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AN ARCHITECTURAL EXCURSUS INTO THE SITE OF BECOMING:

DOMENICO FONTANA'S
DELLA TRASPORTATIONE DELL'OBELISCO VATICANO

ERIC SOLOMON TOKER
HISTORY AND THEORY OF ARCHITECTURE PROGRAMME
MCGILL UNIVERSITY

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A Thesis submitted to the Faculty of Graduate Studies and Research in partial fulfilment of the requirements of the degree Master of Architecture.

ABSTRACT

At the close of the sixteenth century, the Roman architect Domenico Fontana choreographed the transformation of the Vatican Obelisk from its antique position on the circus of Nero, to its present location facing St. Peter's. Fontana's treatise *Della trasportatione dell'obelisco Vaticano* (1590), records this event in a detailed narrative, and a series of remarkable etchings. Architect to Pope Sixtus V, Fontana is often cited as a founder of city planning due to his seminal reorganization of Rome's topography, and as an early proponent of civil engineering owing to his calculated mechanics. Yet neither of these appellations do justice to Fontana's complex practice, one in which architecture is composed in time, characterized by the intensity and profundity of the festival, and the divine power of Man to operate within a world of sympathies. The scaffold which translates the obelisk - and the occulted knowledge of these cosmographic relations - into the space of the city, also invokes an alternate tradition for architecture. Opposite classical solidity and eternal being, Fontana's *castello* proposes the immaterial, and the ephemeral. An inquiry into this scene of emerging order is particularly relevant for our contemporary world, with our idols fallen and our foundations in ruin.

Appended to this thesis is an abridged English translation of *Della trasportatione*, chapter 1.

ABRÉGÉ

À la fin du seizième siècle, l'architecte romain Domenico Fontana a entrepris la chorégraphie de la transformation de l'Obélisque du Vatican à partir de sa position depuis l'Antiquité dans le cirque de Néron au site actuel, en face de la Basilique St-Pierre. Dans son traité, *Della trasportatione dell'obelisco Vaticano*, Fontana raconte cet événement dans un récit détaillé et l'illustre par une série de gravures des eaux-fortes remarquables. Architecte du pape Sixte V, Fontana est souvent cité comme le fondateur de la planification urbaine en raison de la réorganisation seminale de la topographie romaine, et comme un initiateur du génie civil en raison de ses études en mécaniques. Toutefois, aucun de ces titres ne rend justice à la pratique complexe de Fontana, une dans laquelle architecture se compose dans la durée, et est caractérisée par l'intensité et l'aspect profond du festival, ainsi que le pouvoir divin de l'homme agissant dans un monde de sympathies. L'échafaudage qui soutient le transfernt de l'obélisque - et le savoir occulté de ses relations cosmographiques - à l'intérieur de l'espace de la ville invoquent en même temps une tradition alternative pour l'architecture. Par opposition à la solidité classique et à l'Être éternel, la *castello* de Fontana propose l'immatériel et l'éphémère. Un regard approfondi sur cette scène de l'ordre en émergence est particulièrement pertinent pour notre monde contemporain avec nos idoles détruits et nos fondements en ruine.

En appendice le lecteur trouvera une traduction abrégée en anglaise du premier chapitre de *Della trasportatione*.

ACKNOWLEDGEMENTS

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The generous welcome of the Canadian Centre for Architecture deserves many thanks, both for opening its collections to me at every opportunity, and providing the luxury of an intimate working environment. A debt of gratitude to its Librarians and Curators, particularly Renata Guttman, Paul Chenier, Suzie Quintal, Pierre Boisvert, and Howard Shubert, all of whom made this research most enjoyable. The collections of the Biblioteca Apostolica at the Vatican were also placed at my disposal, with thanks to its director, Fr. Leonard E. Boyle.

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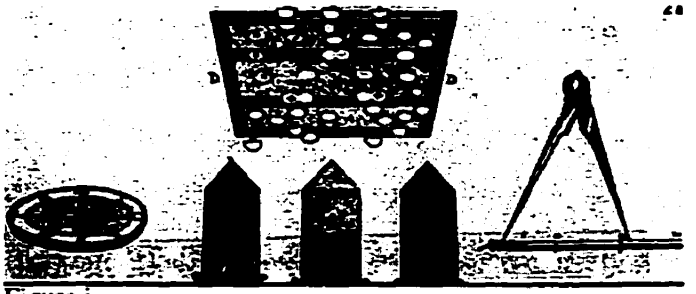

Figure i
Fontana, i, 28. (Detail).

INTRODUCTION
COSMOGRAPHIC INITIATION

Verily first of all did Chaos come into being, and then broad-bosomed Gaia, a firm seat of all things forever, and misty Tartaros in a recess of broad-wayed earth, and Eros, who is fairest among immortal gods, looser of limbs, and subdues in their breasts the mind and thoughtful council of all gods and all men. Out of Chaos, Erebos and black Night came into being; and from Night, again, came Aither and Day, whom she conceived and bore after mingling in love with Erebos. And Earth first brought forth starry Ouranos, equal to herself, to cover her completely round about, to be a firm seat for the blessed gods forever.
-Hesiod: *Theogony*

There were, before the world came into existence, being, space, and becoming, three distinct realities. The nurse of becoming was characterised by the qualities of water and fire, of earth and air, and by others that go with them, and its visual appearance was therefore varied...And its contents were in constant process of movement and separation...so the four basic constituents were shaken by the receptacle, which acted as a kind of shaking implement, and those most like each other pushed together most closely, with the result that they came to occupy different regions of space even before they were arranged into an ordered universe. Before that time they were all without proportion or measure....
- Plato: *Timaeus*

Moses is right also when he says, that 'darkness was over the face of the abyss'. For the air is in a manner spread above the empty space, since having mounted up it entirely fills all that open, and desolate, and empty place, which reaches down to us from the regions below the moon. And after the shining forth of that light, perceptible only to the intellect, which existed before the sun, then its adversary darkness yielded, as God put a wall between them and separated them, well knowing their opposite characters, and the enmity existing between their natures.
-Philo: *On the Creation of the World*

To set up a world has always been a task for Architecture, and the Gods. Giving order to the plastic matter of chaos, as Plato writes, composes its harmonious transformation into *kosmos*. Cosmogony tells the story of the birth of order, that archetypal creative work. For Hesiod, the procreative acts of Chaos bring earth into being, and the Gods take their positions through similar motives. By means of sympathies and antipathies, light and darkness separate, opening a clearing for time to commence,

and causing meaning to arise out of this gap. Our philosophical tradition arises from this essential order, in allowing us to transcend a world in constant flux through the contemplation of unchanging and recurring patterns, such as dawn and twilight, or the motions of the celestial spheres. If the role of Architecture is to represent our world back to us, in a creative mimesis of these cosmological orders, it is intimately tied both to the divine work of theory, and to the possibility of making within the political life of the city. For the sixteenth century, to conceive the universe is to have knowledge of its creator, either through mystical union, or the interpretation of the physical world. To represent this order is to produce a series of resemblances, essentially writing the world. The proliferation of Renaissance treatises on the structure of the cosmos exists in parallel with the rise of an almost hieroglyphic architecture. Revealing meaning through a bridging of the visible and invisible realms, the work of Architecture was itself a model of knowledge. While philology provided the materials for an inquiry into the nature of the cosmos, an overriding hermeneutics arranged these sources appropriately. The arrangement, as architecture, told a story not only of classical solidity and eternal being, but also of creation, continual transformation, and impermanence. An inquiry into the site of becoming and the scene of emerging order is particularly relevant for our contemporary world, with our idols fallen and our foundations in ruin.

At the close of the Sixteenth century, the Roman architect Domenico Fontana choreographed one of the most elaborate spectacles the eternal city has witnessed. Constructing an immense temporary wooden scaffold, Fontana moved the great Egyptian obelisk from its antique position on the circus of Nero to its present location facing St. Peter's. The scaffold was operated with tuned precision by 900 men and 74 horses, harmoniously arranged amidst a myriad of pulleys, levers, and capstans. The event is recorded in Fontana's treatise *Della trasportatione dell'obelisco Vaticano* (1590),[1] a rare

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[1]Fontana's treatise is composed of two volumes. The first volume is entitled *Della trasportatione dell'obelisco Vaticano et delle fabriche di Nostro Signore Papa Sisto V, fatte dal Cavallier Domenico Fontana, architetto de Sua Santità, libro primo.* This volume was published in Rome by the Vatican press, under Domenico Basa in 1590. A second volume was printed in 1603 at Naples, entitled *Libro secondo in cui si ragiona di alcune fabriche fatte in Roma et in Napoli dal Cavalier Domenico Fontana.* This was followed by a reprinting of volume one in 1604, and the two are occasionally bound together. The plates are by Natale Bonifacio (1538-1592), after drawings by Fontana. Bonifacio and Giovanni Guerra collaborated to produce the large plates issued separately by Bartolomeo Grassi with Filippo Pigafetta's *Discorso* in 1586. Often cited as engravings, the illustrations in Fontana's treatise are all etchings with the exception of Fontana's portrait within the frontispiece. On Bonifacio, see Sue W. Reed and Richard

and graphically remarkable text, consisting of copper plate etchings which encircle a detailed narrative. As the Architect of Pope Sixtus V, Fontana is often cited as a founder of city planning due to his seminal reorganization of Rome's topography, and as an early proponent of civil engineering owing to his calculated mechanics.[2] Yet neither of these appellations do justice to Fontana's complex practice, for not only does Fontana predate this contemporary nomenclature, his treatise is oriented elsewhere. The horizontal translation of the Vatican obelisk and its representation speak of an alternate tradition, one composed in time, characterized by the intensity and profundity of the festival, and the divine power of Man to operate within a world of sympathies.

The creative imagination, moving the world to order, is an essential mark of Man's humanity. Our fundamental desire to transcend mortality and leave our traces on the earth, whether in the brick stamps of city walls or in the generation of progeny, is bound to the creative act.[3] This faculty is not without its ambiguities. Retribution against Man's divination is evident in Adam's fall, which occurred in imagining a world of his own making, and in the torture of Prometheus, as punishment for stealing the fire of the Gods, and using it in his own transmutation of nature.[4] However, these transgressions of divine power change their aspect as we approach the Modern era. The birth of the Modern, with the scientific constructions of Galileo and Descartes, open new possibilities for action in a world liberated from resemblances. Here, the transgressions operate against an objectified and detached Nature, and the transformative will of the Architect becomes mired in a history of domination and violence we know too well. Fontana stands at this seminal epoch, bounded by a cosmos which remained very much alive and open to interpretation, then extending into a universe of mathematical space. In his preface to the reader, Fontana states that his project does no less than inaugurate a new Rome, lifted from its pagan traces into the bright clarity and universality of the Christian church. Yet

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Wallace, *Italian Etchers of the Renaissance and Baroque* (Boston: Northeastern University Press, 1989), 85-88.

[2] For the majority view, see Rudolf Wittkower, "...the creation of long, straight avenues, of star-shaped streets, and the erection of fountains and obelisks as focusing points for long vistas anticipate seventeenth-century town-planning ideas...Sixtus gave the rebuilding of Rome into the hands of his second-rate court architect Domenico Fontana, although the much more dynamic Giacomo della Porta was available." *Art and Architecture in Italy 1600 to 1750* (Harmondsworth, Penguin, 1973), 7.

[3] Hannah Arendt, *The Human Condition* (Chicago: University of Chicago Press, 1958), 19. Arendt calls this the immortal deed.

[4] Richard Kearney, *The Wake of Imagination* (Minneapolis: University of Minnesota Press, 1988), 39, 80.

this dramatic reconfiguration, which included the destruction of antique monuments, does not structure a standing reserve of human artefacts, in the modern sense of a productive imagination. Rather, through a process of revelation and the interpretation of recovered ancient wisdom, the divine aspect of Man performs these translations from within the world. The forces of similitude which Michel Foucault describes as organizing knowledge at the end of the sixteenth century - adjacency, emulation, analogy, sympathy - still hold.[5] Irony, their disjunction, is visible on the horizon, yet the integral presence of emblems and iconological devices which make up Fontana's treatise are evidence of a creative imagination operating within this world of intricate harmonies. While the vertical orientation of the elements, as Aristotle explains in *Physics*, is based on a striving to achieve their natural position, their horizontal position remains for Fontana the domain of human action and politics. In remaking the Campus Vaticanus, site of propitious omens, physical remains, and sacred topography, Fontana proportions the horizontal realm of the city.

The status of Fontana's modernity is related to an equally ambiguous distinction between his practical work and what is here considered to be his contemplative or theoretical dimension. The project to move the Vatican obelisk, the *trasportatione*, unavoidably revolves around his 'doing' in the political realm, in adjusting the city to reflect the powers of the Christian Church and his patron Sixtus V. To what degree Sixtus V shares authorship for the impressive projects carried out by Fontana is open to debate, nevertheless, the city remains the locus of Fontana's work. Walking contemporary Rome, it is easy to characterize Fontana as a devotee of the *bios politikos*, yet that would ignore the evidence of his treatise. The Pythagorean trilogy, echoed in Aristotle, offers two further choices: the *bios theoretikos* of the philosopher, and the *bios voluptuaria* of the pleasure seeker. Plato believed that this last option was not a viable possibility for serious individuals, although that unfortunately removes the lived world of the senses from serious consideration. Moreover, the life of action and the life of theory remain impenetrably bound together, as Plato conceded in writing down his thoughts for posterity, momentarily disengaged from contemplation.[6] These categories seem to offer us little consolation for an inquiry into the nature of the Architect, and it is here contested

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[5]Michel Foucault, *The Order of Things* (New York: Random House, 1970) 17-25.
[6]Hannah Arendt, *The Human Condition*, 20.

that Fontana spans them all. A more relevant characterization, following Hans-Georg Gadamer, might distinguish between a proponent of the mechanical arts who produces useful things, and that of the creative artist, whose work revolves around an imitative activity.[7] This thesis will attempt to align Fontana's work with a contemplative and mimetic practise, dedicated to the political experience of the city, and ultimately concerned with the supremely useless - the occult space of the obelisk and its ceremonial transportation. The festival, that mimetic space which gives rise to the city, offers an essential way into the work of Fontana.

The unique temporality of the festival transforms the *ordinary*, and our world is given to a play of eccentricity, disorientation, and levitation. Enacting the orders of the cosmos, the festival suspends linear time and returns us to our very origins. Fontana's *castello*, itself given to these oscillations, might be considered as the temporary stage for this creative work, in the guise of a transformative font, or perhaps as a vessel of becoming.[8] The *castello* is also related to the many works of temporary architecture which structure the triumphant entry processions of the Renaissance. The world opened by Fontana's treatise is fecund with these analogous projects, from the Res Gestae of Augustus, to the Tabernacles of Moses; from the Catafalque to the Instruments of Martyrdom. The questions it poses remain between the bright light of Platonism and occulted Hermetic texts, between the obelisk and its transformative scaffold, between the idolatrous image and the ephemeral word, and finally between the transformative potential of man, and the creative act of translation itself. These questions structure the relation of Fontana's work to the architectural corpus which surrounds it, including the texts of Vitruvius, Alberti, Filarete, and Colonna; and works on the Vatican Obelisk by Camillo Agrippa, Filippo Pigafetta, and Michele Mercati.

The discourse traced by this thesis relies upon a hermeneutic approach.[9] Collapsing the horizons which define our condition at the end of Modernity, and those of Fontana which open it, situates this interpretation as an exploration of both realms. The impossibility of coming to any position of certainty with regard to Fontana in no way

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[7]Hans-Georg Gadamer, "The Relevance of the Beautiful" in *The Relevance of the Beautiful and Other Essays* trans. Nicholas Walker (New York: Cambridge University Press, 1956), 14.

[8] These associations are treated in chapter 7.

lessens the encounter. Disorientation, a central characteristic of Fontana's *trasportatione*, is an aspect of this event, where a portion of truth is revealed in transforming our accustomed ties to the world. Nowhere is this event more visible than in an encounter with works of art, as Heidegger and others suggest. The present inquiry, and Fontana's work itself, does not propose a return to dwelling in the unproblematic way which the obelisk once represented. Rather, the ambiguous nature of Fontana's work, its position on the margins of architectural history, and its essential attachment to the incomplete and the indeterminate, only serves to reinforce the mediating strategy which will structure the thesis. The architectural narrative which is set out in the text and engravings of *Della trasportatione* is the focus of this excursus. It is organized by means of an inquiry into both the world of the festival, and the complex topography which serves as its ground.

A NOTE ON TRANSLATION AND CONTEMPORARY SCHOLARSHIP

An abridged English translation of the *trasportatione* was undertaken in order to read Fontana's work anew (Appendix B). To my knowledge this is the first English translation of *Della trasportatione*, with the exception of the 'Edict of Authority' by William B. Parsons,[10] and general glosses of Fontana's narrative as described in chapter 1. Two translations do exist, into Latin in Carlo Fontana's *Tempio Vaticano,* and into German by Dietrich Conrad entitled: *Domenico Fontana Die Art, Wie der Vatikanische Obelisk transportiert Wurde* (1986).[11] Unless otherwise noted, translations from Renaissance texts in Italian are my own.

Contemporary scholarship is equally limited. Cesare D'Onofrio's *Gli Obelischi di Roma* is a thorough historical account, as is Adriano Carugo's "Obelisks and Machines in the Renaissance," which introduces the facsimile edition of Fontana's treatise. A monograph on Fontana's works has yet to be written, with the exception of his own treatise, which forms the basis for a chronological list of his works (Appendix A). Two texts which focus on the symbolic programme of Sixtus V deserve mention: Steven F. Ostrow's *Art and Spirituality in Counter-Reformation Rome: the Sistine and Pauline Chapels in S. Maria Maggiore* (1996), and Corinne Mandel's *Sixtus V and the Lateran Palace* (1994). Beyond these peripheral texts, and the poetic depictions by S. A. F. Orbaan in *Sixtine Rome,* Fontana remains unrecognized.

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[9]The general strategy will be one based on hermeneutics, described by Gadamer in *Philosophical Hermeneutics* as an event of understanding, composed both of the object of interpretation, as well as the observer's situation.

[10] William B. Parsons, *Engineers and Engineering in the Renaissance* (Williams and Wilkins Co., 1939), 158-9.

[11] Both of these translations are beyond the scope of this thesis.

Figure ii.
Disegno del modo di condurre l'Obelisco, Bonifacio, Guerra (1586).

THE SITE OF ORDER

CHAPTER 1

GENEALOGY

The world of Domenico Fontana's works is founded on genealogy, an archetypal story of order closely bound to the work of architecture, and the transcendence of mortality. The organization of knowledge based on genealogy is evident in two major traditions of the Sixteenth century. The first situates Peter at the origin of the papal edifice, as the heir of Moses and the genealogies of the Torah, beginning with Adam. As an addendum, before the Socratic philosophers and holding the wisdom of Moses to the edge of historical time, lies the figure of Hermes Trismegistus as the Renaissance perceived him. The second lineage is that of the Roman emperors, beginning with Julius Caesar, who is descended not only from Romulus, but from Aeneas, himself proceeded by Roman and Greek Gods, sacrifice, and murder. The conjunction of these two systems, with their numerous symmetries, also share a defining characteristic. Their structures eminate from an original and perfect source, and are progressively corrupted through

time. A return to the perfect knowledge of antiquity was then possible only through the elect figures who held an unalloyed connection to the divine. An inquiry into the symbolic past of *Cavaliere* Domenico Fontana might serve not only as a key to his life and works, but also to the hieroglyphic architecture these orders engender.

Domenico Fontana was born in 1543 at Mili on Lago di Lugano, now Melide in the Ticino canton of Switzerland.[1] Records of his family reach to the thirteenth century in Ticino. Domenico, proficient in geometry,[2] left for Rome at twenty to join his elder brother Giovanni (1540-1614), an architect respected primarily for his hydraulic and military designs.[3] Domenico was later joined by his younger brother Marsilio (d.1597) who collaborated in Rome on several projects.[4] Many of the architects and masons for the expanding building works at Rome arrived from Ticino and Lombardy, including Domenico Fontana's nephew Carlo Maderno (1556-1629), and Maderno's relative, Francesco Borromini (1599-1667).[5] Maderno travelled to Rome in 1574, and worked

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[1]George Sarton states that Fontana is in fact Swiss, as Ticino became a canton of Switzerland in 1512. It is however, equally true that Fontana is Roman, taking Roman citizenship in the first half of 1585, and named a Roman Patrician by Sixtus V, "Agrippa, Fontana and Pigafetta" in *Archives Internationales d'Histoire des Sciences* (Paris: Hermann + Cie, 1949), vol. xxviii, 828-9.

[2]Francesco Milizia, *The Lives of Celebrated Architects, Ancient and Modern*, trans. Edward Cresy (London: J. Taylor, 1826), vol. ii, 72.

[3]The most complete biography of Giovanni Fontana is in Milizia, *The Lives of Celebrated Architects, Ancient and Modern* (University Park, PA: Pennsylvania State University Press, 1971.) Giovanni worked extensively with Carlo Maderno, and the two were considered the leading hydrological engineers of the papal states. See Howard Hibbard, *Carlo Maderno and Roman Architecture* (University Park: Pennsylvania State University Press, 1971), *1580-1630*. Giovanni Fontana's principal works include collaboration on the Acqua Felice and the Acqua Paola, and the water theatre at the Villa Aldobrandini in Frascati.

[4]On Marsilio Fontana little is known, but he is recorded as working with Domenico Fontana and Carlo Maderno on the setting up of the obelisks at Santa Maria Maggiore, the Lateran, and at the Piazza del Popolo. For partical geneological tables see Hibbard, *Carlo Maderno*, 99.

[5]Other architects among the Fontana include Domenico Fontana's son Giulio Cesare Fontana (1593-1627) who collaborated with Domenico on several projects in Naples. Architects descended from Carlo Fontana include Carlo Fontana's son Francesco Fontana (1668-1708) who raised the Colonna Antonina in 1704; Girolamo Fontana, nephew of Carlo Fontana (active 1690-1714) architect and stage set designer; his brother, architect Carlo Stefano Fonana (active 1705-1730); and Mauro Fontana (1701-1767), architect in Rome and grandson of Carlo Fontana.

Unrelated are:
i) the Fontana from Bologna, including the Mannerist painters Prospero Fontana (1512-97) and his daughter Lavinia Fontana (1552-1614). Both worked in Bologna and in Rome.

ii) the Fontana from Urbino, a workshop of potters, including Guido Durantino Fontana (d. 1576), Nicolo Fontana (d. 1565), Camillo Fontana (d. 1589), Orazio Fontana (d. 1576).

consistently with Domenico throughout the pontificate of Sixtus V. The proximity of the Fontana to the church of Peter continued unabated, evident in the work of Carlo Fontana (1638-1714), architect and author of the influential *Il tempio Vaticano e sua origine* (1694). This lengthy treatise contains a chapter devoted to the *trasportatione* as part of his extensive history of St. Peter's. More obliquely, Carlo Fontana's student Johann Bernhard Fischer von Erlach (1656-1723) brings the themes of Domenico Fontana's work to northern Europe, with a return to the mythical history of the church and the wonders of the world.[6] Fontana's works also had a profound influence on the architect and stage designer Inigo Jones, and on eighteenth century engineers such as Niccola Zabaglia. The continual retelling and interpretation of Fontana's project in subsequent works belies its status not only as a seminal event in the reorganization of Rome, but as an integral part of the mythical history of the church.

The series of texts which describe moving the Vatican Obelisk, including Domenico Fontana's own treatise, is the major source for the thin biographic works on Fontana. This is not surprising, as Fontana is consistently portrayed against the background of his remarkable translation. The recounting of the *trasportatione* is treated in Filippo Pigafetta's *Discorso* (1586), Vincenzo Scamozzi's *L'idea della architttura universale* (1615), Athanasius Kircher's *Oedipus Aegypticus* (1652), Carlo Fontana's *Il tempio Vaticano*, Niccola Zabaglia's *Castelli*, and M.A. Lebas' *Obelisque..extrait de l'ouvrage de Fontana* (1839), among others.[7] Beyond architectural treatises, Fontana's

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iii) the Fontana from Austria, the painters and engravers Giovanni Battista Fontana (1524-87), and his brother Giulio Fontana (d. 1578).

iv) of uncertain relation is Annibale Fontana, Medallist and Sculptor (1540-1487), active in Milan, also from the Ticino. See *The Dictionary of Art*, ed. Jane Turner (New York: Grove, 1996), vol. ii, 268-279.

[6]J.B. Fischer von Erlach studied in Carlo Fontana's studio around 1680, which Carlo Fontana took over from Bernini following the later's death that year. Carlo Fontana and Fischer were also both under the patronage of Queen Christina of Sweden in Rome. Fischer is also tied to Domenico Fontana through Domenico's biographer Giovanni Pietro Bellori. Fischer and Bellori are known to have been close acquaintances, with Fischer's methods developed in part from Bellori's texts on art and interest in antiquity. See Braham & Hager, 18-19; Allan, Braham and Hellmut Hager, *Carlo Fontana: The Drawings at Windsor Castle.* (London: A. Zwemmer Ltd., 1977).

[7]While the narrative of the *trasportatione* is widely disseminated, Fontana's biography remains in pieces, and a comprehensive record of his works has not yet been published. In terms of source material by Fontana's hand, only his account books remain, while all correspondence is assumed to be lost. An interesting source would be Fontana's house, as J.A.F. Orbaan writes, "On the walls of his own house,

biography is found in the artist anthologies of Baglione, Bellori, and Melizia. Expressly following the schema established by Giorgio Vasari, Giovanni Baglione's *Le Vite* (1649)[8] devotes three pages to Fontana's works, a dry but fairly accurate enumeration which ends abruptly in Rome with the passing of Sixtus V, only the briefest reference to the works in Naples, and an incorrect date for Fontana's death.[9] Giovanni Pietro Bellori offers a more detailed chapter on Fontana in *Le vite de pittori scultori et architetti moderni* (1672), with an account of the *trasportatione*. Fontana is here positioned amongst his contemporaries, including the Carracci, Domenichino, Lanfranco, Carravagio, Poussin and Rubens. As is the case with almost all works on Fontana, Bellori acknowledges his debt to *Della trasportatione*, with his summary "following for the most part the writings of Domenico."[10] In the eighteenth century Francesco Milizia's *Memorie degli architetti antichi e moderni* (1781) expands on previous accounts and gives a summary of Fontana's principal works. Adding a contemporary example, Milizia describes moving the stone pedestal for the equestrian statue of Peter the Great, firmly placing Fontana's work in the tradition of mechanical achievements which begins with Archimedes, asking

> ...what is the value of these obelisks, for the working, transporting, and erecting of which so many rewards and anxieties have been created? All their worth consists in the difficulties surmounted. But from this species of vanity some advantages have certainly arisen; as the invention of machines - the employment of men - fame and riches to the artists.[11]

In epitomizing modern pragmatism, Milizia assesses Fontana's work to have been most successful in its mechanical pursuits. "His genius in mechanics was great - much greater

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situated in the Vicolo delle Palline, near the gate of the corridor from Castel Sant'Angelo to the Vatican, the first house on the right through the arch, he represented all his works", *Sixtine Rome* (London: Constable + Co., 1911), 90.

[8]Giovanni Baglione, *Le vita de'pittori scvltori et architetti dal Pontificato de Gregorio XIII fino a tutto quello d'Urbano VIII* (Roma: Manelfi, 1649), 84-86.

[9]Orbaan notes that Baglione worked under the leadership of Fontana at the Vatican Library, yet the two parted ways after 1592, which would account for this cæsura. See Baglione, *Le vita*, 86.

[10]Giovanni Pietro Bellori, *Le vite de pittori scvltori et architetti moderni* (Roma, 1672), 141. Bellori was the first to notice that the Vatican obelisk is not in perfect alignment with the centre of the dome.

than the purity of his taste for architecture. He did not preserve the proper characters peculiar to the orders: his style was meagre and tame, nor did he avoid any of the various abuses then in practice."[12] Faced with an apparent contradiction between Fontana's remarkable urban and mechanical works, and his static architectural production, contemporary scholarship has followed this convenient division, condemning Fontana as an architect while celebrating his ingenuity. Not only does this eighteenth-century division between architect and engineer run counter to the encompassing *aedificatio, gnomonice, machinatio* of Vitruvius,[13] it is unavoidable that Fontana, perhaps more than most, epitomises this triune conjunction. Nevertheless, the bulk of Fontana's treatise lends itself to this misappropriation, if only because *Della Trasportatione* seems to be primarily a record of works. Yet as Fontana makes clear in the title of his *libro primo*, the text centres around the transportation of the Vatican obelisk, and only secondarily treats of the other works completed at Rome and Naples. While together, the *trasportatione* and the remaining works cover almost the entire range of Vitruvian subjects and building types, the two parts follow different models. The *trasportatione* and its constituent sections has already been introduced as a cosmological work of creative mimesis, and is the focus of this thesis. The remainder consists of a list of works closely related to the frescos in the Palazzo Vaticano and in the Lateran which illustrate the Good Works of Sixtus V. Yet beyond these frescos, a more obscure source for this structure presents itself from within Fontana's treatise, one that to my knowledge has not been previously recognized. This source is the antique inscription of Augustus Caesar known as the *Res Gestae*.

The Renaissance Popes, as governors of the Church, interpreted both the works and deeds of their imperial predecessors. Julius Caesar, Hadrian, and Constantine deserve

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[11]Milizia, *Memorie degli architetti*, vol. ii, 79.

[12]Milizia, *Memorie degli architetti*, vol. ii, 86. This sentiment is echoed by Baron Hubner, "That extraordinary man - if one may so call a man who is wanting in genius...his drawings are those of a thorough engineer-architect, who fears no obstacles because he knows how to get over them; who spares his means, looks to the essential; adds, or simplifies, or repeats...they are somewhat like the products from a manufactory," *The Life and Times of Sixtus the Fifth*, trans. Hubert E. H. Jerningham (London: Longmans, Green and Co., 1872), 134-5.

[13]Vitruvius, *On Architecture*, trans. Frank Granger, Loeb Classical Library (1934), bk i, ch. iii. In addition, it should be noted that the sixteenth century English translation of the Italian title *Ingegniere*, which is sometimes applied to Fontana by his contemporaries, is as follows "Engineer, a devisor or Engines,

mention, yet none more so than Augustus, whose building programme most closely prefigures that of Sixtus V. The works of Augustus are numerous, and include his Forum and the Temple of Mars Ultor, his Mausoleum near the Tiber, the Theater of Marcellus, the Temple of Julius Caesar, the Ara Pacis and the Horlogium, as well as restoring and constructing new aqueducts, and building provincial cities. Both the obelisk moved by Fontana from the Circus Maximus to the Piazza del Popolo, and the obelisk formerly at the centre of the Horlogium Augusti in the Campus Martius, were originally transported to Rome by Augustus, as Pliny and the Roman historian Ammianus Marcellinus recount. Yet in enumerating the works of Sixtus V, Fontana makes reference not to these Augustinian projects, but rather to the figure of Augustus, *Pontificus Maximus* and *Patrem Patriae*. If Sixtus IV obtains the name Romulus,

> ...Sixtus V, with so many works of Architecture and with such peace, and tranquillity in the state of the Church, having amazed so many public treasures, and having administered all with justice, merits the title not only of Augustus: but by common consensus merits also to be called Father of the Country.[14]

With the Pope as the head of the Christian imperium, the Roman Emperors foreshadowed the divine role they enacted as *princeps*, pairing Rome's destiny with that of the Church triumphant.[15] The keys which surmount the *impresse* of Sixtus V demonstrate that this power to govern occurs in the Pope himself, handed down by the founders of the *respublica christiana* Peter and Paul. The relation between the Emperors and the Pope is also manifest in the title *pontifiex maximus*, present in the great majority of the engravings and inscriptions of Sistine Rome. Concurrent with the building of the Horlogium, the Ara Pacis, and the first transportation of the obelisks, the title *pontifex maximus* and the spiritual leadership of the Roman state was conferred on Augustus in 12

Machines or Stratagems, one skilful in Fortifications. Also an artificer or maker of any tools." John Florio, *Queen Anne's New World of Words*, 1611.

[14]Fontana, i, 4v.

Figure iii
Impresse of Sixtus V. Fontana, i, frontispiece (Detail)

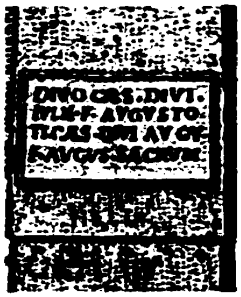

Figure iv.
Inscription on the Vatican Obelisk [18]
Fontana, i, 8 (Detail)

Figure v.
Res Gestae, on the *Monumentum Ancyranum*, Ankara.

Figure vi.
Impresse of Fontana.
Fontana, i, frontispiece (Detail)

BC, and was first inscribed on the obelisk now at Montecitorio *Imp. Caesar divi f. Augustus / Pontifex Maximus.*[16] This titulature was subsequently adopted by the papacy in the quatrocento, with the intention of connecting the sacred rites of the Popes with the religious duties of the Emperors.[17] The title *Pater Patriae*, also applied to Sixtus V, was conferred on Augustus by the senate in 2 BC, and occurs in the concluding section of the *Res Gestae Divi Augusti.*

> While I was administering my thirteenth consulship the senate and the equestrian order and the entire Roman people gave me the title of *patrem patriae*, and decreed that this title should be inscribed upon the vestibule of my house and in the senate-house and in the Forum Augustum beneath the quadriga erected in my honour by decree of the senate.[19]

Composed by Augustus, this now famous inscription describes his military exploits, built works, expenses, and the honours he received. The *Res Gestae* was in fact known to the

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[15]See "The Renovatio Imperii and the Renovatio Romae" in Charles L. Stinger *The Renaissance in Rome*, (Bloomington: Indiana University Press, 1985).

[16]For the temporal conjunction of these four projects in relation to Augustus' return to Rome, the conquest of Egypt, his *horoscopos*, and the assumption of the priesthood, see G.W. Bowersock "The Pontificate of Augustus" in *Between Republic and Empire* (Los Angeles: University of California Press, 1990), 380.

[17]Stinger, *The Renaissance in Rome*, 246.

[18]DIVO CAESARI DIVI IULII F AUGUSTO ‖ TI CAESARI DIVI AUGUSTI F AUGUSTO ‖ SACRUM. Consecrated to Divine Augustus Caesar son of Divine Julius Casesar and to Tiberius Caesar son of Divine Augustus. Attributed to Caligula (37-41 AD).

[19]*Res Gestae Divi Augusti*, trans. Frederick W. Shipley, Loeb Classical Library (1955), xxxv.

Renaissance, from a partial publication by the Dutch scholar Buysbecche in 1555 of a copy found on the walls of the Temple of Rome and Augustus at Ancyra, Turkey.[20] The inscription consists of thirty-five sections or paragraphs, each of which begins with a projecting letter on the surviving copies.[21] That Fontana lists the major works of Sixtus V as being thirty-five in number, leaving out projects and dividing others into parts almost arbitrarily, certainly fits the structure of this inscription[22]. The correspondences of the list of works by Sixtus V with the *Res Gestae* reinforces the twofold reading of *Della trasportatione*. While the first section on moving the Vatican Obelisk is in all senses an architectural treatise, the rest of volume one and all of volume two are a record of the life and achievements of both Sixtus V and Fontana:

> ...although I am sure, that the fame of these remarkable works, in the company of your many other heroic deeds, has filled the whole world; yet I am persuaded, that it will give great satisfaction to the desire of those who were not present, and due to great distance can not come to see the majesty of these many built works, to represent them before the eyes, insofar as art can show them...[23]

To interpret Fontana's corpus is to read this imperial 'remainder'. The translation of relics and artefacts, the construction of streets, aqueducts and hydrological designs introduce Fontana as an architect of transformations.

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[20]Frederick W. Shipley, Introduction to *Res Gestae Divi Augusti*, 334.

[21]Ibid. A modern facsimile of the *Res Gestae* is visible in Rome on the wall of the reconstructed Ara Pacis.

[22] For the works of Sixtus V, see Fontana, *Della trasportatione*, i, 3v-4r.

[23]Fontana, *Della trasportatione*, i, 2r. A third model for Fontana's 'remainder' might be compilations of inscription, as great sections of the treatise are devoted to the inscriptions which occur on the Obelisks, at the Bibliotecca Vaticana, and at the Palazzo Lateranense. A work containing all the Roman inscriptions made in the pontificate of Sixtus V was authored by Luca Orfei di Fano [BAV].

CHAPTER 2
WORKS

By all accounts, Fontana's rise from *stuccatore* and mason to the prolific Sistine architect is founded on an act of generosity. After being commissioned in 1574 by Cardinal Felice Peretti da Montalto for the tomb of Nicholas IV at S. Maria Maggiore,[1] and then in 1577 for the casino of Villa Montalto on the Esquiline, Fontana began work on the side chapel of S. Maria Maggiore known as the Capella del Presepio (Capella Sistina). Construction on the chapel started in January of 1585 under the patronage of Cardinal Peretti, yet the Cardinal's display of power displeased Gregory XIII, and all allowances were suspended. Fontana generously continued the work, financing construction with his extended properties in Rome. When, on April 24, 1585, Cardinal Peretti was elected as Pope Sixtus V, Fontana was compensated for his expenditures, and appointed Pontifical architect. This chapel inaugurates the transformations which would characterize the great majority of Fontana's works. These transformative projects include moving both relics and artefacts, opening roads, building stairways and doors, constructing aqueducts, dismantling antique works of architecture, and setting up catafalques. The Capella del Presepio, as a repository for numerous relics, is particularly illustrative of these multiple adjustments. The new chapel was to receive not only this precious relic, but also the body of St. Jerome, and the relics of the Holy Innocents from S. Paolo fuori le Mura, making S. Maria Maggiore one of the most significant pilgrimage sites in Rome.[2] Fontana's treatise shows the reliquary in mid-air before being placed in the centre of the completed chapel in 1587, attached by ropes to capstans in much the same way Fontana illustrates the operation of his castello. Redesigned in the 13-c, the Presepio chapel contains relics from the crib of Bethlehem, lending the name Santa Maria del Presepio to the basilica. The iconological programme of these transported relics links

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[1] The connections between Fontana and Sixtus V extend to their Franciscan ancestry, here first evident in constructing the tomb of Nicholas IV, the first Franciscan Pope.

[2] Steven F. Ostrow, *Art and Spirituality in Counter-Reformation Rome: the Sistine and Pauline Chapels in S. Maria Maggiore* (Cambridge Univ. Press, 1996). Ostrow is expressly concerned with the altars, relics, and pictorial programs of the two chapels. References to Fontana are limited, nonetheless, the text provides insight into the relation between Sixtus V, St. Jerome, and St. Francis.

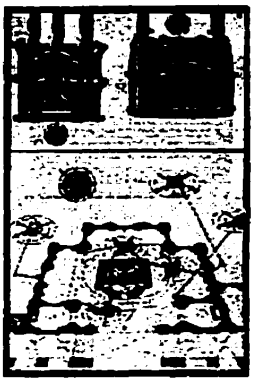

Figure vii.
L'armatura della Capella,
Fontana, i, 51r.

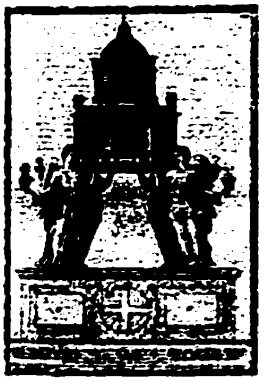

Figure viii.
Tabernacolo di metallo dorato, Capella del Percipio. Fontana, i, 107r.

Figure ix.
La Capella del Presepio,
Fontana, i, 53r.

Sixtus V not only to his Franciscan origins, but to the figure of St. Jerome.[3] As Steven Ostrow writes, the connections forged between relics of Christ's life, including the Presepio chapel, the Santa Casa di Loretto, and the Tomb in Montalto, maintain specific topographical associations with Sixtus V.[4] The reliquary was surmounted with Fontana's baldacchino, consisting of a centralized church held aloft, and in transition, by cherubim.

Over the next two years, Fontana was to design a series of roads joining Rome's pilgrimage churches along processional routes. The project with which Fontana is most commonly associated begins by circumnavigating the Villa Montalto, and radiating outward from Santa Maria Maggiore. Via Felice extends to Trinita dei Monti, and south-east to Santa Croce in Gerusalemme. Via Merulana connects Santa Maria Maggiore to the Lateran, while Via Panisperna extends towards Colonna Traiana. In addition to their processional significance, they connect Monti, the largest of the *rioni* which partition Rome, with the remainder of the city.[5] To revitalize the sparsely populated region, Sixtus commissioned Fontana to restore the ruined Acqua Alessandrina, a project initiated by Gregory XIII in 1583.[6] Bringing water to the higher elevations of Rome from the Alban

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[3]Ostrow, *Sistine and Pauline Chapels,* 12. Sixtus V is read as *Hieronymus redivivus*. The early advocacy of monastic life, his orthodoxy, his erudition, and their shared Slavonic origins are cited as possible connections to Sixtus V. In addition, the lion, well known as St. Jerome's companion, figured in the *imprese* of Sixtus V.

[4]Ostrow, *Sistine and Pauline Chapels,* 34. In this connection, it is interesting that Natale Bonifacio, the etcher of Fontana's treatise, authored a second transportative work: an arial map showing the flight of Mary's house from Nazareth to Loreto. Cited in Reed, *Italian Etchers of the Renaissance and Baroque,* 85.

[5]Torgil Magnuson, *Rome in the Age of Bernini* (New Jersey: Humanities Press, 1982), 13.

[6]As with much of Fontana's treatise, the intentions of a particular project are recorded in the setting down of inscriptions. One of the inscriptions which explains the purpose of the Acqua Felice occurs on an arch of the

Hills, the renamed aqueduct Acqua Felice flows into several fountains, including those at the Capitol, Quatro Fontane, the Piazza Giudea, at Trajan's column, and of course on the Quirinal at the fountain Acqua Felice.[7] In addition, Fontana writes of several roads which were projected but not undertaken due to the death of Sixtus V, including those connecting S. Paolo fuori le Mura past the Lateran to S. Croce in Gerusalemme, and from Porta Maggiore to S. Lorenzo fuori le Mura.[8] As Paolo Portoghesi notes, the urban planning of Sixtus V "does not constitute, as has often been asserted, a sudden change from the tradition instituted by his predecessors, but only an enlargement and broad application of this tradition."[9] While this may be accurate,[10] the novelty of Fontana's urban work lies not in its development of circulatory routes, but in setting up obelisks for optical connections. Despite these well documented precedents, the processional routes traced by Fontana, in their formal manifestation of ecclesiastical power, are often considered to first usher in the modern city. Westfall and others have argued that this distinction belongs rather to the quatrocento city of Nicholas V (1447-65), where the assemblage of buildings, roads and so on was first considered to carry a unified political

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aqueduct: "SIXTUS V PONT. MAX II QVO FONTIBVS RESTITVTIS II DESERTI VRBIS ITERVM HABITARENTVR COLLES II ACQVAS VNDIQVE INVENIENDAS MANDAVIT II AN. M.D. LXXXV. PONTIFIC I." Sixtus V Pontificate Maximus restored this spring, in order that the deserted areas of the city once again would become liveable hills, water from all directions was ordered to be brought. Fontana, *Della trasportatione*, i, 54r.

[7]The fountains were constructed by Giacomo della Porta, with the exception of the fountain Acqua Felice by Domenico and Giovanni Fontana.

[8]Fontana, *Della trasportatione*, ii, 20. There were are also a number of other roads planned by Sixtus V but not mentioned by Fontana, including connecting the Terme di Diocleziano to S. Vitale, connecting the Coliseum to the Circus Maximus and the Aventine, connecting the Porta Settimiana to S. Paolo fuori le Mura, the Capitoline with St. Peter's, the Quirinal with the Vatican, and the Porto di Ripetta with Saint Peter's passing through the Prati di Castello. See Magnuson, *Rome in the Age of Bernini*, 18; Paolo Portoghesi, *Roma Barocca* (MIT Press, 1970), 29.

[9]Portoghesi, *Roma Barocca*, 28.

[10]Certainly, the designs on Rome by the pontificates of Alexander VI, Julius II, and Gregory XIII all depend on the construction of wide and straight roads. Alexander VI constructed the Via Alessandrina which connects Castel Sant'Angelo with the Vatican; Julius II built the Via Giulia and the Via della Lungara; and Gregory initiated work on the Via Merulana from Santa Maria Maggiore to the Lateran. The trident which extends from Piazza del Popolo is the result of the roads by Leo X (Via Ripetta), Clement VII (Via del Babuino) and Paul III (widening of Via del Corso). Precedents for Fontana's work also include Gregory III's papal bull *Quae publice utilia* (1575) which set out building codes to encourage new streets and a continuous street facade.

and conceptual structure.[11] In fact, the building program of Nicholas V constitutes a model for the urban works of Sixtus V.[12] Yet, the relation between the urban works of Nicholas V and Sixtus V goes beyond the limited and reductive examination of the city as embodied politics. What makes the urban work of Fontana unique and open to the Modern is not so much its expression of power, or that the city itself had a purpose and so allowed men to follow their vocations and achieve fame, as Westfall writes.[13] After all, these characteristics are present in the Greek polis. Rather, it is through the representation of its transformation that the urban works of Fontana can be distinguished from their predecessors.

The optical connections which structured Rome begins with the transportation of the Vatican Obelisk. In the summer of 1585 a commission was established under Sixtus V to study the *trasportatione*, Fontana's project was chosen, and construction started by late September. Fontana received an edict of authority from the Pope in October, which allowed for materials and timber to be requisitioned as needed. From April to May of 1586 the obelisk was lowered, and by September it had been transported and set up facing St-Peter's. The obelisk was dedicated with an elaborate ceremony on the 28th of September. The bronze orb which had carried the ashes of Augustus on the summit of the obelisk was replaced with the pontifical devices of Sixtus V surmounted by a cross. Fontana was awarded the titles of *Cavaliere dello Speron d'Oro*, *Conte Palatino*, and declared a Roman Patrician, as well as receiving a pension and all the materials from the operation.[14] In 1587, a smaller obelisk was set up in front of the central apse of S. Maria Maggiore, brought from Via Ripetta near the Mausoleum of Augustus.[15] Two obelisks, both covered in hieroglyphics and broken in three parts, were later uncovered in the

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[11]For the urban work of Nicholas V, and its relation to the political, institutional, and conceptual structures of his pontificate, see Carrol William Westfall, *In this Most Perfect Paradise* (Pennsylvania State University Press, 1974).

[12]Nicholas V first proposed moving the Vatican obelisk, inaugurated the Vatican Library, and transformed the Mausoleum of Augustus in surmounting it with the figure of an angel.

[13]Westfall, *In this Most Perfect Paradise*, ix.

[14]Fontana was also known as Cavaliere della Guglia, after his defining work.

[15]Although not mentioned by Fontana in his treatice, Carlo Marderno assisted in moving all the obelisks, with the exception of the Vatican obelisk, as well as in other projects. For the contributions to the works of both Domenico and Giovanni Fontana by Carlo Maderno, see Howard Hibbard, *Carlo Maderno and Roman Architecture, 1580-1630* (University Park, Pa: Pennsylvania State University Press, 1971), 15.

Figure x.
Villa Montalto, A.
Giovanni, n.d.

Figure xi.
Ritratto di Sisto V from
Invicti Quinarri,
Pinadello, 1589.

Figure xii.
SIXTUS V PONT M BIBLIOTECAE VATICANAE AEDIFICATIONEM PRAESCRIBIT. Fresco, *Salone Sistino.* Domenico Fontana right.

Circus Maximus, which was explored by Fontana using a metal stake. In 1588, Fontana set up the tallest of the two in front of the Lateran. The second obelisk was moved to the Piazza del Popolo and set up in 1589. The statue of Trajan which had surmounted his victory column was replaced by Fontana with the statue of St. Peter in 1588, and Fontana restored the Colonna Antonina the following year, replacing the statues of Marcus Aurelius and Faustina with that of St. Paul. That winter, the Septizonium of Septimus Severus was demolished by Fontana to provide both stone and marble for other works. The Scala Santa, a relic of the stairway used by Christ to ascend to the praetorium of Pontius Pilate, was transported by Fontana in 1589 from the Palazzo Laterana and enclosed with the Sancta Sanctorum in a new building. At the Quirinal, Fontana enlarged the piazza, and moved the Dioscuri (Castor and Pollux) from the nearby Baths of Constantine to its centre. A project to transform the Colliseum into a wool factory was started in 1589 but work was halted.[16] In 1590, the completion of St. Peter's Dome by Fontana and Della Porta receives only passing mention in *Della trasportatione.* This is a striking ommission, given the magnitude of Fontana's role in completing the Basilica, its technical difficulties, and certainly its symbolic associations. The many etchings which show the dedication of the Vatican Obelisk occurring in front of St. Peter's, with the dome and cupola already built, suggests that the completion of St. Peter's was celebrated in the transportation of the Vatican Obelisk itself.

[16]On the death of Sixtus V in 1590 all construction on the Colliseum was stopped. Fontana states that the earth surrounding the coliseum had already been moved away.

Soon after the death of Sixtus V on the 27th of August, 1590, Fontana lost his standing in Rome. While working on the bridge at Borgehetto in 1592, Clement VIII rescinded his title as pontifical architect, and an ongoing audit of his accounts and charges of embezzlement led to a declaration of Fontana's indebtedness.[17] That year Fontana left for Naples, where he was appointed by Vice Re il Conte Miranda as Architetto Regio, and Ingegnere maggiore del Regno di Napoli.[18] Fontana travelled between Rome and Naples for several years, finally moving the contents of his house to Naples in 1596.[19] Bellori describes Fontana's first works in Naples as being hydrological, principally repairing flooding, renovating the riverbeds of the Clanio, and constructing an aqueduct from Sarno to the Torre della Annunziata for the use of mills in Naples. For the new Viceroy Count Olivares, Fontana designed several streets, along with projects for ports at Naples and at Bari. As Alberti writes in *De re aedificatoria,* these works which alter the landscape are considered architectural in nature, as they forge connections to the world in the same way as doors or passages

> ...by cutting through rock, by tunnelling through mountains or filling in valleys, by restraining the waters of the sea and lakes, and by draining marshes, through the building of ships, by altering the course and dredging the mouths of rivers, and through the construction of harbours and bridges, the architect has not only met the temporary needs of man, but also opened up new gateways to all the provinces of the world.[20]

These thresholds increasingly transformed the world, as Francesco di Giorgio Martini laments in his chapter on the Parts and Forms of Ports:

> ...Nature has ordained that in diverse parts of the world there are diverse fruit with various virtues and of diverse effects. Therefore, as many contrary things can not commodiously be in one single place, we need to

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[17]Hibbard, *Carlo Maderno,* 37.

[18]Pietro Belori, *Le vita de pittori, scultori, et architetti moderni* (Roma: Mascardi, 1672), 159.

[19]Orbaan, *Sixtine Rome,* 230 Apparently, one of the objects recorded in this move is a bronze model of an obelisk.

[20]Leon Battista Alberti, *On the Art of Building.* Trans. Joseph Rykwert et al. (Cambridge: the MIT Press, 1988), prologue.

> find ways in which merchandise and fruit from place to place can be transported for the comfort of Man. [21]

Fontana's urban works in Rome might also be interpreted in this sense, as openings with the transformative qualities of a threshold. This accords with the prominent engravings of doorways occupying several pages in both the first and second volumes of Fontana's treatise, which are similar in many ways to those found in Serlio's *Libro Extraordinario*, and later in the designs of Inigo Jones. Concurrent with these hydrological works, in 1596 Fontana designed a catafalque for the requiem mass in Naples of Philip II, King of Spain.[22] Fontana's son Guilio Cesare, a frequent collaborator, took over the Neapolitan practice after his father's death in 1607, and was appointed Architetto Regio. The last project Domenico Fontana is known to have produced in Naples is a plan for the facade of St. Peter's, entered in the competition established by Paul V in 1606, and which was eventually won by Carlo Maderno.[23]

The life and works of Domenico Fontana and Sixtus V are nowhere more intertwined than in the papal catafalque set up in Santa Maria Maggiore, which deserves elaboration due to its proximity to the *trasportatione.*. With this obscure, ephemeral piece of architecture, Fontana embodies Sixtus V in works of his own making.[24] On the 20th of

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[21]Francesco di Giorgio Martini, *Trattati de Architettura civile e militare*, ed. Corrado Maltese (Milano: Edizioni il Polifilo, 1967), bk. vi, tav. 309.

[22]Orbaan, 230.

[23]Cited in Jacopo Grimaldi 1619. See Obaaan p. 231, Hibbard p. p.37,

[24]In order to compose Fontana's world of symbols and images, the figure of Sixtus V requires some detail. Sixtus V is the subject of several biographies, including those by Casimiro Tempesti (1754), Baron Hübner (1872), and Ludwig von Pastor (1886-91), among others. Casimiro Tempesti, *Storia della vitae geste di Sisto Quinto...*, 1754. Hubner, Joseph Alexander Graf von, *The Life and Times of Sixtus the Fifth*, 1872. Pastor, Ludwig F. von, *The History of the Popes*...1924. A brief biography follows: Sixtus V was born Felice Perette in Grottammare December 13, 1521, on the Feast of St. Lucy. His family soon moved to Montalto, and Felice Perette joined the Franciscan order in 1533. He was known as an outstanding preacher, and in 1556 became a councillor to the Venetian Inquisition. His coat of arms was chosen on his election as a cardinal in 1570, and consists of a Lion holding pears (Felix - fruit, Peretti - small pears; the three mountains refer to Montalto). He was elected Pope the 25th of April 1585. His short pontificate is almost always characterized as one of haste and exuberance. Besides his building programme, the acts of Sixtus V include reforming the Curia (giving the Pope greater power over fewer cardinals), an economic policy which gathered great wealth into the coffers of Castel S. Angelo by issuing interest bearing bonds (the coffers were supposedly designed by Fontana, they were not depleted until the French Revolution), purging Rome of armed bandits and prostitutes (for a while), protecting the coast of the Papal States, and establishing the silk and wool industries in Rome. Sixtus V also established the Typographia Vaticana in 1587, which was headed by Dominicus Basa, publisher of Fontana's treatise and numerous engravings. A

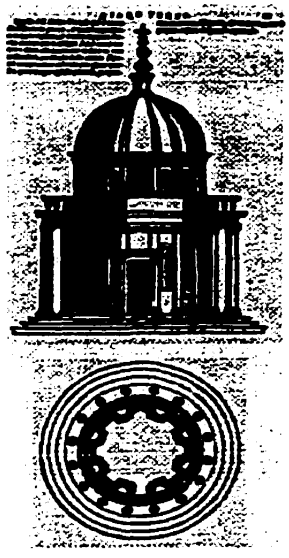

Figure xiii.
Tempietto, from
Architettura et prospettiva. Serlio, bk. iii

Figure xiv.
Il disegno del Mausoleo che si fe in S. Maria Magiore quando si trasporto il corpo di Papa Sisto V..., Fontana, i, appended.

August 1591, almost exactly a year following the death of Sixtus V, his body was moved from the Cappella di S. Andrea in S. Pietro to Santa Maria Maggiore. It then occupied Fontana's catafalque for one week before being placed in the crypt of the Capella Presepio. Baldo Catani, a source of greatest proximity yet rarely if ever touched, records this final transportation in his *Pompa Funerale Celebrata dal Cardinal Alessandro Montalto nella trasportatione dell'ossa di Sisto Quinto da S. Pietro a S. Maria Maggiore,* 1591.[25] Inigo Jones, architect of festivals and masques, had access to Fontana's *Della trasportatione* and Catani's *Pompa funerale* in designing the very similar catafalque for James I in 1625.[26]

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new version of the vulgate Bible by Sixtus V also came from this press in 1589, entitled *BIBLIA SCARA VVLGATAE EDITIONIS AD CONCILII TRIDENTINI praescriptum emendata ET A SITO V P. M. recognita et approbata,* Printed by Aldo Manuzio the Younger, Typographia Vaticana, 1590.

[25]This text, available at the BAV, is reprinted in Tempesti, vol ii. Catani writes that the catafalque was authored by Domenico Fontana, with paintings by Giovanni Guerra, and sculpture by Prospero Bresciano. Folliwng Catani's text is a copy of the funeral oration, by L. Pellegrino, *Oratio Funebris de Sixto V Pont. Max.* in Tempesti ii, 329-333.

[26] In the records of Jones' library holdings, one of his painters is known to have owned a copy of Fontana's treatise, see John Harris, Stephen Orgel and Roy Strong. *The King's Arcadia: Inigo Jones and the Stuart Court* (London: Lund Humphries, 1973), 64. For the relation between Fontana's catafalque and that by Jones, see John Peacock "Inigo Jones' catafalque for James I" in *Architectural History: Journal of the*

Figure xv.
Catafalque of James I in Westminster Abbey, London. Inigo Jones, 1625.
[Worcester College]

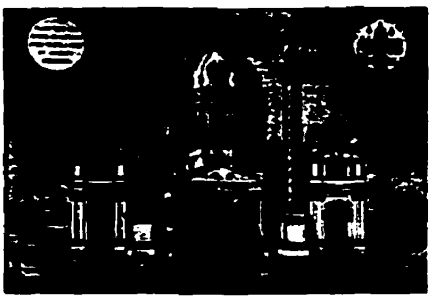

Figure xvi.
Karlskirche, Vienna, Fischer von Erlach, 1715-38.

Figure xvii.
Il mausoleo di Filippo II, Fontana. 1599
[Napoli: biblioteca nazionale]

The *Pompa funerale* begins with a description of the funeral procession and the locations in Rome which the cortège passed on the way to Santa Maria Maggiore, including many of Fontana's works. Catani writes that once within the church,

> I saw the whole Church covered in darkness, and all around sparkled torches. In the middle was set up a large and splendid Catafalque in the form of a most beautiful temple, of composite orders and making the figure of a hexagon; I saw the six distinct parts, the height of which the Church did hardly contain, and in this way was it built. From its beginnings above the pavement of the Church, as a base for the entire edifice, rose a plinth one *palmo* high, finished in green marble called Lacedemonio. Above this six pedestals were placed with their mouldings, each being six *palmo* in height, finished with marble mixed of difference sorts, and equally from the mouldings of the pedestals was raised six arches eighteen *palmi* in height, and to these arches six stairs ascended, with seven steps each...[27]

The elements of the catafalque are recorded in ascending order, concluding with descriptions of the dome, the inscriptions, obelisks, and the friezes. The catafalque distorts the space and time of Fontana's production - dome, obelisks, and columns - combining it with the symbols and *stemma* of Sixtus V. As the apotheosis of an architecture of relics and artefacts, the catafalque *is* the life of Sixtus, and the work of Fontana.

Society of Architectural Historians of Great Britain, vol. 24, 1981. The influence of Fontana on Inigo Jones would be an interesting project.

[27]Catani, *Pompa Funerale,* 1591.

The catafalque has few direct presidents for its form, although the temple of Vesta and the Maritime Theatre at Hadrian's Villa come to mind. Bramante's Tempietto is perhaps closest not only in terms of form, scale, and enclosure, but as an equivalent shrine.[28] Yet what is particularly remarkable about the Tempietto, and likewise the catafalque, are their essentially topographic intentions. In terms of the catafalque, Fontana brought the relics and places of the city into the theatre of the church, much as his other projects brought relics of the church into the organization of the city. In this, the catafalque and the *trasportatione* of the Vatican obelisk are related as antithetical projects. The Tempietto of S. Pietro in Montorio also marked out the topography of Rome. Built on the site assumed by the humanist Vegio to have witnessed Peter's crucifixion, the Tempietto stood on the Janiculum precisely halfway between two tombs, the Meta Romuli (close to Sant'Angelo, now destroyed) and the Meta Remi (Pyramid of Cestius).[29] The implication is that St. Peter follows the founders of Rome in setting up the Church. However, early Christian tradition situates Peter's martyrdom at the Vatican Obelisk, *inter duas metas*, on the spina of Nero's circus, thus transforming a decadent site into a gateway to heaven.[30] In both cases, the topographic signs of antique Rome augured for the establishment of the Church. These antique foundations, with their attendant winds, sun and shadows, together prepare the ground for the *trasportatione* itself.

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[28]If one interprets the grotto of the adjacent Sistine Chapel, into which the Precipio chapel was placed, in conjunction with the Catafalque, the parallels with Bramante's Tempietto are reinforced. The subterranian portion of the Tempietto is formed from by a pre-existing grotto, and the grotto of the Precipio chapel is interpreted by Ostrow as being a re-creation of an early-Christian confessio, ***Sistine and Pauline Chapels***, 33.

[29]Charles L. Singer, ***The Renaissance in Rome*** (Bloomington: Indiana University Press, 1985), 179. The location of St-Peter's crusifiction between the two metae was first proposed by the humanist Maffeo Vegio in *De rebus antiquis memorabilibus Basilicae S. Petri Romae*, circa 1447-58.

[30]Stinger, ***The Renaissance in Rome***, 181.

CHAPTER 3
TOPOGRAPHY

Topography, like genealogy, is an essential part of cosmogony. While genealogy is ordinal and sequential, the drawing of place is uniquely cardinal. The birth of order describes the making of place, as primordial matter divides into sky and earth, and the world opens for us to dwell.[1] Aristotle treats of place, (*topos*) in chapter 4 of *Physics*, noting that place not only exists, but itself has power to move the world into order, drawing elements upward or down to their natural positions. Hesiod is correct, writes Aristotle, in positioning chaos first in his system, "because the first requirement is that there should be space for things."[2] Even in cosmologies which begin with a void, rather than a primordial substance such as chaos, place quickly appears; the void acts as a stage on which boundaries are soon marked.[3] In the composition of these boundaries lies the origin of the *templum*, that place set off from the landscape by the work of the augur. Before the obelisk was moved by Fontana, before it was set up on Nero's circus by Caligula, before the circus was laid out on the temple of Apollo, lies ichnographia. As Michel Serres writes, "Before there are men in cities, there are the flights of vultures."[4] Ichnographia, the signs drawn by footprints (*ichnos*), becomes significant only through interpretation. Interpretation can properly be called the work of the augur, the translation of *vaticinii* (prophecies)[5] into meaning, and the tracing out of this meaning on the landscape. Fontana's *trasportatione* is also a work of interpretation, drawn horizontally

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[1]Varro, supports this common dichotomy. "The primal places of the universe, according to the ancient division, are two, *terra* 'earth' and *caelum* 'sky', and then, according to the division into items, there are many places in each. The places of the sky are called *loca supera* 'upper places', and those belong to the gods; the places of the earth are *loca infera* 'lower places', and these belong to mankind." *On the Latin Language*, trans. Roland G. Kent, The Loeb Classical Library (1938), bk. v, xvi.

[2]Aristotle, *Physics*, trans. Hippocrates G. Apostle (Bloomington: Indiana University Press (1969), 208b.

[3]Edward S. Casey, *The Fate of Place: A Philosophical History* (Los Angeles: University of California Press, 1997), 18.

[4]Michel Serres, *Rome: The Book of Foundations*, trans. Felicia McCarren (Stanford Ca.: Standford University Press, 1991), 13.

[5]Charles L. Stinger, *The Renaissance in Rome* (Bloomington: Indiana University Press, 1985), 184. Three sources are given by Stinger: Aulus Gellius (*vaticinii* - prophecy), Festus Pompeius (*vates* - seers), and Varro (*vagire* - wail) after the God Vaticanus who had power over the beginnings of human speech, and was venerated where a voice from heaven was heard. Also relevant is Varro's definition in *On the Latin Language*, vi, 52a, where *vaticinari* is translated as 'to prophase' from (f/v)ati 'to speak'. Properly, *vaticinari* comes from *vates* (bard) and *canere* (to sing), "It is called the Vatican because in that place the *Vates*, or priests, sang their offices before Apollo's Temple," *Mirabilia Urbis Romae*, 12-c. trans. Francis Morgan Nichols, 1986.

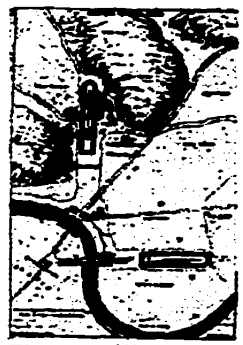

Figure xviii.
Pianta del Vaticano Antico, from *Il Tempio Vaticano,* Carlo Fontana (1694) [15]

Figure xix.
Veduta del Cerchio Neroniano. Ibid [12].

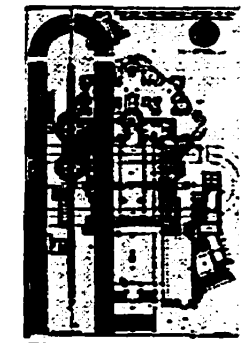

Figure xx.
Pianta della Basilica...con il cotorno e loco dove fu il circo di nevone, Ibid [89].

across the surface of the ground, and set up to reveal the order of the *topos* it measures. The history of the obelisk is bound to the sun, and to the shadows traced by its apex across the many layers of the Campus Vaticanus.

Topographical works on the Campus Vaticanus, particularly Biondo's *Roma instaurata* (1444-6) and *Roma triumphans*, describe the auspicious and sacred qualities of this site. The martyrdom of Peter and the subsequent establishment of the church in the Vatican occur in a place already heavy with meaning, events interpreted by Biondo as fulfilling the city's true destiny.[6] The Campus Vaticanus, illustrious and venerable site of prophecy, is (predictably) at the origin of Rome. According to the medieval topographical text *Mirabilia Urbis Romae*, the founding of Rome is preceded by the inhabitation of the Janiculum by Janus, the son of Noah.[7] The Janiculum, also known as Vaticanus Mons before this referred to the modern Monte Vaticano, was considered an part of the

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[6]Stinger, *The Renaissance in Rome,* 183-4. The early history of St. Peter's is also the subject of Vegio's *De rebus antiquis memorabilibus Basilicae S. Petri Romae.* Perhaps the most detailed history of the Vatican is the late work by Carlo Fontana, *Il Tempio Vaticano* (1694), which traces the site of the Vatican through its many incarnations, making use of ancient authors and compiling previous sources. The titles of C. Fontana's first book include the following subjects (not complete): The Antiquities and Etymology of the Vatican. The sepulcur to the memory of Romulus. The Circus and its use. Of the size, form, and measure of the Circo Neroniano. The Naumachia at the Vatican. The Strada Etrusca and Trionfale at the Vatican. The Ponte Trionfale and its origin. The demolished pyrimadal sepulcur at the Vatican. The street Aurelia at the Vatican and of the Gianicolo.

[7]Janus builds the city Janiculum on the Palantine hill, but also a palace of the same name in Trastevere. A series of cities then gradually form by the Tiber, the Capitoline, the Aventine, and the Palantine. Finally all of these cities are enclosed by Romulus, and he calls the place Rome after himself. *Mirabilia,* 3-4.

Vaticanus Ager, the region on the right bank of the Tiber.[8] The Campus Vaticanus itself consisted of the level ground bounded by Monte Vaticano, Monte Aureo (Montorio / Janiculum), and the Tiber, evident in Carlo Fontana's etching. According to Biondo in *Roma triumphans*, the Vatican contained a temple of Apollo, with the Via Triumphalis connecting it to the Tiber and across the now destroyed Pons Triumphale. Assembling on the *territorium triumphale*, or later in the Circus, the processions following this route prefigure those which were to issue from St. Peter's.[9] Whether a temple of Apollo did in fact exist on the Campus Vaticanus or not, the symbolism for the Renaissance is clear. Apollo, God of the sun and of prophesy, patron deity of Augustus and hallmark of Platonism, was venerated where the obelisk was later set up.[10]

Pliny, in the book of his *Natural History* which deals with the nature of stones, writes that the Obelisk placed in the Vatican was first quarried in Aswan, and dedicated by Nencoreus (Amenemhet II, Nebkaure), "to the Sun-god, in accordance with an oracle after he had been stricken with blindness and had then regained his sight."[11] From its position in Heliopolis, Caius Caligula (37- 41 AD) transported the obelisk to Rome using wondrous boats which navigated the Nile, the Mediterranean, and the Tiber.[12] The obelisk was moved directly to the *spina* of the circus Gaii et Neronis, which was built by Caligula and later finished by Nero (54-68).[13] The *spina* at the centre of the circus held not only *metae* for the horses to race *circum* 'around',[14] but trophies. While the transportation of artefacts is linked with the movement of relics in the Christian era, the

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[8]L. Richardson, *A New Topographical Dictionary*, (Baltimore: Johns Hopskins, 1992), 405. Janus was also thought to be the founder of the Etruscan religion, with the divine wisdom of Noah, thus also prefiguring the establishment of Christianity on this site.

[9]Stinger, *The Renaissance in Rome*, 183. Although Carlo Fontana illustrates the Campus Vaticanus with a temple of Apollo, and both Biondo and the *Mirabilis* mention a temple to Apollo in the Vatican, other references to it have been elusive.

[10] Properly speaking, the Greek God of the sun is Helios, descendent of Uranus and Gaia, and the eye of the world. Apollo, while a solar deity, is also the God of music and poetry, among other attributes.

[11]Pliny, *Natural History*, xxxvi, 74. The Vatican obelisk was moved from the quarry at Assuan to Helipolis by Meneptah I, 19th dyn, 1322-1302 BC.

[12]"The ship used by the Emperor Gaius for bringing a third [obelisk to Rome] was carefully preserved for several years by Claudius of Revered Memory, for it was the most amazing thing that had ever been seen at sea." Pliny, *Natural History*, xxxvi, 70. Augustus had already moved two obelisks to Rome, one for his Horlogium and the second for the Circus Maximus (20 BC), as well as moving two obelisks from Assuan to Heliopolis (13 BC).

[13]The use of the theatre was short-lived, apparently due to the collapse of the *pons neronianus* in the 2-c AD, which made access more difficult.

[14]Varro, *On the Latin Language*, bk. v, 154.

Figure xxi.
Il transferimento dell'obelisco Vaticano...dall'Egitto a Roma, after a fresco in Palazzo del card. Pier Luigi Carafa, n.d.

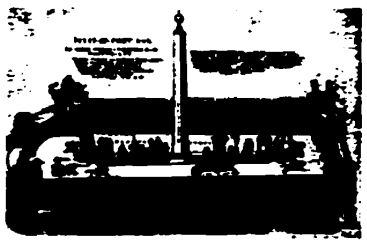

Figure xxii.
Circus Flaminius, Nicolas Beatrizet (1552) [271]. The obelisk is marked *obeliscvs soli sacer.*

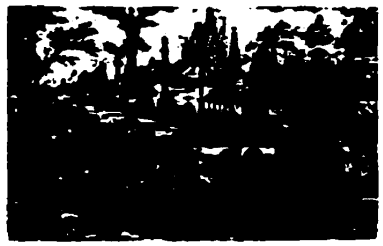

Figure xxiii.
Dedicatory Plate from, *Antichita romana,* Piranesi.

antique counterpart to the relic is the trophy. Rome was the stage for the many architectural projects which celebrated military successes,[15] including the conquest of Egypt by Augustus in 31 BC, evident in the inscription on the base of the obelisk at his Horlogium.[16] Fontana is aware of this history, when he calls the obelisks "most rich and memorable trophies."[17] Choosing the obelisk as the pre-eminent spoil in the conquest of Egypt, the Romans brought not only spectacular works into the city, but adopted the obelisks as a reflection of their own solar attributes. Pliny is correct when he writes, "An obelisk is a symbolic representation of the sun's rays, and this is the meaning for the Egyptian word for it [*tekhen* / sunbeam / obelisk]."[18] The Roman historian Ammianus Marcellinus links the obelisk to the *metae*, in describing its form.

> An obelisk is a very hard stone, rising gradually somewhat in the form of a *metae* to a loft height; little by little it grows slenderer, to imitate a sunbeam; it is four-sided, tapers to a narrow point, and is polished by the workman's hand. Now the infinite carvings of characters called hieroglyphics, which we see cut into every side, have been made known by an ancient authority of primeval wisdom. For by engraving many kinds of birds and beasts, even of another world, in order that the memory of their achievements might the more widely reach generations of a subsequent age, they registered the vows of kings, either promised or performed.[19]

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[15]Diane Favro, *The Urban Image of Augustan Rome*, 82. In a similar way, Titus transported to Rome the spoils of the Temple of Solomon, including the archtypal seven-branched mennora in 71 AD.

[16]IMP CAESAR DIVI AVGVSTVS PONTIFEX MAXIMUS IMP. XII COSXITRIBPOT XIV AEGVPTOIN POTESTATEM POPVLI ROMANI REDACT SOLI DONUM DEDIT.

[17]Fontana, i, 3r.

[18]Pliny, *Natural History*, bk xxxvi.

[19]Ammianus Marcellinus, *Rerum Gestarum Libri*, Loeb Classical Library (1938), bk. xvii. ch. iv.

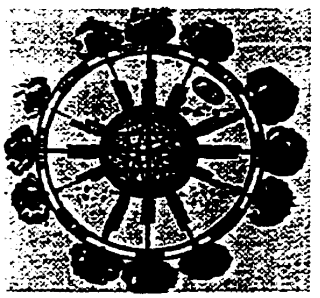

Figure xiv.
From *Anemographia Vaticanum Horizontale*
Dante (1569) Frontispiece.

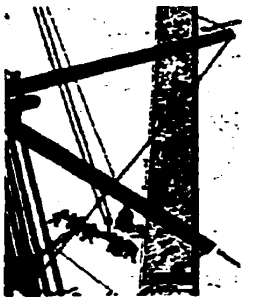

Figure xxv.
From *Trattato di trasportar la Guglia.* Agrippa (1583) (Detail).

Varro does not give the etymology of *obeliscus*, but it originates from the Greek term οβελισκοζ, which refers to a spit or skewer.[20] Italian variations of the word obelisk used by Fontana include *Guglia* and *Aguglio* (needle). At the close of the sixteenth century, the interpretations of the obelisk and the Campus Vaticanus, by Fontana and his contemporaries, are infused with this nascent solar imagery, and the idea of a new centre for Rome.

Fontana's *trasportatione* reveals the hidden marks which compose the topography of the Campus Vaticanus. First among devices in the *trasportatione* is the wind-rose, which appears on almost all engravings, and serves to orient not only each view of the proceedings, but to indicate that the event itself is primarily one of orientation. The eight cardinal winds refer to the following, beginning with north: T (Tramontana), G (Greco), + (Levante), S (Siciroce), O (Ostro), A (Libecchio), P (Ponente), M (Maestro). The relation of the Latin winds to the twelve Greek winds of Vitruvius is illustrated on the frontispiece of the treatise Anemographia by the astronomer and mathematician Egnazio Danti.[21] These winds are also foremost in the engraving by Camillo Agrippa, naming the four levers of his *castello*. The naming of the winds and their directions, like any act of naming, discloses the orders of the world. Similarly, the augur's naming fixed the

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[20]According to John A. Weisse, *The Obelisk and Freemasonry* (New York: J.W. Bouton, 1880), 5, another Egyptian term for Obelisk is *Djeri Anschai*, meaning 'written column'. Nineteenth century nomenclature for the parts of the obelisk are as follows: pedestal, shaft, and pyramidion, terminating in an apex. Weisse states that both the Greek *stelae* and Roman columns are derived from the obelisk.

[21]Danti designed the Anemoscope in the Torri dei Venti, located in the west corridor of the Belvadere at the Vatican. Cited in Philip Jacks, "*A Sacred Meta*," 153.

boundaries of the *templum*, dividing left from right. Livy describes the augury performed by Numa in Rome,

> Gazing out over the city and the country beyond, he uttered a prayer, and marking with a glance the space of the sky from east to west and declaring the southward section to be 'right' and the northward section 'left' he took an imaginary point full in front of him and as far away as his eyes could reach...[22]

The optical connection to the landscape is reinforced by Varro, who writes that the relation between *templum* and *contemplare* 'contemplate' revolve around *tueamur* 'to gaze'.[23] From this marker, the contemplation of the horizon is also bound to a vertical axis, as the obelisk joins the heavens and the earth. Varro defines the templum as being used in three ways, "...of nature, of taking the auspices, and from likeness [of a templum] of nature, in the sky; of taking the auspices, on the earth; from likeness, under the earth..."[24] The conjunction of these three archetypal places in the figure of the *templum* occurs in two other architectural types closely related to the obelisk, the *umbilicus* or *mundus*, and the *stella*.

The *umbilicus romae*, supposedly an incongruous brick tumulus in the Foro Romano built over earlier and unknown structures, marked the centre of antique Rome, and the Roman world.[25] The *umbilicus*, linked by Varro to the Greek *omphalos*, was both the centre point of the city and the origin of all things.[26] The *umbilicus* refers back to the founding of the city itself, and the construction of the *mundus*.

> A circular trench was dug around what is now the Comitium, and in this were deposited first-fruits of all things the use of which was sanctioned by custom as good and by nature as necessary; and finally, every man brought a small portion of the soil of his native land, and these were cast in among first-fruits and mingled with them. They call this trench, as they do the

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[22]Livy, i, 18, 53.
[23]Varro, *On the Latin Language*, vii, 9.
[24]Varro, *On the Latin Language*, vii, 7-8.
[25]Ernest Nash, *Pictorial Dictionary of Ancient Rome* (New York: Frederick A. Praeger, 1961), 484. The existing brick structure dates from 4-c AD.
[26]Varro, *On the Latin Language*, vii, 17.

> heavens, by the name of *mundus*. Then, taking this as a centre, they marked out the city in a circle around it.[27]

Plutarch's description of the founding of Rome invokes a point of origin not on the horizontal plane, but in subterranean depths. The *mundus* was both a founding event and the centre point of the city, as well as a passageway to the underworld. Filarete, in his *Trattato di architettura*, records the founding of Sforzinda based on the construction of a similar mundus. In *Della trasportatione*, the new foundations of the obelisk were considered to be a type of *mundus*:

> ...Within this foundation, in many places, were cast bronze medals in memory of the occasion; for which were specifically made two caskets of travertine holding twelve medals each. The medals had a sculpted band with the image of Our Lord, and the reverse sides were of many kinds...[28]

The Vatican obelisk stands above this subterranean realm and buried symbolism, as both a gateway, and as a funeral stella. Many considered the obelisk to be a stella, carrying the ashes of Julius Caesar aloft, although Fontana asserts that the dust found in the gilt orb was merely natural accumulation by means of small openings.[29] The *metae*, best described as a type of obelisk, among medieval lexicographers connoted burial structures, due to its position as a *terminus*.[30] The Campus Vaticanus was in fact a veritable necropolis, containing not only the monuments of Peter, Romulus, and Hadrian but the myriad sepulchres which currently populate the lowest reaches of St. Peter's.[31] The inscription on the Vatican obelisk by Caligula is not only a genealogical trace, but an epitaph. The tomb is also a centre, and as Mircea Eliade notes, it is a place where communication could be made between the world of the dead, the earth, and the sky.[32] The setting up of sacred stones is evident in Samuel's offering, and in Jacob's Dream:

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[27]Plutrarch, "Romulus" in *Lives*, trans. Bernadotte Perrin, Loeb Classical Library (1914), ch. x. See also Ovid, *Fasti*, iv, 820.

[28]Fontana, *Della trasportatione*, i, 6.

[29]The orb is now in the Capitoline museums, and can be seen in the Sala dei Bronzi (under restoration).

[30]Philip Jacks, "A Sacred Meta for Pilgrams", 141.

[31]Hadrian built his Mausoleum (Castel Sant'Angelo) 113-134 AD. The bays of the circus were known to have fallen into disrepair, and then modified to contain tombs.

[32]Mircae Eliade, *Patterns in Comparative Religion*, trans. Rosemary Sheed (New York: Meridian Books, 1963), 323.

Figure xxvi.
Samuele erige la 'pietra del soccorso' Palazzo Lateranese, Fresco
(Detail)

> He came upon a certain place and stopped there for the night, for the sun had set. Taking one of the stones of that place, he put it under his head and lay down in that place. He had a dream; a ladder was set on the ground and its top reached to the sky, and angels of God were going up and down on it...Jacob awoke from his sleep and said, "This is none other than the abode of God, and that is the gateway to heaven." Early in the morning, Jacob took the stone that he had put under his head and set it up as a pillow and poured oil on the top of it. He named that site Bethel...[33]

The theophany which occurred by means of this ladder or gateway, tied to the consecration of the city as the site of God, is closely related to the intentions of the *trasportatione*. Fontana transformed the obelisk by surmounting it with a cross, as he writes in his treatise, giving the promise of bodily resurrection and the triumph over death.[34] The transformation of the obelisk from stella to sanctified ladder only reinforces the essential characteristic of the obelisk, and the basis of the *trasportatione*, its significance as a trans*porte*ative device.

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[33]Genesis 28: 11-19.
[34]Fontana, *Della trasportatione*, i, 2.

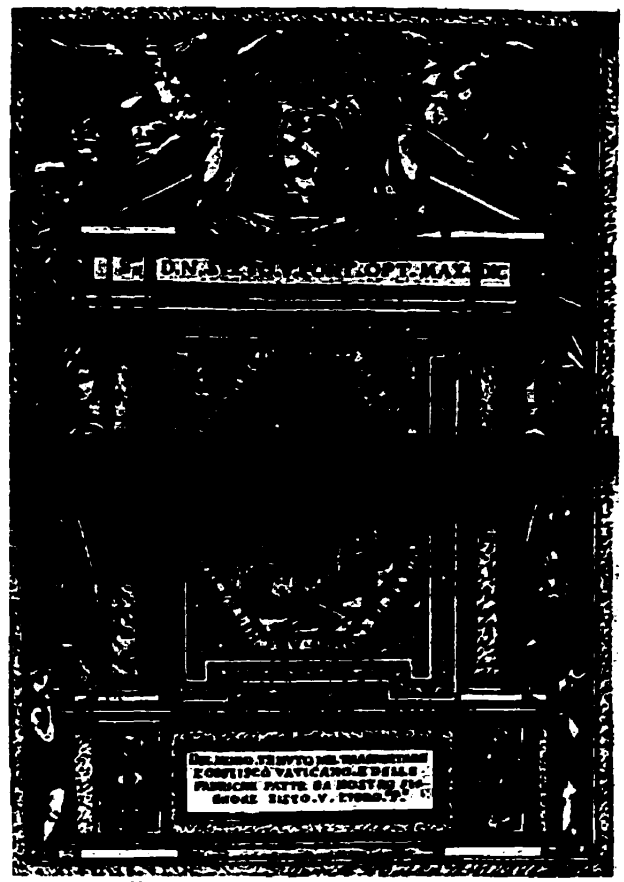

Figure xxvii.
Fontana, i, Frontispiece.

WRITING ARCHITECTURE

CHAPTER 4
DELLA TRASPORTATIONE

Fontana divides his chapter on the *trasportatione* into four themes, beginning with the methods used to measure and weigh the obelisk, the construction of the *castello* and all of its parts, the procession and ceremony to purge the obelisk and consecrate the cross, and finally, a conjecture on methods used by the ancients to set up the Vatican obelisk.[1] Added to this is an account of the competition organised by Sixtus V to select the *Artifece* capable of performing the work, a description of the various proposals which were

submitted, and a copy of the 'Edict of Authority' giving Fontana access to materials. Fontana narrates the entire operation, beginning with the excavation of the new foundations, the *compartimento* of the capstans on the site and other preparations,[2] and the choreographic procedures used to lower, convey, and raise the obelisk. The text describes the precise workings, dimensions, and weights of the many devices which composed the *castello*, including: clamps, wedges, ligatures and ropes, iron bands and rods, pulleys and blocks, rollers, levers, bolts, sheathing, props and bracing. As there existed no record of the ancient methods used for the *trasportatione*, based on traces visible at the foundations, Fontana speculates that their operations were both more difficult and more costly. The historical conjectures are limited to this brief discourse, and an elaboration on the texts by Pliny as to the fractured state of the obelisk. The illustrious personages who witnessed the *trasportatione* are recorded, as are the accompanying inscriptions, medals, emblems, and masses. The sections are divided by full plate etchings, often prefaced with titles and detailed legends. As Fontana introduces his work, it is clear that the narrative contained in the sequential plates is the focus of the text.

> I will therefore gather all the arts necessary for the transportation, and setting up of this needle, represented in drawings to the eyes of the readers for greater clarity, so that they would understand all the important actions that served to produce this effect: so that with little effort, others in this practise will now no longer be buried in shadows, rather will be able to use the present invention, brought back into light...[3]

The text is replete with descriptions and explanations of the *castello*, and the complex motions required to transport the obelisk. Yet the practical interests of the text notwithstanding, and which in any case were to be rarely used, Fontana's treatise is pre-eminently a story of architecture, ultimately concerned with order, proportion and

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[1]Fontana, *Della trasportatione*, i, 3v. For an abridged English translation of *Della trasportatione*, see Appendix B.

[2]Fontana, *Della trasportatione*, i, 21r. Alberti uses the similar *partitio*, usually translated as compartition, in describing the work of arrangement. "All the powers of invention, all the skill and experience in the art of building, are called upon in compartition; compartition alone divides up the whole building into the parts by which it is articulated, and integrates its every part by composing all the lines and angles into a single, harmonious work..." Leon Battista Alberti, *On the Art of Building in Ten Books*, trans. Joseph Rykwert, Neil Leach, Robert Tavernor (Cambridge, Mass: The MIT Press, 1988), bk.i ch. ix.

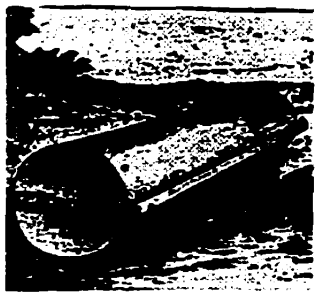

Figure xxviii.
From *Vitruve: Corrigez et Traduits,* M. Perrault, planche lx. (1634)
Project by Cherisphron

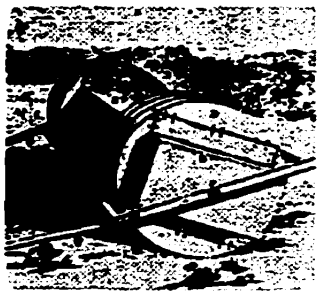

Figure xxix.
Ibid.
Project by Metagenes

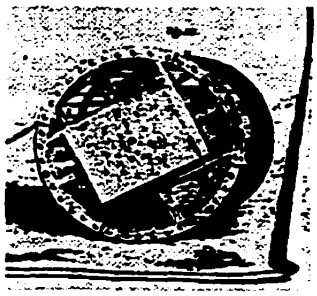

Figure xxx.
Ibid.
Project by Paconius

harmony. Fontana's text recalls the treatises of Vitruvius and Alberti, the narratives of Filarete and Colonna, and works contemporary with *Della trasportatione*, including those authored by Camillo Agrippa, Fillipo Pigafetta, and Michele Mercati. Inquiring into the relations between Fontana's treatise and the *cadre* of architectural writing which precedes it, suggests that the moving of weights is rarely a prosaic concern, but rather, illuminates an essential aspect of architecture.

The tenth book of Vitruvius' *De architectura*, an enumeration of various machines and inventions, constitutes an appropriate parallel to *Della trasportatione*. Curiously, although Vitruvius dedicates his work to Augustus, the text is silent on the transportation of obelisks. *De architectura* does however include three examples of moving large weights, firstly the invention of Chersiphron, who moved the shafts of the columns to the Temple of Diana at Ephesus, secondly that of his son Metagenes who moved the lintels, and finally a third variation by Paconius who moved the pedestal for a statue to Apollo. Vitruvius classifies the various types of machines into those which operate principally as ladders (*acrobaticon*), those moved by wind (*pneumaticon*), and those moved by traction (*baru ison*). The writing then becomes increasingly specialised, with lengthy depiction of the *tripastos*, *pentaspaston*, and *polyspaston*, along with the arrangement of their numerous pulleys, blocks, and timbers. The essentially cosmological aspects of moving large weights is constantly beneath the surface, as Vitruvius begins his discourse with the observation that all machines are generated from Nature, as they move weights in imitation of the celestial motions which govern the universe. The prosaic aspects of

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[3]Fontana, *Della trasportatione*, i, 3v.

machines, such as those used in the construction of Temples and other public works, or in the more complex *scorpiones* and *balistae*, is likewise tempered by their exquisite proportioning. As Fontana's *castello* is derived from the weights and measures of the obelisk, these Vitruvian machines are proportioned and based on their charges. Vitruvius writes

> The holes which are made in the frames...are taken proportionately to the amount of the weight which the *balista* is to shoot, in accordance with gravity, just as in the case with catapults the length of the arrows furnishes the module...[4]

For *balistae*, the dimensions of the entire structure are based on these openings.

> The thickness of the frame is to be 9/16 of a hole. Of the box, the length is 2 holes; the breadth 13/4; the thickness, in addition to the part inserted into the hole, 9/16...[5]

The original proportions are insufficient to bring the machine into operation, which requires further tuning and adjustment, again similar to the concordant operation of Fontana's *castello*. In the famous passage on the attributes of an Architect, Vitruvius insists that:

> An architect ...must know music that he may have acquired the acoustic and mathematical relations to be able to carry out rightly the adjustments of *balistae*, *catapultae* and *scorpiones*...[6]

The proportions of this architecture are adjusted by wedges, which tighten or loosen the ropes, in accordance with the patterns of musical harmony.

Alberti's treatise provides a second model. As with Vitruvius, Alberti maintains an uncanny proximity to the moving of the Vatican obelisk, having originally presented a version of his treatise to Nicholas V, the quattrocento Pope who first requested proposals for its modern transportation.[7] In book 4 of his *De re aedificatoria* (1486), entitled 'On

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[4]Vitruvius, *On Architecture*, trans. Frank Granger, Loeb Classical Library (1934), bk. x, ch. xi, 2.

[5]Vitruvius, *On Architecture*, bk. x, ch. xi, 5.

[6]Vitruvius, *On Architecture*, bk.i, ch. i, 8.

[7]While Alberti was no doubt aware of the plans of Nicholas V to transport the Vatican obelisk, the architect most often associated with Nicholas V's project is Aristotele Fioravanti, who had previously moved large columns for the Pope (1451-2), and had moved a tower in Bologna using mechanical devices. Filarete

Ornament', Alberti devotes three chapters to the moving of heavy weights, and how they may be set in difficult positions.[8] Alberti places the transportation of weights in the company of walls, openings, and columns; as an aspect of *ornamentum*, the setting into work of Beauty.

> ...should you be able to incorporate in the construction a block of stone beyond human belief...surely all such things would make a work more impressive; especially if the stone comes from abroad, and has been conveyed along a difficult route, like the block described by Herodotus...it will also greatly enhance the effect of ornament if a stone that is itself worthy of admiration is set in a noble, important place...[9]

It is within this discussion on ornament that Alberti ventures into the mechanical aspects of moving weights. The text continues with an explanation of levers, screws, and pulleys; where small weights can wondrously raise large weights, again in imitation of natural motions. The section concludes not with the machines themselves, but rather with Alberti's advice on placing these machines into practise,

> Whenever you intend to move vast weights, it is well to approach the task gradually, with caution and in due time, on account of the various unforeseeable and irreparable accidents and dangers...nor will you receive as much respect and praise for your ability if your undertaking follows your plan and succeeds, as the disrespect and contempt for your temerity if it fails.[10]

> Alberti constructed several mechanical devices, principally the ambitious project to raise Caligula's boats out from lake Nemi, an event attended by the entire papal court, and in which he was partially successful.[11]

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mentions Fioravanti in connection with the construction of an obelisk to hold the statue of Francesco Sforza. See Adriano Carugo "Obelisks and Machines in the Renaissance," in the facsimile edition of *Della trasportatione* (Milano: Edizioni il Polifilo, 1978), lxxi.

[8]Alberti, *On the Art of Building*, bk. vi, ch. vi, 172-175. Vitruvius cites Archimedes, Ctesibius and Hero on moving large weights; Alberti cites Plutarch, Pliny, Ammianus Marcellinus, Herodotus, and Vitruvius.

[9]Alberti, *On the Art of Building*, bk. vi, ch. v, 163.

[10]Alberti, *On the Art of Building*, bk. vi, ch. viii, 175.

[11]The account by Biondo in *Italia illustrata* relates that Alberti was commissioned by Cardinal Prospero Colonna, and the raising occurred in 1446. Alberti mentions this event in bk. v, ch. xii. See Roberto Weiss, *The Renaissance Discovery of Classical Antiquity* (Oxford: Basil Blackwell, 1969), 113.

Figure xxxi.
From *On the Art of Building,*
Alberti, trans.
Bartoli (1550)
[bk vi, ch.8].

Figure xxxii.
From *Treatise on Architecture*
Filarete (1464)
[102v].

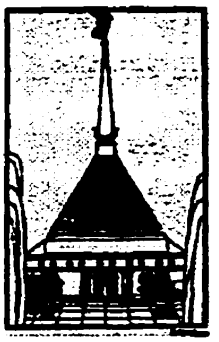

Figure xxxiii.
From
Hypnerotomachia Poliphili,
Colonna (1499)
['b'r].

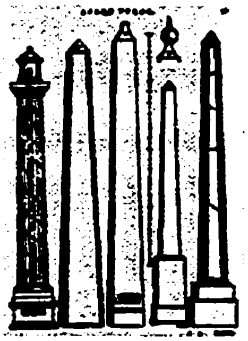

Figure xxxiv.
From *d'architettura et prospetiva,* Serlio
(1540) [78r].

The raising of these antique trophies was an event in many ways similar to Fontana's *trasportatione*, as the two works are devoted both to the practise of architecture, and its transcendent intentions.

The Vatican obelisk is present in many Renaissance works, and was drawn and measured by Antonio da Sangallo (1514), Baldassare Peruzzi (1519),[12] and Sebastiano Serlio, where it appears in book 3 'On Antiquities' of *Tutte l'opere d'architettura et prospetiva* (1540). The obelisk is also present in Filarete's architectural treatise (1464), in the guise of a memorial, fixed to a base of marble fountains by four gilt bronze lions. The detailed and chronological narrative by Filarete, whose subject is at once the education of the architect and the incremental building of a city(s), provides an intriguing opening into Fontana's treatise. Yet the antique works of architecture and ingenious devices which populate Francesco Colonna's *Hypnerotomachia Poliphili* (1499) precede the specific inquiries of *Della trasportatione* with striking verisimilitude. The hero of the *Hypnerotomachia*, in sighting his first work of architecture, comes upon a most magnificent obelisk,

> ...that none could conform to its height, nor resemble it. Not even the Vatican. Nor the Alexandrian. Not the Babylonian. It held such a cumulation of wonders, that I was stupefied in its contemplation. And even more than the immensity of the work; the subtlety, richness and

[12]Adriano Carugo, "Obelisks and Machines in the Renaissance," lxxi.

> sharpness of the ingenuity, and of the great care, and exquisite diligence of the Architect. With what audacity was this art invented? With what virtuous and human forces, and arrangement, and incredible expense, and emulation of the sky, was this weight transported so far into the air? With what cranes, and with which pulley blocks, and with which *polyspaston*, and other winding machines, and drawing Armatures?[13]

The brilliance of this obelisk commands Poliphilo's attention as it towers above its pyramidal base and the porch which carry it, all of which stand as a testament to a golden age of antiquity. Inscribed with the name of the architect, and set upon metal encased in lead, the obelisk in Colonna's treatise is in many ways similar to Fontana's description of the Vatican obelisk.[14] While the antique method of transporting the obelisks is a mystery whose passion is shared by Colonna, the congruencies between *Della trasportatione* and the *Hypnerotomachia* extend to their unique narrative structures.[15] As narrative works, both treatises clearly situate architecture in the lived-world, experienced in time. For Colonna and Fontana, architecture is the subject of a transformative journey, operating by means of mobile inventions, antique wisdom, and harmonic proportions. The narrative expression of these not dissimilar texts situates them outside the Renaissance tradition of architectural treatises, and subsequently, on the margins of discourse by two centuries of science unable to fully instrumentalize their stories.[16] Yet of the two texts, *Della trasportatione* lends itself more readily to a reduction into technique and prescription, at the hands of authors such as Niccola Zabaglia and his eighteenth century treatise *Castelli, e ponti...con ingegnose pratiche* (1743).[17] Similarly, the construction of scaffolds is

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[13]Francesco Colonna, *Hypnerotomachia Poliphili* (Venice: 1499), 'b'.

[14]The description of the pedestal and clamps by Colonna ('a' viii verso) is coincident with the supports for the Vatican obelisk; see Fontana, i, 14. The inscription by Fontana on the lower pedestal of the Vatican obelisk which reads DOMINICVS FONTANA EX PAGO MILI ARGINOVO COMENSIS TRANSLVIT ET EREXIT (Domenico Fontana from the canton of Melide set in motion, invented, translated, and set up) recalls Colonna's inscription on the obelisk in his treatise LICHAS LIBYCVS ARCHITECTVS ME EREXIT (Lichas the Libyan Architect set me up).

[15] As well, both texts maintain a vaulted position in the history of printing and typography.

[16]In reference to the *Hypnerotomachia*, see Alberto Pérez-Gómez, *Polyphilo: or the Dark Forest Revisited* (Cambridge, Mass.: MIT Press, 1992), xv.

[17]Niccola Zabaglia, *Castelli, e ponti di Maestro Niccola Zabaglia con alcune ingegnose pratiche, e con la descrizione del trasporto dell'obelisco Vaticano, e di altri del Cavaliere Domenico Fontana* (Roma, 1743). The illustrations are by Alessandro Specchi, using the plates from Carlo Fontana's *Il Tempio Vaticano*. The *ponti* in Zabaglia's title refers primarily to scaffolds used for building, although the term is also used for

Figure xxxv.
From *Castelli, e ponti,*
Zabaglia (1743).

Figure xxxvi.
Charpente, from
Encyclopédie,
Diderot (1747-73).

classified as mere carpentry in Diderot's *Encyclopédie* (1747-73). This predisposition might be explained by the narrative which orders Fontana's treatise, for while Poliphilo is led by the forces of love and desire in the *Hypnerotomachia*, the *trasportatione* is conveyed by the procession (or progression) of architecture itself. The possibility of using Fontana's narrative in a literal sense, however unlikely, brings *Della trasportatione* closer to the modern world. It remains significant that Colonna left the moving of obelisks concealed in wonder, while Fontana enacted the *trasportatione* and set the movement in order with text and drawings.

> I have been greatly driven to this [the *trasportatione*] as to this moment I have found no one, that I know, who had written of it, nor given the least light to this workmanship, sufficiently proved to be a difficult enterprise, and already close to a thousand and four hundred years out of use.[18]

In comparison with the *Hypnerotomachia*, the role of the architect at the close of the sixteenth century is no longer set in largely allegorical terms, but is increasingly articulated in the realm of action. Further, it would seem that the distance between the world and its representation, the space of allegory itself, begins its eventual collapse with the explicit images of Domenico Fontana.

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bridges, and figures in the etymology of *Pontifex*, a bridge or scaffold maker - a connection Sixtus V could not have missed.

[18]Fontana, *Della trasportatione*, i, 3v.

CHAPTER 5
OBELISCUS VATICANUS

The Vatican obelisk was the focus of numerable texts contemporary with Fontana's treatise. Profound interest in the *trasportatione* is marked by over fifteen texts published in the years 1585-90 on the Vatican obelisk, its symbolism, and the mechanical aspects of its transportation. A collection of nine of these works was assembled in a volume entitled *Obeliscus Vaticanus*, of which a single copy exists in the Biblioteca Apostolica in Rome. The texts in *Obeliscus Vaticanus* include Pietro Angelio's *Commentarius de obelisco*, Cosimo Gaci's *Dialogo...del trasportamento dell'Obelisco del Vaticano*, Pietro Galesino's *Ordo dedicationis obelisci*, and Filippo Pigafetta's *Discorso...d'intorno all'hisotria della aguglia et alla ragione del muorerla*. The texts are occasionally in verse, such as Angelio's *Commentarius*, in which "...are presented several lyric poems, partly as an argument, and partly as a distraction;"[1] and in dialogue, where Gaci enters into a conversation with Sixtus V on matters relating to the obelisk. Galesino, a biographer of Sixtus V, reproduces the dedication given at the ceremony to consecrate the obelisk.[2] Foremost among the texts in the *Obeliscus Vaticanus* is Pigafetta's *Discorso* which was written in March of 1586, one month before the obelisk was moved from its antique position by Fontana. Pigafetta's volume was also printed separately, and issued along with the first of two large etchings by Guerra and Bonifacio, depicting Fontana's project.[3] Pigafetta writes that his *Discorso* reveals:

> ...the divine history and origin of obelisks, their providence, and when they were moved to Rome, and by who, and where they are, and the way to investigate their size, measure, weight, and the meaning of resistance and of mobile forces, and of their manufacture, through which that of the Vatican Obelisk will become apparent. For which I have thought it convenient to diligently accompany them with drawings, to illuminate, and that which is in part silent, to give it speech...[4]

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[1]Pietro Angelio, *Commentarius de obelisco* (Rome: Bartolomeo Grassi, 1586), title page.

[2]While no doubt worthy of study, the Latin texts are beyond the scope of this inquiry.

[3]For the relation between Pigafetta's translation and his *Discorso*, see Adriano Carugo, "Obelisks and Machines in the Renaissance," lxxvii.

[4]Filippo Pigafetta, *Discorso di M. Filippo Pigafetta d'intorno all'historia della agvglia, et alla ragione del mvoverla* (Roma: Bartolomeo Grassi, 1586), ii.

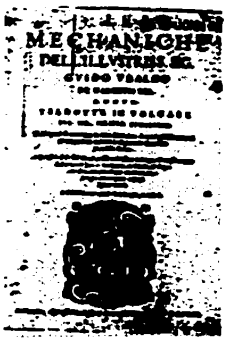

Figure xxxvii.
Le mechaniche.
Pigafetta (1581)
Frontispiece.

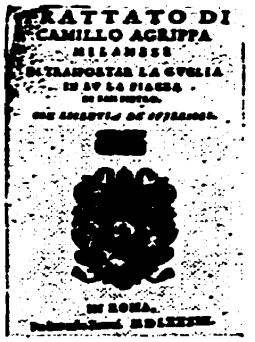

Figure xxxviii.
Trattato. Agrippa
(1583) Frontispiece.

Figure xxxix.
De Gli Obelischi.
Mercati (1589)
Frontispiece.

While the illustrations in Pigafetta's treatise consist of little more than two line drawings showing the calculation of the obelisk's volume, from the introduction it is clear that the illustration referred to is Fontana's large plate.[5] With the *castello* under construction near the Sacristy, Pigafetta describes the motions which will be used in the *trasportatione*, and adds the following warning:

> The architect of this apparatus for the Obelisk, and its conductor, is named Domenico Fontana from Mielde, situated close to lake Lugano, who is guided by natural ingenuity, and proceeds in an orderly fashion; and according to me, he can not fail in any way, as long as he pulls the ropes in concordance with the capstans...[6]

Pigafetta's text speculates in areas which Fontana was content to leave obscure, by devoting several paragraphs to the symbolic attributes of the obelisk, and referring to the philosophers.

> The figure of the obelisks, the corresponding dimensions, and the very antique customs of the Egyptians are consecrated to the sun. The sun is a hieroglyph of many things, but two particularly, the first being the divine mind, or as Plato calls it, the intelligible world, and mysterious things which are treated of in book six of Plato's Republic; and also of Justice, in the way Iamblichus testifies of in his discourse on Pythagoras...[7]

The association of the obelisk with the sun is significant in that with Pigafetta, it invokes a discourse on cosmology. Plato's book vi of the *Republic* contains, (among other

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[5]Adriano Carugo, "Obelisks and Machines in the Renaissance," lxxviii.
[6]Pigafetta, *Discorso*, 36.
[7]Pigafetta, *Discorso*, 6.

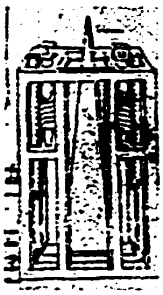

Figure xl.
From *Saluzzianus.*
Di Giorgio Martini,
f.51 Tav. 93 (1475)
(Detail).

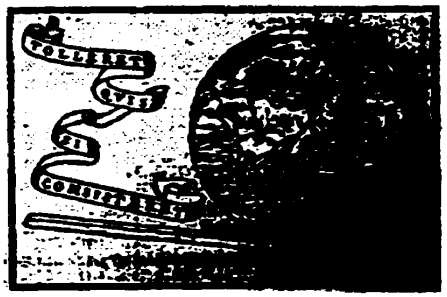

Figure xli.
Mechanicorum liber. Del Monte
(1577) (Detail).

Figure xlii.
From *Diverse et artificiose machine.*
Ramelli (175), (1588).

mysteries) the allegory of the line, which proportions the cosmos into visible and invisible realms, "Good reigning over the domain of all that is intelligible, the Sun over the visible world,"[8] although it seems Pigafetta blurs this distinction. Similarly, the neoplatonist Iamblichus (c.245-325) wrote several texts and commentaries on Pythagoras, attributing to Pythagoras the idea of a cosmos governed by the universal principals of Justice, Harmony, and Proportion.

Soldier, traveller and diplomat, Pigafetta is also known as the translator of Guidubaldo Del Monte's *Mechanicorum liber* (1577) into Italian, entitled *Le Mechaniche* (1581). Divided in five parts, *Le Mechaniche* offers:

> The true doctrine of all the principal instruments used to move large weights with little force; for the benefit of those who practise this noble Science; Captains of War, Engineers, Architects, and other Artificers, who intend to use Machines for marvellous works, and those above nature.[9]

The frontispiece of the Latin original shows the earth moved by the force of a lever, set on that which is solid, following Archimedes.[10] The treatise is divided into chapters on the lever, the pulley, the 'axle in its course', the wedge, and the worm screw. Adriano Carugo in his essay "Obelisks and Machines in the Renaissance," proposes that del Monte was the first to reduce systems of pulleys to the forces of the lever, and that Fontana's project differed from its predecessors precisely by substituting capstans and winches for

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[8]Plato, *The Republic of Plato*, trans. Francis MacDonald Cornford (New York: Oxford University Press, 1963), bk. vi, 509.

[9]Pigafetta, *Le Mechaniche* (Venetia: Franceschi Sanese, 1581), frontispiece.

[10] The engravings clearly objectifies the world, a precursor to Galilean motion and mechanics. See chapter 8.

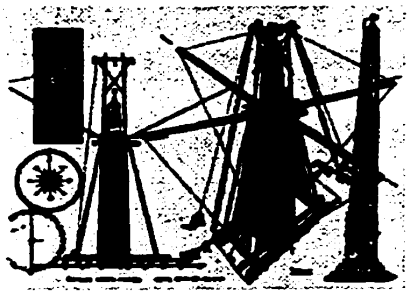

Figure xliii.
From *Trattato di trasportas la guglia.* Agrippa (1583).

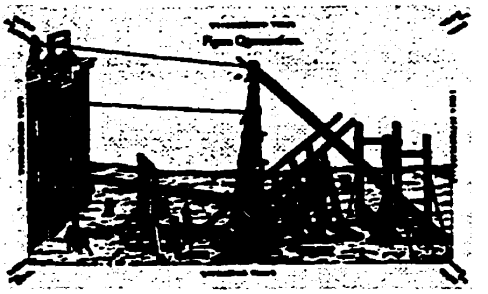

Figure xliv.
From *Theatrum instrumentorum,* Besson (1578).

unwieldy levers.[11] This mechanical treatise is in the company of two other influential Renaissance works on machines and the moving of weights, Jacques Besson's *Theatrum instrumentorum et machinarum* (1578), and Agostino Ramelli's *Diverse et artificiose machine* (1588).[12] The engraving in Besson's *Theatrum* to raise and transport an obelisk, and the many cranes and lifting machines in Ramelli's treatise, are both considered precedents for Fontana's *trasportatione*. Finally, the machines in the *Saluzzianus* (1475) manuscript by Francesco di Giorgio Martini include several devices for moving obelisks, an appropriate enterprise for these often seductively useless inventions. Di Giorgio uses terms similar to those in Fontana's text, particularly *castello* to describe the scaffolds which hold the machines, and one of the proposals in Fontana's treatise shows a device similar to that by di Giorgio (H). This etching, which depicts architects working models of their proposals, shows the winning project by Fontana raised above on the wings of cherubim, as well as the project by Camillo Agrippa (B), author of the earliest treatise devoted to the transportation of the Vatican Obelisk.

Camillo Agrippa wrote the *Trattato di trasportar la guglia, in su La Piazza di San Pietro*, in 1583. Astronomer and mathematician, Agrippa is also known for his *Trattato di scientia d'arme* (1555), a treatise on fencing (the moving of a needle), cosmology and geometry, as well as a treatise on the generation of winds, rivers, lakes, valleys and mountains. Agrippa's method for moving the obelisk, represented in the single engraving of his treatise, consists of a scaffold on rollers which transports the obelisk as it is held upright, "*Il castello e portato, e porta.*"[13] Dedicated to Giacomo Boncompagni, the son of

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[11]Adriano Carugo, "Obelisks and Machines in the Renaissance," lxxvii.
[12]Among others, including Georgius Agricola's *De re metallica* (1556).
[13]Camillo Agrippa, *Trattato di Camillo Agrippa Milanese di trasportar la gvglia is sv la piazza di san Pietro* (Roma: Francesco Zanetti, 1583), 29

Pope Gregorius XIII, Agrippa's treatise is commonly thought to have been influential for the project of Sixtus V.[14] Many of Agrippa's technics precede Fontana's *trasportatione*, such as encasing the obelisk in matting to protect it from damage, and the accurate calculations of its weight. Significantly, both texts also propose the use of models to test the design.

> ...as material bodies are different from imaginary ones, they can not correspond exactly with respect to their forces, nor in their positions; therefore, all the elements which go into these machines have been made larger, to avoid dangers...in the model the obelisk will be of lead, to make the test most clear, and to show the universal proportions with great solidity & assurance, as the lead [model] will weight the equivalent of five Obelisks...[15]

Antonio Da Sangallo, Michelangelo, Giacomo della Porta and Carlo Maderno all built models for the construction work at St. Peter's, and models were often used in Renaissance competitions, particularly in submissions for the design of cathedrals and major civic works.[16] What makes the presence of models in Agrippa's treatise and in *Della trasportatione* exceptional is that not only were they constructed for presentation, but the models were used as test of the design itself. Literally proving the proportions and harmonics of the design, these models are perhaps most closely aligned with Alberti's use of the model to resolve proportions, forms and costs. For while for Filarete writes that models are best used to present the architect's ideas to the client, and others used models as a guide to construction, Alberti writes that the model is used in the process of design itself, as it enables us to consider:

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[14]Camillo Agrippa's name also occurs as one of seven architects who worked on moving the Vatican Obelisk in the account of the *trasportatione* given by Vincenzo Scamozzi. In the *L'idea della architettura universale* (1615), *parte seconda*, Scamozzi devotes two chapters to the moving of obelisks; ch. xvii "The artifices which were used to conduct and set up antique Obelisks: and the way which is now used to conduct, and elevate great weights;" and ch. xix, "The antique obelisks of Rome, and the way which was proposed, and used, to transport in our own time that of the Vatican [Obelisk]."

[15]Camillo Agrippa, *Trattato*, 16.

[16]Henry A. Millon and Vittorio Magnago Lampugnani, ed. *The Renaissance from Brunelleschi to Michelangelo: The Representation of Architecture* (New York: Rizzoli, 1997), 53.

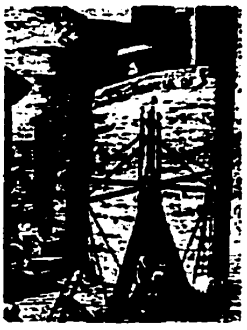

Figure xlv.
Fontana, i, 8 (Detail).
Proposal B.

Figure xlvi.
Fontana, i, 8 (Detail).
Proposals E, F, G.

Figure xlvii.
Fontana i, 8 (Detail)
Proposals H, C, D, E.

> ...the work as a whole and the individual dimensions of all the parts...it will also allow one to increase or decrease the size of those elements freely, to exchange them, and to make new proposals and alterations until everything fits together well and meets with approval.[17]

Joining the texts by Agrippa and Pigafetta is the lengthy *De gli obelischi di Roma* by Michele Mercati, written one year before *Della trasportatione* as a complete history of obelisks, with particular attention to those already set up in Rome. Mercati, a doctor and metallurgist at papal court, describes the *trasportatione*, the obelisk and the lions which raise it above its pedestal, the meaning of hieroglyphs, Sistine inscriptions, and the ceremonies of dedication. One of the more interesting aspects of Mercati's text is the timeline which stretches from 1662 BC, when the obelisk was supposedly first invented by the King of Egypt Mephres, to 1589 AD when Fontana transported an obelisk to the Piazza del Popolo.[18] According to Mercati's *Universal Table of Egyptian Kings, Emperors, Pontiffs, and their Times*, the next date given is for the birth of Moses in 1589 BC, in fortuitous symmetry with the reign of Sixtus V. Also listed is the flight from Egypt of the Israelites 1510 BC, the fall of Troy in 1179 BC, and the reign of Solomon in 1034 BC. The Vatican obelisk is first set up by Noncoreo in Heliopolis in 963 BC, just a few years before the founding of Rome in 755 BC. From the end of the Roman empire and Theodosius I in 386 AD, the date skips to 1586 AD and the setting up of the Vatican obelisk. This series of dates joins Christian Rome not only to Augustus, and the founding of Rome, but to the antique history of Jerusalem and Egypt, and the beginnings of the western world.

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[17]Alberti, *On the Art of Building*, bk. ii, ch. i.
[18]Mercati, *De gli obelischi di Roma* (Roma: Domenico Basa, 1589), 329-333.

Figure lxviii. *Disegno, nel quale si rappresenta l'ordine tenuto in alzar la Guglia.* Bonifacio, Guerra (1586)

SITE OF THE FESTIVAL

CHAPTER 6
THE FESTIVAL AND REPRESENTATION

Fontana's *trasportatione* arranged the *Campus Vaticanus*, dividing and naming the horizontal space touched by the cardinal winds, and spanning the gap between earth and sky. The *castello* which moved the obelisk in this seminal event was dependent not only on ingenious mechanics, but on a fragile play outside the limits of order, in the realm of levitation, eccentricity, and the festival. The festival names the many events which define an essential aspect of the Renaissance, including pyrotechnic displays, court fêtes, masques, ballets, tournaments, state entries, water spectacles, and *intermezzi*.[1] Bridging the human and divine, the festival plays between the space of appearance and the underlying order it re-enacts. Its players and its audience are united in a unique spatial and temporal condition, in the living unity of a work of art.[2] As a festival, the *trasportatione* recalls the triumphal processions of Roman antiquity, the augural foundations of the city, routes of pilgrimage, and finally, corresponds to the funeral

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[1]Roy Strong, *Splendour at Court: Renaissance Spectacle and Illusion* (London: Weidenfeld and Nicolson, 1973), 19.

[2]For a discussion of the festival see Hans-Georg Gadamer, *The Relevance of the Beautiful and Other Essays*, trans. Nicholas Walker (New York: Cambridge University Press, 1986).

cortège and the catafalque which Fontana designed for his patron. In all, what remains from the temporal events which make up Renaissance festivals is a corpus of profusely illustrated catalogues, manuals and texts, not dissimilar to Fontana's treatise. Appropriately, the etchings which structure *Della trasportatione* are an abundant source for readings of this choreographed event. Standing opposite the solidity of the church, Fontana's scaffold invokes a tradition based not on the tomb and monument, but rather on the immaterial qualities of the ritual and its image.

Ovid, author of a famous text on transformations, also wrote *Fasti*, a treatise on the Roman calendar. Originally dedicated to Augustus,[3] the *Fasti* describes Rome by means of its festivals. In setting forth the propitious augury and subsequent fratricide which gave rise to Rome, Ovid begins by depicting the festival of the *Parilia*. Coinciding with these inaugural events on the 21st of April, the pastoral celebration of the *Parilia* became associated with the founding of Rome.

> The night has gone, and Dawn comes up. I am called to sing upon the Parilia, and not in vain shall be the call, if kindly Pales favours me...when I sing of pastoral rites, if I pay my respects to thy festival. Sure is it that I have often brought with full hands the ashes of the calf...I have leaped over the flames ranged three in a row, and the moist laurel bough has sprinkled water on me. The goddess is moved and favours the work I have in hand.[4]

Ovid explains that the calendar is divided primarily into days of festival, and days of ordered speech. "That day is unlawful [*nefastus*] on which the three words may not be spoken [*do* (I give), *dico* (I pronounce), *addico* (I assign)]; that day is lawful [*fastus*] on which the courts of law are open". Varro corroborates the etymology, with *dies fasti* derived from *fari* (to speak).[5] The days of festival are by definition unbalanced, whereon justice and words of order are silent. This unbalance, which allows the past to be re-enacted in the present, is an essential aspect of the festival. The disequilibrium might appropriately be represented by the figure of Dionysus, later reincarnated as the Roman

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[3]James George Frazer, trans. and introduction to Ovid, *Fasti*, Loeb Classical Library (1931), xviii.
[4]Ovid, *Fasti*, iv, 721.
[5]Varro, *On the Latin Language*, vi, 53.

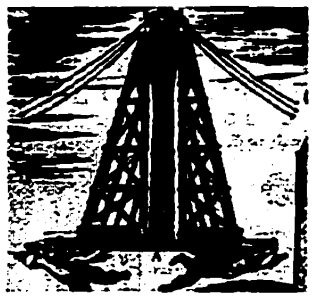

Figure il.
Fontana, i, 8 (Detail).

Figure l.
Disegno nel quale alzar la Guglia Bonifacio, Guerra (1586) (Detail)

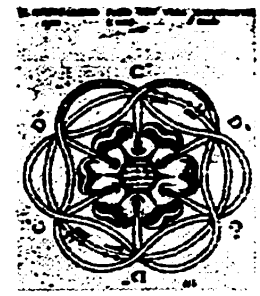

Figure li.
Il contraposso fatto con vera mathematica Caroso (1600).

Bacchus, the God of inspiration, mysteries, and wine. Following Nietzsche, the Dionysian character of the festival is analogous to the experience of intoxication,

> Either under the influence of narcotic draught, of which the songs of all primitive men and peoples speak, or with the potent coming of spring that penetrates all nature with joy, these Dionysian emotions awake, and as they grow in intensity everything subjective vanishes into complete self-forgetfulness.[6]

Reconciled with nature, and unified in community, the enactment of the festival is bound to music, dance, and the ecstatic expression of all the senses. Apollonian clarity and the bright light of Platonism finds its opposite in the site of the festival. The Vatican Obelisk confronts the performance of Fontana's *castello*.

The movements of the obelisk and the concordant operation of the *castello* are particularly evident in the choreographic etchings. Choreography, the written notation of dancing[7] occurs alongside representations of the dancers and their costumes in Renaissance dance manuals such as Fabritio Caroso da Sermoneta's *Nobilità di dame* (1600). Similarly, the paths traced by the horses and men operating the capstans in Fontana's etchings are indicated by dotted lines, which often take the form of ellipses in perspective. Other traces on the ground include the patterns of the capstans, with their ropes set in spirals, twisting in the direction of their movement. As the figures and horses revolve around the capstans, in patterns not out of place in an equestrian ballet, workmen

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[6]Friedrich Nietzsche, "The Birth of Tragedy," in *Basic Writings of Nietzsche*, trans. Walter Kaufmann (New York: Modern Library 1968) 36.
[7]O.E.D., s.v. "choreography."

Figure lii.
Disegno del modo di condurre l'Obelisco.
Bonifacio, Guerra (1586).
(Detail).

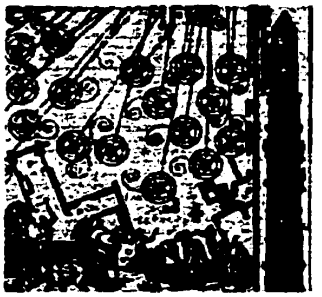

Figure liii.
Fontana, i, 15. (Detail).

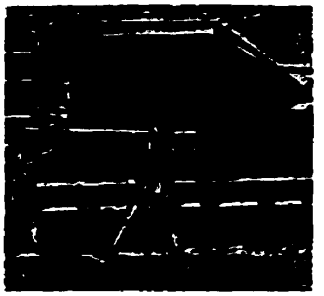

Figure liv.
Disegno del modo di condurre l'Obelisco.
Bonifacio, Guerra (1586).
(Detail).

ascend the *castello*, balancing on its timbers, like statues placed strategically on the architecture. The dense crowd which populates the second large etching shows these figures in unusual positions as they work to lower the obelisk, pulling and turning, or else holding their arms raised in gesture. Fontana is careful to explain that these motions occurred in absolute silence which was broken only by his ordering notation, as the motion of the obelisk commenced with the sounding of a trumpet, and ceased with the ringing of a bell.[8] Many of the plates show elements in levitation, including representations of the *castello* born aloft by cherubim, plans showing the arrangement of pulleys floating above the perspective, figures suspended by ropes, columns in mid-air and the personification of *concordia*, *firmitas*, abundance and religion all seated on clouds. While this levitation corresponds to the raising of the obelisk, the axial movement of the obelisk between two centres invokes a theme of eccentricity.

According to Fontana, the etchings show the *trasportatione* in *pianta*, *facciata*, and *prospettiva*, often in the same plate. Immersed in the scene of the festival, these multiple view points are joined by the figures and horses, diverse *impresse*, emblems, inscriptions, legends and explanations. Shifting between these modes of representation seamlessly, Fontana's etchings replace a central focus with narrative scenes in constant motion. The cardinal wind-rose which appears on the etchings reinforces these changes in points of view, allowing the *castello* to be seen from all directions as it completes its sequential transformation. Various scales inhabit the space of the drawings, particularly emphasising the heroic dimensions of the obelisk and the *castello* as they eclipse the

[8]Fontana, *Della Trasportatione*, i, 14r.

workmen which surround them, much as Fischer von Erlach would show the seven wonders of the world towering above their surroundings, and later as Boullée would represent his figures in relation to their architecture. Levitation, eccentricity, bodies represented in contorted motions, shifts in scale, discontinuous views, and ellipses all point to the mannerist tendencies in Fontana's work, following the formal qualities enumerated in Giorgio Vasari's *Lives*.[9] This mannerist adjustment of centres and proportions accords with developments in astronomy, specifically the proposal of new models seeking to accommodate discrepancies between observed phenomenon and their representation.

While the loss of an immobile centre can be traced to Copernicus, Kepler freed astronomy from its dependence on circularity. Kepler's texts *Mysterium cosmographicum* (1596) and *Astronomia nova* (1609) proposed unique cosmologies to account for the seemingly irregular in the natural world. In his first work, Kepler proportions the distances between the planets according to the spaces between nested polyhedrons, and in the second text, the orbits of the planets are arranged in elliptical paths. According to Kepler, the substitution of the ellipse for the circle is a necessary correction of proportions, as it best represents the dynamic forces of attraction and repulsion which guide the planets' orbit.[10] In this way, corporeal forces begin to define proportional systems. The etchings of Fontana's treatise revolve around these lines of force, represented by the ropes, pulleys, capstans and the figures which tie these scenes together. Fontana's etchings fall under the rubric of architectural *cantieri*, and although the majority of Renaissance construction scenes are present in the backgrounds of other subjects, an exception is evident in works depicting the construction of the tower of Babel. A related tradition to the etchings of the *trasportatione* is found in the works of

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[9]From Vasari's introduction to part III of the *Lives* (1550), these elements include licence, abundant innovation, beauty contained in every smallest thing, and grace in the figures that depends on judgement and transcends mere measurement. Cited in Craig Hugh Smyth *Mannerism and Maniera* (New York: J.J. Augustin, 1960), 7. Mannerism, as the title of an artistic or historical movement, encompasses a wide range of definitions, for the most part the result of contemporary scholarship. Broadly considered, these formal elements are: optical suggestion of movement, multiple view points (from Vasari: *figura serpentinata*), the juxtaposition of irreconcilable elements, exaggeration, distortion, elongation, the presence of several axis, a predilection for the grotesque / bizarre / abnormal / fantastic, figural crowding, various proportions and scales within a single frame, the disintegration of boundaries between painting / sculpture / architecture. See Wladyslaw Tatarkiewicz, *History of Aesthetics*, ed. D. Petsch (Paris: Mouton, 1974), vol. iii, 153-161; *The Dictionary of Art*, ed. Jane Truner (New York: Grove, 1996), s.v. "Mannerism."

Figure lv.
Tempesta *Trattato degli instrumenti* [31]. (1591).

Figure lvi.
Tempesta *Trattato degli instrumenti* [27]. (1591).

Figure lvii.
Tempesta *Trattato degli instrumenti* [11]. (1591).

Antonio Tempesta (1555-1630), author of famous maps of Rome and Jerusalem, sequential engravings of the old testament, an illustrated edition of Ovid's *Metamorphosis*, a book on the seven wonders of the world, and a fascinating book published in Rome one year after Fontana's treatise, entitled *Trattato degli instrumenti di martirio* (1591). The engravings in Tempesta's work display an interest not only with in the composition of mechanical systems, but the representation of forces which act on bodies. The treatise on the instruments of martyrdom shows basic mechanical devises set up on scaffolds, including the screw and the capstan, the wheel and the crank, and the pulley. The similarities of the engravings by Tempesta to those of the *trasportatione* are several. If both works deserve to be called mannerist in their adjustment of proportions, they are also explicit, unfolding the entire scene in detail. In the *trasportatione*, the etchings reveal the distorted bodies of the festival, including the *corpus* of the obelisk itself, suspended by its scaffold.

Among the many ceremonies recorded in Fontana's narrative are the musical processions which accompany the architect to his house, the pyrotechnic display at Castel Sant'Angelo, and the ceremony to exorcise the obelisk and dedicate the cross. The final plate of the *trasportatione*, showing the *Procession made to purge and bless the Obelisk, and to consecrate the Cross*, is particularly worthy of inquiry in light of the eccentric reading of the preceding etchings. In this return to order and stasis, the obelisk stands unencumbered before a centralised version of St. Peter's. The texts by Fontana, Galesini, and Mercati all describe this ritualised element with great clarity, recording the masses

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[10]Fernand Hallyn, *The Poetic Structure of the World: Copernicus and Kepler*, trans. Donald M. Leslie (New York: Zone Books, 1990), 209.

Figure lviii.
le Cerimonie fatte d'ordine di N.S. Bonifacio (1587).

Figure lix.
Tutte l'opere d'architettura Serlio.(1551).

Figure lx.
Castel Sant' Angelo con la girandola Brambilla(1579).

celebrated by Vescovo Ferrantini, the procession across the piazza, and the temporary alter set up to perform the ceremony. Although Fontana establishes order and balance in his concluding plate, an engraving issued separately by Bonifacio and Guerra in 1587 displays a different version of this scene. The earlier etching displays the procession itself, the alter set with lit candles, hyssop, holy water, and incense;[11] the Swiss guards on horseback in a semicircle to the right, drummers close by, and artillery being fired far right. Although not illustrated, two other pyrotechnical events at the Castel Sant'Angelo corroborate the consistent presence of the festival in the *trasportatione*. The first event occurred after the obelisk was raised above its original pedestal, and the second after it was set up in the piazza.

> ...With the signal of mortars from the Castel, which discharged many pieces of artillery [previously: scattered with a great thundering], all the City rejoiced: gathered at the house of the Architect were all the tambourines and trumpets of Rome sounding with great applause...[12]

The Castel Sant'Angelo was an appropriate location for this spectacle, as it was also the site of the *girandola*, an annual and very famous pyrotechnical display which was instituted as early as 1450, and lasted into the eighteenth century. The festival of the *girandola* was composed of sequential events, beginning with lanterns and torches, next the firing of canons and mortar, then fireworks, and finally, amidst cannon fire and the

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[11]Fontana, *Della trasportatione*, i, 34r. An interpretation of the mass and the verses which accompanied the dedication ceremony is beyond the scope of this work.

[12]Fontana, *Della trasportatione*, i, 33r. A similar description occurs on 14r. Tambourines and trumpets also escorted Fontana to his house after the obelisk was successfully lowered onto its carriage, 17r.

Figure lxi.
Septem Primaria Romana Urbis Ecclesia, Gherardi. (1590).

Figure lxii.
L'Entrée de Lyons (1600).

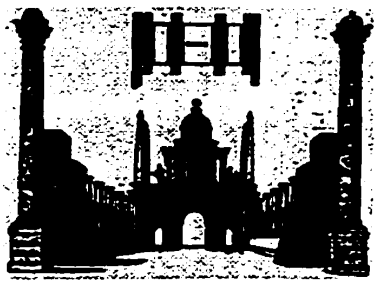

Figure lxiii.
Spectaculorem ...apparatus Grapheus (1550)

sound of trumpets, spinning *girandoles* were set off.[13] The spectacle which accompanied the *trasportatione* was certainly not as elaborate as the *girandola*, nevertheless, the musical processions and the pyrotechnics were an integral part of Fontana's project, and Rome's celebration.

Recalling the many transportative processions of the Renaissance, the association of obelisks with trophies aligns the *trasportatione* with triumphal processions and entry festivals. Roman military triumphs, such as the scene represented on the arch of Titus showing a procession of the menorah and other spoils from Jerusalem, or the scenes on Trajan's column, became the model for numerous festivals in which the Triumphs of the Roman Empire prefigured the Church Triumphant. Petrarch's *Trionfi* (1350), often the bases of Florentine entries, used this structure to present the sequential triumphs over Cupidity, Chastity, Death, Glory, Time, and Eternity on the journey from this world into celestial bliss.[14] The *Hypnerotomachia* also describes a festival composed of triumphal chariots, on which mythological scenes are staged in the company of Bacchants and Satyrs. Tempesta also issued several plates showing triumphant processions, including *Le triomphe d'un empereur Romain desiné d'aprés les anciens monuments*, which displays various figures holding standards, spears, and trophies either on foot or conveyed in carriages. The procession travels through several arches, much as the engraving from *L'Entrée de Tres-Grande...Princesse Marie de Medicis Reine de France & de Navarre en la ville de Lyons* (1600) shows the festival procession passing temporary obelisks, statues, and gates. Entry processions were often represented as a linear display of the

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[13]Kevin Salatino. *Incendiary Art: The Representation of Fireworks in Early Modern Europe* (Los Angeles: The Getty Research Institute, 1997), 78.

entire cortège, amidst elaborate works of temporary architecture which held a large part of the iconological programme. The 1549 Antwerp Entry, often considered the epitome of festival entries, was a work similar in scale to Fontana's *trasportatione*, requiring 895 carpenters, 234 painters, and 498 other workmen to set up the arches and street pageants.[15] The entry welcomed Philip as the next Holy Roman Emperor, King of Spain and heir to Charles V in the provinces of the Netherlands. The political importance of this entry insured the publication of several works representing the festival in Latin, French and Flemish. The architect of almost all of the built works was Cornelius Grapheus, who later authored the Latin *Spectaculorem ...apparatus* (1550) which was illustrated with woodcuts of the major arches. Among the gates was the Spanish Arch, where from the summit of a triumphal arch, four obelisks rose to a height of 35 feet in simulated Numidian marble, surrounding a *Tempietto* closely resembling Bramante's.[16] These large, demountable works of architecture constituted the stages on which the triumphant entries were performed, not unlike Fontana's *castello*, which enacted the triumph of the church over the idolatrous architecture of antiquity, and transformed the city.

Funeral cortèges provide a second model for the festival enacted by the *trasportatione*. Alongside frescos of pilgrimage routes in the *Salone Sistino* are depictions of these solemn processions. While Fontana's association with the former is well-known, his design of funeral works is less so. These include the cortège for Pius V represented in the fresco entitled *La traslazione del corpo de S. Pio in S. Maria Maggiore nel 1588*, the design of the catafalque for Philip II in Naples (1596), and most importantly, the translation of Sixtus V in 1591. The catafalque set up for Sixtus V, lit by sparkling torches along the walls of S. Maria Maggiore, has already been described as a work of theatre. While the *trasportatione* enacts the festival, it also shares in the theatrical nature of the catafalque.[17] The audience of the *trasportatione* is both a participant in the

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[14]*Petrarch's Triumphs: Allegory and Spectacle*, ed. Konrad Eisenbichler and Amilcare A. Iannucci (Ottawa: Dovehouse Editions, 1990), 34.

[15]Strong, *Splendour at Court*, 103.

[16]W. Kuyper, *The Triumphant Entry of Renaissance Architecture into the Netherlands* (Holland: Canaletto, 1994), vol. 1, 48. The architect of the Spanish Arch is the unknown Francisco Montesa. From the description given by Grapheus, the figure on the left of the *Tempietto* is Augustus, holding the key with which this Temple of Peace was solidified, and prefiguring the actions of Philip and Charles V located on the right. This collage of arch, *Tempietto*, and obelisk prefigures Fontana's catafalque for Sixtus V.

[17]Gadamer explains the active participation between the spectator and the performance as the festive character of theatre. See Gadamer, *The Relevance of the Beautiful and other Essays*, 61.

festival, and present as spectators, reposed on building roofs, stairs and ledges surrounding the piazza.[18] Fontana often describes the event as being a *spettaculo*,[19] a wondrous display of action revealed in light, and the contemplative subject of the *theoros*. This theatre, and the etchings of *Della trasportatione*, revolve around the *castello*, a transformative work of architecture which is at once scaffold, stage set, and festival construction.

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[18]If the *trasportatione* is indeed a work of theatre, then faced with Aristotle's *Poetics* and Serlio's stage sets, it is tempting to interpret the *trasportatione* alternately as a work of tragedy, in the imitation of actions which arouse fear and pity - corroborated by the obelisk and the catafalque; and as a work of comedy, in the levitation and disorientation of the festival.

[19]Fontana, *Della trasportatione*, i, 33r. The mechanical aspects of the *castello* might easily be associated with complex stage machinery, allowing for the production of wondrous effects.

CHAPTER 7
THE ORIGINS OF EPHEMERAL ARCHITECTURE

The *castello*, as both a scaffold and a stage set, enacts Fontana's *trasportatione*. Aligned with festival constructions and other transformative works, the *castello* might best be characterized as a vessel of becoming, which shapes both the obelisk it carries, and the city which it repositions. In *Timaeus*, Plato describes a cosmology based on an unchanging model, a visible and changing copy, and a vessel which holds these transforming copies, that which "provides a position for everything that comes to be."[1] This receptacle, as Plato names the difficult term for the agent which brings into Being, has no qualities of its own, but forms itself to that which it contains. Universal, incomplete, and ephemeral, the *castello* is in this way particularly open to the modern world. Fontana's scaffold, which is at once transparent and profoundly cosmographic, naturally has many sources.[2] One work of architecture which proves appropriate as a model, both for the *castello* and the *trasportatione* itself, are the Tabernacles of Moses. The tabernacles which Moses set up in the wilderness, defined by scaffolds of cloth and temporary wooden construction, composed a moveable *templum* which held the structure of the cosmos. To inquire into the relation between Fontana's *castello* and the tabernacles requires an excursus into biblical exegesis, that original hermeneutic activity. It also invokes the figure of Philo Judeus, the seminal Hebraic-Platonic philosopher, whose *On the Life of Moses*[3] takes Exodus as his point of departure for an inquiry into the immaterial.

The figure of Moses is already connected to Fontana's work, forming the central sculpture of the Acqua Felice, where water springs from a rock as in the wilderness of Sinai.[4] Lawgiver, priest, and king, Moses served as a common archetype for the authority

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[1] Plato, *Timaeus*, trans. Desmond Lee (New York: Penguin), ch. xx.

[2] The analogy between the *castello* and the vessel can be extended to include other transformative fonts, such as the *krater* of Pimander and the *vas Hermetis* of the alchemists. See C.G. Jung, *Alchemical Studies*, trans. R.F.C. Hull (Princeton: Princeton University Press, 1967) vol. 13, 73. The hermetic aspects of the *trasportatione* are considered in the following chapter.

[3] Philo Judeus "On the Life of Moses" in *The Essential Philo*, ed. Nahum N. Glatzer (New York: Schocken Books, 1971). Interestingly, Philo (c.20 BC. - AD. 40) connects the places and times of the Vatican obelisk, heading a delegation out of Egypt to petition Caligula in Rome.

[4] Deut. 8:15.

of the Renaissance Popes in their several roles.[5] Further, according to his biographer Galesino, the early life of Sixtus V contains remarkable similarities to that of Moses.[6] While the figures of Moses and Sixtus V are linked, the biblical text of Exodus is closely related to the transportation of the Vatican obelisk. Exodus describes the flight of the Hebrew tribes out of Egypt and their wandering in the Sinai. As Franciscans, both Sixtus V and Fontana follow aspects of this peregrination, evident in the frescos of the *Salone Sistino* and the many engravings which show the pilgrimage churches of Rome surrounded by an empty landscape. The life of St. Francis is commonly associated with a retreat into the natural world, and a tradition of mobility, by means of a Holy poverty free from possessions or the ownership of property.[7] The wandering of Moses in the desert is punctuated by the building of the Tabernacles, receiving the covenant, and the destruction of idols. The wandering of Exodus not only describes the relation between Sixtus and the urban order of Rome, but explains the origins of incorporeal, temporary, or ephemeral architecture.

The building of the tabernacles is revealed to Moses on his ascension of Mount Sinai, as the first responsibility of his priesthood. Philo interprets the tabernacles as a work based not in the material world, but in the realm of ideas.

> ...Moses now determined to build a tabernacle, a most holy edifice, the furniture of which he was instructed how to supply by precise commands from God, given to him while he was on the mount, contemplating with his soul the incorporeal patterns of bodies which were about to be made perfect, in due similitude to which he was bound to make the furniture, that it might be an imitation perceptible by the outward senses of an archetypal sketch and pattern, apprehensible only by the intellect.[8]

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[5]Stinger, *The Renaissance in Rome*, 203.

[6]As a young child, Felice Peretti was engulfed by a house fire, yet remained unscathed, as with the burning bush Moses saw on Mount Sinai. Felice was also saved from drowning by his sister, as Moses was brought out of the river by Pharaoh's daughter. Cited in Corinne Mandel, *Sixtus V and the Lateran Palace* (Roma: Istituto Poligrafico, 1994), 26.

[7]St. Francis is known to have urged his follower to define the limits of their shelters by planting hedges and not building walls, reinforcing this mobile tradition connected to the natural world. St. Jerome, with whom Sixtus V is equally associated, also invokes the themes of wandering and the desert in his writings. See George H. Williams, *Wilderness and Paradise in Christian Thought* (New York: Harper & Brothers, 1958), 43.

[8]Philo, "On the Life of Moses," bk. iii.

Figure lxiv.
Tabernacles, from *Exemplar, siue de sacris fabricis liber,* Montanus (1572).

Figure lxv.
The *trasportatione,* from *Il Tempio Vaticano,* Carlo Fontana (1694).

Figure lxvi.
Tabernacles, from *Physica Sacra,* J.J. Scheuchzer (1731-35)

For Philo, fusing the Platonic realm of ideas to scripture, the arrangement of the Tabernacles composed a journey towards divine knowledge, where dimensions and proportions were nothing less than a revelation of the world by means of God's architecture.[9] Several biblical works of architecture share this characteristic, including the Temple of Solomon. However, while Philo denied the material significance of both the Tabernacle and the Temple,[10] the Tabernacle is significant in that it alone was conceived as a temporary, and emphatically portable structure. Renaissance engravings of the Tabernacle show its tripartite composition, which consists of the external court, vestibule, and the Holy of Holies. The vessels within this enclosure include the Ark of the Covenant, the Menorah, Lavers, Alters, the Table of Bread and Salt, and the Costume of the High Priest.[11] The circumscribed precinct, bounded by a fence of draped cloth, sets out the space of the *templum.* A remarkable similarity exists between Renaissance depictions of the tabernacle, and the engravings by Carlo Fontana of the *trasportatione.*[12] The links between the scaffold for the Ark, and the scaffold for moving the obelisk are several. As scaffolds, both are essentially works of theory based on unchanging

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[9]The stages of this journey as interpreted by Philo are examined by Robert Jan van Pelt, "Philo of Alexandria and the Architecture of the Cosmos" in *AAFiles,* vol. 4, 11.

[10]van Pelt, "Philo of Alexandria," 4.

[11]Described by Philo, "On the life of Moses," bk. iii, ch. iii-xv. The text interprets Exodus 25-27.

[12]In reference to the engraving of the precinct around the *castello,* contemporary scholarship holds that Domenico Fontana was merely instrumental in developing the clear and ordered building sites of the Modern era.

mathematical proportions, expressed in the profound symbolism of number.[13] Further, the two scaffolds contain moveable artefacts of graven stone, where the tablets of the Ark and the Obelisk formed surfaces for the inscription of divine knowledge. This re-enactment of the Tabernacle in Rome finds a parallel in the many interpretations of St. Peter's as the reconstruction in Rome of the Temple of Solomon. Julius II invoked the Temple of Solomon as the precedent for his building activities, and for the works of his predecessors Nicholas V and Sixtus IV.[14] Carlo Fontana devotes book 6 of his treatise to the Temple, comparing St. Peter's to its mythical archetype. Setting up the Tabernacles in Rome accords with the work of Lilio Tifernate, the Latin translator of Philo's *De vita Moysis* (1480) who describes the transition of the Church from Jerusalem to Rome via the figure of the menorah. Originally within the Tabernacle, then moved to the Temple of Solomon, and finally brought to Rome by Titus, for Tifernate the transportation of the menorah symbolised the *translatio Templi.*[15] The transfer of the Church from the sacred *templum* of Jerusalem to the city of Rome is accompanied by a shift from the figure of the temple, to the idea of the city itself as an image of paradise.[16] This shift from the space of the church to the city is evident in both the pilgrimage routes of Rome, and the importance of the *trasportatione* in as an urban spectacle. The journey undertaken by the initiate, whether across the structure of the tabernacles or within the city itself, is one of transcendence. Interpreting the scaffold of this ascension renders visible the divine *logos*, which according to Philo describes the patterns of creation and the underlying laws of the universe. Without dwelling on the fortuitous similarity between the engravings of the Tabernacle and the *trasportatione*, the immaterial nature of Fontana's project suggests a continued examination of Exodus, and an inquiry into the changing status of the image. The history of the image and its complex relations, with both architecture and culture broadly considered, deserves an elaboration not possible here. However, in reference to Exodus, ephemeral architecture is associated with the purely intelligible, while monumental architecture is aligned with the idolatrous image. Moses is led out of Egypt

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[13]The numerological significance of the architecture of the Tabernacles occupies the bulk of Philo's commentary on Exodus. The presence of numerical symbolism in Fontana's treatise is treated in the following chapter.

[14] Stinger, *The Renaissance in Rome*, 222-3.

[15] Ibid.

[16]Robert Jan van Pelt, "The Utopian Exit of the Hermetic Temple" in *Hermeticism and the Renaissance*, ed. Ingrid Merkel and Allen G. Debus (Toronto: Assoc. Univ. Presses, 1988), 405.

Figure lxvii.
Fontana, i, 49 (Detail).
Moses, Acqua Felice.

Figure lxviii.
Spoils of Jerusalem, Arch of Titus (81 AD) (Detail of bas relief).

Figure lxix.
Moses and Joshuah see the Golden Calf, Tempesta [147].

by signs from God, who alternately appears as pillars of cloud, smoke, and fire; indefinite and changing forms which do not easily lend themselves to representation. It is important to note that the Mosaic prohibition against the making of images is neither directed towards the making of art, nor towards the imagination itself, but rather against revealing a single and static image of God.[17] The Hebraic imagination, according to Richard Kearney, is composed of both a good tendency which rises towards God in imitation, and an evil tendency towards idolatry, which is the materialisation of fantasies, bodily desires and instinct.[18] In this way, idolatry is aligned with the realm of *being* and making present, in opposition to continual imitation, which man undertakes in a process of *becoming*.[19] According to Philo, graven and unchanging images rival a universal and strictly intelligible God. This intelligible character of God is particularly evident in the passages which describe the decent from Mount Sinai, where Moses comes upon the Golden Calf.[20] It seems to me that the essential turning point in Exodus is the re-melting of this idol by Moses, an act which overcomes the monumental forms of Egypt, literally placing the image of God within the bodies of his tribes.[21] Situating the mysteries of religion in opposition to the architecture of antiquity, Fontana writes at the start of his treatise, that intentions of Sixtus V were to:

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[17]For a discussion of the single image of God, see Martin Buber, *Moses: The Revelation and the Covenant* (New Jersey: Humanities Press, 1946), 127.

[18]See Richard Kearney, *The Wake of Imagination* (Minn.: Univ. of Minnesota Press, 1988), ch. 1.

[19]Kearney, *The Wake of Imagination*, 51. Kearney sees the Hebraic imagination (Becoming) diametrically opposed to the ontological categories of the Hellenic imagination (Being).

[20]Exodus 32:19

[21]"And he took the calf which they had made, and burnt it in the fire, and ground it to powder, and strewed it upon the water, and made the children of Israel drink of it." Exodus 32:20.

> ...completely take away the memory of the Idols, which the pagans so exalted with the Pyramid, with the Obelisk, with the Column, with Temples, and with other famous edifices: on the contrary, we exalt still more the Mysteries and Ministers of the Catholic Religion[22]

The obelisk which stood as itself in Egypt, immediately present *as* the God of the sun, is transformed into that which symbolizes, here a "pedestal for the insignia of the cross."[23]

Fontana's *castello* is a work of architecture based on the immediacy of the festival, and it is also a work of theory, that which signifies at a distance. These two ways of knowing, based on the re-enactment of myth and the interpretation of cosmographic models, is joined by a third. For Moses, that "most sun-like mind,"[24] knowledge is found as the result of a mystical revelation. Here lies an essential shift in the interpretation of order and *mathesis* which constitutes architectural knowledge in a theoretical world. The Mosaic prohibition against making images of the heavens is perhaps most illustrative of this shift. [25] Astronomy, one of the central models of regularity and immutability, is here no longer considered the subject of mimetic works, such as architecture. This third way of knowing is occulted in the secret interpretation of the Mosaic law, a knowledge of the Pentateuch which holds the text itself to be sacred.[26] For the Renaissance, this ancient knowledge was written down in the Cabbala of Jewish mysticism and in the Hermetic texts of Egypt. The covenant which Moses brought down from Mount Sinai endures, while the stones themselves vanish.[27] Architecture, separated from its monumental role, returns to us in the guise of writing, as a scaffold for meaning.

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[22]Fontana, *Della trasportatione*, i, 3r.

[23]Fontana, *Della trasportatione*, i, 3r.

[24]Philo, "On the Life of Moses," bk iii, ch. xxxix.

[25]"Thou shalt not make unto thee any graven image, or any likeness of any thing that is in heaven above, or that is in the earth below, or that is in the water under the earth." Exodus 20: 4.

[26]H. C. Agrippa in *De triplici ratione cognoscendi Deum* (1516) considered this third way of knowing to be the revelation of the Gospel, with the Cabbalist tradition prefiguring Christian Religion. See Charles G. Nauert Jr., *Agrippa and the Crisis of Renaissance Thought* (Urbana: Univ. of Illinois Press, 1965), 46.

[27]The original tablets, carved by the hand of God, are destroyed by Moses in anger at seeing the idol of the Golden Calf (Exodus 32:19). Moses then carves new stones out of the ground, and ascends the mount to record the words of God in his own hand (Exodus 34:1). They were first placed in the Ark, and subsequently in the Temple, then pass out of recorded history. See Martin Buber, "The Words on the Tablets" in *Moses: The Revelation and the Covenant* (Atlantic Highlands: Humanities Press International, 1988).

CHAPTER 8

ELEMENTAL TRANSLATIONS

Architecture is a magical art. At the close of the Sixteenth century, architecture transformed the very order of the world, operating within the complex relationships which composed its sympathetic order. The currents of alchemy, hermeticism, and emblematics describe the systems of knowledge which organised the transformative acts of the *magus*. The position of Man is here no longer relegated to the margins of fate, but to the centre of this great theatre. The leap into this position of divine transmutation is the privilege of enlightened souls, searching for the keys to knowledge hidden since the antiquity of Moses. While the Renaissance obsession with things Egyptian, including obelisks and hieroglyphics, has led to the proliferation of Hermetic interpretations of Renaissance architecture, Fontana's treatise moves beyond this general evidence, to Hermes Trismegistus directly. The invocation ΤΡΙΣΜΕΓΙΣΤΟΣ below the *impresa* of Sixtus V in a double plate engraving of *Della trasportatione* underlies Fontana's project. The inscription aligns Sixtus V with the Egyptian Hermes, signalling the recovery of occulted knowledge, and the revelation of a primal theology (*prisca theologia*) carried by the obelisk. The translation of this knowledge into the space of the city is an essential aspect of Fontana's project, while the modes of this translation, and their creative potential, bring the Architect seductively close to the divine.

The work of translation is a creative act. A vertical or horizontal transfer of significance, to translate is to bear across.[1] Walter Benjamin explains the relation between the original work and its translation as being a vital connection, with the continued life of a work of art evident in its subsequent interpretations. Certainly the Vatican Obelisk, that most opaque and immobile object, continues to endure not as a funeral marker or monument, but in its continued life in the city of Rome. Far from a neutral or mechanical displacement, translation is a transformative action which reveals something essential about its space of discourse. Benjamin writes "Translation thus ultimately serves the purpose of expressing the central reciprocal relationship

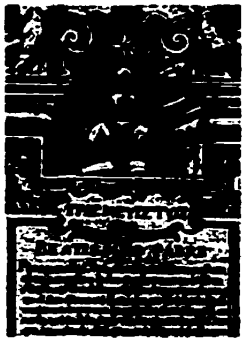

Figure lxx.
Fontana, i, 75 (Detail).

between languages."[2] George Steiner writes similarly, "A study of translation is a study of language."[3] The implication for an inquiry into Fontana's project is that the *trasportatione* reveals something essential about architecture itself, in its ability for meaning across time and place.

The transformative potential of man in the Renaissance can be traced back to the Hermetic texts. Marsilio Ficino's epochal translation of a series of texts supposedly authored by Hermes Trismegistus fuelled Renaissance interest in Egypt as the origin of all knowledge.[4] Ficino proposed a genealogy of divine revelation which began with the Egyptian thrice-great Hermes, followed by the Greek philosophers Pythagoras and Plato. Ficino even suggested the association of Trismegistus with Moses himself, which seems appropriate considering Moses was also a *magus*, and the author of numerous transformations.[5] The great antiquity of the *Corpus Hermetica* was significant for Ficino and others, and was interpreted as prophetic evidence for the establishment of the Church. The divine provenance of the *Hermetica* was in part founded on the account of creation

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[1] The OED gives the etymology of 'translate' as the Latin *translatus*, used as pp. of *transfere*, from *trans* (across) and *ferre* (to bear).

[2]Walter Benjamin, "The Task of the Translator" in *Illuminations*, ed. Hannah Arendt, trans. Harry Zohn (New York: Schocken Books, 1968), 72.

[3]George Steiner, *After Babel: Aspects of Language and Translation*, 2nd ed. (New York: Oxford University Press, 1992), 49. As a work devoted to the creative interpretation of the Vatican Obelisk, the sequential terms set out by Steiner in his chapter "The Hermeneutic Motion," could be applied to Fontana's project.

[4]The translation by Ficino of 14 texts from Greek to Latin in 1417 was named *Pimander* after the title of the first discourse, and is more broadly known as the *Corpus Hermeticum*, which includes a second text ascribed to Trismegistus and already in Latin, the *Asclepius*. See Frances A. Yates, *Giordano Bruno and the Hermetic Tradition* (London: Routledge, 1964), 40. Added to these works of Philosophical Hermeticism are numerous other magical and alchemical texts which claim the mythical authorship of Trismegistus, and are generally cited as Hermetica.

given in the first text of *Pimander*, and its many similarities with Biblical cosmogony.[6] As Frances Yates and others have noted, while similarities to Christian scripture do exist, the characterisation of Man is notably different.[7] The account of Man's divine position in the cosmos is described to Trismegistus by Pimander:

> ...Man took station in the Maker's sphere, and observed the things [planets] made by his brother [the Mind], who was set over the region of fire; and having observed the Maker's creation in the region of fire, he willed to make things for his own part also; and his Father gave permission[8]

Entered into the demiurgic sphere, Man participates in the making of the world by means of his divine aspect; as Nature brings forth the bodies of the world, soul and mind are then given to these creations "...after the form of Man."[9] The divine and creative nature of Man is recovered by those who, like Trismegistus, are illuminated by a vision of God.[10] This Hermetic mode of thought characterizes the transformative qualities of the Renaissance magician, able to reconcile the celestial and the terrestrial realms by arranging its most basic elements.

For the Renaissance Neoplatonists, the search for divine knowledge led back to the Torah. While its Hebrew characters contained the revelation given to Moses, the arrangement of these characters was governed by acrostics, numerical ciphers, and anagrams to conceal their true meaning.[11] The technique to decipher the five books of Moses is known as the cabalah, adding mystical interpretation to the allegorical and hermeneutic readings of biblical exegesis. For cabalists, language did not represent the world, rather the world was made from language.[12] The letters of the Hebrew alphabet

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[5]Amoung these transformative acts is the contest with Egyptian magicians in Exodus. For the relation between Trismegistus and Moses, see Yates *Giordano Bruno*, 26.

[6]The Egyptian account of creation begins with a boundless view of light and a chaos of elements, "... from the Light there came forth a holy Word, which took its stand upon the watery surface." The elements come to take their places, and Man is created. See Walter Scott, *Hermetica* (London: Dawsons of Pall Mall, 1968) vol.1.

[7]Yates, *Giordano Bruno*, 27.

[8]Scott, *Hermetica*, 121.

[9]Scott, *Hermetica*, 123.

[10]Yates, *Giordano Bruno*, 28.

[11]The three modes of translation are *Ars notoria* (acrostics), *gematira* (numerical combination of letters), and *temurah* (anagrams). See Umberto Eco, *The Search for the Perfect Language*, trans. James Fentress (Cambridge: Blackwell, 1995), 27.

[12]Eco, *Perfect Language*, 121

brought the world into being, a cosmogony recorded in the *Sefer Yizirah* or *Book of Creation.*[13] The manipulation of words and their mathematical counterparts became the key to transformation. Two trends of cabalah became increasingly distinguished after the 15th century, speculative cabalah which dealt with mystical and philosophical elements, and practical cabalah, aligned with occult and magical transformation.[14] Giovanni Pico della Mirandola (1463-94), a contemporary of Ficino and leading proponent of the practical cabalah in the Renaissance, applied its techniques to his search for divine knowledge and the secrets of the Catholic faith. With the power to act in the world comes the ethical responsibility to act correctly. The cabalists were well aware of the dangers in bringing elements together, as the myths of the *golum* illustrate. Pico's *Oration on the Dignity of Man* (1486) emphasises the attendant responsibility to chose between good and evil in constructing the world:

> Neither a fixed abode nor a form that is thine alone nor any function peculiar to thyself have we given thee, Adam, to the end that according to thy longing and according to thy judgement thou mayest have and possess what abode, what form, and what functions thou thyself shalt desire...[15]

Without delving into the complex works of either Pico or Ficino, their belief that man could operate at the most basic levels of the cosmos by means of number and letter, translating knowledge obscured by thousands of years into the space of discourse, parallels Fontana's *trasportatione* of the Vatican obelisk. The architect who knew the harmonic proportions of the world, its measures, weights, and concordant operation, was able to span the gap between heaven and earth.[16] Alongside the sacred characters of Hebrew and the Hermetic texts, hieroglyphics offered a further possibility for translating the secret knowledge of God. For the Renaissance, hieroglyphs were not merely "an

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[13] The *Sefer Yezirah* (3rd-6th cent. A.D.), declaired that God created the world by means of 32 secret paths of wisdom, composed of the 10 *sefirot* (hypostasis of the divinity or 'numbers') and the 22 Hebrew letters. See Gershom Scholem, *Kabbalah*, (Toronto: Penguin, 1974), 23.

[14] "Before the term 'practical Kabbalah' came into use, the concept was expressed in Hebrew by the phrase *hokhmat ha-shimmush*, which was a translation of the technical Greek term *praxis*". Scholem, *Kabbalah*, 183.

[15] Giovanni Pico della Mirandola "Oration on the Dignity of Man," in *The Renaissance Philosphy of Man*, ed. Ernst Cassirer et al. (Chicago: University of Chicago Press, 1948), 225.

[16] Fontana's lengthy discourse on calculating the volume and weight of the obelisk can not, in these terms, be considered uniquely a practical operation.

account of natural philosophy according to the theories of the Egyptian sages,"[17] as Pliny described them, but incised wisdom of Trismegistus himself. This renewed interest in hieroglyphics is in part based on the discovery of Horapolo's *Hieroglyphica* in 1419, its subsequent translations, and works like those by Pierio Valeriano (1556) which used the *Hieroglyphica* as its model.[18] These works were accompanied by the proliferation of manuals on emblematics and icons, the most significant being Andrea Alciati's *Emblemata* (1531), and Cesare Ripa's *Iconologia*, first published in 1593 at Rome. Fontana does not treat of hieroglyphs directly, writing only

> ...I have resolved a little while ago to print the four faces of S. Gio. Laterano, with Egyptian letters which are seen engraved so that scholars can assent to their power, cavernous with respect to understanding, and the final meaning of which is occulted.[19]

This caesura is noteworthy in a text which is centred around obelisks, unlike the seventeenth century works by Kircher which devote many pages to the subject of hieroglyphics and their interpretation. By the time Kircher wrote his interpretations, in 1614 the scholar Isaac Casaubon had revealed the *Hermetica* as a late Hellenistic text.[20]

Preceding this disclosure, and far more significant, were the new cosmologies by Galileo, which transformed Aristotle's cosmos, and the writen language of images which composed this mediated space. Alexandre Koyré offers us a guide when he writes that it is not so much the heliocentric repositioning of the cosmos which ushers in Modern science, but the radical reformulation of motion.[21] While Galileo was to formulate his principles of inertia with the publication of *his Dialogue Concerning the Two Chief World Systems* (1632), his early manuscript *De Motu* (ca. 1590)[22] is significant in that it first proposes a break with Aristotelian cosmology, in considering motion separate from

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[17]Pliny, *Natural History*, bk. xxxvi, 72.

[18]Like the *Corpus Hermetica*, the *Hieroglyphica* was thought to be Egyptian in origin, but is now known to be circa 5th cent. A.D., when knowledge of hieroglyphics was for the most part already lost. Horapollo's *Hieroglyphica* was translated many times, first into Latin in 1514, and into Italian in 1547. For the history of the *Hieroglyphica*, see Eco "The Perfect Language of Images" in *The Search for the Perfect Language*.

[19]Fontana, i, 75, centre of engraving.

[20] Yates, *Giordano Bruno*, 398.

[21]Alexandre Koyré, *Metaphysics and Measurement*, 20.

[22]See Galileo Galilei, *On Motion and On Mechanics*, trans. and ed. I.E. Drabkin and Stillman Drake (Madison: University of Wisconsin Press, 1960). Also Alexandre Koyré, *Galileo Studies*, trans. John Mepham (Sussex: The Harvester Press, 1978) ch.4.

its object, it dispenses with the necessity for a medium in which motion occurs.[23] In Aristotelian terms, Fontana changed the essential qualities of the obelisk by moving it. In the terms set out by *De Motu*, the obelisk was subjected to a progressively diminishing series of forces as it neared its resting position. This essential shift from Aristotle's theory of natural places to one in which terrestrial and celestial movement gain equivalence, offers the *trasportatione* above all as an ambiguous project, in which the modern world of objects begins to expose itself.

[23] Aristotle's theory of natural places, developed in his *Physics*, viewed order in the cosmos as the result of a correct arrangement of the elements. Motion occurred in disequilibrium, as elements strived to return to this given and lasting order. Like qualities of temperature or colour, motion was a sustaining characteristic of the element itself, a process of becoming similar to growth and decay. Confirmed by sense experience which showed light elements rising and heavy elements falling to their assigned places, the Aristotelian model depended on a finite world, full and differentiated.

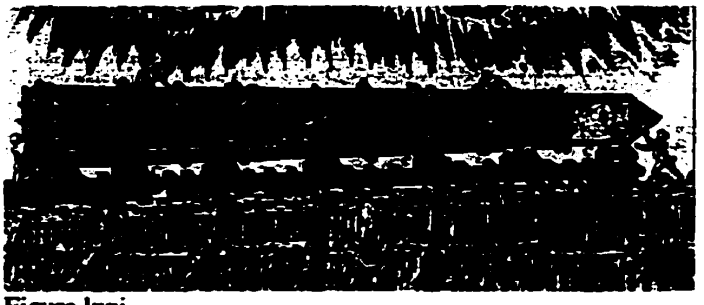

Figure lxxi.
Fontana, i, 24 (Detail).

Conclusion
Being and Becoming

From the trophy, to the relic, and finally to the object of Galilean motion, the Vatican Obelisk is placed at the edge of the Modern era by means of Fontana's choreographed translation. The proximity of *Della trasportatione* to the questions which define our world makes Fontana's work a particularly relevant subject of interpretation. The marginalization of *Della trasportatione* in contemporary discourse, evident in the almost complete lack of scholarship, can itself be attributed to this proximity. Instrumental, mechanical, and perhaps most aptly, *equipmental* readings of Fontana's project, has long conferred obscurity on the *trasportatione* in all but Engineering histories. The *castello* is dismantled and dispersed, the festival is concluded, and mere traces remain. Yet it is within these very traces that the *castello* might be revealed in its essence, not as mere carpentry, but as a cosmographic work of architecture.

The setting up of obelisks, not surprisingly, fascinated George Bataille. The imperishable image, a petrified sunbeam, has become an absurdity at the centre of urban life, in the public square of the city, of any city.

> The Place de la Concorde is the space where the death of God must be announced and shouted precisely because the obelisk is its calmest negation. As far as the eye can see, a moving and empty human space gravitates around it. But nothing answers so accurately the apparently

> disordered aspirations of this crowd as the measured and tranquil spaces commanded by its geometric simplicity.[1]

The guarantor of stability, response to the Heraclitean world of flux, and marker of eternal time; the obelisk is perhaps the highest idol, little more than a necessary fiction. Nietzsche set Heraclitus above Socrates for obvious reasons. And yet, as Bataille notes, even this tyrannical weight is preferable to its contemporary *irrelevance*, as we distance ourselves from the sensation of time that it represents.

> From the very fact that they [obelisks] had become, for the mass of tranquillized lives, increasingly useless, empty, fragile shadows, these figures stand under the threat of collapse and thus reveal, far more thoroughly than in the fearful obsessions of the past, the despairing fall of lives.[2]

The obelisk of Luxor at Place de la Concorde also replaced a temporary scaffold - the guillotine (now safely obscured).[3] Interpreting Fontana's *trasportatione* is an exhortation to our senses. The 'fall of public man,' and our increasing distance from a bodily participation in the city is a story which greatly precludes the nineteenth century, and extends to the first apparition of Being.

The space of the *trasportatione* is the site of the festival, disorientation, and levitation; it is also the space of appearance, where Being reveals itself, and order is re-enacted. It is the space of theory, where like the *theoros* who remains present but not engaged in speech, the spectators at Fontana's theatre (in which speech was punishable by death), contemplate the performance from afar, outside the *templum* marked on the ground. This experience of the *logos* describes the proportions, harmonies and underlying sympathies which compose the world, and possibly the (weak) orders of architecture itself. The Vatican Obelisk might be the place in which the collapse of meaning is best heard, but surely that is not all. The question of Being is too easily ended with Nietzsche,

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[1]Georges Bataille, "The Obelisk" in *Visions of Excess: Selected Writings*, trans. Allan Stoekl (Minneapolis: University of Minnesota Press, 1985), 215.

[2]Bataille, "The Obelisk," 217.

[3]See M.A. Lebas, *L'Obelisque de Luxor: Histoire de sa translatione a Paris...suivi d'un extrait de l'ouvrage de Fontana* (Paris: Carilian - Goeury et V. Dalmont, 1839).

whose project is seductive, but perhaps is best left to the Bacchants themselves. What of the traces the Vatican Obelisk bears for us - its smooth west facet in which Fontana read the world of antiquity, the dust of Augustus in its orb, the letters inscribed in its pedestal which recall the ceremonies and exorcism, or finally the drawings etched in the plates of *Della trasportatione.*

While the standing-out vertical of the Obelisk was a project of the ancient Egyptians, the *trasportatione* is emphatically bound to the horizontal. The *castello* is little more than a provisional synthesis, a temporary construction which moves the obelisk by lowering it on its side. Yet borrowing terms from Heidegger's essay "The Origin of the Work of Art," one might say that Fontana's treatise opens this event to us, as its stands in the clearing of Being.

> ...the more purely the work [of art] is itself transported into the openness of beings - an openness opened by itself - the more simply does it transport us into this openness and thus at the same time transport us out of the realm of the ordinary. To submit to this displacement means: to transform our accustomed ties to world and to earth and henceforth to restrain all usual doing and prizing, knowing and looking, in order to stay within the truth that is happening in the work.[4]

In this disorientation, a new world is opened. Art is foundational. Fontana transforms the city of Rome above all by making a work of architecture, in ordering the conjunction of immutable stone with its ritualized construction. The obelisk and the *castello*, joined in a topographic excursus, set forth the earth and set up a world, in a poetic measuring of the gap which constitutes our horizon. As we approach the alienating conditions which define our cities, and the vacuum which has replaced the very *pnuma* of the world with an insidious homogeneity; as Modernity, History, and the cult of the rational subject come to a close, perhaps the few traces of art which survive can still invoke new worlds for us, offering places in which we can act appropriately. For while the ground of history no longer supports us in our desire for meaning and direction, we continue to have recourse to the shared stories which make us human.

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[4] Martin Heidegger, "The Origin of the Work of Art," in *Poetry, Language, Thought,* trans. Albert Hofstadter (New York: Harper & Row), 66.

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McL	**McLennan Redpath Library, McGill**
McL (Rare)	**McLennan Redpath Library, Department of Rare Books, McGill**
PSE	**Physical Sciences & Engineering Library, McGill**
CRL	**Center for Research Libraries**
CCA	**Canadian Centre for Architecture**
BAV	**Biblioteca Apostolica Vaticana**

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APPENDIX A
CHRONOLOGY OF DOMENICO FONTANA'S WORKS

References are to books 1 (1590) and 2 (1604) of *Della trasportatione*
Sources: Bellori, D. Fontana, D'Onofrio, Lanciani, Hibbard, Macadam, Miliza, Munoz, Turner.

WORKS BEFORE 1585

Tomb of Nicholas IV, Santa Maria Maggiore
1574
By Fontana and others.

S. Luigi dei Francesi
1576
With Carlo Maderno, following the design of Giacomo della Porta

Palazzo in Piazza Pasquino (Via dei Leutari)
1577-78.
Small palazzo for Cardinal Felice Peretti.

Villa Montalto (1:37-38)
1577-86
Now the site of the StazioneTermini, on the Esquiline Hill near S. Maria Maggiore.

Chapel attached to Sant' Antonio Abbate
1583-85
On the Esquiline, near the Villa Montalto. With C. Maderno

Palazzo Rusticucci
1584-86
With Carlo Maderno

Sistine Chapel, Santa Maria Maggiore (1:39-49)
1585 -87
Started by Fontana in January 1585 before the election of Sixtus V. Marble set up after 1589 by Carlo Maderno, from the Septizodium. Frecos by Cesare Nebbia, G.B. Pozzo.Tombs of Sixtus V, Pius V.

Works 1585-1591

Vatican Obelisk (1:3-36)
1585-86
Transported by Domenico Fontana. Later additions include a wind rose in the pavement (1723), and a meridian curve by Vatican astronomer Gilii (1871).

Via Felice (1:101)
1585-86
Now via Sistina and via Quatro Fontana. From Santa Maria Maggiore to Trinita dei Monti, and south-east to Santa Croce in Gerusalemme.

Via San Lorenzo in Panisperna (1:101, 2:20)
1585-87
From Santa Maria Maggiore towards Trajan's Column

Via Merulana (1:101, 2:20)
1585-87
From Santa Maria Maggiore to the Lateran. Begun by Gregory XIII

Lateran Palace (1:59-70)
1585-90
Demolished and displaced the medieval structure, complete renovation. Removal of the Scala Santa.

Scala Santa, Piazza S. Giovanni in Laterano (1:70)
1586-89
Transportation of the Scala Santa, and the construction of its new building.

Acquaduct Acqua Felice (1:54-56)
1586-89
With Giovanni Fontana. Begun by Matteo Bertolini in 1585. First new acquaduct into the city of Rome since antiquity, conveying water from the Alban Hills to Rome. Its water flowed into several fountains, including the Acqua Felice.

Fontana dell'Acqua Felice (1:54-56)
1587-89
At the terminus of the acquaduct. Sculptures include a figure of Moses by Prospero Antichi or Leonardo Sofmani. Bas relief of Aaron by G.B. della Porta; of Gideon by Flaminio Vacca and P.P. Olivieri. The four lions are copies of Egyptian antiques removed by Greorgy XVI to the Egyptian Museum in the Vatican (in 19th century).

Transportation of the Capella del Presepio (1:50-53; 1:106-7)
1587
The 13c. chapel of the relics holds the crib of Bethlehem. Temple-like baldacchino designed by Fontana.

Bibliotecca Sistina (82-98)
1587-89.
Interior frescos show the urban works of Sixtus V, and ancient libraries. Cuts across Bramante's Belvadere.

Obelisk at Santa Maria Maggiore (1:76)
1587
(Esquilino). Transportation from via Ripetta at the Mausoleum of Augustus. With C. Maderno.

Ospizio dei Mendicanti (1:80-81)
1587
At the Ponte Sisto

Stair from the Vatican Palace to St. Peter's
1587

The Church of San Girolamo degli Schiavoni at Ripetta (1:100)
1588-89

Church of Santa Sabina (1:102)
1587
Renovated by Fontana, restored by A. Munoz in 1919.

Staircase at Trinita dei Monti
1587
Constructed from stones taken from the dismantled Belvadere theater.

Via San Giovanni in Laterano (1:101)
1587-9
From the Lateran to the Colosseum

Trajan's Column (1:99-100)
1587
(Colonna Traiana) Statue of Trajan replaced by that of St. Peter.

Column of Marcus Aurelius (1:99-100)
1588
(Colonna Antonina) Statues of Marcus Aurelius and Faustine replaced by that of St. Paul

Dome of St-Peter's (1:101)
1588-93
With Giacomo della Porta. Dome completed in 1590, cupola in 1593.

Obelisk at San Giovanni in Laterano (1:71-74).
1588
(Lateranese). Found in three pieces in the Circus Maximus, 1587. Transported with C. Maderno

Transportation and Restoration of the Dioscuri (1:100-101)
1588
At the Piazza di Montecavallo / Piazza del Quirinale.The Dioscuri (Castor and Pollux) transported from the baths of Constantine. Fontana also designed the fountain.

Benediction loggia of the Lateran (1:57-58; 2:3)
1588
Two story logia, placed in front of the north transept of the church.

Destruction of the Septizonium of Septimius Severus
1588-89
Marble was used for the interior of the Capella Sistina at S. Maria Maggiore, the restoration of the column of Marcus Aurelius and the church of S. Girolamo degli Schiavoni. Stone was used for the pedestal of the obelisk at Piazza del Popolo and the staircase of Trinita dei Monti.

Obelisk at Piazza del Popolo (1:75)
1589
(Flaminio). Found in three pieces in the Circus Maximus, 1587. Transported with C. Maderno. Fountain with lions completed to Fontana's design by Gius. Valadier 1823.

Palazzo Vaticano (1:105-2:11)
1589-91

Block to the east side of the Cortile S. Damaso overlooking St. Peter's square. Now contains the Papal residence.

Palazzo del Quirinale (1:101)
1589-91
Purchase of the palazzo from the Carada family in 1587. With Giovanni Fontana. Later continued by Flaminio Ponzio, and then C. Maderno to 1625.

Bridge over the Tiber, at Borghetto (2:20-22)
1589-92
North of Rome, completed at the beginning of the reign of Clement VIII

Conversion of the Colliseum into Wool Factory (2: 18-19).
1590
Levelling the ground had started when Sixtus died, and the project was abandoned.

Catafalque for Sixtus V (1:addendum)
1591
Temporary structure set up in Santa Maria Maggiore

Restoration of the Tower of the Belvadere (1:103)

Washing place for Fabrics at the Fontana di Trevi (1:103)

A collage of Trades at Bolognia (1:103)

Fortifying the city at Madonna di Loreto (1:103)

Fortifying the city at Montalto, and the levelling of a mountain (1:103)

Works 1592-1607

Piazza del Castel Nuovo
1596.
Enlargement and improvement

Strada di Santa Lucia
1596-98
Constructed and raised. Now Via Cesario Console

Strada Olivarez
1596-98
Now Via Cristoforio Colombo - Via Nazario Sauro.

Project for the Port at Naples (2:25-27)
1597
Executed after Fontana's death by Francois Pichiati under Pierre d'Aragon.

Catafalque for Philip II in Naples
1596

Palazzo Reale (2:29-30)
1600-02
Piazza del Plebiscito, continued by Giulio Cesare Fontana after Domenico's death.

The Alter of Sant'Andrea in Amalsi, and of San Matteo at Salerno (2:29).
With Giulio Cesare Fontana.

Conducted Water from Sarno to the Torre della Annunziata (2: 22-23)

Project for the Port at Bari (2:27-28)

The Fontana Medina (2:24)

Design for the Facade of St-Peters
1606
Submitted to Paul V. Cited in Jacopo Grimaldi 1619.


DELLA
TRASPORTATIONE
DELL'OBELISCO VATICANO
ET DELLE FABRICHE
DI NOSTRO SIGNORE
PAPA SISTO V.
FATTE
DAL CAVALLIER
DOMENICO FONTANA
ARCHITETTO DI SVA SANTITA
Libro Primo
CON LICENTIA DE SVPERIORI.
IN ROMA
Appresso Domenico Basa.
M·D·XC·

Figure i. (Fontana, i, title)

Figure ii. (Fontana, i, frontispiece)

APPENDIX B

Translation of the first chapter of *Della trasportatione*, abridged

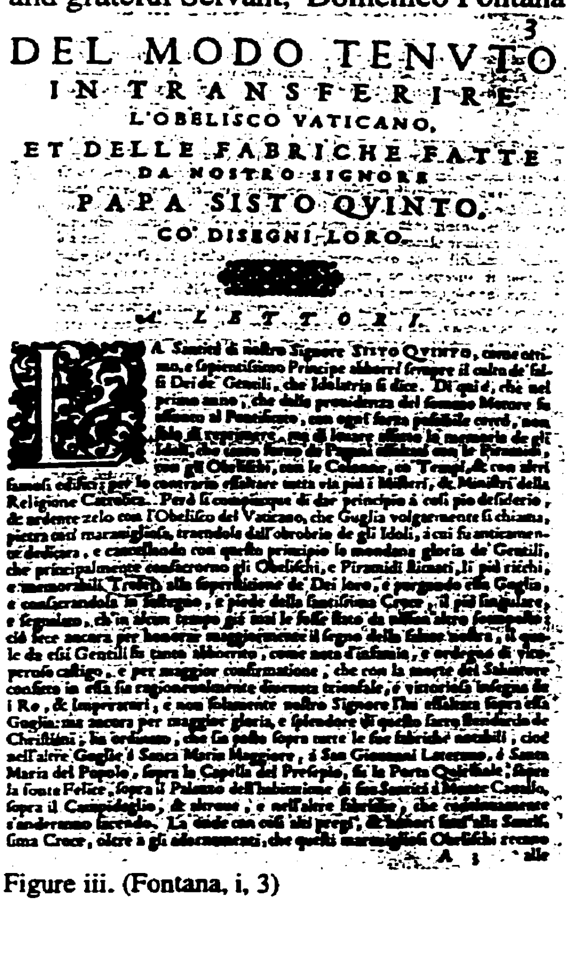
TO THE HOLIEST AND MOST BLESSED FATHER AND OUR LORD POPE SIXTUS V

As all waters come from the sea, 2r
and to the sea return, so having issued forth from the magnanimous hand of Your Holiness all the magnificent works of Architecture which are described in the present book, it is a most rational thing that, having gone out in public, they should return as a tribute due to you, for the eternal remembrance of the greatness of your soul, and of my most humble and devoted service dedicated to Your Benevolence, with my favour truly and singularly focused on the execution of this enterprise. And although I am sure, that the fame of these remarkable works, in the company of your many other heroic deeds, has filled the whole world; yet I am persuaded, that it will give great satisfaction to the desire of those who were not present, and due to great distance can not come to see the majesty of these many built works, to represent them before the eyes, insofar as art can show them: which, I am certain, will bring to the spirit much pleasure, and great happiness, and particularly the

declaration of the way adhered to for the transportation of the large Vatican Obelisk, which in this book is similarly recounted for all the world to see. With all my senses I thank Your Holiness from whom all these things proceeded, which I now, most humbly, bowing down to kiss your most holy feet, restore to you, as proper; and dedicate, as a devout believer, so that our lord God shall long confer to your glory, and the universal benefit of the Holy Church.

The year 1590

To your Holiness, your most devoted and grateful Servant, Domenico Fontana



3

DEL MODO TENVTO
IN TRANSFERIRE
L'OBELISCO VATICANO,
ET DELLE FABRICHE FATTE
DA NOSTRO SIGNORE
PAPA SISTO QVINTO,
CO' DISEGNI LORO.

A' LETTORI.

LA Santità di nostro Signore SISTO QVINTO, come ottimo, e sapientissimo Principe abhorrì sempre il culto de' falsi Dei de' Gentili, che Idolatria si dice. Di qui è, che nel primo anno, che dalla providenza del sommo Motore fu assunto al Pontificato, con ogni forza possibile cercò, non solo di reprimere, ma di levare affatto la memoria de gli Idoli, che tanto furno da' Pagani essaltati con le Piramidi, con gli Obelischi, con le Colonne, co' Tempi, & con altri famosi edificij; per lo contrario essaltare tutta via più i Misterij, & Ministri della Religione Catholica. Però si compiacque di dar principio à così pio desiderio, & ardente zelo con l'Obelisco del Vaticano, che Guglia volgarmente si chiama, pietra così maravigliosa, traendola dall'obrobrio de gli Idoli, à cui fu anticamente dedicata, e cancellando con questo principio la mondana gloria de' Gentili, che principalmente consacrorno gli Obelischi, e Piramidi stimati li più ricchi, e memorabili Trofei alla superstitione de' Dei loro, e purgando essa Guglia, e consacrandola in sostegno, e piede della santissima Croce, il più singulare, e segnalato, ch'in alcun tempo già mai le fosse stato da nissun'altro sottoposto; ciò fece ancora per honorar maggiormente il segno della salute nostra, il quale da essi Gentili fu tanto abhorrito, come nota d'infamia, e ordegno di vituperoso castigo, e per maggior confirmatione, che con la morte del Salvatore confitto in essa fu ragionevolmente diventata trionfale, e vittoriosa insegna de i Re, & Imperatori; e non solamente nostro Signore l'ha essaltata sopra essa Guglia: ma ancora per maggior gloria, e splendore di questo sacro stendardo de Christiani; ha ordinato, che sia posto sopra tutte le sue fabriche notabili, cioè nell'altre Guglie à Santa Maria Maggiore, à San Giovanni Laterano, à Santa Maria del Popolo, sopra la Capella del Presepio, su la Porta Quirinale, sopra la fonte Felice, sopra il Palazzo dell'habitatione di sua Santità à Monte Cavallo, sopra il Campidoglio, & altrove, e nell'altre fabriche, che continuamente s'anderanno facendo. La onde con così alti pregi, & honori fatti alla Santissima Croce, oltre à gli adornamenti, che questi maravigliosi Obelischi recano

A 3 alle

Figure iii. (Fontana, i, 3)

OF THE WAY ADHERED TO IN TRANSFERRING THE VATICAN OBELISK AND OF THE WORKS MADE BY OUR LORD POPE SIXTUS V WITH THEIR DRAWINGS

TO THE READERS

His holiness our Lord SIXTUS V, as most excellent, and wise Prince has always abhorred the cult of the false Gods of the Gentiles, which is called idolatry. Thus, in the first year, when through the providence of the supreme Mover he was raised to the Papacy, he sought, with every possible force, not only to suppress, but to completely take away the memory of the Idols, which the pagans so exalted with the Pyramid, with the Obelisk, with the Column, with Temples, and with other famous edifices: on the contrary, we exalt still more the Mysteries & Ministers of the Catholic Religion. However, he decided to begin [fulfilling] this pious desire and ardent zeal with the Vatican Obelisk, vulgarly called the Needle, a stone which is marvellous, yet dragged down with the disgrace of idols, to which it was formerly dedicated, and erasing with this beginning the worldly glory of the Gentiles, who principally consecrated the Obelisks, and esteemed Pyramids, and

the most rich and memorable trophies, to the superstition of their Gods; and purging this needle, and consecrating it as a supporting pedestal for the Holy Cross, the most singular, and famous, that has never been under submission: and that he also gave greater honour to the sign of our salvation, which was so abhorred by the Gentiles as a mark of infamy, and implement of shameful chastisement, and for its greater confirmation, that with the death of the Saviour fixed to it, most reasonably became a triumphant and victorious insignia of the Kings & Emperors, and not only has he exalted our Lord to the top of this needle, but again for the greater glory, and splendour of this sacred standard of Christians, he ordained that there be placed on top of all these notable works, that is, the other Needles at *Santa Maria Maggiore*, at *San Giovanni Laterano*, at *Santa Maria del Popolo*, above the *Capella del Presepio*, upon the *Porta Quirinale*, on the [*acqua*] *Felice*, upon the residential Palazzo of his Holiness at *Monte Cavallo*, upon the *Campidoglio*, and elsewhere, and at other works, which continue to be made. Thus, with such high esteem & honour given to the holy cross, that this most marvellous Obelisk carries to the Church and to the

3v places where they are erected, for which they become more famous; it will remain in the future a clear and eternal testimony of piety, and devotion, that this most Holy Father, and Pastor of ours has in particular towards the most Holy Cross. Now therefore, having been commissioned by His Holiness (as will be evident from place to place in the present book), the transportation of this Obelisk which was first in a location seldom frequented by people, it setting up in the middle of the *Piazza di San Pietro*, I proposed to put into writing, and all that followed concerning this enterprise: because I aim (as well as my weak forces can carry) to leave some notes of this work, in order to result in the benefit of those who have occasion to move stones that are so heavy, and dangerous to split; I am that much more impelled to do this because until now, I have found no one, that I know, who has written of it, nor shed the least light on the device proved sufficient for such a difficult enterprise, already close to a thousand and four hundred years out of use. I will therefore gather all the arts necessary needed for the transportation, & setting up of this Needle represented in drawings to the eyes of the readers for greater clarity, so that they would understand all the important actions that served to produce this effect: so that (if I am not mistaken), with little effort, others in this practise will now no longer be buried in shadows, rather will be able to use the present invention, brought back into light, and proved successful

many times, and possible to achieve successfully in the future, for the glory of God, and the honour of Pope Sixtus V. Thus I will touch on the way that I used to measure, and weigh the obelisks easily, so as not to err in the preparation of the building timber, ironwork, ropes and other necessary instruments, but to speedily determine what is overabundant, and what is lacking. Further, I will treat all the construction of the Scaffolding made to raise the Needle, and all of its parts, and the armatures, pulleys, cords, cranes, and their disposition, levers, wedges, and other things used in the work, as well as the shrouding made around the stone to defend it from every offence that could happen to it. I will describe the procession ordained by our Lord to purge the Needle, and to consecrate the Cross that was placed on top of it in the same location that was originally occupied by the gilt globe, within which was said to contain the ashes of Caesar, although I believe otherwise, for reasons that I will put forward elsewhere: and as far as I have been able to understand by conjecture, I will mention the methods that I judge the ancients must have practised to handle and move similar stones, which, compared to our own, will make it less difficult to know which are the most secure and reasonable; and as he judges these things most notable, and worthy of amazement, that our Lord in the brief space of four years, since he was promoted to the Pontificate, has finished so many famous built works, and marvellous edifices, and begun so many, that the principal ones have risen to the number of thirty-five, I thought it convenient on the occasion of showing the art of transporting the Needle to describe those already made, and those which Our Father will make, making this the first book of them, and I will represent in drawings those which seem to me could be most useful, and satisfying; works which are now listed below.

1. A *Palazzo* made in his vineyard while a Cardinal, where his Holiness often lives in the summer, embellished with many adornments.
2. The *Capella del Presepio* with the transportation of the old Chapel in a single piece
3. The conduit for the spring *felice*, which was made to come to *Monte Cavallo* twenty-two miles distant from Rome.
4. The Loggia of the benediction at *San Giovanni Laterano* 4r
5. A very large *Palazzo Apostolico* in this said place.
6. The transportation of the *Scala Santa*, and the adornments of the *Sancta Sanctorum*.
7. The transportation, erection, and restoration of the Needle of *San*

Giovanni, which was fractured into many pieces.

8. The same for the Needle of *Santa Maria Maggiore*, and that of the *Popolo*.

9. The hospital for beggars at the *Ponte Sisto*

10. A sumptuous library at the *Belvedere in Vaticano*

11. The placing of bronze statues of Saint Peter, and Saint Paul above the *Colonne Traiana and Antonina*, with the restoration of the *Colonne Antonina*.

12. The Church of *San Gironimo de gli Schiavoni* at Ripetta.

13. Transportation, and restoration of the Horses Prassitele and Fidia, which had been damaged since antiquity.

14. Levelled Piazzas, and made public fountains, and levelled the *strada Pia* to *Monte Cavallo*.

15. A large *Palazzo* at the same place.

16. The new street named *felice*, two and a half miles long.

17. Two other new streets that start at the *Porta San Lorenzo*, one arriving at the *Piazza of Santa Maria Maggiore*, the other at the Piazza of the *Terme*.

18. Another new street from *Santa Maria Maggiore* to the *Palazzo di San Marco*.

19. Another new street from *San Giovanni Laterano* to the *Coliseo*.

20. Another, which goes from the *Porta Salara* to the *strada Pia*.

21. He levelled the hill of *Santa Maria Maggiore*.

22. He levelled the Piazza of *San Giovanni Laterano*, and filled in the street, which goes from this Church to *Santa Maria Maggiore*.

23. The grand Dome of the Church of *San Pietro* with greatest diligence, and enormous expense.

24. A large public washing house at the piazza of the *Terme*.

25. He ordered the destruction of old structures which surrounded the Church of *Santa Maria de gli Angeli* , allowing it to adorn the centre of that Piazza.

26. A great stair, which rises from the *Palazzo papale* at *San Pietro*, by which his Holiness is able to enter the Church without going out in public.

27. The restoration of the Church of *Santa Sabina*.

28. He raised the Tower of the *Belvedere*.

29. A public washing place for the art of wool at the *Trevi* fountain.

30. Most recently he began to construct a great Palazzo in the Vatican, beginning on the 30 of April, 1589.

These things are all finished, except for the Dome and the *Palazzo del Vaticano*, which with the diligence that is employed, in brief time will be brought to perfection within the city of Rome, all at the expense of his Holiness. Many others are omitted as here is made mention of only the most notable.

31. And outside of Rome in the same time he built a College of Trades at Bologna

32. He built a new City at Madonna *di Loreto* with much expense in augmenting its sanctified House.

33. Another new city in *Montalto*, birthplace of his Holiness, where a complete mountain was levelled.

34. A Conduit for water to *Civitavecchia*, six miles away from this City.

35. Furthermore, he has begun a bridge over the *Tevere* between the *Borghetto*, and *Otricoli*.

4v And so, whether for the many works, or whether also for the paternal care and singular providence with which this most high Pope maintains the City of Rome, and the whole Ecclesiastical state in abundance of provisions, free from Assassins, and those who disturb the pubic calm, we can reasonably affirm that if Pope Sixtus IV of sainted memory obtained the name of Romulus for having improved, and enlarged this City with various buildings, so our Lord Sixtus V with so many works of Architecture, with such peace, and tranquillity in the state of the Church, having amassed so many public treasures, and having administered all with justice, merits the title not only of Augustus: but by common consensus merits also to be called Father of the Country.

NARRATION OF THE WAY ADHERED TO IN TRANSFERRING THE VATICAN OBELISK

With this proposal therefore (as was already said) to make a pedestal for the Cross, the greatest and most excellent that has ever been made of it, and to erase the memory of ancient superstition; to adorn the piazza, and the new stupendous work of *San Pietro*, our Lord ordered on the 24th day of August 1585 a congregation of Clergy, and most intelligent men, and gave unto their care, that by reasoning with every caution they should determine the site where the Needle should be set up again in the Piazza of *San Pietro*: but what was more important, that they should determine the method that should be adhered to in conducting the transportation of this large rugged stone as safely as possibly, accepting also to judge which Artificer would be most suitable, both for his intelligence and for his experience in similar affairs, to conduct the work to the desired end: and truly the action of this undertaking was commonly esteemed by all as most difficult, both for the immense weight, and for the large size of the body of the stone, and for the scrupulous care required not to break it during its movements, so that they had to treasure it exceedingly, as a most rare

jewel which alone remains intact among the many ruins of Roman magnificence, and also for the difficulty undertaken in other times by the first Engineers, and Architects of Christianity: which has frightened the spirit of many Pontiffs in the past, that might have desired to translate the very same stone, and they added up a thousand doubts about the impediments that they had come across, not yet having being discovered, to their knowledge, any written or other remembrance left of the way adhered to by the ancients (as I said above), from which certain rules could be drawn out, that I had no opposition, increasing the difficulty, and the unanticipated dangers that fortune suddenly produces in similar cases.

The Captain of the aforementioned congregation was the well-remembered Signor Pier Donato Cardinal Cesis, in whose house all congregated. The second, the well-remembered Signor Filippo Cardinal Guastavillano then Chamberlain of the holy Church. The third, the illustrious and most Reverend Signor Ferdinando Cardinal de Medici, at present Grand Duke of Tuscany. The fourth, the Illustrious and most Reverend Signor Francesco Cardinal Sforza.

Also participating were the Illustrious Clergy listed below.

5r Monsignor Benedetto Giustiniano, General Treasurer, at present Cardinal.

Monsignor Innocentio Malvagia, Cleric of the Chamber, and president of the streets.

Monsignor Bernardino Piscina, remembered as General Commissary

Monsignor Giovanni Pelicano, Senator of Rome.

And the illustrious Conservators: Domenico Giacobaccio, Hortensio Celso, Giulio Panfilio.

Signor Gasparo Sanguigna, Prior of the Corporals.

And the Magnificent Signori Gio. Pietro Muti. Horatio Stati, Masters of the streets.

The Magnificent Signor Girolamo Altieri, deputy of the Roman People:

The Magnificent Signor Fabio Amodeo, Commissioner of the Trevi Fountain

The Magnificent Signor Petruccio, official of the Roman People

In the first discussion of these Men, in this first congregation, they declared, and concluded, that to best examine and understand this business, and its end result, that was desired to conduct this much-loved relic to safety, that they should call on all the *Letteratti*, Mathematicians, Architects, Engineers, and other valiant men that they could find: so that each one could give his opinion on the execution of this undertaking: because having discussed among themselves the methods that they

judged one could employ, they did not remain fully satisfied with any one of the aspects mentioned above. To this effect they ordained the second congregation at the same location twenty-five days later to give time for many valiant foreigners, who from many places converged in Rome to show their forces of ingenuity in the cause much desired by our Father, and by the whole world, as already much earlier, the intention of his Holiness being known, there had arrived in Rome various people attracted by the fame of a work such as this, that at this aforesaid second congregation, that happened on the eighteenth of September following, there appeared from the above-mentioned professions five hundred men of various countries, some having come from Milan, others from Venice, some from Florence, from Luca, from Como, and from Sicily, and even from Rhodes, and from Greece, among which there were even some Friars, and each one had brought his invention, either in drawing, or in model, or in writing, others explained their opinion in *viva voce*, and most of them concurred to transport the Needle upright, judging the difficulty of stretching it on the ground, and then turning it upright once again, frightened I believe by its enormity, and the weight of the machines, believing perhaps it would be easier and more secure to conduct it upright by moving its middle, than using the three motions of lowering, dragging, and raising it: and there were others who wanted to carry not only the needle upright, but also the Pedestal, and the base together: others not straight up, nor extended on the ground, but hanging at forty-five degrees from the horizontal, which is vulgarity called *mezz'aria*. Others showed the way of lifting it up, some with a lever as the mode of making it stand: others with screws, and others with wheels. I brought my model of timbers, within it a Needle of lead proportionate to the ropes, pulleys, and small devices of this model which were to raise it, and in the presence of all the Gentlemen of the congregation, and the aforesaid Masters of Art, I raised this Needle, and lowered it setting in order the exhibit with speech which told of the reasoning, and the foundation of each one of its movements, following exactly its workings. Now having minutely considered, and weighed the discourses, designs, and edifices of all of us, and having disputed a great deal, they finally came to this conclusion, that the way of moving, and transporting the Needle that I had found was the most secure, and 5v
better expected to come out propitiously than all the others that had been offered: and by common consent of all the congregation I was elected, and approved to be employed for the transportation of the Needle, leaving aside all the others. It is true that, for the great desire that these Gentlemen had, that the work should

succeed for the better, they became fearful of my age, saying that I was too young, at that time not having passed my forty-second year, and they believed that a man with long experience in the art of moving weights was required in order to execute with mature and lengthy discourse, and by degrees, what was demonstrated in the model; therefore, they decided that the undertaking should be consigned to Bartolomeo Amannati Fiorentino, a man of sixty-five years, and assigned as his assistant Giacopo della Porta: so that both, with my invention, could succeed as was desired. In this manner the congregation was concluded, and I was greatly content in this aspect, that among so many fair engines, drawings, and diverse models, my invention had been placed foremost, selected, and approved as the best, and assigned to two worthy architects to be employed to best advantage, and I was free of every worry that undertaking to bring to conclusion a work so important, and difficult, and full of risks, and dangers not experienced by anyone of our time, would have brought me. After this, I remained for seven days without going to see Our Lord, and waiting for the aforesaid Masters to begin the work: then, needing to deal with his Holiness on some affairs; I went to *Monte Cavallo*, and while taking of some other things, he asked me my opinion concerning the needle, and as far as I could think, I answered that I judged it good, except that, being most desirous that the work should be well carried, I was afraid that if by chance, in its execution, when others would build my invention some accident might intervene, anyone might believe that this had happened because my model was defective, and so I fell into deep thought, and it seemed to me that in this respect I had suffered some injury: thus I thought that no one would ever be able to execute the invention of another, quite as well as the inventor himself; it being that no man can be found who can ever fully understand the invention, or the thoughts of another man. Then our Father ordained that I alone should be the head of the work, and execute my intentions; so suddenly he dispatched me with forty men to excavate the trench, where the foundations would be cast in the Piazza of *San Pietro*, in the same place where previously a marking stake had been planted by Amannati, and by Giacopo della Porta, opposite the principal Door of the said church, and this was on Wednesday, the twenty-fifth of the month of September, a truly notable day, and fortunate in the procession of the life, deeds, and greatness of Our Lord, because on this day he was created a Bishop, successively exalted to the dignity of Cardinal, and lastly ascended to the high position of Pope, and was

crowned this very same day, certainly a memorable series of events.

Now, having begun the excavation, the foundations were made in a square of sixty *palmi*[1] each side, to a depth of thirty-three *palmi*, and not finding good support, and feeling muddy earth, and clay with much water, it was necessary to drive into the bottom of the trench piles of oak, and peeled chestnut beams, that would conserve in perpetuity under the earth, each twenty-five *palmi* long, one *palmo* wide, and driven in with brass pile drivers, all with great diligence. The material for the foundation is of finely crushed stone, and pieces of brick with good unslaked lime with *pozzolana*, which sets and holds very well, and in this foundation in many places were cast bronze medals in

6r memory of the occasion, for which were specifically made two caskets of travertine holding twelve medals each, which had a band sculpted with the image of Our Lord, and the reverse sides were of many kinds; one of a man sleeping in the countryside under a tree, with a surrounding motto, which says: PERFECT SECURITY: another one had three mountains, and above the right band a cornucopia, on the left band a branch of the laurel tree, and at the top, a sword with its point turned towards the sky, which served as a pin for a pair of Balances with the motto: FECIT IN MONTE CONVIVIVM PINGVIVM: others showed Saint Francis kneeling before the crucifix with the church, in destruction, and the motto: GO FRANCISCAN, AND REPAIR IT; others had a band with an effigy of Pope Pius V, and on the reverse some had Religion, others had Justice. And this was put here for the satisfaction of whoever desires to have knowledge of all that happened.

And while these things were being done in Rome, it was necessary in order to form a Scaffold that would serve to raise so much weight, as I describe in its rightful place, to find a great quantity of large and long beams, and diverse and extraordinary ironworks, which were not to be found anywhere within the City; to facilitate negotiations, and to solicit great speed for Our Lord, it pleased him to give me ample authority, with privilege over the entire Ecclesiastical State, to buy, and sell, and to do other things having to do with the work, as will appear below.

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[1] Note on units of measure: In Rome, one *palmo* is equal to 8.79 inches or 22.3 cm. 1 *canna* is equal to 10 *palmi* or 7.33 feet or 2.23 m. One *minuito* is one sixtieth of one *palmo*. Also, one *libra romano* is equal to 12 oz or .339 Kilograms.

COPY OF THE EDICT
OF AUTHORITY[2]

We, Sixtus V, grant power and full authority to Domenico Fontana, architect of the Holy Apostolic Palace, in order that he may more easily and more quickly transport the Vatican obelisk to the Piazza of St. Peter, to make use, as long as this removal lasts, of whatever workmen and labourers, with the apparatus that may be necessary, of whatever kind it may be, and when in need to compel anyone to lend material to him, or sell it, he, however, satisfying them with due compensation.

That he can make use of all the boards, timbers, and wood of any size, which are in places convenient for his needs, regardless of to whom they belong, paying, however, the due price to the owner of this lumber, in accordance with the decision of two arbitrators chosen by the parties; and that he can cut, or have cut, all the wood which in any way belong to the church of St. Peter, its chapels and canons, particularly in the ground of the *Campo Marto*, or of the Hospital of *San Spirito in Sassia*, or of the Apostolic Chamber, without making any payment, and he can carry this wood to whatever place he desires; and let out to pasture the animals used in this work without incurring any punishment, making up, however, for damage done, according to the decision of experts chosen for this purpose.

That he can buy and carry away the above mentioned articles and anything else necessary from any person whatever, without paying excise tax or duty of any kind.

That he can, without a license, or permit, get together in Rome or in other cities and neighbouring places any amount of victuals for his own use and that of his workers and animals.

That he can requisition and carry 6v
away from wherever he finds them, capstans, ropes, and cords, whether loose or fixed, undertaking, however, to repair them and make them whole, paying a due recompense; and that in the same way he can make use of all the instruments and apparatus belonging to the edifice of St. Peter, and can order the agents, representatives and officials of the said building in a due space of time to make free and clear the Piazza around the obelisk so that it can be removed and to accommodate him in whatever way necessary in this undertaking.

That he can (if it be necessary) tear down, or have torn down, the houses near the said obelisk, deciding first on the way in which to compensate the owners for the damage.

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[2]The *Copy of the Edict of Authority* is the only portion of *Della trasportatione* which exists in English translation. This section is reproduced from William Barclay Parsons, *Engineers and Engineering in the Renaissance* (Baltimore: Williams & Wilkins Co., 1939), 158-9.

Finally, authority is given to the said Domenico Fontana to do, command, execute and carry out any other thing necessary to this task, and, moreover, that he, together with his agents, workers and domestic servants in any place and at any time may carry any force of arms necessary, except those prohibited, all the magistrates and officials of the entire estate of the Church are commanded to aid and help the said Domenico Fontana in the above mentioned things, as are all others subject in any way at all to the authority of the Holy See, of whatever rank and condition, under pain of Our displeasure, and a fine of five hundred ducats to the Treasury, and other punishments at Our discretion. No one shall dare impede, nor in any way molest the carrying out of this work of the said Domenico, his agents, or workers, but on the contrary without delay or any pretext, everyone shall help, obey and support him; anything to the contrary notwithstanding. Given at Rome in St. Mark's this 5th day of October, 1585...

Figure iv. (Fontana, i, 8)

RULES FOR MEASURING

SQUARED OBELISKS

and to have knowledge of their weight

First, to prepare myself for the 9r
work, and wishing to ascertain the weight of the Needle; I made a square measuring one *palmo* of the very same stone, cut with great diligence from another piece of this stone, in the fashion of a die, and after it was cleared; I found it to weigh 86 *libre*; then to investigate how many cubed *palmi* were encased in the body of the Needle, I took the height

from its upper square portion, where its point begins to the base, with a string weighted with lead, and found the height to be 107 *palmi*, and a half, and having done this, I took the size of the base, which was 12 *palmi* and 5 *minuti*, and similarly I did this where it is squared above, under the point, in which place it is 8 *palmi* 5 *minuti* wide, above this squaring the point has the form of a small Needle under other angles, and another vertex rises straight up six *palmi*. Noting this measure, forming a square similar to the base of the Needle, as indicated by the edge a.b.c.d. of 12 palmi and 5 *minuti* each face, that is the 12th part of a *palmo*, and inside the first square is formed the second minor one, e.f.g.h., similar to the squaring above the Needle of 8 palmi, and one twelfth per face, now I wished to measure this body,

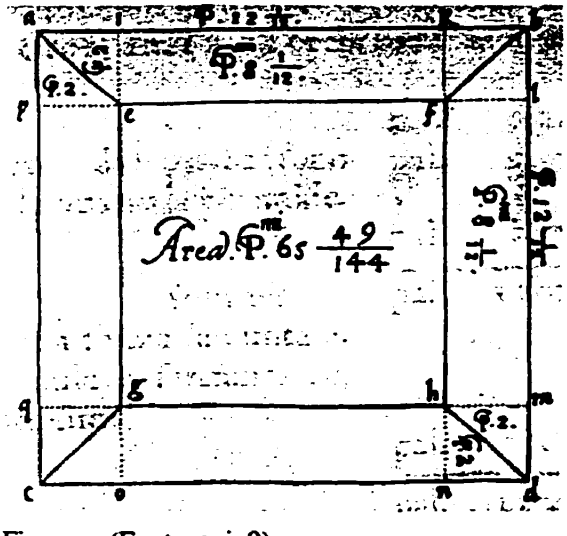

Figure v. (Fontana, i, 9)

to first find the area, or vulgarly called the *superficie*, of the minor squared portion e,f,g,h which forms a square pillar in the middle of the Needle, from the tip to the base, and following the rules of multiplication one face times the other is 65 palmi and a fraction of forty-nine one hundred and forty-fourths, that multiplied by the height of the entire needle, that is 107 *palmi*, and a half, makes seven thousand and twenty-four cubed *palmi*, and the fraction twenty over two hundred and eighty-eight, which is one twelfth of a *palmo*, but to show it exactly I leave off the odd bits at this first incarnation: then I wished to measure the sloping thickness, of the four parts, or facets of the Needle, and these thicknesses are designated by e,i,k,f & f,l,h,m, & h,n,g,o & g,q,p,e the sloping area of which begins on the squared base, and finishes on the smaller square of the point, which is to say that the area of the figures designated by e,i,k,f begins on the facet a,b of the squared base at the points i & k and finishes at the angles of the minor square of the tip at the points e&f. ...

DESCRIPTION OF THE FORM OF THE CASTELLO

Made to raise the Obelisk

10v To form the aforementioned *Castello*, at the ground level were fixed eight columns, or antennae as they are commonly known, four on one side, and four on the other side of the Obelisk, with a distance between them of five *palmi*, formed in thickness by four beams, each with a width of two *palmi* and a quarter, so that each column came to have a diameter of four *palmi* and a half, and a circumference of eighteen *palmi*; these beams were joined together for greater stability in this way, so that one was always shorter than the other: in order that the joints would not face each other, and these same beams were drilled in many places on all their faces, passing from one side to the other, within these holes were placed bolts which, passing through both, and then fixed with bands of iron where they issued out, held these beams together, uniting them tightly without any nails, and this was done it quicker to assemble and disassemble the Castello without ruining any beams: the above-mentioned bolts were made of iron, as seen in their place in the drawings, and those outside were arranged at a distance of twelve *palmi* one from the other: and besides, every twelve *palmi* loops of iron, which as one can also see in the drawings, circumscribed and similarly tightened the four beams together, and to make them grasp even tighter, there were positioned in many places, where needed between the beams, and at the said loops, many wedges strongly built from wood, and furthermore, in many opportune places, they were wrapped, and many narrow ropes were wound around and around with wedges in the same way, and this ligature was the same distance of twelve *palmi* from one to the other, and continued in this way; the above mentioned columns (as a single beam alone could not reach that height), with many beams one on top of the other joined in the same way, to a height ten *palmi* higher than the Needle itself, so that these columns, or antennae, rose one hundred and twenty-three *palmi* above the base...

Figure vi. (Fontana, i, 12)

13r And next the whole Obelisk was covered by a double matting: in order that it would not get marked, and on top of this matting it was covered by large planks one quarter *palmo* thick, over which were rods of iron one half *palmo* wide, and one quarter *palmo* thick, and there were three for each face, which embraced the foot of the Obelisk with clamps of metal, and which came straight up all four faces of the stone with their joints hinged one over the other, and these rods were bound tightly around by nine loops of the same iron, as all will be seen in the following drawing, the iron of the sling weighed forty thousand *libre*, and then the planks, pulleys, and ropes about another forty thousand *libre*, so that the Obelisk embraced in this way came to weigh one million forty-three thousand five hundred and thirty-seven *libre*...

...And because limitless crowds would assemble to see this memorable work; to avoid disorder, that might be caused by the multitude of people, the roads which arrived on the piazza were barricaded, and a decree was issued that on that day when the Obelisk was scheduled to be lowered, no one could enter that secure area, except for the workmen: anyone who forced the gates would be under the penalty of death, and further, that no one should impede the operations in anyway, and that no one would speak, spit, or make any loud noise on grave penalty: in order not to impede the ordering commands given by me to the workmen, and to execute this decree immediately, the head of the guards with his troops entered this locked area, so that whether because of the novelty of this work, or because of the punishments of the decree, this large

number of people gathered in great silence....

13v ...Now all the responsibilities were distributed; meanwhile it has become a most beautiful day, and the sky was clear almost like a sign of favour that Our Lord God wished to give to this greatly desired enterprise, which most of Rome had already assembled to see, and among the others was the most

14r Illustrious and Reverend Lord Cardinal Montalto nephew of our Lord [Sixtus V], with the majority of the Cardinals: the most Illustrious and Excellent Signor Don Michele Peretti Governor of Borgo, and nephew of his Holiness: the Illustrious and Excellent Signora Camilla sister of our Lord with her Illustrious nieces Signora Flavia, and Signora Orsina; the first is the present Duchess of Bracciano, married to Duke Verginio Orfino, the second is the present Duchess of Palliano, married to Duke Marc'Antonio Colonna, grand Constable of the King of Spain in the kingdom of Naples, and almost all the other Ladies, and Gentlemen of Rome: the Ambassadors, and all great people that one finds in the city, and many foreigners gathered from all parts of Italy to see the spectacle so new, and marvellous, so that from all the windows looking onto the piazza, and all of St. Peter's was covered with a multitude, and all the roofs of the surrounding houses, and Churches, and all the roads were undulating with people, so that it was necessary to deploy the Swiss Guards, and the light Cavalry at the gates, in order not to bring disorder into the crowd. With everyone all prepared and waiting, I exhorted everyone to execute the instruments they had been given when they heard the sound of the trumpet; I asked all the workmen, ministers, and the bystanders to pray, since this work was addressed to the glory of God; they were content to kneel down and give a short oration with me, in order that his Majesty might favour this blessed and honourable work, judging that our forces, without special help, were too week for executing such an effect; then, after everyone had said an *Pater Nostro* and an *Ave maria*, I gave the sign to the trumpet, and once this sound was heard, the work began with the five levers, forty capstans, nine hundred and seven men, and seventy-five horses; during this first movement the earth seemed to tremble, and the Castello made a great tightening noise, for as all the timbers bent together under the weight of the Obelisk, which was

hanging two *palmi* towards the choir of St. Peter's where services are now held, which is towards the North (which was discovered when it was plumbed) it was raised vertical: this noise, having been heard, and the *Castello* not having yielded in any part, or harmed anyone; everyone took comfort, and after stopping it with the signal of the bell; I found that one iron band was ruined, the first of those which surrounded the rods around the Obelisk beginning at its summit, this band was repaired with four pairs of pulleys harnessed on one side, and on the other, and was wrapped in ropes in this spot, which passed under the Obelisk, and returned to the top like the band on the other side, so many times that it was well secure, and the work continued: and so in twelve moves the Obelisk was raised by two and three-quarter *palmi*, which was enough to place the sledge below it, and to raise the metal astragals, and the Obelisk was secured at this height, below the four corners with very strong attachments, and wedges of wood, and iron, and all was completed at twenty-two hours of the same day, and the Castle gave a signal with mortars, and the artillery was scattered with a great thundering, as a sign of joy, and in order that no one should leave his place, dinner was brought to every capstan in baskets. From all of this I became aware that the ropes were more secure than the belts of iron, and although from the first it had been fastened (it was not all entrusted to iron) with many large ropes wrapped around and around in many places, which (so they would not escape upwards) were enveloped in many cords, which descending to the base, passed under the foot of the Obelisk, and rose on the other side, to join the rope already wrapped...

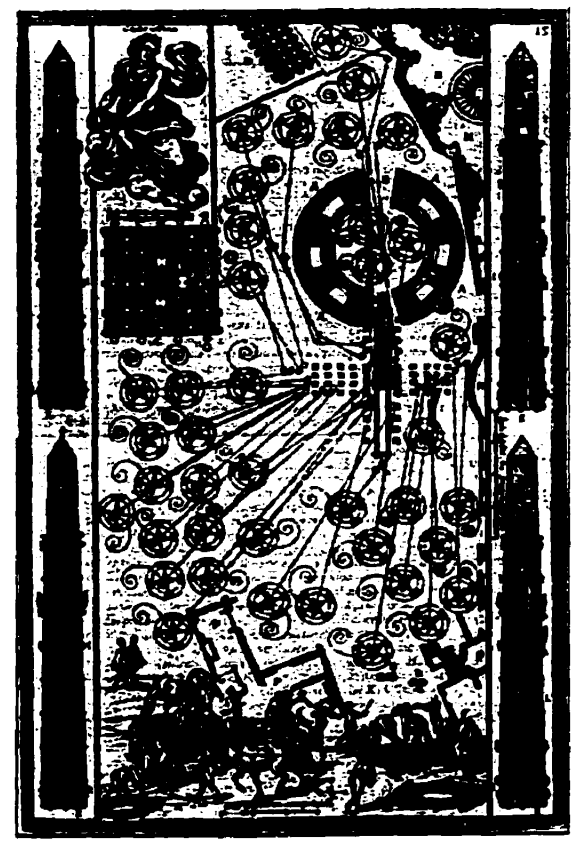

Figure vii. (Fontana, i, 15)

DISCOURSE ON THE WAY
THAT THE ANCIENTS MUST HAVE USED
To raise the Obelisk, and on its fracturing

16r These astragals with their pins, mentioned earlier, which I said were enveloped with lead within the stone, were so hard that it took four days and four nights of continuous work to disengage them, and finally it was necessary to excavate; the *Scarpellini* had to cut away the stone around them: however, from this I traced a conjecture (and which, according to me, I believe to be the truth) that the ancients used these to buttress the foot of the Obelisk above these clamps, then by raising it and pulling it by the point, they had to return it to the pedestal; and a second conjecture is seen in these clamps, which were crushed at their edges on the side above which the Needle must have pressed down while being set up, so that it seems that we can conclude from these marks, that the ancients must have employed more effort and more expense in raising an Obelisk than is done at present: more effort, because pulling the Obelisk against these clamps where its foot was secured, they had to oppose one force against the other, and I (as will be seen in its proper place) ordered the work in such a way that pulling the foot I helped to raise the summit: more expense, because if the ancients wanted to replace it on its feet, they had to construct a *Castello* as long as the whole Obelisk, which was extended on the ground. Moreover is my opinion that this Obelisk had been lying on the ground for a long time before it was put to work, because I see that its base is corroded by time, and I find that its facade which was turned towards the ground was polished, as though it was finished very recently, which is also known today, the same for its roughness, caused by time...

...and this effect is also seen on the same faces of the Obelisk: those which face towards the South are rough, and consumed, as it is under its base, and towards the North it is polished without any distortion. I am also of the opinion, which Pliny says is true, that this Obelisk was fractured in its setting up, for three reasons. First, because the point is not made in the same measure as the others, as is seen in that of Augustus now set up in front of the *Madonna del Popolo*, and in that of Constantine, now standing *at San Giovanni Laterano*, which were

found at the *Circus Maximus*, and much as we see in that one, the Obelisk at the Circus of *Caracalla* at *San Bastiano*, a mile outside of Rome, and in that of the *Campo Marzo*, in that of the gardens of *Salvstio*, and in the small one, which is at *San Mautto*, the points of which are all one third and a half heads [in ratio], and so in proportion to the others the point of this one should be twelve *palmi* high, and it is only six *palmi*, and so I believe that after it was fractured, the ancients did not want to enlarge it to avoid diminishing the size of the stone. The second reason is that I see that the point has been worked by the hand of

16v another craftsman, for if there had been a single craftsman, it would all be worked in a consistent way: but on the contrary, as the point is not as polished, like the rest of the stone, but is rougher: the third reason is that this Obelisk is shorter than all the others mentioned above, which are nine and a half heads or ten up to the square, where the point begins, and the present one does not even come to nine.

Now while these clamps were being excavated, a flat carriage was made, and this sledge was placed on rollers, and this sledge was made narrower than the base of the obelisk: so that it could enter below the void left between one corner and the other where it had stopped above the wedges, and the edges of the beams, as was already described. The lowering remained; a more difficult work, and very dangerous due to the great movement, and the length of the stone; and so for this all the pulleys were moved so that the ropes were attached in various places on three sides only, leaving free the facade of the Obelisk turned towards the East, which when lowered had to rest on the sledge, and the capstans were also moved, which served in another way to lower it, as I will tell, and because I foresaw that it would sometimes be necessary to brace the work while the Obelisk was hanging in the air, to accommodate its pulleys and ropes, and other things according to need might be required; in this way [when horizontal] the Obelisk would never rest on the ropes, but would rest propped up; I provided for all of this with four beams fifty *palmi* long, at the top of which I had placed clamps of iron, which were wound around a large rod of iron, with a diameter of half a *palmo*, that was near the Obelisk, placed on the side that would face the ground when lowered, and this rod was held by a large band of iron, which, encircling the other

three facades of the Obelisk, held the rod tightly inside certain eye-holes here and there, and the [bottom ends of the] above mentioned beams were placed on rollers, which entered like capstans into some sockets of iron bolted to the ends of these beams, so that while the Obelisk was being lowered, they would open much like a compass, when necessary, and when they had been extended so far that because of their obtuse angle, they could no longer serve as bracing; and so I had prepared four shorter beams, which would serve in the same way, until it was finally placed on the carriage, and when it was necessary for the work to stop, the Needle would always be propped up on these beams...

...and the preparation of all these things consumed eight days, that is, until Wednesday, so it was on the 7th of May, 1585, early in the morning that the apparatus was all in order. To the foot of the Obelisk was attached four pairs of pulleys, which corresponded to four Capstans placed on the West side, behind the Sacristy, and so early that morning the four Capstans started to turn, and all the others which were stopped, at the same time began to loosen the ropes accordingly to the orders given to them, and those who were in charge of them, and the same order was given as for the lifting, that is, when the trumpet sounded, the Capstans attached to the foot of the Obelisk pulled, and all the others loosened, and when the bell sounded, everything stopped, and so that the point would bow to the earth, it was supported on the side behind with two small beams, which were secured to the last columns of the Castello, and while the foot was pulled, the point was held by props; it bowed

towards the earth with great ease, and in 17r
order that in bending it would not collapse; there was attached five pulleys, and secured over the vault of the Sacristy, which corresponded to five others attached to the point of the obelisk, and these acted as a tempering brake in this way the lowering of the Obelisk proceeded without any shocks, and when it was half way descended, as its weight flowed largely to its base; it began by itself to slide backward onto the rollers, and there was no longer a need to pull it from behind; on the contrary it was necessary to apply brakes to this motion, which was too powerful; to provide a hoisting tackle, and attach it to the foot of the Obelisk, and with this to govern it at the pleasure of the Conductor, and so at twenty-two hours

the Obelisk was placed on the carriage, which itself had been pulled underneath while the decent was occurring, without any harm to anyone. And this news was greeted with great happiness by Our Lord, and universally all the people felt infinite joy, and as a sign of it the Architect was accompanied to his house with tambourines and trumpets.

THIS DRAWING
SHOWS THE OBELISK
Within the Castello
IN THE WAY IT WAS POSITIONED
while being lowered 17v

Figure viii. (Fontana, i, 18)

THE FOLLOWING DRAWING
SHOWS THE OBELISK FROM ITS POINT
Soon after it was lowered onto the carriage
WITH ALL THE CORDS,
WHICH HELD IT WITHIN THE CASTELLO
Secured with guy wires to the North and South

19r

Figure ix. (Fontana, i, 20)

THE FOLLOWING DRAWING
EXHIBITS THE PLAN
And the *compartimento* of all the Capstans
WITH ALL THE PREPARATIONS
MADE TO LOWER THE OBELISK
As was mentioned earlier

21r

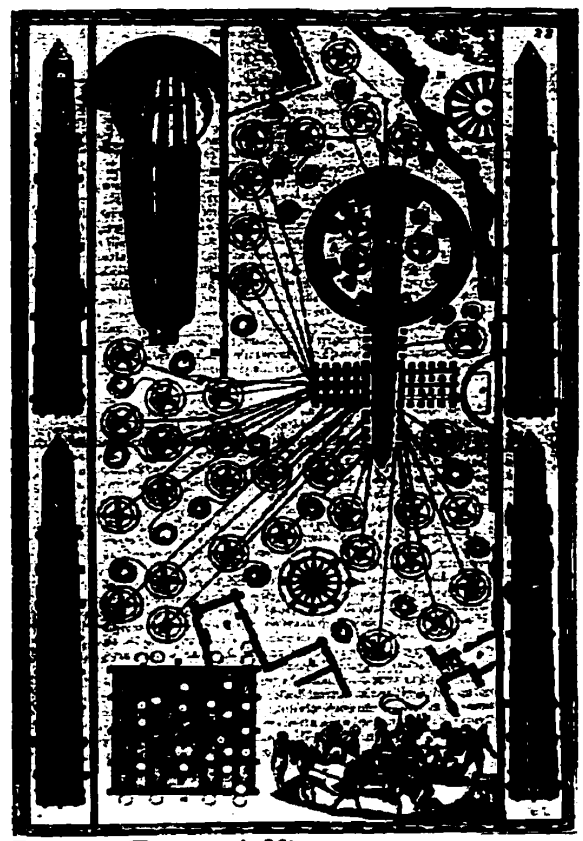

Figure x. (Fontana, i, 22)

Now, by the grace of God, having lowered the most holy Obelisk undamaged onto the carriage on the ground; the next day we began the process of removing all the pulleys and the Capstans, and this took four days, and then the Obelisk was pulled by four Capstans, and their pulleys, to bring it outside, so that the *Castello* could be dismantled without the danger that any beams would fall on it [the Obelisk], and then the *Castello* was dismantled by taking off all the wedges, cords, bolts, and bands, keeping each thing separately in order to make use of them, constructing it anew in the piazza: as soon as it was dismantled, excavation was begun around the pedestal to unearth it, because it was buried forty *palmi* under the earth (as I said at the beginning), and at the same time all the timbers were pulled to the piazza; when it was uncovered halfway, the first piece of the pedestal was found, above which were the clamps to support the Obelisk, and this piece was eleven *palmi* high, and the East side was twelve and a quarter *palmi* wide, the West thirteen *palmi*, and the North and South sides thirteen and one quarter *palmi*, and cubed that gives one thousand nine hundred and twenty-four *palmi*, and a weight of one hundred and sixty-five thousand, four hundred and sixty-four *libre*, and this was pulled over the rollers towards the piazza...

...Since the Obelisk had to be conducted 23v
from this spot to the piazza of St. Peter's, a distance of one hundred and fifty *canne*, and set up there, the piazza was levelled, and was found to be lower than this place, as it started from about forty *palmi*, three *palmi* higher than the pedestal, and so a causeway was constructed which extended from the original location of the Obelisk to the piazza, taking the earth from the *monte Vaticano* behind St. Peter's, and it was made one hundred *palmi* wide at its base, and thirty-seven *palmi* high, and at its summit is was fifty *palmi* wide, and it was enlarged around the *Castello* to one hundred and twenty-five *palmi* at its base, and ninety-five *palmi* at its summit, and it was filled in many places with beams, so that it would not split open, and both its flanks were strengthened with other beams, anchors, and braces, so that it would not yield to the weight in any of its parts, as is seen in the following drawing.

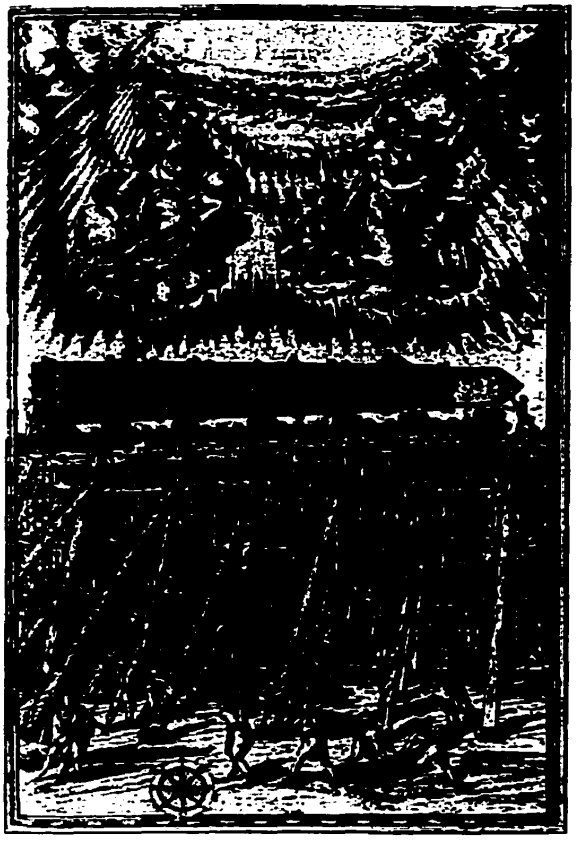

Figure xi. (Fontana, i, 24)

25r And meanwhile, as the aforementioned was being done, on the foundations, which were already made on the piazza, and which were to sustain the Obelisk, was placed a platform of worked travertine stone, forty-two *palmi* wide at each face, with three steps of the same stone all around, two and a half *palmi* wide, but within this platform to the North, and South were left open eight square voids of five palmi on each side, within which were to be placed the eight columns, or antennae of the *Castello*, which had to be rebuilt. In the centre between these voids, which was in the centre of this travertine platform placed above the foundations, a plinth of white marble was attached, as it was originally, and below this, diverse medals, similar to those placed in the original foundations, two of which were gold with the effigy of Pius V of Holy memory, ordained by Our Lord, and on the reverse were sculpted religion, and Justice, and the pieces of this plinth, of which there were three, were placed one third of a *palmo* apart, so that they would give a bit of relief to the sides, that with this proportion added a little grace, and between two of these pieces was placed a slab of marble in was engraved in Latin the name of Our Lord, and succinctly the way adhered to in all of this work, the first name, family name, and the country of the Architect, and the dates, all for perpetuity, and between this plinth of marble, and the base were placed other medals of Sixtus V, and above this was the first surface of the pedestal, and then the cyma, then the last piece of all, as it was originally; except that it was necessary to lower this last piece one quarter of a *palmo* to make a new place for the pins of the clamps: then to reseal it as it was before, because in the process of excavation the trenches were made too

wide: then these clamps were resealed into their places with lead; and while these pieces were being accommodated; the pile of earth continued to grow all around them, and also eight columns of the *Castello* were reconstructed with the very same bands and bolts as in the first base above the foundations, inside the aforementioned voids that had been left on purpose to receive the columns, as described above, as soon as the pieces were fixed in their places, and the clamps were covered in lead, the same day the mound around the base was completed, arriving at a height equal to that of the pedestal, the principal columns were raised, and above this base the Castello was constructed, of beams armed with cross bracing similar to the first one, as is seen in the following drawing.

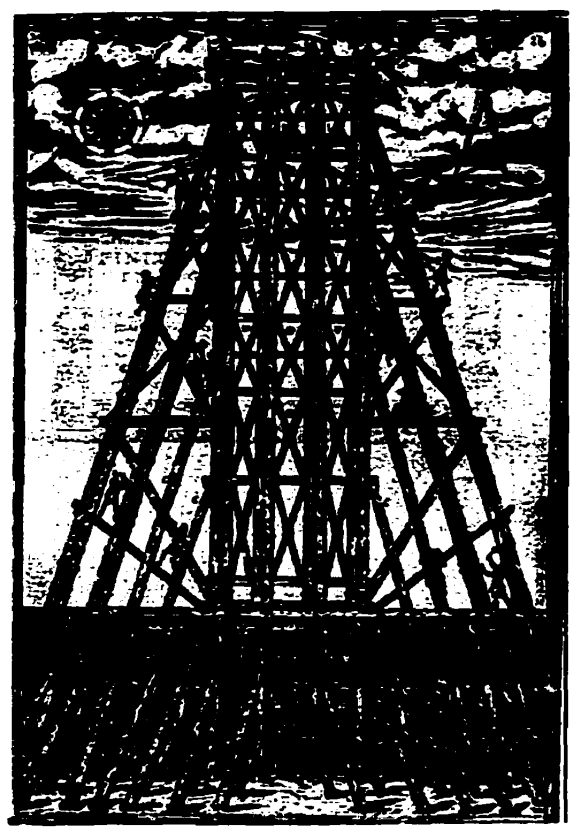

Figure xi. (Fontana, i, 24)

27r

WHEN THE CASTELLO WAS FINISHED

THE OBELISK WAS THEN PULLED UNDER, SO THAT

the point exited on the other side, and then they began to tie it in two or three places, and the blocks were attached to all three uncovered facades, as is seen in the following drawing, in which three Obelisks are represented standing in order to exhibit in one view the attachment of the blocks in all the three of the aforementioned facades

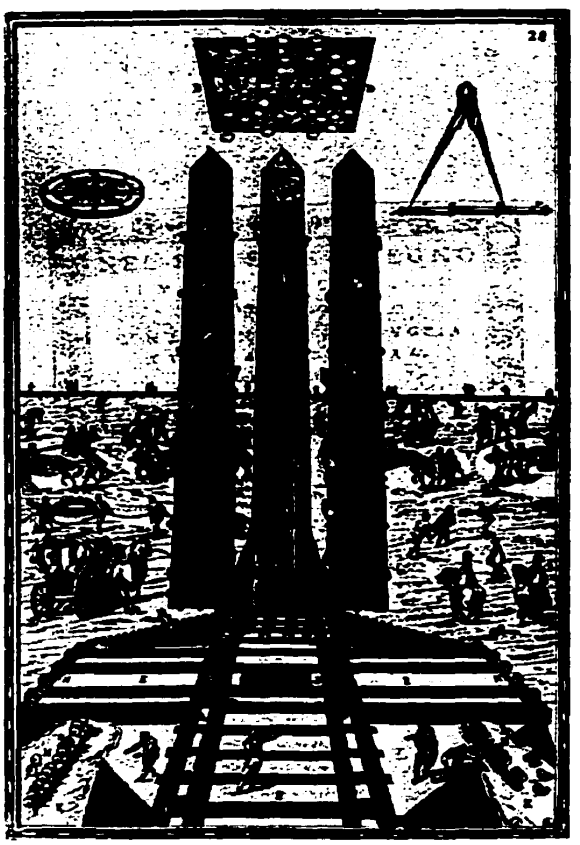

Figure xii. (Fontana, i, 28)

29r

THE FOLLOWING DRAWING SHOWS THE CASTELLO

Open on one side

WITH THE POINT OF THE OBELISK PULLED WITHIN

And the ropes, which supported it

Figure xiii. (Fontana, i, 30)

31r

WHEN ALL THE BLOCKS WERE ATTACHED, The Capstans were placed ON THE PIAZZA AS IT APPEARS on the following plan

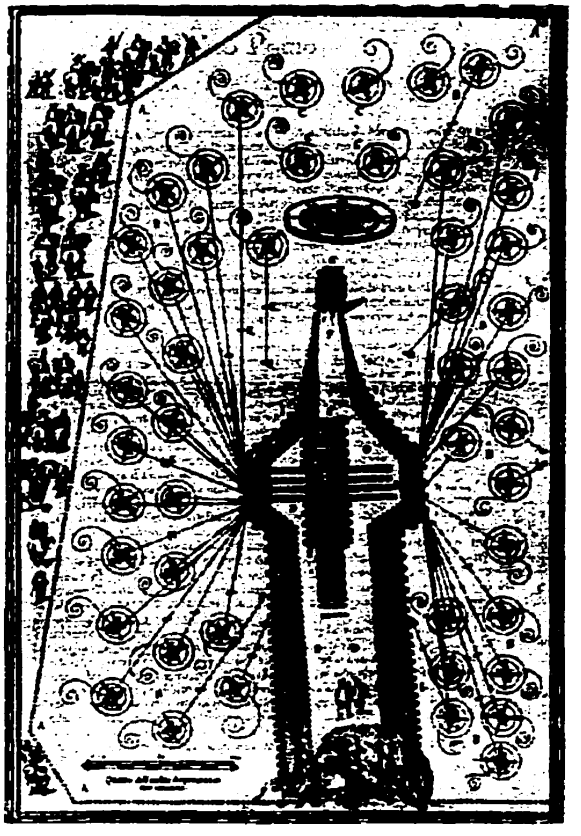

Figure xiii. (Fontana, i, 30)

RAISING, AND ADJUSTMENT Of the Obelisk 33r

On the tenth of September 1586, a Tuesday, everything was in its place; the morning before two masses of the Holy Spirit were said at the Church placed within the *Palazzo del Priorato*, so named because it was the Prior of Rome of the Religion of Malta; it stands at the head of the piazza facing West, and everyone who had work to do took communion the day before, as was done for the first raising, and prayed to Our Lord God, that he might grant favourable success for his glory; everyone went to his place, and at the point of daybreak all were in order, and they started with forty Capstans, one hundred and forty horses, and eight hundred men with the same signals of the trumpet to begin the work and the bell to stop, and while the point of the Obelisk was being lifted, the four Capstans always placed opposite never pulled the foot ahead of the point, so that the ropes which pull the Obelisk upwards worked to straighten it, and did not have to pull the Obelisk behind them or even buttress its foot, which was made steady, as I already said, the way the ancients must have done it: in fact, while the point was rising from the ground, a

diminishing weight flowed to the foot, because as little by little its base was pulled below, so with greater ease did the Obelisk straighten up, and when it was raised half-way; buttressing timbers were secured, so that all the workers, and the others who were helping with the work could lunch; after eating when everyone had returned to work with much diligence, they went ahead, and in that time twenty-one hours, the Ambassador of France, who had come to render obedience to our Lord, and had entered by *the porta Angelica*, and passing by the piazza, had stopped to see two pulls given. The Obelisk was set up in fifty-two moves, and was a most beautiful spectacle in many respects, and an infinite crowd of people had come to see it. And there were so many that, so as not to lose their viewing places, they stayed until evening without eating; others made platforms for the people and earned a lot of money. At the setting of the Sun, the Obelisk was brought above its pedestal, but below it was the sledge, which itself had been pulled underneath while the Obelisk was being raised. Then with the signal of mortars from the Castle [*Sant' Angelo*], which discharged many pieces of Artillery, all the City rejoiced: gathered at the house of the Architect were all the tambourines and trumpets of Rome sounding with great applause; while the Castle rejoiced, his Holiness was in his litter, returning to St. Peter's from *Monte Cavallo* to give a public audience to the Ambassador of France, and the news reached him that the Obelisk was set up and carried to safety, which pleased him, and he showed great joy. The next seven days were consumed in returning to rearrange the Capstans, and to attach the pulleys on all four sides of the Obelisk to be able to adjust it...

Then began the dismantling, and 33v
disarming of the Obelisk, and the pulleys, and it was rendered nude on this twenty-seventh of the same month, on which our Lord ordained, that a procession be made to consecrate the golden Cross, and to purge, and bless the Obelisk in the way which follows.

DESCRIPTION OF THE PROCESSION

Made to purge and bless the Obelisk, and to consecrate the Cross

In the morning, around fifteen hours, a votive mass of the Cross was celebrated by Vescovo Ferratini, who, having finished the mass, clothed himself in a red cope, and raising before him the flag of the Chapter of St. Peter's, with the cross and candlesticks, according to custom; the procession in arrangement extended across the piazza climbing the mountain of earth to the alter supported by the face of the Obelisk towards the Church, and while walking they sang the following psalms with the antiphon. Antiphon *O crucis victoria &c.* Psalm 2. *Quare fremuerunt gentes &c...*

34r ...This consecration was on Friday, and above the Alter supported by the Obelisk, was placed the Cross on a platform, and this alter was adorned with another cross, and six candlesticks of silver with white candles which were lit, and it was covered with a *baldachino* of damask red; to the left was a small table set with hyssop, holy water, an incense burner, and other necessary things: to the right was the place for the clergy to sit, and around were the Swiss guards to prevent confusion in the crowds. The celebration was accompanied by the Illustrious Lord Monsignor Scipion Gonzaga Patriarch from Constantinople, and by Monsignor most Reverend of Turin and the other Cardinals. At the procession the following were present, in order....

....The gold-leafed Cross of 34v
Bronze is high up with its fittings, twenty-six *palmi* above the point of the Obelisk, the Cross without fittings is ten *palmi* high, eight *palmi* wide at its arms, and two-thirds of a *palmi* thick.

Further, Our Lord has granted in perpetuity ten years, and ten times forty indulgences, to those who, passing, and having confessed, will say a *Pater Nostro*, and an *Ave Maria*, and bowing to the Holy Cross placed at the summit of the Obelisk, will pray to God for the Good state of the Holy Church, and for the Roman Pontificate.

The Obelisk with all its furnishings was one hundred and fifty *palmi* high, and three-quarters, and adding the height of the platform of two and a quarter *palmi*, the interval in which are the astragals of one and a quarter *palmi*, and the height of the Cross, one hundred eighty and one quarter *palmi* in all, and it is finished, and accommodated

in the piazza, as is seen in the present drawing.

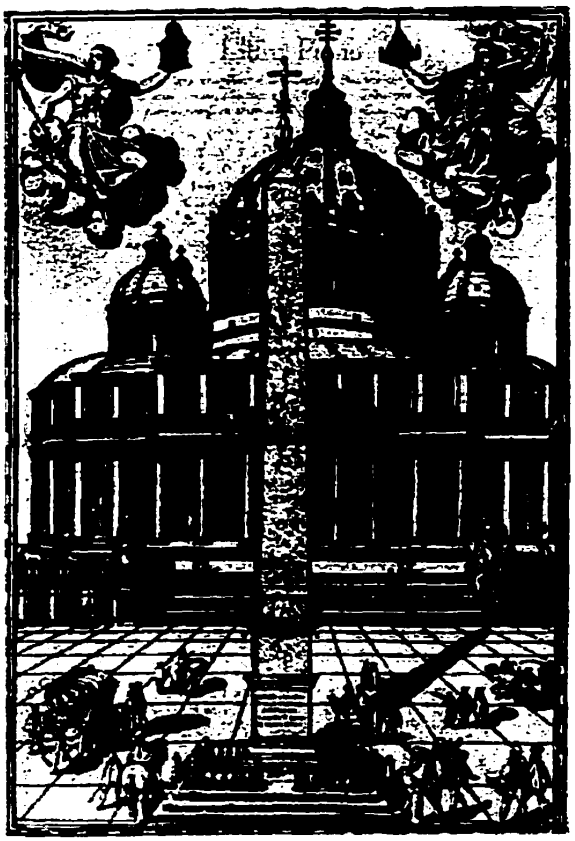

Figure xiv. (Fontana, i, 35)

36v The ancient inscription written on the two sides of the Needle, to the East and the West, a little above the Lions, says:

DIVO CAES. DIVI
IVLII F. AVGVSTO
TI. CAES. DIVI AVG.
F. AVGVS. SACRVM