The Performative Nature of Function

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»To praise is easy when having ice cream; but architecture,
well that is a bit more difficult.« (Andrea Memmo)

Carlo Lodoli (1690-1761) exists as a footnote in most history books of modern architecture. He is typically noted for either his influence on the Venetian Neoclassical tradition or as an early prophet to modernist functionalism. Lodoli, as this essay will show, proposed an understanding of function that is more closely related to performance. Far from being the precursor to the modern dictum ›form follows function‹, Lodoli's position may still be seen as a productive and non-dialectical critique of the reductive relationship between form and use. A careful look back to Lodoli's critique offers a new perspective on the relationship between architecture and function today and, even, the role of performance in architecture.

The Nature of Function

As little of Lodoli's writing survives, we must look to his most faithful student, Andrea Memmo, who established Lodoli's theoretical position with the publication of two major texts. The first, the *Elementi dell'Architettura Lodoliana* (1786, 1833) discredits almost all architecture since the ancients, though also contains a general approach to making meaningful architecture.[1] The other text, the *Apologhi Immaginati* (1787) is a collection of architectural fables used by Lodoli in his lessons to young patricians.[2] Central to both texts is an understanding of »indole« or the inherent nature of something: in the *Elementi*, the discussion focuses on the nature of materials, in the *Apologhi*, the nature of students and that of architectural pedagogy.[3] Lodoli used the word indole within the section of the *Elementi* on solidity to describe the inherent properties and characteristics of both natural and artificial materials. In the second book of the outline he explained, »che la funzione della materia tutta atta a compor fabbriche, è quella moliplicata e modificata azione che risulta della stessa materia, qualor venga essa impiegata dimonstrativa-mente, secondo la propria indole ed il proposto fine, e fa sempre essere concordi tra esse solidità, l'analogia ed il comodo.«[4] Materials, when employed according to their nature are functional.

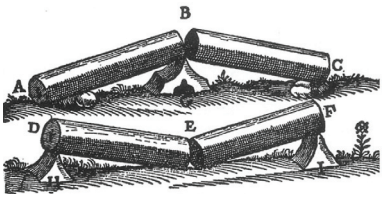
Memmo described a similar approach to materials from Galileo. He referenced a dialogue found on the second day of Galileo's *Two New Sciences*. This particular discussion followed an attempt to support a column that was lying on the ground. A support was placed directly in the middle of the column and, after a few months, the beam cracked exactly in the place where the support was placed (F1). Sagredo (the character of Galileo's student GiovanFrancesco

1 Memmo 1833. An earlier edition was published in 1786 and contained only one volume. The only difference between volume one in the first and second editions is a series of typographical errors (Memmo 1786)

2 Andrea Memmo, »Apologhi immaginati, e sol estemporaneamente in voce esposti agli amici suoi [...] l'eccellentissimo signor Andrea Memmo cavaliere della stola d'oro« (1787). For a complete translation of the apologues contained in the *Apologhi immaginati* and the *Elementi*, see Neveu 2006: 237–358

3 Although Lodoli's use of *indole* with respect to pedagogy may be unique, he was not the first architect to use the term. In a retelling of Aesop's fables, Centum Apologi (1437), Leon Battista Alberti referred to the nature of animals as *indole*. The original version of the *Apologi Centum* was written in Latin and composed over nine days in December 1437. An Italian version appeared in 1568 in an anthology by Cosimo Bartoli. See Massetani 1972, Martinelli 1977 and Marsh 2004

4 »that the function of the material used in the construction of buildings depends on the nature of the material itself. When used for decorative purposes, in the intended style, one must always take into consideration the concordance between sturdiness, beauty and usefulness« Memmo 1833/4: 60



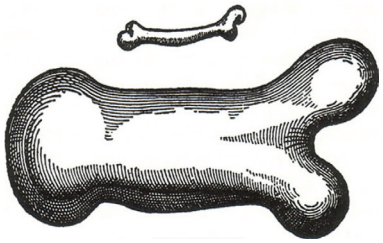
F1 Galileo's Osteological Explanations

Sagredo) pointed out that a similar accident would not have occurred in a smaller column made of the same stone if its length and thickness were the same ratio as that of the larger column. As explained in proposition VII:

> »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.«[5]

Salviati (one of the other characters in the dialogue, representative of Galileo's friend Filippo Salviati) illustrated this principle by sketching a bone three times the size of a normal bone (F2). He observed that the new bone was out of proportion and concluded that if one wished 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.«[6] He continued to explain that it is this same principle that allows a small animal, like a cat, to be able to fall from a much higher distance than a larger animal without risk of breaking a bone. For the larger bone to perform the same way as a smaller bone, the material must be different. Following Galileo's example, one could say that the *indole* of a cat's bones is appropriate to its situation and, as such, is able to perform well.

5 Galilei 1952 [1638]: 126



F2 Galileo's Osteological Explanations

6 Ibid.: 131

It was in this same spirit that Lodoli mocked the work of one of the more important architects of his day, Tommaso Temanza. In 1755 the clock tower in Piazza San Marco was renovated. Temanza added a column just to the inside of the existing openings at the ground level of the clock tower façade (F3). Lodoli considered the addition untruthful and superfluous and his reaction was to paint the following graffiti on either column: »Lustrissime siore colonne cosa feu qua? No lo savemo in verità.«[7] The two columns look to each other and, truthfully, do not know why they are there. A closer look indeed demonstrates Lodoli's quip against Temanza. Just above the capital of both columns, there is now a crack in the beam – identical, in fact, to the one described by Galileo in his Dialogs (F4). In this situation, the orders, though *correct*, are not truthful with respect to the materials of which they are constructed. Just as a large animal will break a bone if it attempts to jump from a high shelf like a cat, a stone beam supported incorrectly will crack.

7 »Illustrious columns, what are you noble ladies doing here? In truth, we do not know« Memmo 1786: 125

F3 Renovation of Clock tower in Piazza San Marco

The Function of Making

Lodoli's critique was aimed at much more than a cracked beam in San Marco. Indeed, he questioned the ubiquitous use of the Orders in architecture. Lodoli based his critique on the recent archeological discoveries of Pier Antonio Paoli who argued that the development of the orders follows a shift from wood to stone construction.[8] Paoli claimed that the shift from wood to stone aligns directly with the Greeks' development and use of the chisel in construction. Regardless of the historical accuracy of his claim, it is an important point. Paoli looked not to style, development of form, or ritual, but to the tools and methods of fabrication. Lodoli recognized this shift and did not fault the Greeks for using a more durable material; rather their mistake, according to Lodoli, was in using the same form for a completely different material. This mis-translation was proof to Lodoli that the Greeks were not able to reason well. He

8 Memmo referenced Paolo Antonio Paoli, *Antichità di Pozzuoli: Puteolanae Antiquates* (1768). Paoli was the president of the *Accademia Ecclesiastica* of Rome, from 1775-98. The connection back to Lodoli was probably through Maffei.

compared Greek architecture to a woman with three eyes and a man with two noses, in other words contrary to common sense and good reason. This lack of reason is exemplified in the development of the various elements of the orders: the modillions, triglyphs, and dentils. These components of the orders are examples of direct representations, for Lodoli, of wooden elements whose original role was to bear weight. Once translated into stone, however, the form and material make little sense relative to the newer (stone) construction system. A telling example of this particular flaw is at the Palazzo Barbaro in Maser by Palladio. Two systems of construction are demonstrated, one directly (wood), the other in translation (stone, F5). The stone forms imply rafters that are only truly present within the wooden construction of the enclosure. The ends of the dark wooden beams are chamfered thereby reducing their visibility under the roof. It is important to notice that the wooden diagonal beam, essential to the actual roof construction, is not indicated in the stone representation. Given this fundamental error in architecture, Lodoli urged us to remember that not all architecture was born in Greece. Paoli, again, is important in the argument. As well as offering both positive and negative aspects of Greek architecture, he described a much longer history to include the architecture of Asia, the Egyptians, the Phoenician, and, most importantly for Lodoli, the Etruscans.[9]

F4 Renovation of Clock tower in Piazza San Marco showing crack caused by a non-functional proposal

It is important to note that a particular discourse underlies this interest in a much broader history. The privileging of the *Oriental-Egyptian-Etruscan-Roman* historical line was seen as an important link to recover the cultural history of the Veneto, which was perceived to be in decline due to decadence. Scippione Maffei, Lodoli's influential teacher in Verona, was attempting to promote a cultural recovery through such reform.[10] One effect of such reform was a surging interest in Etruscan culture, seen as both a precedent to the Romans and means of privileging the Romans over the Greeks. This distinction was also made manifest in the emerging Franco-Italian debates exemplified by the literary debates between Giambattista Piranesi and P. J. Mariette. Piranesi, named as the *anti-Le Roy* by Memmo, was also attempting to recover the glorious past of Roman civilization through his reconstructions of Roman ruins depicted in the many etchings of the *Della magnificenza ed architettura de' Romani* (Rome, 1761).[11] One plate in particular referred to Le Roy's study of Greek monuments. Piranesi collaged a series of elements from the Greek monuments but made one very interesting addition; he placed the Roman bocca della verità within the Greek capitals. According to urban myth, anyone who put their hand into the stone mouth and told a lie would not be able to pull their hand back out. Piranesi seems to be tempting Le Roy to place his hand in the mouth of truth. The architecture of the Romans and Etruscans offered both Lodoli and Piranesi a more ›truthful‹ source. Memmo explained Lodoli's position:

F5 Corner condition at Palazzo Barbaro.

> »Il padre Lodoli ben lunghi dall'essere poi quale il signor conte lo fa supporre, nemico dichiarato d'ogni ornamento, non si immaginò al certo di escluderne alcuno, purchè non fosse messo contro convenienza; sulla quale Vitruvio sì ben ragiona, cioè si dovesse mai mettere in immagine od in termine più preciso del Lodoli, quello che non avrebbe potuto starsene in verità, o come l'alto diceva in funzione.«[12]

As stated here function was, for Lodoli, a synonym for truth. Memmo claimed that Lodoli derived this understanding of function-as-truth from a quote of Vitruvius: »Ita, quod non potest inte fieri, id non potuerunt (antiqui) imaginibus factum posse certam rationem habere.«[13] Lodoli translated the quote: »Quello che non può stare nel fatto in verità, non si rappresenti,« a version of

9 See Memmo 1833/4: 306 f. Memmo also referenced Antoine-Yves Goguet (1716-58), Thomas Dempster's *De Etruria Regalia* (1723), Anton Francesco Gori, Scipione Maffei, and Mario Guarnacci (1701-85). This last character was the secretary to Carlo Rezzonico and most likely the source of Piranesi's understanding of Roman Law, expressed in the *Carceri* etchings. For his praise of Paoli, see Ibid.: 296

10 Maffei attempted to effect a cultural recovery through a series of endeavors including one of the first public museums in Europe (the *Museo Lapidario*

which has become the dictum to which he is often associated: »Devonsi unire fabrica e ragione – e sia funzion[e] la rapresentazione«[14] (F6). This dictum was so essential to Lodoli that it is wrapped around his portrait in the frontispiece of both the *Elementi* and *Apologhi*.

This representation of the truthful component of the function of materials allowed Lodoli to make a critique of the orders and to question the essential meaning of architecture. Lodoli claimed that the orders did not represent the nature of stone because the orders were based on an architecture of wood falsely translated into an architecture of stone. Lodoli was not the first to propose a break with the authority of the orders. Frémin and Cordemoy, at least, had attempted a break as well. Cordemoy was less radical than Frémin – or maybe just less sudden – but his treatise was more influential. Though possibly similar in intention, Lodoli's critique differs greatly from his French counterparts. The critique is bi-fold. The orders are not functional because they do not demonstrate the nature of the materials of which they are made: if a beam is made of stone and supported correctly, it will not crack. Secondly, the orders are not functional because they do not truthfully represent the means of construction.

The Performance of Beauty

If knowledge is found through making, beauty is found through performance. Lodoli explained this in his story of *The Graceful Hunter* in which a young Knight meets an elegantly dressed grand Prince who is carrying a Spanish harquebus.[15] The Prince is invited to hunt with the Knight, who immediately recognizes that, although the Prince may have an amazing weapon, he is too uncoordinated to use it. Lodoli lamented:

> »Oh quanti Studiosi hanno una bell'apparenza, carichi la lor memoria di erudizioni, e pronti a formar subito calcoli matematici, e politici, che se gl'inviti ad agire nel commercio del Mondo, non sanno da qual parte in cominciare, e restan scornati, non di rado appunto colà ove mettono la maggior loro pretensione di comparire!«[16]

The analogy here is obvious: a big, overly ornate gun and the inability to hunt correspond to the overly erudite scholar, full of facts though unable to act. Lodoli described other examples of beauty understood through performance: a cannon, the gondola, and a musical instrument. The gondola is a noteworthy example as it is, according to Lodoli, perfectly suited to its performance in the lagoon. Gondole are one of the few boats that are not symmetrical. Anyone who sees them bobbing in the water can notice that they tilt to one side (F7). The craft are made this way so that a single person can row them successfully without having to shift the oar from side to side. If one were to push the gondola in the water from the back, less the gondoliere, it would arc to the right. Not only is it asymmetrical in plan, but in section as well. The back end of the gondola is elevated much higher out of the water. This section counteracts the weight of the gondoliere when he is perched at the back, rowing the craft. The asymmetry of the boat allows the rower to row from only one side, thus making the very large craft more easily maneuverable. In effect, the boat only *works* while it is being used. Indeed, it is the gondoliere who ultimately decides if the gondola is beautiful. Lodoli said:

Maffeiano, 1745), academic reform (*Parere intorno al sistema dell'Univ. di Padova*, 1715), theater reform (*Merope*, 1713), and a cultural history of Verona (*Verona Ilustrata*, 1731-32) to name just a few of his interests. For further discussion, see Silvestri 1968. The description of *Etruria* was based mostly in the fragments of Greek and Roman historians and focused on Tuscany. In the eighteenth century there was an interest to *discover* this ancient civilization in order to demonstrate a certain unity, and with this unity a sense of superiority over the rest of Europe. In 1726 the Etruscan Academy was founded in Cortona. See, for example, Thomas Dempster's *De Etruria Regali Libri Septum* (1723) and Scipionne Maffei's *Degl'Itali primitivi ragionamento in cui si procura d'investigare l'origine degli etruschi e de'latini* (1727), as well as Ludovico Antonio Muratori's *Dissertazioni sopra la Antichita Italiane* (1755). Each sought to establish an *Italian* history separate from Rome. Apostolo Zeno, a founder of the *Giornale de Letterati d'Italia*, was interested in publishing a collection of writers documenting an Italian history. Other writers who helped to establish a Roman historical context include Mario Guarnacci and Giuseppe Micale. Angelo Mazzoldi followed an Italian heritage all the way back through Etruria to claim that the roots of the Italian civilization were in fact Atlantis, located somewhere near Corsica. See Pasca 1969 for a more complete review.

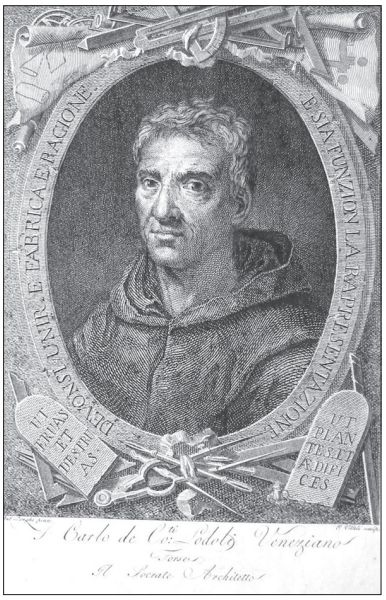
11 Piranesi 1756.
Memmo considered this book to be of particular interest in describing the inventions of the Romans and Greeks. Memmo also claimed that Piranesi personally gave a copy to Lodoli. Though it is often assumed Lodoli was Piranesi's tutor, this may be the only known real evidence of interaction between the two. Memmo 1833/4: 139

12 »Father Lodoli was not, as the Count [Algarotti] would have us believe, the declared enemy of ornamentation; he certainly did not imagine excluding it in situations where it did not interfere

»È bella questa nave, questa galera, questa barca, se il vero bello di queste fabbriche nautiche non poteva derivare se non quelle scientifiche proporzioni, delle quali chi giudicava non avesse idea. Che una donetta poteva ben dire è pregevole questo cembalo guardando al prezioso legno di cui fosse formato, alle belle intagliature, ai tasti coperti di madreperla, ed altri ornamenti non musicali; ma che il solo professore di musica decider poteva del suo merito intrinseco: così l'artigliere poteva decidere se un tal cannone fosse più o meno atto ad un colpo più lontano e più sicuro, non quegli che ammirasse i belli ornamenti, i quali vi avesse sopra sparsi il fonditore.«[17]

Further, Lodoli praised each part of the boat for being fabricated with a different type of wood. One interesting and important piece is the *fòrcola* – the wooden oar-post used in most Venetian boats. *Fòrcole*, the wooden or-posts found on the side of all Venetian boats, have existed as long as boats have moved throughout the lagoon (F8). Just as the form of the boats has evolved, however, so too have *fòrcole*. Over time, fòrcole have become thinner, the curves tighter, and better woods are used. Both the boats and the fòrcole, however, have evolved in direct relationship with the conditions of the lagoon and of the expectations of the rowers. There are as many fòrcole as there are rowers – though no two are the same, and variations have developed for each type of boat. Each is dependent upon, the type of boat, number of oarsmen, and rowing purpose. Variations include one rower at the back, one in front and one in back, and a team of rowers. Each can occur with one or two oars. The most common is the single rower at the stern with a single oar. Even more specifically, *fòrcole* relate to the height, weight, and technique of the rower. In a sense, each *fòrcola* must be *in tune* with the rower. The curves and facets accommodate all of the various rowing techniques, maneuvers and variations of rowers. As mentioned, the asymmetric form of the gondola keeps the boat straight. So too does the rowing technique. The rower pushes and keeps the oar in the water for guidance. The various curves and facets also allow for up to twelve rowing positions – including stopping, turning, reverse, passing another gondola, and moving at various speeds.

Remèri, the craftsmen who also fabricate oars, have historically also made *fòrcole*.[18] The material is always wood and the preferred wood is walnut – a wood used for its hardness, durability and tight grain. Before shaping, the wood is cut into meter long lengths and left to dry for at least three years. A general form is cut from the walnut log, lengthwise to take advantage of the grain, with a band saw. Four forms can typically be taken from each log. A template is then used to find the general form. Once the cut the general form is made, the wood sits for another year to dry. The rough cut is then worked with hand tools to include small axes, various curved blades and finishing tools. It is important to remember that the evolution and adaptation of form has emerged due to localized conditions and variations amongst rowers, not taste, style, or fashion. In a sense the *fòrcole* are very similar to musical instruments. Indeed, the form of a musical instrument is derived from the performance of the instrument as much as from the performance of the materials. The materials used should be chosen not only for ornament, but for their intrinsic quality, their indole. Memmo rhetorically asked:



F6 Frontispiece from the *Apologhi Immaginati* and *Elementi dell'Architettura Lodoliana*.

with convenience. This is a subject that Vitruvius discussed in detail, that is: one should never build artifacts if they serve no function, or in the more precise terms of Lodoli, things should only be built if they can exist truthfully« Memmo 1833/4: 38

13 Galiani 1758: 136. The full quote continues to discus proper meaning and true nature (indole): »Omnia enim certa proprietate et a veris naturæ deductis moribus traduxerunt, quorum explicaciones in disputationibus rationem possunt habere veritatis« Memmo 1833/4: 121

14 Lodoli's translation of Vitruvius is as follows, »What cannot be made truthfully, should not be represented« and the frontispiece, more tricky to translate, explains that »Building and reason must be combined, and the design will be functional« Ibid.: 13-16. Memmo also referenced Algarotti's contribution from the *Saggio Sopra l'Architettura* (1756): 10, »Niuna cosa, egli insiste, metter s dee in rappresentazione, che non sia anche veramente in funzione.« Other translations

»Nell'ottica (per esempio) se si volesse adoprare talco, certamente meno facile a rompersi del cristallo, costruirebbesi un buon telescopio? Gli occhiali resi che fossero con quello più durevoli, ingradirebbero egualmente gli oggetti, e servirebbero all'uso? Io credo di no. Se nell'acustica si facesse un istromento musicale di porfido, in luogo di uno di ottone o d'argento o di legno, creder mai si potrebbe che non rendesse il medesimo suono, benchè formato colla stessissima figura? Neppure.«[19]

Lodoli exemplified this understanding of beauty as performance in the construction of his own chair. Rather than building a chair in the manner of the Ancients or in a more popular style of the day, Lodoli formed the back of his chair to fit his shoulders. His buttocks formed the seat. Girolamo Grimani, a close friend of Lodoli, commented while showing the chair:

»Eccovi il vostro palazzo magnifico, dispendioso, ma non opportune all'uso vostro. I Sammicheli, i Palladii imitando gli antichi, come quelli che facevano questi grandi sedili senza consultar mai quel che la nuda ragione semplicemente esigeva, obbligarono tutti a star male. E non si potrebbe far delle case, come delle sedie ragionate? Intagliate pure, inverniciate, indurate quanto volete per servire al necessario vostro lusso; ma senza scordarvi del comodo, diceva, e della resistenza opportuna. Sedete sull'uno, sedete sull'altra, e proverete se sia più comodo il seguir l'autorità degli antichi o lasciarla per tener dietro alla ragione.«[20]

Lodoli observed that artisans who repaired and constructed things in wood approached making in this very way. He claimed that their work revealed a near perfect combination of solidity and apparent lightness, of commodity and ornament. This same understanding of the performance of architecture guided Lodoli in his only architectural project: renovations to the hospice of the *San Francesco della Vigna*. The Church plan was by Sansovino; Palladio worked on the façade (ca. 1564). The original quarters for the frati consisted of six rooms, all connected by a narrow and dark corridor. It was not planned well; the brothers were required to always keep the doors to their cells open in order to allow free passage through the building. Lodoli reduced the walls to half-height so as to allow sufficient light into each of the cells. He widened the corridor at shoulder height and angled the wall towards the base, making it narrower at the floor to allow two people to pass with their belongings. The renovation also had the advantage of stopping the rain from seeping in and soaking the floor. Memmo reported that many did not praise Lodoli's renovations and he himself even named them as ›irregularities‹. Nevertheless, he considered the renovations to be convenient (comodo).

The other part of Lodoli's renovation was to the window frames in the hallway leading to the living quarters (F9). Throughout Venice, Lodoli saw cracks repeatedly appearing in the centre of stone windowsills. Anyone who looks today will still see such cracks everywhere. Lodoli believed this was due to a lack of understanding of materials, as well as a lack of foresight with respect to the weathering of buildings. To remedy this condition, builders would either leave out a course of brick underneath the sill, or make the sill of multiple pieces. Both solutions, Lodoli observed, still held the strong possibility of failing under typical conditions. Lodoli believed that the downward force on either edge of the sills pushed the middle portion of the sill upward and thus caused the stone to crack in the middle. To resolve this, he re-made the hallway windowsills out of three pieces. The middle piece, wider in the center and narrowed towards

of the quote include Milizia's, *Memorie degli architetti antiche e moderni* »Quant è in rappresentazione deve essere in funzione« (Milizia 1784: 14)

15 Memmo 1787 / 1800: 20

F7 Gondole in the Venetian lagoon

F8 A recently completed *fòrcola* at Saverio Pastore's workshop in Canareggio

16 »Oh, how many seemingly worthy scholars – their memories laden with eruditions, ready at the drop of a hat to formulate mathematical and political calculations – who, when invited to act in the world of commerce, do not know where to begin! They are often humiliated in the very situations in which they make their biggest efforts to show off« Ibid.

17 »This ship, this galley, this boat is beautiful when the true beauty of these nautical constructions is derived from scientific proportions. However, those who make judgments often know

the outside edges, took the form of a catenary curve.[21] This middle piece is joined to the two sidepieces underneath the jambs with a mortise and tennon. Into the sill a hole is drilled that drained any water that may collect on the top of the sill before it seeps into the frame. In reference to the bones described by Galileo, Memmo named the solution of the window frame as a Lodolian osteology (*osteologia lodoliana*).[22] Lodoli understood the performance of stone in a specific situation and in a common-sense way. This understanding allowed the materials to perform well and remain unbroken over time. Following Lodoli's advice, Andrea Memmo designed very similar sills for his palazzo on the Grand Canal and for the Venetian Embassy in Constantinople. Lodoli referred to these variations as substitutions (sostituzioni).

From these examples, I propose that for Lodoli, true or essential beauty is not prescriptive, but rather situational. To understand how something could be appropriate to a situation, Lodoli again used the analogy of clothing.[23] He stated that there were two types of clothing in general – one of a man, and the other of a woman. However, this was only the base of truth. The clothing or costume should in addition be appropriate to the office and social station of the wearer. This is determined by the appropriate convention of social hierarchy relative to situation. Further, each of us wears a different costume during different seasons and for different events – dress for a summer party is different than that for work in the winter. There are infinite possibilities of how this may be understood, limited, however by appropriateness. Similarly, architecture can be made in various ways, though this making must be based upon the nature and truth of materials.

In support of this position, Lodoli told a story in which a hat-maker had ordered the latest hat in fashion in Paris for a wealthy client.[24] When the hat arrives, his wife falls in love with it that she begs her husband to make a copy of it to send to the client, who, at this point, is on holiday in the country. After a bit of discussion he agrees, sending his client the replica and giving his wife the original to wear. That night she is very well-received all over Venice and her hat is praised, as it rightly should be. The next morning, after hearing what an amazing reception his wife had received at the casini the previous night, the shopkeeper decides to wear the hat to the Rialto while he does his morning errands. Strangers snickered as he walked by; others could barely stop themselves from bursting with laughter while they spoke with him. Confused, he asked a friend why everyone was mocking him. His friend suggested that he might want to go home and give his wife her hat back. Still a bit confused, the hat-maker asked »But why, my wife received so many compliments last night.« The friend responded, »Sure, the hat is wonderful and lovely, but on your wife. On you, a serious man, making your business at the Rialto, it is terrible!« Memmo added that you might laugh at this story, but then asked:

> »Ah! ridete, signori architetti, usciva allora il padre Lodoli, ascoltando tale stravaganza; e non riderete mai nel vedere che il gocciolatoio si ponga nel di dentro dove non cade pioggia, ed il fregio co'suoi trgilifi che smentiscano il di fuori?«[25]

Lodoli often claimed that he was looking for new norms that would provide the essence of a meaningful architecture as this was not to be found within an architecture of the orders or in imitation of ancient architectue. Though Lodoli never explicitly defines what a *norm* may be, I believe it is very similar to his articulation of substitutions. Memmo claimed that Lodoli had made a book

F9 San Francesco della Vigna, Venice

nothing of the science employed in making an artifact. A lady may well judge the value of a harpsichord by observing the precious wood from which it is made, the beautiful engravings, the keys finished in mother of pearl, and other non-musical ornaments, but it is only the musician who can judge its intrinsic merits. In the same way the artillery-man could decide if a cannon was more or less suitable for accurately striking distant targets, not those who admired the beautiful ornaments scattered on its surface by the foundry« Memmo 1833/4: 80 f.

18 At present only a few *remèri* remain in Venice. Saverio Pastor is clearly recognized as the master.

19 »In the making of optical instruments, for example, if talc were used instead of glass (talc being less likely to break), would this make a good telescope? Would the lenses made of this more durable material magnify in the same way? I believe not. If, in acoustics, an instrument were made of porphyry instead of brass, silver or wood, would it produce the same sound even if made in exactly the same shape? Of course not« Ibid.: 22

20 »Here it is: your magnificent, lavish palazzo that is entirely unsuitable for its intended use. In the same way as those who made oversized chairs without

containing many such substitutions in response to various abuses and mistakes he had found within the city – think of the windowsills and doorframes. Though he never specifically defined *substitution*, Memmo carefully said that Lodoli »per purgar quanto più fosse possible quell'architettura, ch'ebbe corso nel colto mondo, onde render netto il suo terreno finora inselvatichito e spinoso, pensava di sostituirvi subito le nuove teorìe ec.«[26] Variety is important, however, what is new should not be based simply in novelty or variety. A substitution, I venture, may be defined as a truthful invention made not according to habit or blind imitation of precedent but rather found through the specific nature of materials, in accordance to an understanding of fabrication techniques, and revealed to be beautiful due to a situated performance. This, then, is functional.

Postscript

In a recent essay, the architectural critic and professor David Leatherbarrow argues for a shift in architectural practice and theory, *from what the building is to what it does*.[27] His call echoes a transformation in architectural practice. Both in the Europe and North America, there is an ongoing shift in building codes in favor of a more sustainably focused set of guidelines that are dependent upon objective performance criteria. Under the banner of innovation, architects as diverse as Guy Nordensen, SHoP, and Frank Gehry have proposed practices that are making such performative criteria measurable, even in post-occupancy. Still, one must judge between one *performance* and another. Further, the reduction of performance to quantifiable data seems to miss an opportunity for architecture to be more than information. How does one quantify the *performance* of a symphonic work, for example?

The examples of the chair, the fòrcola, and windowsills are not architecture. None are spatial and each exists as one component within a larger system. That said, I do think the comparison to architecture is a fruitful one. As architects, we search for criteria by which to distinguish why one form is better than another does. This may be decided in various ways: cost, efficiency, performance, use, aesthetics, taste, whimsy, intuition, influence, reference, etc. Architects, more recently, have found formal inspiration from various fields including: biology, botany, philosophy, rendering and representational techniques, computational processes, and even pasta. Certainly, recent developments in representation and fabrication techniques allow for a wide variety of form and if we look around, it seems that variety, innovation, and novelty is praised. Such innovation is aided by modeling techniques that can produce an array of iterations very quickly and with (seemingly) little effort. Within this forced evolution, however, one still must decide which $60,000 coffee set to fabricate (and purchase?!) or which multi-million dollar development tower should be built.[28] In essence, which variation amongst the many is best?

Lodoli's critique of the orders, and the example given of the fòrcole, offers criteria; that the nature of materials and an understanding of fabrication relate directly to form. A building is simply different when made out of wood, concrete or pasta. Such decisions should not simply be a change in surface rendering. A nod to the nature of materials, or knowledge of fabrication and rendering techniques, however, is not enough. Judgment is still required. One such criterion for meaningful architecture is found through situation. This is based in performance and not on imitation. Though, fashionable, it is pointless

applying straightforward reasoning, the Sammicheles and the Palladios, by imitating classical architects, force discomfort on everyone. Cannot houses be made in the same way, like the chairs made with common sense? You may carve the wood and apply as much paint and gold leaf as you like to satisfy your need for luxury but, he said, without neglecting comfort and sturdiness. Try sitting on one and then on the other, and you will see if it is more comfortable to follow the authority of the ancients or to follow reason« Memmo 1786: 85 (emphasis added). This principle also relates to Piranesi's statement, L'uso fa legge. See Piranesi 2002 [1765]: 102

21 Memmo does not reference Giovanni Poleni here specifically, though he does describe the curve of the sill as a catenary – the same curve proposed by Poleni to cure the ailing dome at St. Peter's in Rome.

22 Memmo 1833/4: 160

23 That said, architecture is not simply clothing. »L'architettura non è simile ad una moda, ad una donna, ad una stoffa, o ad un manicaretto.« Id. 1786: 362

24 Id. 1833/4: 97-100

25 »Ah! Laugh, you esteemed architects, exclaimed father Lodoli, listening to such extravagant things; and never laugh when you see the gutter placed too far in where rain does not fall, and the frieze with its triglyphs that conceal what lies behind them« Ibid.: 100

26 He decided to clear the overgrown and thorny terrain of architectural theories developed in the cultured world, and to replace it with new thoughts and ideas. Ibid.: 235. This comes in a defense of Lodoli against attacks by Pietro Zaguri.

27 Leatherbarrow 2009: 43

28 Here, I refer to the Greg Lynn's *TCTLYNN* coffee set for Alessi and Gehry's recent tower in lower Manhattan.

to mimic the form of *fòrcole* in a tower, as others have replicated flowers, seashells, or even biological forms. Though the forms may seem *natural*, *organic*, or even just funky, each fòrcola responds to a specific set of situations within the performance of a boat. If we follow this example, function certainly relates to form, but is situated and revealed in performance.

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Figures

F1
Galilei, Galileo 1952: Dialogues Concerning Two New Sciences [1638]. Translated by: Crew, Henry / de Salvio, Alfonso (Ed.) New York., 135

F2
Ibid.: 131.

F3
Photo by author.

F4
Photo by author.

F5
Photo by author.

F6
Memmo, Andrea 1787 / 1800: Apologhi immaginati, e sol estemporaneamente... Lodoliana. Bassano (1787) / Paris (1800).

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F7 – F9
Photo by author.

Marc J. Neveu

Marc J. Neveu graduated with a professional degree in architecture in 1995 and began working at Kallmann, McKinnell, & Wood Architects in Boston. After three years there he traveled to Montreal where he completed a post-professional M.Arch in the History and Theory program at McGill University. Following a few years of professional work back in Boston, Neveu returned to Montreal to pursue studies toward a Ph.D. His dissertation, entitled *Architectural Lessons of Carlo Lodoli (1690-1764)*, was named to the Dean's Honor List in 2006. It focuses on the origins of architectural education in the Veneto during the eighteenth century. The dissertation discusses Carlo Lodoli's bi-fold understanding of *indole* (inherent nature)—with respect to meaning of materials and architectural education—and includes the first ever translation of Lodoli's fables,

Apologhi Immaginati (1787), into English. While working on his dissertation Marc was awarded a Fulbright Fellowship for study in Venice and a Collection Research Grant at the Canadian Centre for Architecture.

Neveu has taught at the University of Manitoba in Winnipeg, as a Visiting Faculty member at SCI-Arc in Los Angeles and at Cal Poly in San Luis Obispo. In autumn 2011 he began work at Wentworth Institute of Technology in Boston, MA where he teaches history/theory courses and studio. He has lectured and published on issues concerning architectural pedagogy, both within historical and contemporary contexts. A book-length study of the eighteenth century apologist and architectural pedagogue, Carlo Lodoli, is his current project.