LANGUAGE BEYOND METAPHOR: 
THE STRUCTURAL SYMBOLISM OF 
BORROMINI’S SANT’IVO ALLA SAPIENZA 

by 

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This paper focuses on Francesco Borromini's church Sant'Ivo alla Sapienza, and the relation between Solomonic symbolism and Hebrew linguistics to the structure of the church. Kabbalistic influence during the Renaissance is explored, as well as Borromini's intellectual involvement with the Jesuit scholar Athanasius Kircher. The Solomonic influence present within Borromini’s church is examined through the comparison of architectural features within Sant'Ivo, to the descriptions of the First Temple of Jerusalem described within the book of Kings. Within the book of Kings, there is a specific passage that becomes a clue into an arcane interpretation of Hebrew scripture known as Gematria. Through Gematria, the language of this scripture is thought of as something beyond a method of description; it becomes a cosmological framework by which to interpret the Solomonic meaning of Sant'Ivo alla Sapienza.
This thesis is the culmination of a curiosity that began in the scrutiny of architectural footprints in the sketchbooks of Borromini and his contemporaries. At first, this curiosity started as a comparison of Borromini’s drawings to optical theory and the form of optical devices and mirrors. However, it was on behalf of my friend Rabbi Eli Adler as well as an article by Pierre de la Ruffinière du Prey that my mind awoke to the Kabbalistic knowledge contained within Borromini’s Sant'Ivo. Much of the Rabbinical wisdom within this paper is due to his incredible depth and breadth of knowledge, and to many discussions we had over coffee about the nature of Kabbalah and the mystical and eternal nature of the Hebrew language. I would like to acknowledge my thesis advisor Dr. Julie-Anne Plax, whose constant encouragement and sense of humor eased my stress, guided me where I was lost, and brought this project to full fruition. I must thank John Hendrix at Rhode Island School of Design, for the incredible knowledge in his books were a significant part of the research for this paper. Also, S. A. Farmer, for his remarkable work on Giovanni Pico della Mirandola is also an important part of this thesis. I must also acknowledge Joseph Connors at Harvard, for his article pertaining to his first three minutes at Sant'Ivo was a beautiful and invaluable addition to my paper. I only hope that some day I too can experience my first three minutes in Borromini's astounding edifice. To my Godfather Raul Delgado, who loves me and always listens to me patiently, and who loves a good Manhattan, up with a cherry. To Elizabeth Anne Riedel, who is constantly shining the most elegant of God's light. I would also like to acknowledge Father James Junipero, for being an awesome priest, for his passion of Liturgy, and for inspiring me with his knowledge of Catholic theology. And to Father Bart Hutcherson, for his gigantic teddy bear heart. I would like to acknowledge my sisters around the corner, Monica, Marta and Tina Grecchi, thanks for adopting
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# Language Beyond Metaphor: The Structural Symbolism of Borromini's Sant'Ivo alla Sapienza

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Introduction

Francesco Borromini's church Sant'Ivo alla Sapienza, built in Rome in 1640, reaches far beyond the classical vocabulary and formalist traditions of Renaissance and Baroque architecture. The church's centrally-planned design, with its exquisite entablatures and Corinthian-crowned pilasters, echoes the ornate elegance of the seventeenth-century. Sant'Ivo's most prominent feature is its dome. With its six lobes that extend like the petals of a flower, it rises forth from a drum that's design is that of a regular hexagram. The application of this geometry in the design of the drum appears both aesthetically and symbolically dissonant within the scope of Roman Catholic architectural tradition. However, further scrutiny of the religious and philosophical undercurrents of Borromini's time reveals a logical coherence to this plan. The academic relationship between Borromini and the Jesuit scholar Athanasius Kircher provides evidence for the influence of arcane religious syncretism, and specifically the study of Kabbalah as a theological foundation of the church's form. The correlation between the linguistic structure of scripture and the church's architectural vocabulary is at the root of discovering the meaning of Sant'Ivo's seemingly anomalous design.

The architectonic relationship between language and structure is an aphoristic concept; one in which grammar and vocabulary act as descriptive elements through which an edifice is interpreted. In understanding the nature of the ecclesium, the language of architecture becomes philogenetically rooted in religious scripture.

The theological foundations of Sant'Ivo alla Sapienza point to a transpositional element that exists between the linguistic structure of scripture and the construction of architectural spaces. One in which sacred language becomes both the ideological and the architectonic root
from which the church is manifest. The epistemology of Sant'Ivo is forged from Biblical knowledge in a manner that is beyond surface description or historicity. It is one that pertains to a structural and symbolic interlocking of architectural form and cosmology that is archetypally expressed by its central design.

The design and fabrication of Sant'Ivo began during the late Counter-Reformation; a time when Renaissance scholars were exploring religious universalism through such ideas as Neo-Platonism, Hermetecism and Kabbalah. The etymology of Catholicism has roots in the Greek adjective καθολικός (katholikos), which is also a contraction of katà hólou, which means "according to the whole". The early church in particular was called Catholic as a way of denoting the original and apostolic form of Christianity that encompasses all sects and denominations. During the Counter-Reformation, ideas of universalism became increasingly important as a way of re-strengthening the church against the division of Protestantism, which broke away from the tradition of the sacraments and the intellectual understanding of God, and sought to know Christ solely through faith alone. Theologians within the Catholic Church also felt that these religious ideas could syncretically act as a theological buttress against the Protestant Reformation. The study of Kabbalah in particular, also tied back to Orthodox notions which emphasize the fundamental importance of the Old Testament as the word of God rather than merely a book of historical significance.¹ This Orthodox principle is manifested within Sant'Ivo, as the church is connected to the Old Testament wisdom of King Solomon as a prefiguration and foundation of Christ. It becomes evident in our investigation of Sant'Ivo that underneath the surface exists a transposition of scriptural language and form; in which we discover that the ideological foundation of Christ exists as the very structural foundation of the church.

Borromini was a scholar of such arcane seventeenth-century philosophies such as Neo-Platonism and Kabbalah, and had a large library that by the end of his life contained almost a thousand works by authors such as Nicolas Cusanus, Marsilio Ficino, Thomas Aquinas, Plotinus and Plato. These complex theories on the origin of God and the structure of the universe became the theoreticus fundamentum of Borromini’s architectural praxis. Within the articulation of forms in Borromini’s Sant’Ivo, there is an architectonic complexity of structure and idea that exists simultaneously on multiple planes. According to Cusanus, "the art of logical thought is found in the process of clarifying and making visible the hierarchy of interwoven levels of reality."² And it is only through a complex examination of the hierarchical concepts of seventeenth-century thought that we can ascertain the ontological significance of his church.

However, it is important in researching Sant’Ivo that a bridge is built between the highly abstract intellections of Baroque academia and the physical structure of the church. The genius of the Baroque lies not solely in ideas, but also in the consilio manuque—the skilled craftsmanship, sweat and blood of the master mason. It is in the work of his chisel that the theory of philosophers is embodied and elegantly articulated, from the caulicole of the Corinthian capitals, to the crown and palm fronds that ornament the astylar above the clerestory windows in the cupola. Within Sant’Ivo, it is an aesthetic, ideological and symbolic reification of factura that manifests the idea in stone; it is by this work that the holiness of the consecrated church is made manifest.

Borromini himself was not only an architectural designer, but also a skilled craftsman as well, who gained experience in the mason's yard at less than ten years of age. He was then employed by Carlo Maderno in his late teens and early twenties sculpting the decorative putti

above the portico of Porta Santa in St. Peter's Basilica. Borromini was not merely a designer working in the abstract. Thus it is necessary to understand Sant'Ivo by looking not only at the philosophical concepts that ontogenetically present themselves during the Baroque period, but also at the architectural features of the church directly manifest them.

The interpenetration of philosophical ideas with the church as *aedificium* is found in the relationship between Borromini's knowledge of craft and design, and within the esoteric theories of the Jesuit scholar Athanasius Kircher. Borromini's method of architectonic expression embodies arcane mystical concepts. The hexagrammatic structural geometry of Sant'Ivo makes theological reference to the Seal of Solomon. The six-pointed star that is the Seal of Solomon originates from a legend about King Solomon, which was the design on a signet ring that he received from heaven. The base of the symbol is thought to be on the ground and the tip is thought to touch heaven. The symbol also represents the cosmic movement of the heavens, and the conjunction of the elements. The design of Borromini's church embodies historical roots in the Old Testament, the wisdom of King Solomon, as well as the physiognomy of the first Temple of Jerusalem. The use of the mysterious symbol of the Seal of Solomon as the central design of the church reveals a Kabbalistic ideology. The grammar and architectural phrasing of Sant'Ivo stems from the cosmological basis of language found in the study of *Gematria*, and the masonic employment of cubits as a system of measurement; in this sense, our inquiry into the "architectural language" of Sant'Ivo is much more than a metaphor; it becomes the very substance by which the church is constructed.
Borromini and the Jesuits

In the year 1634 Borromini received his first autonomous commission from the Spanish Trinitarians to design San Carlo alle Quattro Fontane. Perhaps by God's design, or by pure *accidens*, the German scholar Athanasius Kircher arrived in Rome that same year from Avignon to take a position as Chair of the mathematics department at Collegio Romano\(^3\), a Jesuit school founded in 1551 by St. Ignatius. The commission of San Carlo was granted by the same man who recommended Kircher for the position of math chair at Collegio Romano, Cardinal Francesco Barberini. His Uncle Maffeo Barberini, later patronized Borromini in the design and construction of Sant'Ivo during Papacy as Urban VIII.

Although Kircher's official post was as the head of the mathematics department at Collegio Romano, his polymathic interests encompassed everything from ancient Egyptian hieroglyphics to acoustics. As a child, Kircher also studied Hebrew with a Rabbi at the Jesuit school he attended in Fulda.\(^4\) As a scholar who claimed the command of twelve languages including the study of hieroglyphics, Kircher believed that all languages descended from Hebrew.\(^5\) The Collegio Romano taught Hebrew as well, and also Latin, Greek and Arabic. Kircher's academic study of biblical Hebrew also involved a deeper inquiry into the mysteries of Kabbalah.

Kircher's academic study among the Jesuits during the counter-reformation was specifically aimed at counteracting what was considered the heresy of Protestantism.\(^6\) This

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\(^6\) see Godwin, *Athanasius*, 18.
period, from 1560 to 1648, brought about a revivification of Catholic doctrine and ideas through the synthetic knowledge of Neo-Platonism, Hermetecism and Kabbalah. Borromini was affiliated with the Jesuits throughout his life and worked solely for them from 1646 until the end of his life in 1667 on the Collegio di Propaganda Fide. The Jesuit order in particular was extremely interested in gaining an all-encompassing, universal understanding of intellectual, theological and cosmological concepts. According to José Antonio Maravall, "the Jesuits became a pure expression of baroque mentality, which notwithstanding, was present with no less force in other spheres."

The Jesuit order is known for their keen interest in all intellectual research.

Examining Francesco Borromini's academic involvement with Athanasius Kircher is invaluable in discovering the theoretical foundation of Sant'Ivo. Kircher's interest in architectural principles and more specifically, his esoteric interests in Neo-Platonic theory and the arcane study of Kabbalah are connected to the ideological and architectural vocabulary of Borromini's Sant'Ivo.

One way in which Kircher's interest in Kabbalah extended to the design of architectural spaces is within his treatise on sound production. His "praxis per novam Phonologiae describitur", in Phonurgia Nova, focuses on the "prodigious causes of new and multiple experiments that explain in detail; acoustic instruments, machines concerning prototypes that modify nature" etc. It is evident in comparing Borromini's Opus Architectonicum, (a book

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7 These concepts also allowed for a more universal understanding that is expressed throughout the Renaissance and into the Baroque, while at the same time, allowed an adherence to Orthodoxy by remaining tied to ancient traditions that the Protestants wished to separate from. For more information about adherence to Orthodoxy during the reformation, see Kraeleng, The Old Testament Since The Reformation, 43-58.

8 José Antonio Maravall, Culture of The Baroque; Analysis of a Historical Structure (Minneapolis, Minnesota: University of Minnesota Press, 1975), 77.

9 Kircher, Phonurgia Nova (New York: Broude Brothers, 1673), "prodigiosorum Causae, novae & multiplici experimentorum exhibitione enucleantur; Instrumentorum Acuficorum, Machinarium, ad Natura proprioton adaptandarum.", (preface, first page [unnumbered]).
that includes engravings of all of his major architectural projects) that his study of acoustics within oval-shaped rooms is taken directly from chapter five of *Phonurgia Nova*, in which Kircher describes in detail the behavior of sound within ellipses and parabolic spaces.\(^{11}\)

The influence of Kircher's knowledge on Borromini's architectural concepts and designs is immanently present. Borromini and Kircher were also employed by Pope Innocent X to work on the Fountain of the Four Rivers.\(^{12}\) (fig. 1) Kircher also worked on translating the hieroglyphics of the Egyptian obelisk that was to be part of the fountain. Although Bernini was eventually chosen to complete the project, it is evident in the fountain's Hermetic iconography that Borromini and Kircher worked together on the design. The design of the Fountain of Four Rivers represented a coincidence of opposites; "of the opposing forces of good and evil, or the coincidence of Nicholas Cusanus, based in Platonic philosophy."\(^{13}\) Borromini applies a similar coincidence of opposites to the central structure of Sant'Ivo; however, it is through this coincidence that Borromini creates an ecclesial *contraria contrariis curantur*, in which these principles of opposites connect to reveal the mysterious and archetypal significance of the church's meaning. The philosophical concepts involving the design of the fountain exemplify Borromini's academic involvement with Kircher in applying ideological concepts, and the interchange of ideas with architectural expertise.

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\(^{10}\) For more information about the connection between Kabbalistic influences in the design of architectonic spaces, see Borromini, *Opus architectonicum equitis Francisci Borromini ex ejusdem exemplaribus petitu ... partium lineamentis*. (London: Gregg Press, 1963.)

\(^{11}\) For further research into Borromini's study of acoustics within oval rooms, and especially in reference to San Carlo alle Quattro Fontane, refer to Leo Steinberg's dissertation, *Borromini's San Carlo alle Quattro Fontane, A Study in Multiple Form and Architectural Symbolism* (New York: Garland Publishing, 1977), 282.

\(^{12}\) fig. 1, An image of Kircher's engraving showing the hieroglyphics of the obelisk, and also a photograph of The Fountain of Four Rivers in Piazza Navona, Rome.

\(^{13}\) Hendrix, *Architectural Forms*, 53-54.
Kircher and Kabbalah

Athanasius Kircher's academic involvement in the study of Kabbalah is important in understanding how these arcane principles apply to the design of Borromini's Sant'Ivo. In the same way that Kircher was involved with the translation of hieroglyphics as a part of the project of the Fountain of the Four Rivers, we can also see his involvement in the esoteric aspects of Borromini's work as an architect.

Kircher's study of acoustics in chapter one of section two of *Phonurgia Nova*, entitled *Phonurgia Latrica*, studies acoustics as it is connected to Kabbalah and the Ten Sephirot. The Ten Sephirots represent ten emanations through which God *creates* (not created) the universe into being. The Sephirots are represented as a Kabbalistic tree.14 (fig. 2) Kircher discusses how divine energy flows through the "Sephirothic channels", and how through Platonism, the explication of the Ten Sephirots weaves everything together that they constitute; astrology, alchemy and everything that flows to God above. The Ten Sephirots becomes a model through which these different elements exist, and "by which everything is calculated, when in astrologic harmony and dissonance, or the 'music of the universe'".15

His voluminous treatise on light and shadow, *Ars Magna Lucis et Umbrae*, is also symbolically divided into ten books to correspond with the Ten Sephirots of the Kabbalah. As the Ten Sephirots represent the ten emanations by which God brought the universe into being,

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14 fig. 2, An image of the Ten Sephirots. The Kabbalistic Tree of Life. Keter, Chokmah, Binah, Chesed, Geburah, Tiphareth, Netzach, Hod, Yesod and Malkuth, are the names of the Ten Sephirots, with Ein Sof above the Crown of Keter. These concepts are discussed later as well in the sections *Gematria* and *Structure, Geometry and Cubits*.

15 Kircher, *Phonurgia*: "*Varias hujus prodigiosae curae rationes & cauas varii affignant. Cabalifiae more fuo omnia canalibus sepheiotics, quibus divina vis in fingula mundi influent, attribunt. Modum vero quo hoc fieri afferunt, diximus in Oedipo noster Ægyptiaci tractatu de explicatione arboris 10. Sephiroth, Platonici more fuo horum mirabilium effectum cauas in mundana animae harmonicas omnia fibi copulantis (quam & Colchodeam vocant) nexibus confituant; Astrologi & Alchimifiae omnia influxibus superiorum corporum attribuunt; quorum omnium fationes, cùm in Afsrotologia Confoni & Difdoni, frve in Mufica Mundana tractaverimus, eò Lectorem remittimus.*", 194.
Kircher applies this as a model for how God brings light and harmony into the world. Applied to music in a Neo-Platonic framework, these ten strings of universal harmony are also known as the *Harmonia Decachordia*.

In his studies of alchemy, Kircher believed in an analogical model that the greater universe sent light to the physical world, through archetypal, angelic, sidereal and elementary levels. As the alchemist believed that everything is created from the source of this 'light', by tapping into this source, one can transmute the elements by way of the alchemical process. The upward facing triangle alchemically represents fire, while the downward facing triangle is a symbol of water. (fig. 3) The conjunction of these two elements is known as the most important symbol of universal cosmology. This alchemical model is also a representation of the hexagrammatic geometry of Sant'Ivo, and is recurrent by variance of definition throughout the seventeenth-century philosophy.

The concepts in Kircher's treatises on acoustics to alchemy begin to shed light on the connection of cosmological and theological principles, such as Kabbalah, to physical applications in the design of architectonic structures. The transposition between these arcane concepts and how they apply to Borromini's Sant'Ivo is fundamental in understanding the nature of his church; it is the *cosmographum* that connects the physical with the spiritual, as it is the quintessential idea and crux of alchemy. The transmutation of elements in the alchemist's crucible applies to the interlocking of *spiritus* and *materia*. It is this idea that is crucial in understanding Sant'Ivo, and it is this that is manifested in the church's central design.

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16 refer to Anna Maria Partini, *Athanasius Kircher è l'Alchimia* (Rome, Italy: Edizioni Mediterranee, 2004), 37.
17 see fig. 3, for an illustration of how the upward facing triangle (fire) and the downward facing triangle (water) represent an alchemical model that coincide to create the same geometry as the central design of Sant'Ivo.
18 ibid., 63.
The central plan of Sant'Ivo is designed around the regular hexagram composed of two interlocking triangles. The original geometric plan is also inscribed by six circles; in the physical structure three sit with their center at the outward points of the downward facing triangle, while three interpenetrate the middle of the same triangle where it is interlocked with the upward facing triangle. The effect of this when it is applied to the drum of the dome is that the form of the regular hexagram is interpolated with outward swinging arcs on the corners and apses at the middle.19 (fig. 4) Joseph Connors describes the design of Sant'Ivo as "[t]riangle-plus-apses-minus-angles"20; yet he doesn’t read the space as two interlocking triangles. This is clearly evident however in Borromini's studies for Sant'Ivo. The hexagram, of two intersecting triangles that is so apparent in the transparency of the geometric drawings and plans is often overlooked as it is obscured by the solid forms of the drum of the dome. There is also an inscription from the book of Proverbs written to the left of a groundplan study showing the interlocking triangles as Sant'Ivo's central design. This inscription denotes an important connection to the Old Testament and to King Solomon, who is the author of Proverbs. It is impossible to deny that Sant'Ivo is based around the regular hexagram, as it is thus depicted not only in his drawings of the central design, but in the star hexagram, as a decorative motif occurs in many of his architectural drawings.21 (fig. 5) This motif becomes much more than decorative, it becomes the adornment of a sacred symbol; that of the Seal of Solomon.

19 fig. 4. An image looking upward through the drum to the dome of Sant'Ivo. Also, a comparison of the view of the dome to the geometric plan.
21 fig. 5. Paolo Portoghesi, The Rome of Borromini. Architecture as Language. (Translated by Barbara Luigia La Penta. London: Thames and Hudson, 1968), fig. LXXXIX.
The Seal of Solomon at Sant'Ivo clearly represents the sapiential significance of the Università di Roma, La Sapienza, on whose campus the church sits. On the left-hand corner of the original groundplan drawing of Sant'Ivo22 (fig. 6), Borromini inscribed passages which exemplified the idea of wisdom; "Sapientia aedificavit sibi domum", "Excidit columnas septem" and "Proposuit mensam suam".23 These passages from the book of Proverbs link the construction of Sant'Ivo to the consecration of a sacred house of wisdom. The book of Proverbs, as well as the book of Ecclesiastes and the Song of Solomon were written by King Solomon, and as such Borromini designed the central dome of Sant'Ivo around his Seal. The application of Solomon's Seal at Sant'Ivo alla Sapienza clearly refers to Solomon as the icon of Old Testament wisdom.

Within the first Temple of Jerusalem, King Solomon, in the book of Kings, is said to have "carved cherubim and palm trees with open flowers".24 Borromini's design of Sant'Ivo is also adorned with alto-rilievo sculptures of palm fronds, Easter lilies and cherubim in architrave pediments, apsidal niches and above the windows of the cupola.

The book of Kings also enumerates an intriguing passage about the "inner sanctuary" of the temple where the Ark of the Covenant was kept: "The entrance to the inner sanctuary he made doors of olivewood; the lintel and the doorposts formed a pentagon."25 However the Bible notes that the translation of this passage from the original Hebrew is "obscure". In another older Hebrew translation of the Old Testament, the passage reads simply that "the lintel and side posts

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22 fig. 6. Connors, "The First Three Minutes", 42.
23 Proverbs 9:1-2, RSV. "Wisdom has built her house, she has set up her seven pillars. She has slaughtered her beasts, she has mixed her wine, she has also set her table." Also, for the same Biblical quote in context of Sant'Ivo, see Portoghesi, The Rome of Borromini, p. 156.
24 1 Kings 6:35, RSV.
25 ibid, 6:31.
were a fifth part of the wall."\textsuperscript{26} The influence of Kircher's scholarship also appears once again in his book \textit{Oedipus Aegyptiacus}, which contains a section on the Kabbalistic significance of "the six-pointed star, which he refers to by the name 'Sigillium Salomonis'". In this chapter, he mentions that "the five-pointed star is likewise a talisman called the 'Seal of Solomon'."\textsuperscript{27} The twentieth-century Jewish philosopher and historian, Gershom Scholem writes that "For a long time the five and the six-pointed stars were called by one name, the 'Seal of Solomon', and no distinction was made between them."\textsuperscript{28} It is perhaps for this reason that the biblical transliteration of "pentagon" in describing Solomon's Temple has remained \textit{in obscuritas}, while it might have actually represented something of a secret symbol that is not actually a pentagon but something between a pentacle and a hexagon, or the Seal of Solomon itself.

This arcane scriptural knowledge connects us once again to the central design of Sant'Ivo. The drum of the dome, with its hexagrammatic structure and its adornments of cherubim, Easter Lilies and palm fronds above the cupola windows tie directly to the book of Kings and Solomon's description of the inner sanctuary of the First Temple of Jerusalem. At Sant'Ivo, the palm fronds become a symbol of Christ's martyrdom, while the open flowers become a symbol of Easter and Christ's resurrection.\textsuperscript{29} (fig. 7) The addition of the crown in Borromini’s Sant'Ivo that circumnavigates the palm fronds might be an allusion to King Solomon, but perhaps more importantly, to Christ himself as King. What we experience is a coincidence of Old and New Testament; one is transposed on the other, or perhaps even interlocked by the hexagrammatic central dome. This idea of connecting and interlocking both Testaments also relates back to the

\begin{itemize}
  \item \textsuperscript{28} ibid, 224.
  \item \textsuperscript{29} fig. 7. Anthony Blunt, \textit{Borromini}, (London: Penguin Books Ltd., 1979), 120.
\end{itemize}
Orthodox idea brought forth during the Counter-Reformation of Solomon as the prefiguration of Christ.
Gematria

"By faith we understand that the world was created by the word of God, so that what is seen was made out of things which do not appear." -Hebrews, 11:3

As this pentagonal structure is the entrance to the inner sanctuary of the Temple of Jerusalem, the Holy of Holies, it holds a clue to the significance of Borromini's Sant'Ivo as a sacred temple of wisdom, rooted in the Old Testament theology of King Solomon. It is possible that the obscurity of the Biblical transliteration of the pentagonal shape spoken of in the book of Kings linguistically pertains to another meaning revealed through the syntax of the Hebrew language. As the inner sanctuary is intended as the place to set the Ark of the Covenant, so does Borromini's church become the embodiment of these ideas. The Ark represents the vessel in which God carries the truth that he bestows upon humankind. This truth is passed down through the building of the Ark in which Noah and his generations traveled, to Mount Sinai when the instructions for the Ark of the Covenant were given to Abraham, and to the building of the First Temple of Jerusalem. For Francesco Borromini, Sant'Ivo alla Sapienza represents the embodiment of this covenant.

In searching for the hidden design of this inner sanctuary, it becomes evident that there is something further to be revealed within the linguistic structure of the Bible. There is a deeper ontological layer that exists within the fabric of sacred languages that becomes a bridge between the word as a simple term of description, and the Word as an element of cosmological structure. "It is moreover impossible to conceive that a purpose or plan which involved the moulding and

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30 1 Kings, 6:19. "The inner sanctuary he prepared in the innermost part of the house, to set there the ark of the covenant of the LORD."
literary shaping of writings deemed sacred could in itself have been a light or casual one, or conceived with any but the most serious of motives."\(^3\)

A connection also exists between "the theology of the Sacred Books…and [a] symbolism of an architectural or geometrical nature", \(^2\) and it is this connection that is at the very crux of our investigation of Sant'Ivo. We have read in the life of Christ that He was a carpenter by trade as the son of Joseph, \(^3\) yet His earthly profession has yet another definition. Christ is spoken of in the book of Hebrews as the Creator of the world, which through His body the world is designed. As it is written in Colossians:

\[
\text{He is the image of the invisible God, the first-born of all creation; for in him all things were created, in heaven and on earth, visible and invisible…He is before all things, and in him all things hold together.} \ ^4
\]

This passage speaks of Christ as the formation and structure of all things; as both the source of creation as well as creation made manifest. Therefore mystical body of the church also exists as an object that is beyond \textit{matter}, and that contains within it infinite dimension. This pertains to our architectural inquiry into Sant'Ivo, as it is a definitive in the measurement of ecclesiastical space, for although there is measurement within this type of space, it is not static, and contains infinite space within spaces. \(^5\) This infinite multiplicity of space or, more appropriately substance that is within the body of God, is clearly exemplified by Jesus' parable of the loaves


\(^{33}\) For scripture pertaining to this aspect of the life of Christ, refer to the Gospels of, Matt. 13:55; Mark 6:3.

\(^{34}\) Col. 1:15-17.

\(^{35}\) There is also a mathematical formula for creating \textit{ecclesiastical space} known as \textit{sectio aurea}, or the Golden Ratio. This theory is also discussed in further detail within the section on \textit{cubits}. 


and fishes, in which he asks his disciples how to feed the multitude that followed him to the sea of Tiberias, and he is able to feed all of them with only five barley loaves and two fishes.  

In Catholic theology, Christ as a carpenter becomes the embodied structure and design of the universe, on the cross on which he not only died, but conquered and ascended. And it is by the dimensions of this cross that the church is measured. Thus, if one can design according to the innermost principles of Christ's body, the architect and mason can align the physical structure of the church with the mystical body of God. And as the world was "created by the word", so it is through language that we arrive at the underlying sacred structure of forms that is the body of God.

The linguistic concept that integrates these transpositional principles is called Gematria, which involves the understanding of Hebrew words or phrases according to their numerical attribution. Each letter of the Hebrew alphabet contains a certain numerical value, which is often represented by a chart called the Autiot, (fig. 8) which means "signs". The Autiot "outspreads their specific function as constituents of an alphabet." The Autiot also allows the function of Hebrew letters as numbers, as there are no separate numerical characters in the Hebrew language. Thus Hebrew mathematics is also done by calculating together various letters according to their ascribed value. The numerical attributions of Hebrew letters are used in esoteric exegetical practices of reading Hebrew scripture.

Hebrew, as the original language from the creation in Genesis through the Pentateuch and most of the Old Testament (excluding certain books written later in Aramaic) is considered of
fundamental importance in Judaism as well as Christianity. In Judaism, Hebrew is not only a language, but is also considered the fundamental structure of the universe. The letters of the Hebrew alphabet are thought to be the primordial elements by which God brought forth creation. Hebrew words are thus constructed of very specific combinations of letters, that are meant to represent the physical and metaphysical structure of the object or expression that they describe.\(^{40}\)

The Hebrew language thus represents both a structural as well as a causational principle. The structural principle, through the numerical values of the Autiot, is not only significant in its exegetical application of Hebrew scripture, but also contains a geometric facet. The numerical attributions of the Autiot ascribe each letter with an archetypal definition that is generative (causational) of forms of existence, and one aspect of these forms is the principle of geometry.\(^{41}\) The letter Aleph (א), represents simultaneously all that exists and all that does not.\(^{42}\) The letter Beth (ב) represents that which is necessary as a physical structure to support all creation. Gimel (ג) represents "the organic movement of every Bayt [Beth] animated by Aleph."\(^{43}\)

Here a syncretic comparison can be made with the Trinity in which God represents "all that is seen and unseen" (Aleph), with Christ as the son representing the physical support of

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\(^{40}\) This is similar linguistically to the featureal alphabet, in which the physical structure of the letter expresses the phonemes by which the word is vocalized. However, there is difference in the cosmological significance of Hebrew, as the letters of the alphabet are thought of as the actual constituents that form the universe.

\(^{41}\) The generation of forms is also a Platonic concept, in relation to the hierarchy of Platonic solids. The Platonic solids were considered in Neo-Platonic thought to be the generative constituents of the universe. First discovered by Pythagoras, the solids were thought of, as in the Autiot, to contain cosmological meaning. The Pythagorean concept of Tetractys stood for the number 10 and was considered the most sacred of all numbers, as it is the root and the sum of all generative geometric dimensions. In the Tetractys, \(1+2+3+4=10\), in which 1 represents a point, the number 2 represents a line, 3 represents a plane, and 4 represents the formation of a tetrahedron; a shape with four sides that rests in the third dimension. The Tetractys exists as a triangular number, meaning that when its geometry is projected it forms triangles. The Platonic solids were also applied to cosmographical models, such as Kepler's *Mysterium Cosmographum* of 1596.

\(^{42}\) א-Aleph: The structure of the letter is composed of a Vau (ו) as the cross section, and two Yods (י) that form the ends. The letter of Vau in the Autiot is 6, which represents physical completion and the six days of creation. It is also thought of as the mask of nature which hides God, as it is thought that God is incomprehensible without this masking filter. The upper Yod of the letter Aleph represents the upper spirituality of heaven, while the lower Yod represents the spirituality of the soul; that which we experience on earth. The spelling of the word Aleph ב א (Aleph, Lamed, Peh), also equals 111 (1+30+80), which represents oneness.

creation through the body of God or *Corpus Christi* (Beth), the activation of which is through the Holy Spirit (Gimel). The sixteenth-century scholar Giovanni Pico della Mirandola ardently believed that anyone involved in the study of Kabbalah would not only realize the existence of the trinity, but would "concede without addition, omission, or variation, precisely what the Catholic faith of Christians maintains concerning the Trinity and every divine Person, Father, Son and Holy Spirit."  

"The Christian interpretation of the Cabala started during the last quarter of the fifteenth century" with scholars such as Giovanni Pico della Mirandola and Marsilio Ficino, whose core dictum was based on the finding an esoteric verification of Christian truth through *occulta concatenatio*. This connection could be found through the exegetical practice of reading into Biblical scriptures according to *Gematria*. Pico and Ficino believed in what is known as *prisca gentillium theologiam*, or *philosophia perennis*, which states that there is an ancient and universal truth that recurs in all religious traditions.

In Pico's theology we also "find Old Testament kings like Solomon represented as true prefigurations or 'types' of Christ". This corresponding relationship between King Solomon of the Old Testament and Christ, is an elemental function within the design of Sant'Ivo. With the

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46 *Occulta concatenatio*: "Secret or hidden connection", Latin.
47 *Prisca gentillium theologiam*: "A theology in which the ancient roots of religion are of the same genus", Latin.
50 Farmer, *Syncretism in the West*, 38. Pico believed that there was indeed an important correspondence between Solomon and Christ, but claimed that there were "false types" such as Judah's king during the fall of Babylon, Zedekiah, who were of "the left hand", and which presented a kind of demonic mirror of the type of Cabala through which God truly spoke. "Just as the full moon was in Solomon, so the full sun was in the true Messiah, who was Jesus. And concerning the diminished correspondence in Zedekiah anyone can conjecture, if he is profound in the Cabala." (p. 541, 11>51)
geometry centered around Solomon's Seal along with Christologic iconography, the symbology of Borromini's Sant'Ivo is about a sophisticated interlocking of the roots of Christianity within the representation of Christ's triumph itself. As Solomon was king of an earthly domain, so is Christ represented as heavenly King within the iconography of Sant'Ivo; these two concepts of heaven and earth come together once again in the churches central design.

Athanasius Kircher also reinforced the importance of Gematria in the comprehension of biblical truth:

"The Rabbis say that all of the Holy Scripture is nothing other than an extended symbol of the most sublime matters and mysteries, appropriate only to learned men long and deeply versed in the Law so that they know it. So, too, Christ our Savior conveyed this same eternal Wisdom in the form of speech [known as] parable, as we often read among the Gospel writers."51

Kircher was a scholar who believed that nothing could be understood at face value, but that biblical truth truly contained fathoms of endless knowledge. To begin to penetrate the meaning of this knowledge is the only way to ascertain the complex and multilayered teleology of Borromini's Sant'Ivo. It is not only through this arcane exegesis that we arrive at a deeper ontological substance of the architectonic forms and symbols of the church; but, as we shall see, the linguistic knowledge within Kabbalah is also at the root of the physical structure, the corporus ex spiritus which are the very building blocks of Sant'Ivo.

51 Rowland, *The Ecstatic Journey*, 16.
"According to the commission of God given to me, like a skilled master builder I laid a foundation, and another man is building upon it. Let each man take care how he builds upon it. For no other foundation can any one lay than that which is laid, which is Jesus Christ."

1 Corinthians, 3:10-11

The central design and iconography of Sant'Ivo alla Sapienza roots the church in the phylogeny of the Old Testament and the Temple of Jerusalem. As such the Hebrew language exists as a language that is epistemologically connected to the manifestation of form, and it is by this that the architect manifests what Plato calls a "visible and tangible heaven".52

As the Hebrew language is structural, it is also thus projectional; Hebrew, as a causational principle forms a projectional geometry into space that is fundamental and symbolic. This can also be understood through the Platonic concept of εἴδος, the idea of "a substantial form which is unchangeable in nature",53 which is also described by Neo-platonic philosophers such as Gottfried Wilhelm Leibniz as the materia prima. The subject of eidos describes the idea of form which embodies a manifested structure of reality that is beyond transitory states. It is a form that is connected to an aspatial and atemporal existence (the source of causation); thus as it manifests in reality, its visual φαινόμενα (appearance) has an infinite and archetypal root. This form is manifested "through the study and observation of perfect Truth as symbolized by the symmetries of Form."54

The Hebrew language is projectional from the source of creation as it manifests through certain principles evident in the epistemology of the language, and through these certain

52 quoted in Hendrix, Architectural Forms, 65.
53 ibid., 103.
54 Lea & Bond, Materials for the Study, 18.
principles the geometry of forms is created. This connection between creation and forms can be thought of Kabbalistically in "the relations between Aleph, intemporal consciousness, and Bayt [Beth], their physical framework."\(^{55}\) The relation between these two Kabbalistic concepts is formative in our understanding of Sant'Ivo as an embodiment not only of theological ideas, but that these ideas are the very building blocks of the church itself. It is the Word manifested as creation that forms an *intercursus* between the learned study of sacred scripture and the knowledge contained therein, allowing the architect and mason to design the structure of the church according to the word by which God created the world, in order to make manifest a holy and consecrated edifice out of that which *does not appear*, and by making the unseen seen. It is in this that the language of architecture is exemplified beyond aphorism, as it is this cosmological understanding of language that is the very structure by which all things exist.

The geometry of Sant'Ivo, and in particular the church's hexagrammatic central design, can be examined through the study of the *projective* geometry of the Hebrew alphabet that is discussed by Matityahu Glazerson's writings on the *Magen David* or Star of David. The Ark of the Covenant was given to Moses on Mount Sinai in a prophetic vision, in which God tells Moses to "make [him] a sanctuary, that [he] may dwell in their midst."\(^{56}\) It is this sanctuary that becomes the tabernacle in which the Ark of the Covenant sits, which God instructs Moses to build by sacred design. And by the measurement of cubits, it is in this inner sanctuary that the Ark rests which we once again find hidden the symbol of the Seal of Solomon.

The concept of projective geometry originates in the third century AD with Pappus of Alexandria, and later in the quattrocento with Filippo Brunelleschi. Later advancements in the sixteenth-century with Johannes Kepler and Gérard Desargues involved the projection of space

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\(^{56}\) Exodus, 25:8.
at infinite distance from a vanishing point. The interest in projectional geometry during the Renaissance provided the mathematics behind perspective art. Projective geometry is invariant under projectivity, meaning that as the geometric form is seen from different angles, the form does not change. This is why projective geometry becomes vital during the Renaissance in perspective drawing and architecture, and is a basis of Euclidean geometry as well, although it, in itself is non-Euclidean. Projective geometry becomes important in our investigation of the Hebrew language, as Hebrew becomes projective through harmonic quadruples, which is an essential part of Desargues' theorem.

Glazerson believes that the Hebrew alphabet, as we have seen, contains three properties, "number, form and idea",\(^{57}\) the number being the *Autiot*, the form being that which is the fundamental structure of all things, and the idea being its Kabbalistic attribution to certain theological or ideological principles. The point and the line are the two fundamental principles from which all geometry is generated. In the Hebrew language a point is represented by "Yod" (י), and line by "Vau" (ו). Within the geometry of the twenty-two letters of the Hebrew alphabet, there are seven points that exist within the shapes of the other letters (excluding the letters that are made up of the same amount of lines). There are also seven points that exist within the Solomonic design of Sant'Ivo, including the center.

Matityahu Glazerson writes that geometry exists within the Hebrew alphabet because of *harmonic quadruples* within the linguistic formation of Hebrew letters placed together. Any group of Hebrew letters placed together forms a projectional concurrence that, when seen on a conical cross section interacts with one another to create geometric form. One of these forms is the symbol of the *Magen David*. Amongst all of the projective correspondences of the Hebrew

alphabet, the *most* possible combinations of Gematria are contained in the phrase representing the receiving of the Torah on Mount Sinai by Moses, which also includes the instructions to build the Ark of the Covenant. This phrase in Hebrew is בכר אי (ik-bahar).\(^{58}\) (fig. 9) When this phrase is put on a canonical cross section, or in other words, if the projective geometry is fixated around a circle, the combination of Hebrew characters forms the interlocking triangles of the Seal of Solomon.

There is an astounding significance to the most possible combinations of Gematria existent within the geometric projection of the Seal of Solomon. The one most fundamental is the realization that God is most integrally connected to man. The other, from a linguistic standpoint, deals with the interrelationship between Hebrew letters and how phrases connect to form a multidimensional paradigm. As language or *logos* constitutes the structure of the universe, it is through the symbol of the Seal of Solomon that this language is most fervent and alive. In relationship to Borromini's Sant'Ivo alla Sapienza, the use of Solomon's Seal as the central design around the drum of the dome exists as an oracle through which an integral relationship with God exists in the utmost sense.

This significance of examining the hexagrammatic central structure of Sant'Ivo is that it is a clue into the epistemological nature of this arcane symbol. But it is also a clue into the nature of scholarship that manifested within the inner-circle of Baroque academia. Borromini was a scholar of the many schools of knowledge in seventeenth-century Rome, and there are specific theoretical reasons why he chose certain geometries; in this case, to embody an ideology centered around Solomonic wisdom. The root of which is the instructions given to Moses to

\(^{58}\) fig. 9. Glazerson and Manevich, *Geometry*, 69.
build the Ark of the Covenant, which is eventually housed in the First Temple of Jerusalem by King Solomon.

It has been made evident that the Hebrew alphabet is both structural and projectional, and that they are primordial elements that are essentially the very building blocks of existence. But it is through the Biblical system of measurement known as cubits that this structure and projectional geometry is measured. It is through this system that God instructs Noah to build the Ark,\(^{59}\) and through this that Moses is instructed in his vision on Mt. Sinai on how to build the Ark of the Covenant.\(^{60}\) It is this Ark that is placed in King Solomon's temple, which was to hold the testimony of God, the Ten Commandments. The Ark of the Covenant's design (2.5 x 1.5 x 1.5 cubits, or 4.27 x 2.56 x 2.56 ft) also aligns with the sectio aurea, also known as the Golden Ratio.

The measurement of the Golden Ratio is approximately 1.6180339887, which is the decimal expression of a ratio made up of a longer section (A), and a shorter section (B), where \(A+B=A\) as \(A=B\). What this represents is the longer section pushing or stretching out the shorter section into space. For this reason, the use of the Golden Ratio is also the mathematical reasoning behind ecclesiastical space (discussed in the previous section about the True Cross in the section Gematria), which creates a feeling of infinite space within space.

Borromini used a system of measurement called the palmo in the designing of Sant'Ivo. The palmo is an Italian form of measurement commonly used among architects and builders during the settecento. The dimensions of the palmo are 223.4250mm or 8.79625". There is also a direct connection between the palmo and the cubit, according to ancient Egyptian

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\(^{59}\) Genesis 6:14-15. "Make yourself an ark of gopher wood; make rooms in the ark, and cover it inside and out with pitch. This is how you are to make it: the length of the ark three hundred cubits, its breadth fifty cubits, and its height thirty cubits."

\(^{60}\) Exodus 25:10. "They shall make an ark of acacia wood; two cubits and a half shall be its length, a cubit and a half its breadth, and a cubit and a half its height."
measurements, in which a palmo was a division of the cubit. The palmo is the measurement between thumb and forefinger. There are seven "palms" in a full cubit, which is the measurement of the tip of the hand to the elbow. The average Roman cubit also measures 1 1/2 ft.

The measurements of the drum of central dome according to Borromini's studies are 102 palmi in one drawing, and in another, the triangles are drawn somewhat larger, measuring 106 on each side, with the radii of the apses equivalent to 17 palmi.61 Each side of the triangle is thus 14.85714 cubits if 104 palmi or 15.14285 cubits if 106 palmi, and each apse measures 2.42857 cubits.

Athanasius Kircher was also interested in the relationship between cosmological principles and structural theories. He also had a profound knowledge of the biblical cubit. "When the Society of Jesus celebrated its centenary with a general convention in 1640, he treated the mathematicians among the delegates to a technical disquisition on Noah's Ark", by "calibrating the length of the biblical cubit, using Galileo's work on floating bodies to help determine the Ark's buoyancy…"62 The importance of this in relation to Sant'Ivo, lies in the importance once again of Sant'Ivo as a house of wisdom. This is typified by the iconography of the dove holding the olive branch, representative of the bird's second trip back to the Ark after being the released from its open window after the initial flight of the raven.63 Atop Sant'Ivo's spiral lantern sits the dove holding the olive branch in its mouth64 (fig. 10), a signification that the Ark has landed and found a home where the new covenant is made with Noah and his sons when they reach dry land. This home is represented by Sant'Ivo, as a sacred house of wisdom in which this Ark of the Covenant that was passed down to Moses and then to Solomon is kept.

61 see Connors, S. Ivo alla Sapienza, 44.
63 Genesis, 6:11.
64 fig. 10. Francesco Borromini, Sant'Ivo alla Sapienza, Ædes acutenses, (Roma: Edizione a cura di Alessandro Martini, MDCCXX (1720)), plate XXVIII.
In the calculation of Galileo's floating bodies with the dimensions of the Ark, Kircher integrated an Old Testament form of measurement with seventeenth-century experiments that apply to astronomy, and the weight of floating bodies in the heavens. By doing this he is not only connecting cubits to astronomical measurements, but he is also connecting the concept of the Ark to the cosmos. Kircher's fascination with these concepts also appears to be a direct influence on Borromini's spiral lantern atop Sant'Ivo.

In Kircher's work *Turris Babel*, the Biblical story from Genesis, chapters 10-11 is recounted, in which the antediluvian descendants of Noah attempt to build a tower that reaches the heavens. Kircher's interest in this story also pertains to his search for the origin of language. Accordingly, Kircher devoted the second half of *Turris Babel* to the study of linguistics. There is also an illustration in the book depicting the reason why the Tower of Babel could not possibly reach the moon\(^65\) (fig. 11) for if it were actually constructed at such a height it would tip the earth out of orbit. It becomes clear here however, that Kircher is secretly alluding to Galileo's theory of Heliocentrism, as the earth would only tip out of orbit if it were not at the gravitational center of the cosmos.\(^66\) It is possible once again that Kircher's theoretical inquiries formed a significant influence over Borromini's church and the seemingly incongruous spiraling lantern at its apex. If so, this influence also reveals the nature of these ideas as controversial (as they proved to be for Galileo), and as concepts that should be represented in such a way that would not be subject to the instigations of the Inquisition. It was even Borromini's rival, Gianlorenzo Bernini that blatantly accused him of Heresy.\(^67\)

Borromini's Sant'Ivo alla Sapienza is based on the cosmological understanding of language. In the same way that interlocking triangles form of the central drum of the dome, so

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\(^66\) Rowland, *The Ecstatic Journey*, p. 79.
\(^67\) see Hendrix, *The Relation Between Architectural Forms*, 11.
does the cosmological nature of this language coincide with the structure of the church. This interpolation of cosmos and humankind is aptly described by the fifteenth-century polymath Cardinal Nicolas of Cusa,\(^\text{68}\) (fig. 12) who believed that we exist in a world in which light and darkness, oneness and otherness coincide.

Conclusion

"By the word of the Lord the heavens were made..."
-Psalm 33:6

The receiving of the word of God by humankind is the direct knowledge of the fundamental substance that created the universe. The formation of Borromini's church Sant'Ivo alla Sapienza is rooted in this knowledge; as it is through this word that God established his covenant with Moses by way of the Ten Commandments, and instructed him to build the Ark of The Covenant, the vessel in which this covenant would be held. And through this covenant, King Solomon is instructed to build the First Temple of Jerusalem, and house the Ark in the inner sanctuary that is the Holiest of Holies. It is in this inner sanctuary that we not only find God's covenant kept in a physical Ark, but the knowledge of the word of God as that which permeates everything, and as the fabric of everything that exists.

It is in the Holiest of Holies where we find the evidence of an arcane symbol; a symbol which represents the interlocking of humankind with God. The Seal of Solomon represents a "reciprocal penetration"\(^{69}\) between God and humankind. It is an aspect of this *intercursus* that the word of God represented by the Hebrew language is both structural as well as causational, as it is from the source which is God, but is integral as the very structure upon which everything is built. It is also the inseparable relationship between the labor and craft of the mason's chisel and lathe with the abstractions of Baroque philosophy that is embodied by this symbol.

Perhaps Sant'Ivo is a *complexus*; as the Solomonic design of the central dome seems incongruous with the spiral lantern, perhaps Sant'Ivo is simply an aggregate of different parts that form the entirety of the church. But perhaps there is a hidden meaning within this

\(^{69}\) Farmer, *Syncretism in the West*, 114.
anomalous relationship of forms. While the Seal of Solomon is a symbol of interconnectedness with God and through the receiving of the Word, the *Turris Babel* is evidently quite the opposite; it is the confounding of language. However, the Jesuit idea presented by Kircher's polymathic search for a universal language was not that we should all speak the *same* tongue, but rather that we might all have a universal understanding to allow us to decipher every language of the world. This directly relates to the scripture of the Pentecost, where the Apostles spoke to everyone in every language:

> Then the day of Pentecost had come...And there appeared to them tongues as of fire, distributed and resting on each one of them. And they were all filled with the Holy Spirit and began to speak in other tongues, as the Spirit gave them utterance. Now there were dwelling in Jerusalem Jews, devout men from every nation under heaven. And at this sound the multitude came together, and they were bewildered, because each one heard them speaking in his own language. And they were amazed and wondered, saying, "Are not all these who are speaking Galileans? And how is it that we hear, each of us in his own native language?"70

Kircher saw the *Turris Babel* as a blessing and not a curse; an *increase* of linguistic knowledge and understanding directly from God. God sent forth humankind with different languages not to condemn or to confound, but to expand the complexity and breadth of our knowledge, and the locus of our geographic existence. And in this sense, Kircher's engraving of the Tower of Babel and why the earth would be thrown off course if we were to build to the heavens71 also points to the ever-expanding knowledge of the universe through Heliocentrism and our place in it; that we are truly not the center of the universe for a more astronomical reason than God brought man to realize.

In both architectural elements; the Solomonic central design and the spiraling tower, the ultimate significance is placed on the communication of God with humankind. The church is an

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70 Acts 2:1-8
71 Genesis 11:4
instrument, meant to facilitate this divine relationship through the intricacies of its architectonic features. The architect is "ordained by God to create a second universe."\textsuperscript{72} The scriptural ideology of Sant'Ivo alla Sapienza exists beyond the surface of Biblical understanding; it exists as the very fabric by which the church was created. Francesco Borromini's church is an embodiment of architectonic language that is beyond the metaphor of description. It is an understanding of the word of God that created the heavens. Sant'Ivo alla Sapienza is the embodiment of this truth that reflects the divinity by which God designed the universe.

-Caeli enarrant gloriam Dei, Terram enarrant gloriam Dei.

\textsuperscript{72} Hendrix, The Relation Between Architectural Forms, 206-207.
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The Fountain of the Four Rivers, 1651

Engraving of the Pamphilian Obelisk of the Fountain of the Four Rivers, Athanasius Kircher, 1650
fig. 2: An image of the Ten Sephirot, the Kabbalistic Tree of Life.
Alchemical Symbol for Fire

Alchemical Symbol for Water

The conjunction of the two elements is the same symbol as the hexagrammatic central design of Sant’Ivo alla Sapienza.
Top: A view looking up through Sant’Ivo to the dome.
Bottom: A view simultaneously looking up toward the dome, as well as the geometric plan.
fig. 5: Architectural drawing by Borromini with the symbol of the dove and the six-pointed star.
Groundplan study of Sant’Ivo alla Sapienza for a presentation project, pencil and red chalk on paper, 1642. The upper left contains the inscription from Proverbs.
fig. 7: Sant’Ivo alla Sapienza: The inside of the dome showing the palm fronds, open flowers, a crown and a cherub within a broken pediment above the cupola window.
fig. 8: The *Autiot*. The Hebrew alphabet according to its numerical attribution. The application of these numerical values to the alphabet are used in exegesis of Hebrew Scripture.
fig. 9: (above) - The projection of Hebrew language received at the base of Mt. Sinai with the values according to the *autiot*.

(below) - The reception of the same language placed upon a canonical cross-section, that forms the interlocking triangles of the Seal of Solomon.
fig 10: The spiral turret of Sant'Ivo, with the dove holding the olive branch.
Fig. 11: Kircher’s illustration from *Turris Babel* depicting why the tower could not possibly reach the heavens and touch the moon. Note the polyalphabetic scrolls toward the top of the engraving.
Fig. 12: From Nicolas Cusanus’ De Coniecturis. A theological model applying two interlocking pyramids to show the relationship between God and man, light and darkness, oneness and otherness.