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architecture-as,
an ethics of function.

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abstract

Carlo Lodoli (1690-1761), architect, storyteller, and generally caustic individual, was a friar at *San Francesco della Vigna* in Venice, where he offered non-professional lessons in architecture. In his garden, he had collected a series of architectural fragments for use in his dialogues with students. He would use the fragments as examples of good and bad architecture to allow for his peripatetic teachings. These lessons, described by his faithful student Andrea Memmo as talking in images were sweeping, often ethical. As the Socratic Lodoli did not commit to text any formal treatise, we must look to his student's interpretations and various built projects. It is within these traces we begin to discover Lodoli's proposal for a non-reductive functional architecture based upon the imagination. By looking into this performing aspect of function we may begin to realize an architecture that both invites and constitutes essential meaning.

résumé

Carlo Lodoli (1690-1761), architecte, historien, était un frère de San Francesco della Vigna á Venise, où il a offert des leçoncs aux amateurs d'architecture. Dans son jardin, il avait une collection de fragments d'architecture. Il utiliserait les fragments comme des examples de bonne ou mauvaise architecture pour lui permettre son enseignement péripatétique. Ces leçons, de caractére souvent éthique, étaient décrites par son fidèle étudiant Andrea Memmo comme des "images". Lodoli le socratique n'a jamais écrit ses enseignements. Donc c'est dans les texts et interpretations de ses étudiants qu'on peut essayer de decouvir les théories por Lodoli pour une architecture fonctionnel mais non-reductive, basé sur l'imagination. En regardent de près ces notions de function comme performance, on puet commencer a comprendre les possibilities pour une architecture munie des sens.

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To Alberto Pérez-Gómez you are a true poet, your inspiration and guidance extend further than you know.

EEN

contents

introduction

for never from now on
shall the sacred serve mere use
Holderlin

The failure of most literature devoted to functionalist theories of architecture is the lack of a clearly understood definition of the term function, as well as an understanding as to why function, when defined, is seen as either an appropriate guide for architects to make, or a standard by which to judge[1]. Regardless of this confused nature, function has been described as *providing the unifying principle for modern architecture*[2]. Perhaps it is exactly this uncertainty of terminology that allows for it's ubiquitous use, and offers further discussion.

Function has most often been tied to some form of use, which then has been related to beauty and morality. Xenophon's *Memorabilia* looks to the connections between the good, the beautiful, and the useful by asking if a dung basket is beautiful. The response is that it is in fact beautiful because it is appropriate to its use. The same question was put to a golden shield. The response given was that it was ugly if it was not made well for its work.

Architecture has always responded, though never exclusively, to the utilitarian need for shelter. However, not until very recently within the Western tradition of architecture has functionalism, in its relation to utility, been seen as a design principle or even as a value by which to judge what might be meaningful. For Vitruvius, *utilitas* comprised a branch of architectural production, however it was understood as collinear with *venustas* and *firmitas*. The influence of Galileo and Newton have forever altered this original triad of architectural production.

The question of knowledge in the 18th c. is inevitably tied to a question of man's relationship to Nature. This follows a radical shift that takes place in the 17th c seen as a secularization of consciousness, presenting a distinction between the medieval man - one who contemplates nature, and the modern man - one who dominates nature. This has been described as a shift in the conception of the world from a closed and hierarchically ordered world to an infinite universe[3]. It was reasoned that the order existing over the moon, must also be in place under the moon and therefore within the realm of man. In the 18th c Nature

and Knowledge were to be placed on their own foundations and explained on their own terms and conditions. The truth of the proved experiment replaced any participation in a symbolic order. However this relationship to a scientific conception still found itself within a traditional understanding of the Divine, and could still be described as mimetic. Number and geometry still held transcendental value.

Architecture, after 1800, became subject of this feverish desire of experimental science. The transcendental, previously embodied in symbolic representation in which one would participate, was reduced to immanent meaning - embodied in formal representations in which one would possess. *The ambiguity between traditional symbolic, cosmologically based representation and modern instrumental thinking gave rise to the illusion that the latter is a perfect substitute for the former because traditional symbolic representation is indeterminate and vague, and can be replaced by an unambiguous and precise mathematical equivalent*[4]. Imitation replaces mimesis.

The destination or purpose of a building becomes increasingly the focus of architectural debates within the 18th c. Programmatic needs replace ritual participation. By the end of the century it was clearly understood that a building should present a character fitting to its destination. 'Functional' comes to be colored by the arbitrary limitation of what could be logically deduced or empirically verified with the results being taken as objectively true descriptions of the real world. The structural, and programmatic components of a building were to be solved mathematically, while any symbolic intention could be determined by an appropriate style.

Within 20th c. architectural theory, rationalism becomes intimately tied to function. This relation is made concrete by Le Corbusier. When asked to write an introduction for Alberto Sartoris' book on the elements of modern architecture, Le Corbusier responded; *the title of your book is limited: it is a real fault to be constrained to put the word Rational on one side of the barricade and leave only the word Academic on the other. Instead of Rational, they say Functional.*[5] The title of Sartoris' book was changed and modern architecture became functional. Thus functionalism could be seen an alibi for a system of forms that were to be innocent of stylistic contamination.

A rationalist approach to the outward expression of structure combined with new materials, and new means of construction would guarantee modern. As well, the rationalization of human needs could be understood through the clarity and efficiency of pure form that could

be equated with functionalism. Ironically, this ahistorical approach intended as a freedom from style, itself became a stlye. *The International Style,* both in exhibit at MOMA and in text in 1932, sought to define visual traits, assuring the commonality of a true modern architecture and thus establishing a style. The focus was upon an architecture of volume rather than mass, regularity rather than symmetry, and the avoidance of ornament[6]. Johnson equates modernity with functionalism and proposes this as the future of architecture.

It must be noted however that regardless of the stylistic intention, the Beaux-Arts is similarly rooted as the Bauhaus, if function is understood with the reductionistic attitude whereby architecture is seen as the functional end to of a combination of variables. As a result of this reductionistic attitude, the topic of architecture is seen as either a technical problem to be solved efficiently, or an aesthetic object to be solved appropriately. In either situation the role of the imagination is reduced to capricious fantasy.

Carlo Lodoli (1690-1761) was an early proponent of a functional architecture, however he offers a critique of this shallow post-modernist approach, as well as a productive alternative. My interest is to show that Lodoli, although deeply part of our own tradition of modernism, posits an understanding of functionalism that offers more than a reductionistic utilitarianism.

It is difficult, however to easily discuss Lodoli's theory of architecture as there are no primary sources. He left no real treatise for us to interpret, and the only built form he may have been responsible for is fragmentary at best. Any attempts into a theory of architecture professed by the Friar must be made via his students, who did write about, and make architecture. The fragments range from etchings and fantastic novels to second hand treatises and a piazza offering to us an approach to making, and not simply a fixed methodology. It is my desire to weave together these traces in an attempt to distill their lesson for us today.

The most critical fragment left to us from Lodoli's peripatetic teachings is the *Elementi d'Architetturra Lodoliana ossia L'Arte del Fabbricare con Solidita Scientifica e con Eleganza non Capricciosa*, written by Andrea Memmo. The first edition was published in Rome in 1786 and the second in 1834. The second, enlarged to include two volumes, was published in Zara by his daughter and was appended with a polemical discussion that followed the first printing. Memmo published the *Elementi* with the intention that the

treatise would show the misunderstandings that other authors had produced while putting forward their own version of Lodoli's thesis. The discursive text concludes with two versions of an outline for a possible treatise dictated to him by Lodoli. The introduction to the outlines states their intention: *to make understandable all that he [Lodoli] was planning to discuss, thought out in such a way that they are enough for the clever connoisseurs*[7].

The outlines within the *Elementi* are presented so that we are given first the elements and principles necessary for the setting of a new architecture, and then the definitions and relationships among those elements composing the new theory. *The final aim of architecture is the appropriate function, and the representation, which convert into one aim.*[8] The outlines begin with an interest to study the *histories* of various architectural nations with a preference for a stone architecture beginning with the Egyptian, Etruscan, and then Roman traditions. Lodoli *demands principles that lead with certainty to the fulfillment of those final aims toward which architecture tends.*[9]

My approach echoes his teaching method in the garden where fragments were focused upon to discover a possible past. This first interest is focused upon what we may know - how the making of architecture may relate to truth. The relationships among these elements of history can be understood within the second aim of a civil architecture - representation. Described by the triad of firmness, analogy, and commodity, representation is demonstrated at the level of how we may know - how the making of architecture may relate to being.

My wager is that within this final aim of a Lodolian architecture - the convertibility of function and representation, a third possibility may be revealed. This is the ethical responsibility we now have - how the making of architecture may relate to another. While I am not attempting to show Lodoli's interest was purely ethical, I do believe an examination into his understanding of function may reveal to us a possible way of action that is inherently ethical. Within a world view that understands a functional architecture as one tied to the rational and in denial of the imagination, Lodoli's position outlined an architecture that requires participation. It is by attempting to refigure his approach to the making of architecture, understanding the full potential of ourselves as imaginative poetic beings, that the ultimate underlying theme within this study may be revealed. This is the potential of architecture to allow for a meaningful existence.

[1] see Edward Robert DeZurko , *Origins of Functionalist Theory* (New York, 1957).
[2] 'Case for a Theory of Modern Architecture' - Journal of RIBA, Sec. 3, 64 : June 1957, p.307-14.
[3] see Alexandre Koyre, *From the Closed World to the Infinite Universe* (London 1957).
[4] Dalibor Vesely, "Architecture and the Conflict of interpretation" p22.
[5] A.Sartoris, *Gli elementi dell' architettura funzionale* (Milan 1932) p.1.
[6] see *the International Style: Architecture since 1922.,* New York 1932
[7] Andrea Memmo, *Elementi d'Architettura Lodoliana* (Zara 1834) tomo 2 p 50-62, tr. by Marco Frascari in *Sortes Architectii* (Upenn 1984) Apendix I.
[8] Marco Frascari, *Sortes Architectii,* (Upenn 1981) p.27.
[9] Ibid., p. 256.

Carlo Lodoli was born in Venice in 1690, into a familial tradition deeply immersed within the Venetian Arsenal. His father was connected with shipbuilding and his mother, Anna Maria Albergetti, belonged to a three century long tradition of family members who had served in the Arsenal - a family noted by Galileo for their particular knowledge in metallurgy. In 1706, due to disputes regarding his future vocation and familial obligations, Lodoli left home and made his profession as an Observant Franciscan in Dubvronik. There, he took his final vows before continuing on to Rome. In 1720, described as a brilliant dialectician, he was sent to Verona to teach rhetoric, where he stayed for 10 years[1].

In Verona the young Lodoli found the lifestyle of the Salon, as well as the ever present Marchese Scipione Maffei. Indeed, it was Maffei who later attempted to take credit for forming Lodoli's taste and acerbic social manner. In an effort to keep the young Friar close by, Maffei attempted to use his political influence to locate Lodoli a teaching post in Turin. Unsuccessful in his attempts, he did help to establish Lodoli as a tutor in Venice at *San Francesco della Vigna*. Lodoli's teaching began when the Soranzo family asked Maffei to suggest a way their son, Carletto, could learn *that which was not taught in the collegi, and which was necessary and useful in the ways of the world*[2]. Maffei suggested Lodoli.

Upon his return to Venice, Lodoli became the Chief Censor, a position that involved him intimately within the publishing activities around the Veneto. It was in this capacity that Lodoli was first introduced to the writings of Giambattista Vico. The publishing of Vico's texts were to be the focus, as well as the demise of their relationship. Influenced by Vico's writing, Lodoli began to offer classes in architectural rhetoric to young Venetians. Lodoli's peripatetic *scuola di conversazione,* was based literally within the city. His walks with the students were based, not upon a system of rules, but upon the dialogues found within the fragments of the city.

Lodoli's dialogues were also held within the walls of *San Francesco della Vigna*. There, in his garden, he had collected architectural fragments used as examples of good and bad architecture. This early collection was the focus of Lodoli's teachings. Described by Memmo, as talking in images, his topics were sweeping, often ethical, ranging from the nature of truth to the nature of materials. Lodoli's approach was not necessarily professional in that he did not describe ways of drawing or methods of construction for architects[3]. However, he did focus

upon a critical view of architecture, understanding that the study of architecture could be seen as a way of preparing for a life of varied activities.

Though Lodoli's pedagogical intentions were not officially recognized by either the Accademia in Venice, nor the University in Padua, his influence was felt throughout the intellectual life of the Veneto. The University in Padua offered courses which focused upon the theory of architecture and the practice of architecture. In Venice, students focused upon the graphic representation of architecture. Lodoli's loosely defined role within the schools is more fully understood within the introduction to Giovanni Poleni and Simone Stratico's colossal *Exercitationes Vitrvianae.* Begun in 1733 and not completed until 1824 the text attempted to compare and comment upon previous editions of Vitruvius and can be seen as a summation of the schools intentions through the almost hundred years of development. Lodoli's interest in the relation between architecture, historical precedent, and cultural forces, seen as essential to the school, is given a full paragraph tribute.

The collection in Lodoli's garden consisted of a series of architectural fragments and also paintings, of which he may have been one of the first to begin collecting medieval, or Pre-Raphaelite images. The collection was so strange that Andrea Memmo felt a need to apologize for the friar's unusual taste. *Poor Friar that he was, he could not have undertaken to buy paintings from the more famous artists...he thought therefore to form (a collection) quite different from the ones you usually see, but perhaps more useful, since he imagined that it would show the progress of the arte del disegno from its renewal in Italy until the Titians, the Raphaels.*[4] The collection which included Cimabue, Giotto, and Squarcione was arranged into schools, and used to explain the potential greatness of a past that may have been overlooked.

Lodoli's appearance in public was as peculiar as his collection. *If you consider the blood clotted on his face, the unkempt hair, the piebald, stubbly chin and those sparkly fiery eyes, it could almost frighten the more delicate souls; certainly they did not find the bawdy words with which he sometimes peppered his talk agreeable.*[5] His menu, which consisted of the so-called Pythagorean diet of milk, vegetables, fruit, water, and bread was deemed eccentric as well. However, he was still quite social - *everywhere his milk and his biscuit were set out for him.*[6] Lodoli contrasted even in his dress. Instead of displaying the *bauta*, a carnvale costume that might be worn in Venice from October to March, he always appeared in more austere dress which included his tattered habit. This image of the Friar is verified in various paintings by Bartolomeo Lazari and Alessandro Longhi in which he is described as *too unconventional to appear gallant*[7]

While not a professional architect with a productive practice, he was intimately immersed in the architectural scene. During the construction of *Santa Maria della Visitazione* - one of the four major foundling hospitals, consecrated in 1760 - the councilor asked Lodoli for his opinion of the project. The work was being carried out by Giorgio Massari, one of the most successful architects of his generation in Venice. Lodoli criticized the project as being conventional and uninteresting as it was visually based on familiar examples, such as Palladio. Lodoli's criticism continued to the point where Massari responded by explaining that if he didn't do it surely someone else would, and besides he (Massari) did have to feed his family. Lodoli responds with his typically sharp wit by asking Massari to show him a district in any city given over to prostitutes in which women should nevertheless be able to live decently.

Lodoli's only built work consists of minor alterations to the cloisters of *San Francesco della Vigna*. Any publications that may have existed were confiscated upon his death by the Inquisitors of the Republic. The texts, as well as any of the contumacious ideas they may have contained, were left to rot under a leaking roof in the *Piombe* prisons. The only written work that comes to us consists of two outlines of a possible treatise, a translation of a controversial passage of Vitruvius' *Ten Books*, and a book of stories, all dictated to Andrea Memmo.

Andrea Memmo

As well as the *Elementi d'Architettura Lodoliana* , Memmo published a series of fifty six short stories used by Lodoli in his teachings. The text, *Apologhi imaginati,* offered ethical reflections upon many topics, ranging from the nature of truth and materials to the nature of the first story. Above all the apologues offered architects a way to act without defining immutable laws or principles. This was necessary, for even if architecture was to be defined as a science, there was still much diversity in the understanding of the essence of architecture. Memmo, as well as Lodoli believed; *As we are still in darkness, at least we should have the courage to doubt*[8]

Francesco Algarotti, anonymous

In 1753 Francesco Algarotti was commissioned by friends of Lodoli to write a treatise based on the friar's teachings. Algarotti accepted the commission on the condition that he was not required to speak with Lodoli, and that the essay would not be reviewed before publication. The text - *Saggio sopra L'architettura,* 1764 - was written at the request of Memmo who believed Lodoli was not going to write, and wished someone close to the friar to write down his thoughts. The first choice for author was Marco Foscarini, the Venetian Ambassador to the Holy See and active member within Lodoli's circle. However, he refused due to his commitment to Public Office and to his documentation of a Venetian Literature. Algarotti, author of a successful text explaining Newton to the ladies - *Il Newtonismo spiegato della Dame*, 1736 - would be the first to attempt an interpretation of Lodoli's thinking.

Algarotti moved easily throughout the salons of Europe inspiring devotion amongst both men and women. Nicknamed the *Swan of Padua*, his character was quite the opposite of the contentious Lodoli. Born in Venice in 1712, the second son of a prosperous merchant, he was formally educated in Rome and Bologna[9]. He was extremely well traveled, and well connected. Frederick the Great accorded him the title of Count. He acted as an agent for Augustus III of Saxony in buying paintings through Europe, and in 1742, offered a development scheme for the expansion of the museum to house that collection in Dresden. Organized similarly to Lodoli's garden of fragments, there was an interest in the development of certain schools and not simply upon personal taste. Frequent visits back to the Veneto, and a youthful passion for Palladio connected Algarotti with Lodoli's school, and teachings. It was believed by Memmo that Algarotti's political ties, and established printing success, though not scholarly, would surely make possible a wide circulation of Lodoli's thinking.

In the *Saggio*, Algarotti introduces a *philosophical spirit* - later revealed in a footnote as Lodoli - *of robust fantasia and reasoning who can create and arrange bold images and metaphors*[10]. He overstates Lodoli's views on the role of nature, imitation, and history, while never quite committing himself to those aims. He explains that the Vitruvian Institutes should fear this spirit, since his imagination pours out images and he has a particular way of arguing. Lodoli is tough but has a common touch, as well he has dexterity in managing the Socratic weapons. He describes Lodoli's approach as an attempt to purge architectural practice of falsehoods by way of reason, and not by authority or example.

Algarotti's interpretation is confused and contradictory, moving towards an empty neoclassicism intent on the recovery of a form relating to an idealistic theory. At one point he tells us that n*othing can be more absurd than when a material does not express itself but signifies another. This is wearing a mask, it is a continual lie*[11]. However, he proceeds to trace the development of wood construction, focusing on an architecture that is visually imitative of a primitive hut. This development is seen most clearly within the forms of Greek architecture, surely a tenet contrary to Lodoli's own belief in the glorious Etruscan-Roman tradition. For Algarotti, timber construction offers the greatest diversity of forms deriving from the unity of one material - wood. Concerning the use of masonry imitating a timber architecture he concludes - the *lie is more beautiful than the truth*[12].

Lodoli's response to the *Saggio*, is in the form of a short apologue. He explains how he met a friend, who, just returning from a hunting trip offers as a gift a fat pheasant. However, being on an errand he leaves the gift in a well known cook shop. Upon returning to the shop, the pheasant, which was to be enjoyed with another friend was now nowhere to be found. After further examination of the situation, Lodoli discovered an apprentice had fried the prize along with the daily rissoles and fritters. Upon the publication of Algarotti's *Saggio*, Memmo records Lodoli's reaction as disappointment as result of ignorance, but not malice - this a most severe blow to the socialite's ego.

Regardless of Lodoli's reaction, the newly appointed Count's version of Lodoli's thinking was widely circulated, translated, and even expanded in the from of Francesco Milizia's *Vite degli Architetti piu Celebri* (*Lives of Famous Architects, 1826*). Milizia was born in 1725 and began his studies in Padua. He completed them in Naples in geometry and medicine with the Celestine Monk, Orlandi, and in logic and metaphysics with Antonio Genovesi - a famed economist and student of Vico. Within the text he lays out a 9 point system of architectural design compiled from the writings of Algarotti, Cordemoy, Frezier, and Laugier. He believes

architecture, like the other arts is imitative, however unlike the other arts the model is not nature, but rather that which man made. As such, we should not look to the tree as a model, but we should look to the rustic timber hut as the paradigmatic building type.

Another interpretation of Lodoli's thinking is found in the *Altichiero*, a text that describes Angelo Querini's villa and garden of the same name. Written by Giustiniana Wynne in 1780, the text describes the house in a flowing narrative interesting more for its re-description of experiential time than in an encyclopedic description of parts. Angelo Queirini, remembered as one of the more politically radical students of Lodoli, was involved in the constitutional crisis of 1761 which focused upon reducing the powers of the Inquisition. Wynne, a periodic student of Lodoli, was intimately connected with Andrea Memmo. The project was supervised by Domenico Cerato, an architect and professor at Padua, connected as well to the construction of Andrea Memmo's *Prato della Valle* in Padua.

The property, now destroyed, was located on the banks of the Brenta, north of Padua. Querini inherited the property from his brother in 1765. The sole engraving, and post World War I aerial photos reveal an extensive garden, main residence, and outbuildings. Each of these were filled with fragments including statues, maps, etchings by Piranesi, erotica, busts of Voltaire and Rousseau, and portraits by Canova. The project was conceived as a place that may unite use and pleasure. Wynne uses the word *utile* to describe how everything in the villa and garden is pleasurable, and how everything pleasurable is useful. The didactic monuments, statues, and memorials structure an experience where one *converses more than admires*[13].

The text by Wynne, focuses on these fragments through a wandering tour of the estate, and can been read as a *moral and symbolic poem*[14]. Following the course of two days including meals and rest, the reader is led through the garden and house, pausing along the way, to record various views, conversations, and impressions. The reconstruction of the landscape and the placement of various found objects spur discussions ranging from various political structures, to allegory. The monuments reveal a strong influence of Masonic symbolism, of which Querini was intimately aware. Vico's influence is also seen within the garden through the representation of marriage, burial, religion - the three institutions upon which Vico believes all societies are founded. Wynne's text, influenced by the teachings of Lodoli, offers a productive approach to the representation of an architectural event that not only implies, but requires an active reading.

The work of Zaccaria Seriman is cited as an additional source of Lodolian opinion. Born in Venice in 1709, to a wealthy family, Seriman was educated by the Jesuits in Bologna. After leaving school in 1724, he returned to Venice, where he was engaged in various aspects of the publishing industry. It was at this time that he entered into the Lodolian circle. As well as translating Puffendorf and Laugier's twelve volume *Histoire de la Republique de Venise,* Seriman authored the *Viaggi di Enrico Wanton* in 1749. Continuing an established tradition of fantastic novels, his interests were focused on a utopian change of society - a moral and didactic act he believed could be accomplished through literary production The utopian novel, often prefaced as a translation from English, usually finds the narrator lost, removed from their familiar environment. This isolation and necessary interpretation implies a distance which allows the traveler an opportunity for a critical re-creation of their world.

The *Viaggi* tells the story of two Englishmen, Enrico and Roberto who upon being shipwrecked at the end of the world find two lands. The first, the *Paese della Scimie* (country of monkey people) offers an ironic view of the 18th c. Veneto. Seriman's wit focuses on the capricious irrationality of fashion, arranged marriages, and the fear of a society that blindly accepts an attitude of conformity. This attitude is exemplified by an episode in which the Englishmen witness the custom of *la toaletta*. It seems in this land, there are no mirrors. In order to apply make-up, a servant sitting directly in front of her lady imitates each movement. At the conclusion of this, Enrico offers the lady a mirror. Upon seeing her true self in the mirror, she faints.

This decadence is reflected in the architecture which is characterized by a superfluity of non-structural columns, inappropriate use of materials, and a disregard for pleasing proportions. A philosopher among the *Scimii - a paragon of the most elevated spirit and profound doctrine who wishes to reduce architecture to majestic and primordial simplicity*[15] - is described as mad due to his emphatic manner of presentation. This is Lodoli, who claims himself to be the only one who knows how to construct a building out of stone.

The second half of the *Viaggi* is set in the *Regno dei Cinocefali* - the kingdom of the dog faced men, ruled wisely by a just philosopher king. Enrico begins to travel and becomes lost again only to find himself in the capital of this strange land - the *Prigione delle Passioni* (the Prison of Passions). He spends most of his time, after he has learned the language, within the great library reading only fables. At the end of his visit he meets with three of the most distinguished members of the community. These philosophers, thinly veiled caricatures of Carlo Lodoli, Antonio Conti, and Gottfried Leibniz, act as a guide through further journeys.

The places visited by Enrico offer cynical views towards most every topic of Enlightenment culture. In one such place the *Fortezza de venti* (fortress of the winds), all effort is focused on the abstract, universal categories of the mind, and not the particulars of the body. The inhabitants, absorbed in the problems of being and essence, are unapproachable due to their obscure and subtle habits. At the end of Enrico's stay, he is invited to dine with a nobleman of great learning who conveys to Enrico the thought upon which all other thoughts are based: a cynical interpretation of the famous Cartesian dictum, *Io cammino, dunque sono vivo*[16] (I walk, therefore I am alive).

Another of the places traveled to by Enrico is the *Castello delle Misure* (Castle of Measure) which is filled with active, law abiding, and inquisitive people. The fields' order and abundance is described as the ideal of a stage set whose decorous architecture reveals nothing to be lacking. Each of the citizens is a proponent of a certain aspect of geometry including physics, music, and ethics. For these Cinocefali, education begins with the reading of *novelette gentile* - short stories or fables that describe and distinguish virtues, vices, and passions by their comparison or opposition. These ethical distinctions allow for reflection without being pedantic.

The *Campi della Miseria* (Fields of Misery) is a land where the wealth of people comes, not from the physical labor, but from the strength of their fantasy. Enrico explains that memory is the mother of fantasy and as such this section was written from memory, using his imagination. The fields are dry, there is little food, but the extreme poverty is not seen by the inhabitants who believe themselves to be the most wealthy and powerful in the world.

The student of Lodoli that requires the least introduction is Giambattista Piranesi. Born in 1720 in Moglano, he was the son of a stonemason from Piran. He apprenticed with his uncle Matteo Lucchesi, responsible for the construction of the *murazze*, and then with Giovanni Scalfarotto. Both men were known for their skilled engineering works. His interest in etching, and severe temper led him away from his familial connections to Marco Ricci and the circle surrounding the British Consul Smith. Lodoli was politically connected with this group, and it is at this time Piranesi first came into contact with the Friar's teachings. His skill as a draftsman was recognized, and he was appointed to travel, in that capacity, with Marco Foscarini to Rome in 1740. By his own description, he was a Venetian, he was an architect.

Felice Polanzani, portrait of Giambattista Piranesi as a decaying antique sculpture with the antique world of the Mediterranean, and most especially of the Italian boot as the firmament above his head, from *Opere Varie,* 1750.

Rome in the 1740's offered the young Piranesi a wealth of building activity, both active and in a state of decay. Ruins of the once great Roman Empire animated the recently constructed processional routes and gave reason to compare Rome to the theater. An influx of proper Europeans exploring the city along Grand Tour found a moribund empire excitedly discovering its birth. Piranesi entered into the studio of Guiseppi Vasi, a leading vedutista of the day. At this time Piranesi was exposed to the work of Giovanni Paolo Panini, an artist that had collaborated with Juvarra on stage sets. When Piranesi had met Panini he was teaching at the French Academy and was considered to be at the height of his career. In 1744 Piranesi traveled to Naples, and then back to Venice where he stayed for three years, before returning to Rome. Piranesi's activity in Rome was focused around the etching of *veduta, capricci* and his fantastic *Carceri* etchings, as well as the collection and distribution of architectural fragments.

Within the etchings of Piranesi, we find a passion for all things Roman, and all things true. Fragments and ruins are indexed throughout. Text and image are collaged together at differing scales along with details describing possible means of construction, tools, as well as materials poetically illustrating their essential characteristics. The plates allow views into the pregnant space of Rome, generating a fantastic recovery of history within a heroic appeal to memory, imagination, and the phenomenal.

[1] Andrea Memmo *Elementi*, tomo 1 p.41. Memmo is the usual source for biographical data on Lodoli.
[2] Ibid., tomo 2 p.49-50.
[3] For a description of various approaches to architectural education in and around the Veneto, see Marco Frascari, *Sortes Architectii* (Upenn 1981) p.179-200.
[4] Andrea Memmo *Elementi*, tomo 1 p. 79.
[5] Ibid., p. 113.
[6] Ibid., p. 68.
[7] Ibid., p. 113.
[8] Andrea Memmo *Elementi*, tomo 1 p. 285.
[9] For a more detailed version of Algarotti's life see Haskell, 1963, pp.347-360.
[10] Francesco Algarotti, *Saggio Sopra l'Architettura*, (Venice 1784) p.5.
[11] Ibid., p. 66.
[12] Ibid., p. 330.
[13] Rebecca Boatwright Williamson, *Conversation in Fabric and Reason*, (Upenn 1998) p.83.
[14] See Williamson, 1998.
[15] Zaccaria Sceriman, *Viaggi di Enrico Wanton* (Venice 1764).
[16] Ibid., 3:379.

From the frontispiece of Andrea Memmo's *Elementi d'Architetturra Lodoliana* (1834), an etching by Alessandro Longhi.

Within the frontispiece of Andrea Memmo's *Elementi d'Architetturra Lodoliana* we find an engraving of Lodoli framed by the motto: *devonsi unire fabbrica e raggione e sia functione la reppresentazione* - building and reason must be unified, and let function be the re-presentation. Lodoli, trained as a rhetorician surely knew the implications of the word *funzione*. Function, from the Latin *fungor* - I perform- *had been used in a number of European languages to mean activity or performance in general, or the specific activity of certain things or persons, particularly the carrying out of any ritual or ceremonial action*[1]. Far from being the precursor to the modern dictum 'form follows function', Lodoli's proposal can still be seen as a productive and non-dialectical critique of a shallow post-modernist return to history, as well as the 'modernist' belief in a causal relationship between form and use.

Function was not understood by Lodoli as a substitute for utility nor efficiency, but rather he understood the term with respect to the processes of the body - both phenomenally and in terms of its public role. As such, he had a chair made for him that conformed to the contours of the body. The chair derived its meaning, not from what might be fashionable at the time, but rather within the performance of one's body within the chair and the materials

thereof[2]. Lodoli warns this approach should not be capricious, and that reason still must be obeyed. However we must look to the many possibilities found within the *resistenza oportuna* (desirable elasticity) of materials. The body, for Lodoli was not representative of a world order, however it did allow the architecture to perform - to function.

Lodoli described this approach as *organic,* and is most likely the first to use the term in relation to an architectural theory[3]. Organic, derived from the Greek word *organon,* relates to the movement of one person. It was distinguished by Vitruvius in Book X of his *De Architectura,* from *machinae* which he related to something requiring many workmen and offering a greater effect. The *organici* described by Vitruvius ranged from weapons, parts of our bodies which allowed for sense perception, stars, and musical instruments. Each of which held some sort vital force that allowed for action. Implicit in the *organici* is not a sense of efficiency, but rather a direct participation within the world. *It is important to recognize that these organs did not make the world appear, rather they allowed the world to appear*[4].

It is not until the 19th c., and after Durand, that the two terms traditionally understood as distinct begin to relate much more closely. The *vis vitalis* of pre-eighteenth century physics is replaced by the mechanical processes described by chemists and the will described by philosophers. The development of morphology by Goethe and others in the early 1800's led to the possibility of a Natural History in which the evolution would refer solely to the individual. George Cuvier proposed, in his *Animal Kingdom* (1816), a classification of living beings by way of vital processes including breathing, digestion, movement, and circulation. This understanding of Nature as a mechanical process led to the belief that these functions of the organism related directly to the form. This scientific discussion made its way from Cuvier through Theodore Brogniart, to Gottfried Semper and Eugene Viollet-le-duc, and as a result almost every architect in the later half of the 19th c. was familiar with this analogy.

For Lodoli, *Funzione* also related to the public role of design. Francesco Algarotti, influenced by Lodoli's teachings, advised to architects to restrict architectural form to what can stand up to the evidence of necessity. *It should be demanded of each room, you there, who are you? what do you do there? How are you fulfilling your office? Are you contributing something there to commodiousness? Solidity? Do you fulfill your functions better than any other in your place?*[5] Function here cannot be understood in the light of a mechanical or biological process, but refers rather to a world in which the term still commonly indicated an office - a socio-political role.

From the first part of Lodoli's binomial - function - one *should demand principles that lead with certainty to the fulfillment of those final aims toward which architecture tends*[6]. This refers to the relationship between architecture and truth. Lodoli was living in a time that idealized the Truth offered by the validity of the proven experiment. However Lodoli, though interested in experimentation, recognized a different final aim. He further elaborates on his understanding of the true in the story of the flying pamphlet[7].

The story describes a time that recognizes that Truth no longer reigns over the earth. Jove had recognized that some, though not always successful, had taken to retracing the path of Truth. Moved by this, Jove, instead of simply descending to the mortal realm, decided to lower a large and grand sheet of paper from above. Written on this pamphlet were the elements of a primitive truth. At the announcement of Jove's gift, all eyes became fixed upon the sky. Some, adept in the art of the convex and concave glass were the first to catch a glimpse of what they thought was the paper. Some, in the east, saw the paper as a square, others in the west, recognized a rhombus. In a short time, the world became filled with astro-mechanical writings, each contrary to the next, and each claiming to have the evidence required to prove their own validity.

The pamphlet continued lower and now could be seen unaided by the telescope. Those who were lower began to speculate even as the paper was redirected by gusts of air. Some saw a 't', others a 'u'. Each of them attempted to hide from the others, their own reading of the paper, while still proposing what they believed to be the Truth. As the parchment continued to rise and descend, each gained the hope of assembling all of the letters. Then, in one violent gust the paper was brought to the level eyes of all.

Lodoli concludes the story by asking how many are content in finding truth in the calculations, surfaces, and non-existent observations, and how many differences are created before knowing the truth. It is important to note Lodoli's distinction between the divine and mortal realms. The paper is never fully revealed, even at the end it hovers at the level of our eyes, and as such it is not able to be read. For us to know a truth we must interpret, recognizing that we may never know the Truth, only the true. This understanding of truth is more fully developed by Giambattista Vico, the Neapolitan philosopher and rhetorician whose writings were published by Lodoli.

The frontispiece of Vico's *New Science* (1744) describes the entire work and is offered to give some *conception of the work before one reads it, and with such aid as imagination may afford, to call it back to mind after he has read it*[8]. The Divine Light, emanating from the Luminous Triangle, organizes the image hierarchically. This Light reflects anamorphically from the convex jeweled breastplate of the winged Metaphysics, and on to Homer who is standing amongst hieroglyphs and fragments of the human institutions. As an example of how we may know, Vico offers the frontispiece of the *New Science* to aid the reader, in recalling the work once read. Vico points out in the beginning that the reader should narrate the *New Science* to himself as he reads so as to make it for himself, and therefore know it. This light reveals to us the underlying principle of Vico's thinking - *verum ipsum factum* - the true is convertible with the made.

the frontispiece to Vico's New Science (1744) which may be used to explain his entire text.

First described in *De Antiquissima Italorum Sapientia* (1710), this principle distinguishes between Divine and Human truths. *This can be illustrated by an analogy. Divine truth is a solid image, like a statue; human truth is a monogram or a surface image like a painting. Just as divine truth is what God sets in order and creates in the act of knowing it, so human truth is what man puts together and makes in the act of knowing it*[9]. The divine has access to the *prima materia*, and as such can create forms. Humans do not have such privileged access, and therefore can only re-present these forms. We can never truly know what providence has made. We do make geometrical propositions, therefore we may know them, however we do not make physical forms therefore we cannot ever truly know the laws of natural physics. For Vico, human understanding would always keep separate the laws of Nature and the laws of geometry.

The institutions of the world were all made by humans and as such all of their principles are to be found within the modifications of our own mind. All we can do is study what we have the possibility of making - languages, arts, culture in general. Humans have made history, therefore it is possible to know history. For Lodoli, function depends essentially on the *true* - on that which has been made - and not upon the imitation of a natural or of an idealised form. Vico looks to language, Lodoli and his students look to architecture. Their search is focused on the radical reconstructions of fragments - fantastically rediscovered.

As such, the first book of Lodoli's outline demonstrates an interest to study the *previously known (architectural) systems, beginning with the Egyptian, Etruscan, Doric, Ionic, Corinthinan, then the Composite and then the French and Spanish*[10] with the aim of exposing *faults, crimes,* and *contradictions.* Fragments in his garden used in the lessons to students, show a line of Roman and Etruscan heritage. Lodoli does not reject the past, he simply wishes to critically explore the works of both ancients and moderns. Proposing a productive examination of the past, he finds particular interest in the Roman line of Vitruvius, Alberti, Michelangelo, Palladio, Vignola, and Scamozzi. However, he is not interested in defining the order that may be distilled from previous authors, rather he is attempting to identify that which is not true, and then articulate that which may be true.

Following the motto etched on the two tablets flanking his portrait by Longhi, *Ut Eruas et Destruas...Ut Plantes et Aedifices,* (to tear down and destroy, to plant and to rebuild) a partial quote from Jeremiah, we must not copy nor forget our history, but we must learn from and build upon it. This is not the destruction of our cultural heritage, but more similar to metabolism, in which substances are broken down to yield energy for vital processes[11]. Lodoli recognizes that a collective theory of myth no longer exists, yet he refuses the futility of a nostalgic gaze to past cultures, and the non-productive opposition of scientific to mythical knowledge. This essential approach for a Lodolian architecture is seen in the radical re-constructions of his most productive student, Giambattista Piranesi.

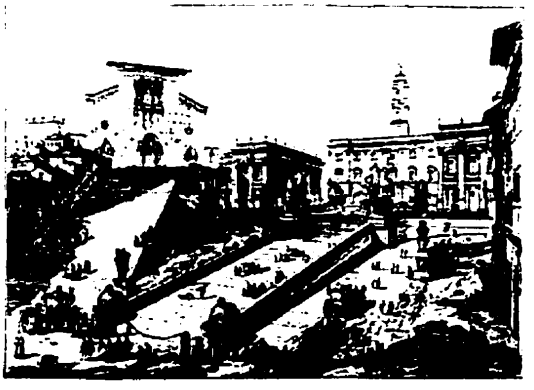
By 1750, Piranesi had worked with the leading *vedutiste* of Italy including Tiepolo, Vasi, and Panini. He had just returned to Rome after a short journey to Naples (in 1744, just before the death of Vico), and a stay in Venice. He was well established as a vedutista and as a dealer of antiquities. He profited from the interest in the ruins of Antiquity that were to be found along the Grand Tour. As well, he began to move away from the more Graeco oriented French Academy at the base of the argument is the artist's originality.

In May of 1756 he published *Anticita Romana*, a series of etchings directed to a very wide audience that were the result of intense study of Roman antiquities. Piranesi attempts to articulate the potential past that is inherent in the ruins that surround him. He has an extreme faith in the return to magnificence of Rome seen within the passage of time through various degrees of decomposition. Although pictorial reconstruction was not a new phenomena, and had been used by scholars, Piranesi is clearly approaching the city differently. Piranesi does not view the city, as a tourist who understands the city through postcard views - vacant and pre-conceived.

Within the *Anticita* we see a few distinctive features that begin to separate Piranesi from his contemporaries. The quality of light, the deep diagonal contrast of framed views imply a theatrical sense to the city. The people who inhabit the foreground of the spaces are typically strange, grotesque, and fantastic. Often times they can be found urinating, or in an extreme argument, providing a stark contrast to the profound ruins. One senses the life of the city, and not simply a collection of buildings. For Piranesi, there is already a growing understanding of the structure *and* the character of the spaces. The sheer complexity of the reconstruction within his plans, the intensity of architectural detail, and the exaggerated emphasis on the structural and engineering exploits of Rome combine to create a place so magnificent that Goethe, after seeing Piranesi's etchings, thought Rome was more grand in the etchings than in real life. The etchings reveal the experience of one who inhabits the city, contrasting a glorious past with a somewhat abominable present.

Piranesi, *Veduta di Piazza Navona*, from *Anticita Romana*, 1756

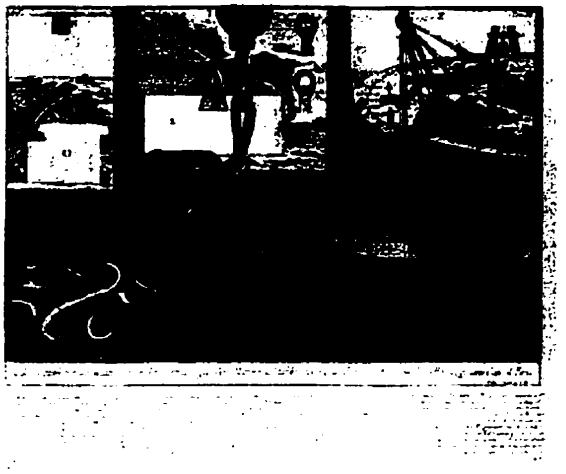
This attitude is also revealed in the writings of Piranesi. He explains *...these speaking ruins have filled my spirit with images that accurate drawings, even those such as the immortal Palladio, could never have succeeded in conveying, though I always kept them before my eyes. Therefore having the idea of presenting to the world some of these images, but not hoping for an architect of these times who could effectively execute some of them - whether for fault of architecture itself, fallen from the highest perfection to which it had risen in the period of the greatest splendor of the Roman Republic and in the times of the all powerful emperors who succeeded it; or whether the fault of those who should have been patrons of this most noble art. The fact is that we have not seen buildings equaling the cost of a Forum Nerva, of an amphitheater of Vespian, or of a Palace of Nero; therefore, there seems to be no recourse than for me or some other modern architect to explain his ideas through his drawings, and so to take away from sculpture and painting the advantage, as the great Juvarra has said, they now have over architecture, and similarly to take it (architecture) away from the abuse of those with money, who make us believe that they themselves are able to control the execution of architecture*[12].



Piranesi, *Veduta del Romano Campidoglio*, from *Anticita Romana*, 1756

As evidence of the functional austerity of early Roman buildings Piranesi cites their impressive engineering feats including road construction, drainage, and the complex aqueduct system. Piranesi reconstructed the technical character of the *mostra* or head

fountain of the water system terminating on the Esquiline Hill. This seemingly boring study of utilitarian achievement becomes a celebration of architectural complexity. If the hidden parts of all of these buildings was so amazing, how much more glorious could the more public parts be. His interest in the technical characteristics of building were explained within richly detailed plates offering details at varying scales overlapping each other. The plates also contained text describing how he discovered, from the remains of holes and protuberances, a glorious method of construction used by the Romans.



Piranesi, *Modo, col quale furono alzati i grossi Travertini...oggi detto Capo di Bove*, from *Anticita Romana*, 1756

Vico as well as Lodoli shared the belief in the Etruscan roots of the artistic development of the Romans. Through the etymology of words, and of construction techniques (how language is made, and how buildings are made) both believed the history of the Romans could be retraced back to the Etruscans. As well, both shared the belief that Rome could once again be great. Vico outlined his understanding of history, basing it upon a comparative mythology that recognised a cyclical pattern of cultural revival. Termed *corso e ricorso,* each culture could be seen to go through three ages.

The first age, the *Age of Gods* is the state of the families. Pre-political institutions of marriage, religion, and burial of the dead are established. The language is hieroglyphic or sacred. Myth is a state of being, it is not simply a description, but a performance of the reality it seeks to describe - history becomes the performance of myth. It is here that Jove is created as the thunder in the sky, fearful, man - created religion.

Within the second age, the *Age of Heroes*, in an attempt to secure themselves against mutinies of serfs and against outlaw invasions patricians banded together to form a state. The plebes always wished to change the state, and the patricians always wishing for it to remain. The language here is symbolic or figurative. Myth answers three questions - *what are we?, where do we come from?, where are we going?.* As well, myth gives to us the meaning of existence -Homer, Dante, Goethe, Joyce operate at this level - in a heroic attempt to answer the great questions of life.

Within the third age, the *Age of Man,* the plebeians take part in the religious and social (marriage and burial) life of the patricians. Heroic states became free popular republics. Language is epistolary or vulgar. Myth is seen as an imaginative narrative, literally untrue, but able to express an emotional truth. The culture is no longer religious but attempts to hold on to the sacred through art. This third age foretells the advent of Romanticism as well as Surrealism - both as responses to the loss of the sacred.

It is within this third age that Vico finds himself, as well as Lodoli and Piranesi. The loss of the sacred, transcendental capacity of experience is accounted for, through the making of art. The true is the made, therefore we must look to what we, as a culture have made - our language, history, architecture. We must be careful that this does not lead to a vacant and solipsistic gaze. What might secure our constructions within a world of floating unsignified signifiers may be approached at the level of being - thus answering the question of how we may come to know what we know. For Lodoli, this is understood within the second half of the binomial of *function and representation.*

[1] Joseph Rykwert, "Lodoli on Function and Representation"

[2] the chair no longer exists, but one might think of Aalto's chairs of bent wood, especially those at Paimio that related to the experience of sitting in the chairs, as much as the physical construction and joining of the wood.

[3] See Memmo, 1834, vol.1, p84.

[4] Indra Kagis McKewen, 1994, p.129

[5] Francesco Algarotti, *Saggio sopra l'architettura,* p. 307-11.

[6] Andrea Memmo, *Elementi d'Architettura Lodoliana* (Zara 1834) tomo 2 p 50-62, tr. by Marco Frascari in *Sortes Architectii* (Upenn 1981) Apendix I.

[7] see Andrea Memmo *Apologhi immaginati...da fu fra Carlo de Conti Lodoli* (Bassano 1787).

[8] Giambattista Vico *New Science* (1744), tr. Fisch/Bergin- p.3.

[9] Giambattista Vico *On the Most ancient wisdom of the Italians* ,tr. L.M. Palmer, ch. 1, I.

[10] Andrea Memmo, *Elementi d'Architettura Lodoliana* (Zara 1834) tomo 2 p 50-62, tr. by Marco Frascari in *Sortes Architectii* (Upenn 1981) Apendix I.

[11] see Frascari, 1981,p. 81.

[12] See Wilton-Ely, 1993, p.4.

the water hollowed the stone,
the wind dispersed the water,
the stone stopped the wind
water and wind and stone.
Octavio Paz

As the true is convertible with the made, function operates similarly with representation combining to become the final aim of architecture. Part II of Lodoli's outline explains the second portion of this dictum; *representation is the precise and total expression resulting from the materials when they have been used in accordance to geometric, arithmetic, and optical rules to reach a proposed end*[1]. The outline continues, presenting the essential properties of representation within the triad of commodity, firmness, and analogy, listing ornament as an accessory, but still important.

Commodity is defined as *the norms relating to the economy of building understood as the long lasting existence over time*[2]. This is best explained by an examination of details found within the *San Francesco della Vigna* (1742) in Venice, where Lodoli lived for most of his life. The renovation to the hospice, first famous for its original design possibly carried out by Palladio, is the only piece of architecture by Lodoli that remains today. Lodoli's intervention consisted of an alteration to the living suite, including a slanting wall that would accommodate two men walking shoulder to shoulder with trunks, as well as new openings detailed in a most unusual way.

Lodoli was interested in *new norms, so that architecture shall not remain confined by the appearances, the memberings, the compositions, that have been usual up to now*[3]. He was attracted to the broken, misrepresented pieces of architecture, described as *faults, crimes and contradictions*[4]. He saw within the Veneto, and especially within the architecture of Palladio, a recurrence of broken window sills. Lodoli believed this was due to a lack of construction knowledge, as well as a lack of foresight in terms of the weathering of buildings. To remedy this condition, most architects would either leave out a course of brick underneath the sill, or make the sill of multiple pieces. Both solutions, Lodoli observed, held the strong possibility of failing under typical loading. The downward force on either edge of the sills, would push the middle portion of the sill upward. This force upward would make the stone crack in the middle. To resolve this, Lodoli made the sill out of three pieces. The middle piece, wider in the center and sloping towards the edges, took the form of a

catenary curve. This piece was connected to the two side pieces underneath the jambs by a mortise and tennon joint.

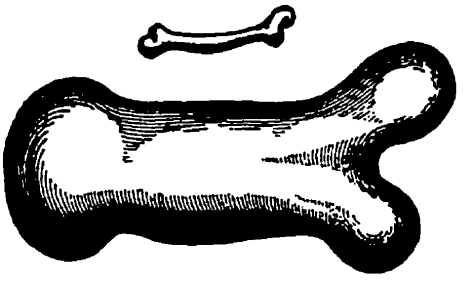
window detail at San Francesco della Vigna

The solution, described by Memmo as a *Lodolian osteology*[5], understood the use of stone economically, as well it allowed for the existence of the building over time. The infiltration of water, especially in Venice, has serious implications for the life of materials. Instead of avoiding the problem, Lodoli embraced the possibility that a building might weather. The top surface of the sill was slightly sloped down into the center where a hole was drilled through to the front face. This would take water away from the joints where it is most dangerous, and allow the excess to drain off of the thicker portion of the sill. After time, rainwater has stained the sill creating a reverse keystone within the arch of the sill. The keystone, typically used to locate meaning within architecture, is reinterpreted by Lodoli locating the act of building within the passage of time.

Lodolian osteology

Galileo, and Lodoli both use an osteological analogy to describe the performance of norms relating to the use of materials.[6] Lodoli's commodious attraction to the flawed, echoes a dialogue by Galileo found on the Second Day of his *Two New Sciences*. This particular discussion follows an attempt to secure a column from cracking by placing a support at the middle. However, after a few months go by, they find the beam has cracked exactly in the place where the support was located. Sagredo (Galileo) points out that a similar accident would not have occurred in a smaller column made of the same stone if it's length and thickness was the same ratio as that of the large column.

Proposition VII explains; *among heavy prisms and cylinders of similar figure, there is one and only one which under the stress of its weight lies just on the limit between breaking and not breaking, so that every larger one is unable to carry the load of its own weight and breaks, while every smaller one is able to withstand some additional force tending to break it*[7]. Galileo illustrates this principle by sketching a bone three times the size of a normal bone. Observing how out of proportion the new bone is, he concludes that if one wishes to *maintain in a great giant the same proportion of a limb as that found in an ordinary man he must find a harder and stronger material for making the bones*[8].



Galilean osteology.

Lodoli was not interested in the *norms derived from habit*, which he described as borrowed and vague. Instead, he wished to purge all that was untrue. Proportion is based not on a transcendental order, but rather within material's phenomenal qualities. Lodoli recognizes that the classical orders no longer offer a possibility of transcendence, and therefore does not attempt to imitate them. It is Lodoli's appeal to reason that clearly shows him to be in opposition to Perrault's positive and arbitrary beauty based on issues of Taste, and much against common opinion of the time.

Perrault's intellectual accomplishments cannot be underestimated. As well as his writings on architecture and science, he was a founding member of the French Royal Academy of Science, and a passionate defender of the *modern* in the dispute of the Ancients and the Moderns (*Querelle des Anciens et Modernes*). Perrault, trained as a doctor, was interested in comparing - as in comparative dissection - the orders as presented by previous authors. The orders' proportions offered discrepancies that Perrault wished to eradicate. He was determined to find a common denominator - a beauty he described as *positive and convincing.* For Perrault, what we may know depended upon the Cartesian understanding of *innate ideas, so clear in themselves...they cannot be learned,* and since all knowledge is given by God, all we perceive *clearly and distinctly* must be true[9].

While remaining faithful to a classical vocabulary, Perrault rejected the relationship of the orders to the human body, as well as any relation to musical harmony. The question of the Orders' proportion - that relation of parts that guaranteed transcendental participation - was to be solved by pre-established rules of proportion, adjusted according to Taste. As the positive beauty of architecture exists in the domain of common sense, it is not necessarily due to the architect's skill as much as the proper disposition of structure, ability of the workmen, and the quality of materials. The architect's skill lies in his imagination, but this for Perrault was simply the ability to correctly judge issues of Taste.

Though criticized in his own time, Claude Perrault's thinking found a more receptive audience in the 18th c., including Carlo Lodoli's circle. Andrea Memmo, and Francesco Milizia frequently reference Perrault's *Ordonnance* in their own writings. Domenico Cerato, influential not only as a professor of architecture in Padua and friend of Lodoli, but also as the architect who helped carry out the *Prato della Valle* and the *Altichiero*, translated Perrault's compendium for craftsmen studying the practical science of a civil architecture. Though both Lodoli and Perrault recognized at some level a loss of the sacred in architecture, their approach to a meaning could not be more distinct.

Firmness, described as the character of materials, is explained by Lodoli in a short apologue of the Ass and the Silkworm. One day an ass was talking to a silkworm. The ass wanted to become a butterfly and was asking the silkworm how he might do so. The silkworm laughed and said it was impossible, you are an ass. However he persisted in his questioning, relentlessly pursuing the silkworm. Finally, the silkworm gave in, however relinquishing any responsibility for what might happen to the ass. The silkworm explained

that during autumn, he would wrap himself up in a cocoon, and then sleep all winter. At the first spring dew, he would begin to unwrap the cocoon, and emerge as a butterfly. The ass, satisfied with these seemingly simple instructions took to wrapping himself as autumn began, just as he was instructed. He slept all winter. At the first spring dew, he began to unwrap the cocoon. The ass emerged as a turkey.

The function of material well suited to make buildings is the repeated and modified effect of this material when it is demonstratively used according to its character"[10]. In this description, Lodoli uses the word *indole* (inborn nature, character, temper - used most often in literature) within the context of materials, citing the gondola as an example of material used appropriately. The outline further explains Lodoli's interest in composite and artificial materials. As a boy in the shipyards of his neighborhood by the Arsenal, Lodoli was exposed to an understanding of materials devoid of classical reference and more suited to the character of materials. The understanding of the proper use of materials is the basis of the 18th c. debate between the Roman and Greek builders which focused more specifically on the issue of imitation and invention.

Francesco Algarotti, in his discussion of Lodoli's thinking, believed architecture, like painting and poetry was an art, although not one of imitation. He believed wood, the essential material of the primitive hut, demonstrated the most remarkable structural properties. Supported by recently discovered scientific evidence, wood reconciled the perceived disparity between unity and variety - something that stone was not able to do as it would lead to a boring architecture of short spans and arches. Therefore it was appropriate, for Algarotti, that an architecture of stone, like the Greeks, could imitate a wooden architecture.

However, Algarotti's essential belief in the beauty of a wooden architecture, contradicts his claim to architecture as a non-imitative art as well as a Lodolian architecture interested in the essentially inventive interpretation of materials. This resemblance of materials for Lodoli is regarded as a stalemate in which it is impossible for an architecture to achieve knowledge. Lodoli was essentially interested in a material's power to assert identities, and not similarities. Memmo faulted Algarotti's historical argument for an architecture based on timber construction. Memmo, as well as Lodoli, believed in the pre-eminence of Egyptian over Greek architecture - an architecture developed according to the essential proportions of stone and not wood, thus questioning the origin of architecture as based within the primative wooden hut. Memmo insisted that the Greeks abandoned the demonstration of

the true or real with the substitution of a different material, stone, within the same building techniques of wood. Algarotti's thesis proposed an architecture that seems at times to be more closely related to Marc-Antoine Laugier (1711-1769).

Lodoli's and Laugier's theories have, at times, been seen as similar. Laugier did have ties to Venice, and may even have visited the Veneto in the early 1750's. Both had relations with the British Consul Smith, and may have met at the Palazetto Smith along the Grande Canal. Andrea Memmo accused Laugier of plagiarism based on two weak assumptions - one, that Laugier, while in Venice *hoped to see one day a genius arise who, embarking on new ways will reveal a beauty unknown to the ancients*[11] - and two, the reaction of a Venetian Nobleman. While in Paris this man reacted to the publishing of the *Essai*, noticing many affinities with Lodoli's work, and wondered why his name was not ever mentioned. However a careful examination of the each concludes that the two theories differ in all essentials[12]

Marc-Antoine Laugier searched for the *origins* of architecture, within the rational system of building he forced upon a mythical primitive hut that appears visually similar to the classical orders. In an attempt to establish empirically *fixed principles* of *essential elements*, he reduced the orders to structural necessity as found in Divine Nature. Laugier, an ex-Jesuit and a passionate public speaker, published his *Essai sur l'Architecture* in 1753, in an attempt to provide architects with *fixed principles to determine his judgments and justify his choices*[13].

Frontispiece from Laugier's *Essai sur l'Architecture* (1753) showing an idealized primitive hut as the paradigmatic architectural assemblage.

Through repeated experiments and conversations with his friends Laugier discovered that their reactions conformed to his. Therefore he could conclude that there are absolute values in architecture. He looked for these absolute values along Rousseau's river bank where man *thinks of nothing else but enjoying the gift of nature*[14]. Laugier's interest in the structural study of primitive myths and cultures was aimed at an authentic knowledge of the relationship between man and Nature. He believed that the form of the primitive hut, like our own selves is most pure in it's savage state. Therefore for architecture to be meaningful, it must somehow address this primitive state. Laugier looked to a mythical first hut, but his gaze only revealed a preconceived form.

Laugier believed in the Greek-then-Roman lineage story that proposed all things true to be of Greek origin, a common view in 18th c France. He however adds that *architecture owes a little to the Romans although he would not wish to follow the style of the ancient Romans*[15]. He believed the Greeks were the first to develop a system of proportion which was then taught to the Romans. This system was based upon the translation of the principles of wooden architecture into an architecture of stone. This opinion was formulated by Laugier based on the reading of texts, and not by actual visits to ruins, of which he experienced very few. Of the architecture Laugier did in fact see through drawings or actual visits, he mentioned *Maison Carree* in Nimes, as a building that showed a noble simplicity much to his liking. Described as a *rectangle where 30 columns support an entablature and a roof which is closed at both ends by a pediment -that is all. It is a combination of a simplicity and a nobility which strikes everybody*[16]. Although Laugier's reasoning placed a myth at the origin of architectural conception, it is a myth projected from his own 18th c. world view. The orders are reduced to structural necessity which constitute the architectural event, reinventing the symbolic role of ornament.

As architecture had not yet received all of the perfection of which it was capable, Laugier still held a certain faith in the possibility of perfection within architecture. However he also saw that when the stage of perfection is reached, there is no way left but to imitate or decline. He described moments of perfection with the Greeks at the time of Pericles or Alexander, the Romans under Caesar or Augustus, and Florence under the Medici. Perrault's myth of progress becomes Laugier's myth of origins. However the idealization of origins becomes just as weak as an idealization of the future – neither fulfilling the transcendental possibility of architecture.

Giambattista Piranesi understood Lodoli's teachings well and defended his views in text as well as in etching. An example is found in his caustic reply to Pierre Jean Mariette's criticism of Piranesi's view towards a Greek architecture. The response - *Ozzervazioni di Giambattista Piranesi sopra la Lettre de Monsieur Mariette aux Auters de la Gazette Litteraire de l'Europe*, 1765 - is made up of three parts. The first, the *Osservazione*, is a point by point rebuttal of Mariette's remarks. The second, *Parere sulla Architettura*, outlines, in the form of a Socratic dialogue, Piranesi's thinking on architecture. The third, *Trattato della introduzione e del progresso della Bell Arti in Europa ne tempi antichi*, is an introduction to a text explaining the Etruscan superiority over Greek culture.

The Parere is a discussion between Protopiro, a partisan of Laugier and the ideal of Greek building, and Didascalo, the speaker for Piranesi and most surely Lodoli. Central to the argument is the role of materials and the possibility of a meaningful ornament. Didascalo mockingly describes Protopiro's ideal architecture - an imitation of the primitive huts from which some people believe the Greeks took the rules for ornamenting architecture. Didascalo responds to this ideal by proving that *the imitation of huts is incompatible with architecture*[17]. Protopiro's architecture would be free of whimsy and caprice. Didascalo details an architecture devoid of all unnecessary ornament - including walls where there are columns, and stone architraves at the corners that cannot align with the center of columns. If architects were to follow this reasoning, it would reduce us to living in huts.

Didascalo is not attempting to simply reduce architecture to construction. If so, he would follow Protopiro's argument to the rational end, resulting in an architecture defined by building technique alone - of columns, pilasters, or walls. Didascalo realizes the role ornament might play. Through the argument Didascalo uses Piranesi as an example of someone *who attempted to show that the Romans, who could not heal the sore which infected the roots of Greek architecture, embraced it nonetheless, and tried to heal what sores they could*[18]. There are as many orders as there are monuments, and instead of attempting to imitate a proportion or an order, one should learn to build well. Didascalo understands that the architect is free in their choice of formal references as long as they conform to the nature of building.

If we were to follow the Greek ideal as proposed by Prototpiro, *architecture would be reduced to a vile trade where all would be imitation, and architects would be reduced to being ordinary - little better than bricklayers. The architectural trade would cease to exist because whoever would will want to build will not make the mistake of asking an architect*

to do something the bricklayer would do for less[19]. A biting comment in the mid 18th c. , but even more so as one looks to the current relationship between architects and contractors. Didascalo believes the lack of poetics in architecture is a result of amateurs who do no know how to build, and therefore rely upon masons to choose materials and structure for the buildings. Echoing Lodoli's thinking, one should understand proportions of building members based on the firmness of materials.

Within the *New Science*, Giambattista Vico explains at the level of language, why the Romans are in a sense more true than the Greeks. Although Greece may have been founded earlier, Greek philosophers hastened the natural course which their nation was to take. The Greek language therefore is much more suited to scientific reasoning - and is natural only to a tongue that is stiff and inept at combining consonants with vowels. The Romans developed at a more natural rate. Roman institutions were founded, as all great cities, in the vulgar tongue of the heroic. A time compared to the age of a child, *when his memory is tenacious, imagination vivid, and invention quick*.[20]

Lodoli did consider a knowledge of the statics and strength of materials as essential for architects. Memmo explains that Lodoli was interested in, and did construct a series of tables to that end. The topics of these tables - xilology, lithology - were two *technai* in which an understanding of the physical property of materials dictated the ratio of architectural terms. Supposedly lost to the leaking roof of the Piombe, they supported an interest in the geometric proportioning of those building materials located in and around the Veneto, adjusted according to various site conditions. Geometric and numerical proportion based on the essential nature of the material endorsed the phenomenal relation between aesthetic values and solidity, stability, and durability.

Analogy, understood as the *proportional regular correspondence between parts and whole which should arise in building*[21], deals with the relationship of parts to the whole. As well it can be seen as a way of thinking. It must be understood, Lodoli held no pretensions to the declarative column-as-body or column-as-tree analogy. The body performed the architecture. Nor, as I have attempted to show, did he believe in *skiamorphic* representation of a wooden architecture in stone. He was however still interested in a proportion. Lodoli's proportioning systems were not based on a cosmological relationship nor on any ideal order imitative of a previous age, a mythical primitive hut, nor Nature.

They were however based on a *complex-rectified-geometric-mechanical reasoning*[22] that was inventive and clearly not imitative.

This analogical way of thinking was developed by Antonio Conti (1677-1749), a friend of Lodoli as well as an influential publisher within the political circles of the Veneto. Born in Padua, of an ancient noble family, he was an amateur scientist and also a member of the Royal Society in London (proposed by Newton). He was well traveled, fascinated by most everything British, Sir Isaac Newton, and the vital importance of creative fantasy. He translated many works from the English, including Milton and Shakespeare, as well as writing on many subjects including painting and the arts. Most importantly for this study is his role in the printing of Vico's *New Science,* and *Autobiography*.

As well, he wrote *Prose e Poesie* (1739) a text which dealt with the issues of imitation and beauty. The text outlines three types of imagination. The *sensific* - which appears similar to a drunken madness, the *visific* - which deals with fixations and is the mother of visions, and the *verisimiliar* - which privileges an image of the true to the truth itself. Conti proposed that the philosopher weave the allegories based on modern abstract doctrines into fantastic poetry - a coloring of ideas utilizing the productive powers of fantasy and the making and combining of images.

The poet is privileged in his access to wisdom through metaphors and poetic invention and may perfect philosophical images and their connections in both natural and human sciences. For Conti this exercise of *Particolareggiamento* contains aspects of recollective memory. It occurs in a dream or dozing state, during the sleep of reason. Objects, fragments, are encountered as emblems or metaphors and located within a mythic context by means of their tropic or etymological origins. The visual image is the source of the recollective making.

Conti also made a commentary on Fracastaro's *Naugerius* and was surely influenced by his thinking. Fracastaro sought to make use of Plato's *icastic* - a faithful reproduction of reality - and *phantastic* imitation - the poetic freedom to recombine the images of experience. He proposes the elevation of imagination over phantasy. However both are based in memory, as memory is the recollections, not of images, but of associations which the mind establishes.

Within the *Naugerius*, Fracastaro establishes that this faculty of imagination is demonstrated by mathematicians, architects, and painters, and those who are concerned with the arts. For mathematicians consider with precision angles, lines and figures simultaneously as they are related. And painters study man, the parts of man, and the parts of those parts, each in minute detail, in what order and in what relation they stand, and how the other parts function in relation to one member. In similar fashion architects are busied in their buildings, and others with their arts. The focus here is on the recombination of associations - relating parts and whole through a productive imagination.

This imaginative approach to making may be further illuminated by looking further into the writings of Giambattista Vico. By looking into Vico's well defined, if sometimes disregarded thesis, we find a framework of ideas that surely engaged Lodoli within his teachings on architecture.

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[1] Andrea Memmo, *Elementi d'Architettura Lodoliana* (Zara 1834) tomo 2 p 50-62, tr. by Marco Frascari in *Sortes Architectii* (Upenn 1984) Apendix I.
[2] ibid., appendix 1.
[3] ibid., appendix 1.
[4] ibid., appendix 1.
[5] Memmo (1834), tomo II, p.160.
[6] it is interesting to note : Teofilo Gallacini's (a Sienese physician) analysis of architectural defects - *Trattato sopra gli Architetti* - which presents, in anatomical fashion, abnormal parts of the architectural body so as to identify and remedy mistakes. The text was published by Giovanni Pasquali under Lodoli's influence. For a more detailed analysis see Alina A. Payne "Architectural Criticism, Science and Visual Eloquence".
[7] Galileo Galilei *Two New Sciences* tr. H. Crew and Alfonso de Salvio,p.126.
[8] Ibid., p.131.
[9] Rene Descartes, *Discourse on Method*, p. 90
[10] Andrea Memmo, *Elementi d'Architettura Lodoliana* (Zara 1834) tomo 2 p 50-62, tr. by Marco Frascari in *Sortes Architectii* (Upenn 1981) Apendix I.
[11] But one must wonder if for a Frenchman this would be an Italian?
[12] For a detailed examination of this topic see Wofgang Hermann's *Laugier and Eighteenth century French Theory* (England 1962).
[13] Marc-Antoine Laugier, *Essai sur l'Architecture* (Paris 1755), pp. XXXIII-XXXIV
[14] Ibid, p.11.
[15] Ibid.
[16] Ibid.
[17] Giambattista Piranesi *Parere sulla Architettua*, p.8.
[18] Ibid., p.11.
[19] Ibid., p.11.
[20] Giambattista Vico *New Science* (1744), tr. Fisch/Bergin, p.66.
[21] Frascari, 1981, Appendix 1.
[22] ibid., appendix 1.

Attend me briefly while I now disclose
How art of fable telling first arose
Unhappy slave. .n servitude confined,
dared not to their harsh masters show their mind,
But under veiling of the fable's dress
Contrived their thoughts and feelings to express
Phaedrus
Fables

Giambattista Vico was born in Naples on June 23, 1668, the sixth of eight children. At the age of seven he fell from the top of a ladder in his father's book shop. The doctor, attending to this near fatal injury predicted that the child would either die or grow up an idiot. However, due to the grace of God, the child did neither but rather developed a mind as *quick as lightning, that took no pleasure in verbal cleverness or falsehood*[1]. Lodoli's admiration for Vico's work was seen in his effort to commission, from Vico, his *periautography*. This autobiographical essay would put into practice Vico's essential principles as proposed in his *New Science*. In 1728 Vico offered his autobiography as part of a *Proposal to the Scholars of Italy,* within the first edition of the quarterly *Raccolta d'Opsusculi Scientifici e Filologici*. The text begins by explaining the incident which led to his irritable and melancholic temperament - one such that belongs to men of ingenuity and depth.

Vico lived in Naples his entire life. At that time Naples, a pious city, had as its center of study the *Investiganti* - an order modeled after the French Academy and the Royal Society of London. Vico held the position of professor of Rhetoric at the University, and was fluent in Latin and Italian. Passionately focused upon the study of histories and languages, he was influenced by authors such as Grotius, Plato, Bacon, Hobbes and Pufendorf - authors Lodoli also cited as influences. After failing to secure the chair of civil law in 1725, he published his positive science - *Principles of a New Science of the Nature of Nations, from which are Derived New Principles of the Natural Law of Peoples.* Two reprints later, the final being financed by Vico himself in 1744, the text was pared down eight times from its original size. Vico's influence has been seen in the works of Leopardi, Joyce, Kant, and as a precursor to German Romanticism.

Considered to be a leading Cartesian in Italy until his own doctrine began to emerge, Vico became known as one of the greatest critics of Descartes. This critique began with the

text, *De Antiquissima Italorum Sapientia* (1710), in which he outlines his epistemological theory of *verum ipsum factum*. This he develops more fully in the writing of the *New Science* (1744). Vico did not necessarily argue with the rationale of Descartes, but he felt Descartes assumed to much. Vico believed Descartes ignored the question of how the mind functions in order to produce knowledge, and even whether or not the mind has objects, or an external world before it. For Vico this was the essential question of origins. Descartes' cogito takes the place of any possible metaphysic. Rhetoric becomes a tool of persuasion. The Cartesian method *dissolves curiosity while providing for truth*[2]. It is at this point that Vico's thinking distinguishes itself from Descartes.

Vico reminds the reader that man thinks because he is both mind and body. This is the situation of man, if man was simply cogito he would become God. Vico focused on the ontological possibility that Descartes' cogito avoids. Scientific truth is the end of a rational process whereby propositions that describe events are affirmed as valid by logical proof. Rhetorical reality refers to the insight of original thought that works through metaphor and is the result of imagination or fantasia, and not reason. Vico related Descartes' approach to builders attempting to repair the roof of a house, while avoiding the foundation. For Vico, what we may know is essentially related to how we may know.

Vico believed the basic mode of understanding to be a demonstration of the specific and not a description of the universals of science and philosophy. Rather, particulars are directly conceived as universals - *as Achilles connotes an idea of valor common to all strong men, or Ulysses an idea of prudence common to all wise men*[3]. This refers to the way primordial men must have thought. The reflection of something (reflective fantasia) contains in itself elements that reflect in a one-to-one fashion the elements in the memory structure of original or mythic fantasia. This is the result of basing reflective thought on the image, rather than working from some universal concept and then moving towards the more concrete. Thus particulars are raised to the universal through our retelling of images.

This retelling was approached at the level of language, through the use of metaphor. Vico named metaphor as the most luminous of the four tropes that constitute the logic of Poetic Wisdom, and it is that by which identity is originally perceived. *Metaphor, as the original form of the interpretive act, raises from the particular to the general through the re-presentation, in image*[4]. The particular has the power to assume an identity, and not simply a similarity. As such, thunder is conceived *as* Jove and not simply like Jove. This endows

the word with a surplus of meaning that must be interpreted, providing the basis for a creative extension of meaning through and within metaphor.

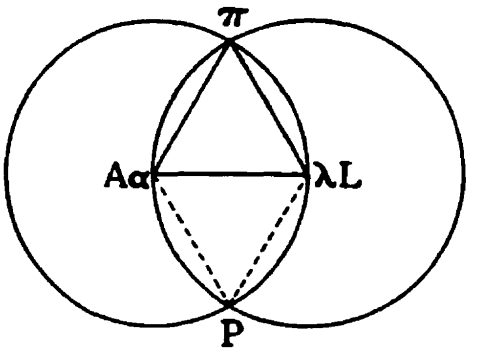
As one of four tropes, metaphor belongs to a group of generative procedures that enables language to depart from a common usage, allowing for the creation of fables. As Vico points out, every metaphor is a *fable in brief*, and *the fables in their origin were true and severe narrations, whence mythos, was defined as vera narratio*[5]. The four include metonymy - in which a word is substituted for another, thereby assuming another meaning (using 'Houston' for NASA control center), synecdoche - in which a part is used for a whole (using the word 'hand' for sailor), and irony - the use of words to contrast intended and apparent meaning. Irony is seen as the weakest trope as it requires reflection.

For Vico the first men created order, not by abstract thoughts, but through the fable. Within the child state of a nation, as well as that of a person one remakes the world through fables. Logic comes from logos, whose first meaning was fable. As it was where all gentile nations had their birth, mythology should be the first logic to be learned. Fables are made, and are able to be retold. The world was not understood as composed of clear cut objects, but as forces, with emotional quality.

This is the way the theological poets apprehended the sky - as Jove, or the sea - as Neptune. Describing things this way, they could explain the sky, or the sea. The first language spoken by the theological poets, was not a language in accord with the nature of the things it dealt with, but was a fantastic speech making use of physical substances endowed with life, most of them imagined to be divine. As such, this first language must have begun with signs and gestures. Vico calls this *onomathesia* - the giving of names to things according to the nature of each. These images combine to what Vico termed a mental glossary of images.

The fable and metaphor are true because they make an identity, and not simply a similarity. Therefore we can understand, as untrue, the construction of a stone architecture as in any way similar to an architecture of wood. However when stone is used appropriately, though possibly not in the typical manner, it evokes the power to assert an identity, fulfilling its re-presentational capacity. Obviously this is not simple. Aristotle believed metaphor *is the one thing that cannot be learned from others; and it is also a sign of genius, since a good metaphor implies an intuitive perception of the similarities in dissimiliars*[6]. Geometrically this can be explained by the *vesica piscis* - the Euclidean device used to construct an equilateral

triangle. Within this emblematic element, two circles combine to create the third - an equilateral triangle. Meaning is generated by the re-combination of two pieces therefore proposing a third.



vesica piscis

Therefore we can understand metaphor as a basis of thought - as a possibility of knowing, but also as a basis of perception. Metaphor is that by which identity is originally achieved in perception - it is how we perceive. This is unlike Descartes who wishes to only prove the validity of corporeal objects in front of him. Such a proof, even if successful would not prove how we know such things in particular ways. Vico makes the question of the given the basis of his conception of knowledge.

We are not simply a thinking subject, as primordial thought is found through the body. Vico demonstrates this by explaining that etymological roots of words stem from metaphors derived from the body - eyes of potatoes, foot of hills, teeth of rakes. Vico explains this relationship; *a man is properly only mind, body, and speech, and speech stands as it were midway between mind and body.*[7] He continues, explaining that *the human mind is naturally inclined to see itself externally in the body, and only with great difficulty does it come to understand itself by means of reflection*[8]. It is not about what we know, but rather, what we do not know. *Because of the indefinite nature of the human mind, wherever it is lost in ignorance, man makes himself the nature of all things*[9].

In a typically 18th c. perspective, Vico looks to primitives, savages, children, and those who suffer from a pathology of speech (a stutter) as sharing a common form of mentality. *For example, they call all men fathers and all women mothers and they make likeness: They build huts, hitch mice to little wagons, play odds and evens, and ride on a great hobby horse of a stick.*[10] Recognizing the *necessity of the ends and difficulty of the means of*

finding this Science within the ferine wandering of Hobbes' licentious and violent men, of Grotious' solitary, weak, and needy simpletons, of Pufendorf's vagrants cast into this world without divine care or help, from which the gentile nations have arisen[11], Vico creates a Chronological Table based on his three Ages of Man. Within the childhood of Nations, he discovers the primitive, and therefore basic, form of apprehension not reason, but instinct, feeling, and intuition.

Describing the frontispiece of the New Science, Vico explains to us the one principle his entire study is based upon: *We find that the principle of these origins both of languages and of letters lies in the fact that the first gentile peoples, by a demonstrated necessity of nature, where poets who spoke in poetic characters. This discovery, which is the master key of this Science, has cost us the persistent research of almost all our literary life.*[12] Vico describes the distinction between *imaginative universals*, based in an abstract thought ,and intelligible universals, based in metaphor. The research into imaginative universals is seen as an outcome of a productive and poetic mind - in Italian, *ingegno*. It is characteristic of the Age of Gods and the Age of Heroes in which the faculty of *fantasia* was the rule. The search for intelligible universals, characteristic of the Age of Men, is a product of a rational but dull mind, typified by the mind's ability to select a common features from a multiplicity of particulars - in French, *esprit*. It is important to note the imaginative universal, and not the intelligible universal, was the original mentality that ordered experience. Imagination then can be understood as the very precondition of being, as such it allows man to recognize himself within the world. Man is essentially poetic and not rational. It is here where one must distinguish between the Cartesian view of meaning-is - a view devoid of an origin and based within an instrumental rationalism, and the Vican conception of meaning-as - a view based in discovery and dependent upon participation.

This approach understands imagination as an intentional act of consciousness which both invites and constitutes essential meaning. As imagination is the very precondition of being, it may recognize that imagining is a productive act of consciousness and not a mental reproduction. Imagining is not an act which connects a Cartesian separation between body and mind. It should be seen as an original synthesis and not simply the result of idle fancy. *Ingegno*, therefore, is productive imagining.

Wisdom, among the Gentile peoples began with the muse. As Mnemosyne was the mother of the muses, Vico continues, adding that *imagination is nothing but extended or compounded memory*[13]. Memory has three aspects. The first, when one remembers things

- *memoria* - is the ability to bring the not here, here, and the not now, now. The second, when it alters or imitates things - *fantasia* - is a kind of memory that has the ability to re-order things. The third - *ingengo* occurs within memory as *it gives things a new turn or puts them into proper arrangement or relationship*[14]. *Memoria, fantasia,* and *ingegno* are the primary faculties of the mind. These are the powers out of which human experience is formed.

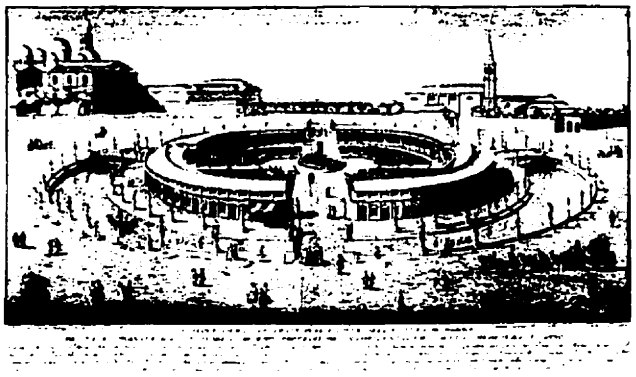
Metaphor then, is secured by its relation to fable and its reference to human institutions through our mental glossary of images. Fables recreate human actions, by virtue of *ingegno* or imagination, allowing for the construction, creation, and disclosure of a world. Stories have the possibility to elevate the experiential world of the human heart to the level of myth. *Meaning-as* can now be related to *being-as*. From the ontological function of imagination is it possible to extrapolate an ethical one? Does the poetics of the possible necessarily entail an ethics of the possible?

That metaphor was essential in guiding the architect is further illuminated by another story brought to us from Lodoli in conversations with his students. Lodoli describes the origins of the apologue, as a mediator between the mortal and divine realms. *Bit by bit dispensing of that first innocence, after reigning Saturn flew from Earth, the Father of Men and of Gods desiring to return to the gentle manner of good custom, decided to incarnate a Genius, a subordinate deity, who was to be called the apologue.* The apologue was needed *to heal the nauseating wounds of corruption so that they [the corrupt] will depart from my hands in health*. However this subordinate deity needed help. The apologue was given as an *indivisible guide and companion, she whom you love more than any other Genius : Metaphor. She will lend you the implements with which at times you must strike, and she will be like a veil, as if to motivate laughter by these same stabs by which they will endure the sting of your remedies*[15].

In an essay entitled 'The Storyteller'[16], Walter Benjamin anticipated critical implications of the narrative's demise within the technological era of impersonal information that erodes the transmission of commonly shared experience. With this end of community, our historical memory heralds in a new culture of instantaneous and fragmented sensations that soon replace the inherited wisdom of tradition. He reminds us of the essential role of the storyteller - to exchange experiences. This event is not simply an imitation or copy, but one in which the storyteller imaginatively reinvents the story each time it is told. The imagination is recognized as a mode of discourse where *someone actually says something*

to somebody about something[17]. Though we cannot guarantee the reception, the word allows us to articulate our intention. Through narrative, we have the capacity to re-describe reality by combining elements dispersed in time and space into some kind of coherent pattern. It must be recognized that storytelling is not simply a method of description, but can be seen as a radical self-grounding.

Paul Ricoeur has outlined a relation of architecture and narrative - it is within the final stage of refiguration that the relation between the making of an architecture and narrative most closely align. The metaphors, symbols, or narratives produced with our imagination all provide for imaginative variations of the world, offering us freedom through opaque poetic discourse to conceive of the world in other ways and to allow for its transformation. It is through participation within our collective histories that architecture may lead to *recognition*.



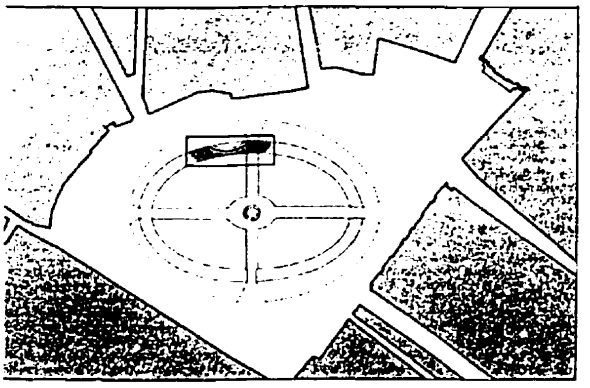
Prato della Valle, etching by Domenico Cerato

The Prato della Valle in Padua, as designed by Andrea Memmo, allows for this recognition. From it's earliest times as a Roman Municipium, the prato has had a specific urban role within Padua. The large open space was bisected by a main urban road, that historians believe replaced the Cardo Massimo, outside the pomerium. The Prato had been used as a Roman theater, a naumanchy, a circus, a parade ground, and even as a place to review maneuvers for the cavalry[18]. By the 18th c the flood land was used for fairs and as a marketplace. It was surrounded by opulent houses, including one that belonged to Andrea Memmo's family. In 1797, Napoleon entered the Veneto and took it with no resistance. As a symbol of this conquest, he placed a single tree within the center of the Prato. It is most interesting for this study, as a realization of Lodoli's ideas concerning the social function of public building.

As well as his active role in Lodoli's *scuola de conversazione,* Andrea Memmo's life was filled with elected political positions including *Savio ai Cerimoniali* (senate officer in charge of ceremonies), *Balia* - (the commissioner) of Istanbul, and later as ambassador in Rome before he returned home as procurator of San Marco. As *Savio* he was asked to report on the protocol which governed the reception of foreign potentates. He describes the role of hosting foreign noblemen as a burden, and not an honor as it was once considered. As the official ceremonies were considered to be ruinous to those who organized them, Memmo proposed they should be discontinued During the years of 1773-1776 he was appointed *Provveditore della Serenisima Dominante* of the City of Padua. Although clearly more even-tempered than the acerbic Lodoli, his political agenda was advanced. He aimed at realizing social reform through architectural production.

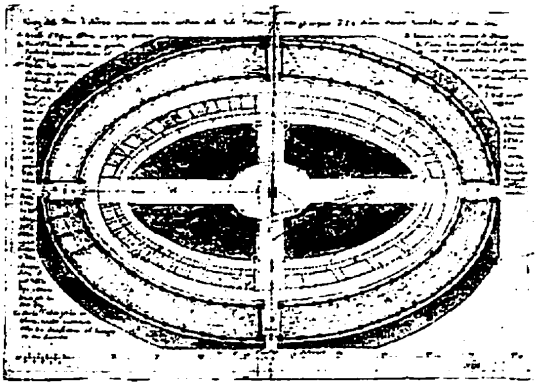
Memmo's architectural and political aspirations found their realization in the *Prato della Valle*. As a politician and as an architect, Memmo recognized the potential boost in tourism and the local economy, as well as the improvement of the health and welfare of the citizens of Padua that such an undertaking would include. Carried out by Domenico Cerato, the marshland was transformed into the new site for the annual agricultural fair for Venice. In order to avoid flooding, Memmo created a canal that drained the land and diverted the flow of the water into an existing stream. The project gave form to the amorphous urban space reforming it into a commercial center for the distribution of the areas agricultural activity, and as a site for large public gatherings such as fairs. Echoing Lodoli's interest in materials, the temporary nature of the market stands implied their construction out of wood. The wood allowed them to be taken down and rebuilt repeatedly.

Memmo's proposal endeavored to be a moral improvement while avoiding a strain on the already tight economy. Therefore the Prato was financed by the sale of subscriptions that would allow the citizens to place and name a statue to line the newly formed canal. The statues, of famous and not so famous Paduans included Antenor, the mythical founder of the city, and Galileo. The statues, not known for their impressive sculptural quality, are almost ordinary. Their placement within the square provided for the collective memory of the city to be presented - each offering a fragment of the city's past.



excavation, revealing plan of preexisting Roman theater

The excavation for the canal of the park, revealed the original use of the site to be a theater used by the Romans. As a storyteller, Memmo's imaginative retelling of the *Prato* finds within the terms of the 18th c., a Roman Forum mapping the universe of Padua. Participation within the theater guaranteed participation within the world, understood previously as ritual. Memmo understands his world is not the Roman world. However, he still looks to the tradition of the theater and its relation to a symbolic geometry. The plan was conceived literally and emblematically as a *vesica piscis* - referring not to a cosmological order, but rather to our own possibility of transcendence, metaphor. Within the etching by Cerato, one finds at least two vesica piscis. The first, which defines the perimeter of the Prato, gives birth to the second which outlines the inner area.



a sketch by Cerato and Memmo delineating the vesica piscis upon the plan of the proposed prato

The organization of the plan does not align to the cardinal points, but rather refers to previously used pathways through the once open space. The Prato generates a function that is grounded in use-value, while still acknowledging the potential generation of poetic

metaphor. Within the Prato the universal and the specific are simultaneously given offering a place for public interaction. It operates at the level of the social imaginary, entering into the social memory, offering a way of participation as a search for otherness and a guide to action. The past is reconstructed by the imagination, understanding the imaginary power of redescription, seen as a reference through traces. The Prato is used, performed and reinterpreted as a story. Indeed, as the Prato generates a surplus of meaning awaiting interpretation and action, it can be understood as *architecture-as*.

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[1] Giambattista Vico *The Autobiography of Giambattista Vico* (1725), tr. Fisch/Bergin
[2] Giambattista Vico *On the Most ancient wisdom of the Italians* ,tr. L.M. Palmer, p 104.
[3] Giambattista Vico *New Science* (1744), tr. Fisch/Bergin *§403.*
[4] Ernesto Grassi *Rhetoric as Philosophy* (Pittsburgh 1980), p.7.
[5] Giambattista Vico *New Science* (1744), tr. Fisch/Bergin §403.
[6] Aristotle, *Poetics*, tr. Malcolm Heath., p.71
[7] Giambattista Vico *New Science* (1744), tr. Fisch/Bergin §1045.
[8] Ibid., §236.
[9] Ibid., §120.
[10] Giambattista Vico *On the Most ancient wisdom of the Italians* ,tr. L.M. Palmer p102, quoting Horace *Satire* 3,II, 247-8
[11] Giambattista Vico *The Autobiography of Giambattista Vico* (1725), tr. Fisch/Bergin p.49
[12] Giambattista Vico *New Science* (1744), tr. Fisch/Bergin §34 NS
[13] Ibid., § 211.
[14] Ibid., §819.
[15] See Paul, 1995.
[16] Walter Benjamin, *Illuminations* (New York, 1968) tr. Hannah Arendt.
[17] See Richard Kearney, *Poetics of Imagining* (New York 1998) epilogue.
[18] See Rykwert 1980.

conclusion

in stories, the self is othered
James Joyce

For Lodoli and his students, architecture offered a social and political means of action. However theirs was not an action based within a determinism, but within the realm of the fantastic imagination. Lodoli realized a collective theory of myth no longer exists, yet he refused the futility of a nostalgic gaze to past cultures, and the non-productive opposition of scientific to mythical knowledge. Instead, he chose to understand the making of architecture as narrative. He recognized the meaning of architecture can only be understood, like a poem, through participation. For Lodoli, architectural meaning can be found within the metaphoric re-telling of non-ostensive historical and material clues to become a performing functional architecture.

Understanding ourselves as historical beings, and informed of the culture of current architectural practice, we are left with the question of the appropriate means of action. It is important to note that Piranesi, though referring to himself as an architect throughout his life, did not actually build until very late in his life. He remained an 'image-maker'. Zaccaria Sceriman understood the making of an architecture as utopia (literally a no-where), and as such produced texts. Andrea Memmo, acting as a politician, was the one student of Lodoli to build within the urban scale. While not legitimizing one over the other, we must recognize alternate ways of action for the architect.

In the essay, 'Imagination in Discourse and Action'[1] Paul Ricoeur discusses the role of image and imagination along two main axis - through the subject and the object. In terms of the object he cites the reproductive imagination within Hume's empiricist account of image, as a faded trace of perception. In terms of the subject he describes the German Romantic and Idealist accounts of the productive imagination. It is with Hermeneutics that the act of deciphering indirect meanings, enables one to acknowledges the symbolizing power of imagination at the level of language (semantic) and not at the level of the image. The semantic and not visual model of imagination makes possible a new appreciation of the creative role: if images are spoken before they are seen, they are not remains of perception, nor are they neutralizations or negations of perception. As Bachelard, reminds us - *an image is not a residue of impression, but an aura surrounding speech. The poem gives birth*

to the image[2]. For Ricoeur, *imagination comes to play in that moment when a new meaning emerges from out of the ruins of literal interpretation*[3].

We must recognize the power of imagination, not simply in deriving images from our sensory experience, but the capacity for letting new worlds shape an understanding of ourselves. It is the coming together of two meanings, that produces a new meaning, leading to creation-as-discovery. Through the recovery of the capacity of language to create and recreate, we discover reality itself in the process of being created. Semantic innovation is essentially an ontological invention - the poetic imagination liberates the reader into a free space of possibility, suspending the reference to the immediate world of perception and thereby disclosing new ways of being in the world. The primary concern is with the worlds which these projects open up, in front of and not behind the work.

Further, the hermeneutic imagination is not confined to circles of interpretation, leaving us floating in a world of un-signified signifiers. By projecting new worlds, it allows for action. The metaphors, symbols, or narratives produced by our imagination all provide us with imaginative variations of the world, offering us freedom through opaque poetic discourse to conceive of the world in other ways and to allow for its transformation. It is through participation within our collective histories that architecture may lead to recognition, through the other to ourselves.

It is through this narrative of imagination, involving all of the potential of Vico's *ingengo*, that we may begin to approach a synthesis of the heterogeneous. It is by recognising the capacity to re-describe reality by combining elements dispersed in time and space into some kind of coherent pattern that a narrative model of ethics begins to emerge. Though we can never know for sure the original intent of the Roman Theater, or Memmo's interpretation of the site, it is the narrative that enables us to imaginatively explore essential connections between our actions and their ends. This phronetic understanding is left open to explore, allowing us to draw our own conclusions through the traces left behind, allowing us to act. Therefore, understanding ourselves essentially as poetic beings, recognizing the possibility of *ingengo*, makes possible the realization of the semantic potential to create worlds, and allows for the imagination to be understood as necessarily ethical as it relates to another.

We must overcome the desire to frame the experience of architecture as a science as it leads to an architecture of formal imitation, either relating to an ideal (historic or geometric), or some form of bio-mechanic mimicry - the essence of which has no relation to truth. That

we, over two hundred years removed, are still dealing with the loss of participation becomes painfully clear as we look to our cities designed by statistics, and in-filled with nostalgic visions. Architects cannot continue to produce designs based on the trends of fashion, sociological pluralism, structural determinism, or reductionistic functionalism, with no accounting for the vagaries of lived experience.

Our task remains - to interpret the images of the *other* and to transfigure one's own image of the world in response to this interpretation. Within a world of floating signifiers and vanishing signifieds, here and now I face an *other* who demands an ethical response.

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[1] Paul Ricoeur, *From Text to Action*, (Illinois, 1991) p 168-188.
[2] See Richard Kearney, *Poetics of Imagining* (New York 1998) p96-119.
[3] See Paul Ricoeur, *From Text to Action*, (Illinois, 1991).

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