from noble persons like the Principessa di Rossano, the wife of count Camillo Pamphili. The vocal music was enriched by additional instruments: 2 lutes, 2 violins, 1 violone and three portable organs.

\* Benevoli's composition is based on the melody of a Gregorian hymn with the liturgical text "Ecce sacerdos magnus" - "He is the high priest" which here refers to the pope himself. Judging by the conservative imitative writing, the music follows mostly the traditional Palestrina style, but in terms of disposition and proportion of the three choirs it offers quite interesting musical experiments and creates various kinds of "surround sound". Maybe you can intuit the spatial effects which are impossible to reproduce from a single acoustic source. Let me just show you how in the beginning of the "Kyrie" the music builds up and rotates through the space. Of course we don't know which of the three choirs was located on which balcony.

\* My last example is the church which Bernini constructed for the Roman noviciate of the Jesuits. It is situated on the Qurinal Hill, accompanied by the college buildings and a famous garden, and was designed in a most extraordinary manner. Here young Jesuits were prepared for their later activity as missionaries in all parts of the world: Latin America, Africa, India, Indonesia and China - and even protestant countries like Sweden or England.

\* (pictures)

\* The interior is a transverse oval space topped by a large dome with ribs and classical hexagonal coffering. The walls are covered with precious red and white marble, while the surface of the dome is lavishly gilded.

\* (plan)

\* The transverse oval plan is quite extraordinary, but not entirely without precedents. The immediate forerunner is Bernini's own chapel for the Collegio di Propaganda Fide, which served a very similar task as an institution were young priests were educated for their service as missionaries all over the world. Maybe it is not too far-fetched to see in the oval form an allusion to the earth as a whole, whose globe is often represented on maps as a transverse oval. Notice the twelve winds blowing from all directions.

\* Bernini transformed the interior into a stupendous religious spectacle, a veritable "teatro sacro", by enriching it in an unprecedented way with sculpture and painting. The decoration culminates in the altar chapel, where Saint Andrew's crucifixion on the saltire, the diagonal cross, is depicted. In the moment of his death the Saint looks up into the sky. Heavenly light shines down and grants him eternal salvation. The painted flare is paralleled by natural light flowing in from a hidden lantern, rendering the apostle’s martyrdom as a vivid example of Christian devotion and obedience for young Jesuits.

\* Curiously, a second representation of Saint Andrew features prominently in the dome. A large stucco sculpture of the saint hovers on top of the pediment over the altar chapel.

\* We see the figure of an old, half-naked man spreading his arms while looking up into the dome, his legs resting on (or rather embedded in) a cloudy substance. Commonly this representation is seen by art historians as the ascension of Saint Andrew to heaven. I doubt this interpretation, for two reasons. Firstly, in catholic theology there is no such thing as a bodily ascension of the apostle (like for Christ, Mary and the prophet Eliah). Andrew was crucified and buried, and his relics are still extant, the most prominent part being his head which is kept to this day in one of the main pillars of St. Peter's basilica.

Secondly, it is hardly imaginable that the scene on the high altar in the presbytery should not be the most important representation in the church. It would seem like a reversing of the hierarchy as well as the chronology if the dominating iconographic feature of the church would be shown in the nave, which is where the ordinary public attends the service.

I would argue instead that Bernini had in mind different subject matter, much more appropriate for the location, which makes use of the space in an unprecedented way.

\* Let me first draw your attention to the presence of the water element in the church. The main apse covered with blue mosaic, which is quite surprising in a church

\* but much more appropriate for a fountain, a bath or a swimming pool. I show you an antique example from Pompei.

\* Moreover, the mosaic has a colour gradient which changes from dark blue at the bottom to light blue at the top, which is the contrary of what you experience in nature when you look at the sky, which has an almost white tint at the horizon and gets deeper blue towards the vertex. By this inversion of the colours Bernini suggests, I think, in a subtle way that the spectator should consider himself in some way to be under the surface of water, which grows all the darker the deeper you are submerged.

\* There are other allusions of water in the church: Fish and sea shells decorate the foot of the dome, and personifications of rivers or oceans are placed above the window coronations.

\* So if we ask ourselves: What has St. Andrew to do with water? the answer is obvious: Like his brother Peter, he was a fisherman when he was called up by the Lord Jesus to serve as an apostle. "And he saith unto them, Follow me, and I will make you fishers of men". What could be more appropriate for young Jesuit missionaries than to follow the example of Andrew and become fishermen of human souls?

\* In order to fully understand Bernini's sacred drama I would like to draw your attention to the tool with which Andrew exercised his profession: The net. Let me quote the relevant Wikipedia article: "A cast net, also called a throw net, is a net used for fishing. It is a circular net with small weights distributed around its edge.

\* The net is cast or thrown by hand in such a manner that it spreads out on the water and sinks. This technique is called net casting or net throwing. Fish are caught as the net is hauled back in. This simple device is particularly effective for catching small bait or forage fish, and has been in use, with various modifications, for thousands of years."

\* I think this is what Bernini had in mind when designing the decoration of the dome. Like every fisherman does, Saint Andrew spreads his arms and casts the net over all the believers who enter the church and is going to pull them upwards to salvation.

\* Several details of the dome decoration give additional hints to this interpretation. Small knots connect the ribs to the apex ring, and a circular garland runs around the entire church like the rope that is used to pull the opened net together again.

\* Additionally the unusual depiction of the apostle as an aged, half naked man closely matches the classical iconography of a fisherman, which Bernini knew from antique statues.

\* By decorating the dome in such a way that it can be read as the opened net which Saint Andrew casts over humanity, Bernini not only created a most appropriate visual metaphor for the daily life of a missionary. He also created an unprecedented artistic ensemble where a sculpture acts upon an architecturally circumscribed space in its totality. None of his earlier sculptural works reaches out so far into the space.

\* For the conclusion let me draw your attention again to the coretti. There are four of them, two located to the left and right of the altar, and two on both sides of the entrance. The sources tell us that on the consecration day a mass was sung with four choirs in the presence of the pope, although we do not know who composed the music and how it sounded.

\* The coretti were positioned in such a way that the sound entered the church from all four "diagonals", so to speak. “Quadraphonic” music filled the oval space, forming the acoustic equivalent of the cross of Saint Andrew. The four diagonals correspond - like in Bernini's fountain of the 4 rivers - to the four corners of the world, the four continents bathed by the water of the all-embracing ocean. Seen in this way, Berninis Gesamtkunstwerk in fact represents a vision of totality: The entire world covered by the net of christian salvation.