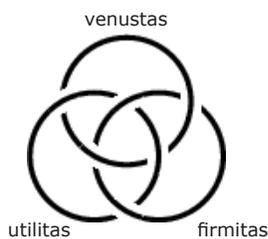
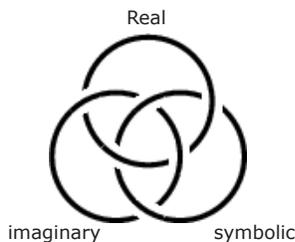


# The Vitruvian Virtues of Architecture: *Utilitas, Firmitas, Venustas*

No more famous slogan has been invented for the essential components of architectural values than Vitruvius's famous three of *utilitas* (function? commodity? utility?), *firmitas* (solidity? materiality?), and *venustas* (beauty? delight? desire?). Despite the famous attempts to fix the meaning of the three terms, it is evident that their location within the Vitruvian 'triad' has cast a spell over any etymological analysis. Clearly, what Vitruvius intended was a 'unity in the face of difference', or, alternatively, a resistant diversity in the face of imposed unity. Although this Janusian goal resembles Jacques Lacan's equally problematic proposal for the 'unity-in-diversity' of the imaginary, the symbolic, and the Real as components of human subjectivity (or 'mind', or 'life' ...), no one has undertaken a comparison of Vitruvius's triad to Lacan's. Yet, there are some compelling reasons why this comparison should be made. First, Lacan compared the relationships of the imaginary, symbolic, and Real to the Borromeo knot, a triad of overlapping rings where the connection of any two is made by the presence of a third. Remove or cut one of the rings, and the other two fall apart. The role of the 'third thing' to guarantee the unity of two others, which are not commensurable on their own, suggests that the typical paradoxes that plague Vitruvius's translators (materiality v. imagination? form v. substance?) could benefit from this 'topological' approach. Three considerations are needed to set up this comparison: (1) How architects make *specifications* — the fact that architects are restricted to a 'symbolic' level of communication with those who actually construct buildings is very important; (2) How architects conceive of and articulate the outcomes and accomplishments of their designs — and the dependence of these conceptions on collectively maintained fantasies about how buildings work and are used; and (3) How unsymbolizable values, such as beauty, are somehow incorporated 'anyway' in the process of symbolic specification and fantasized results. This last issue must be parsed into two parts, a set of problems related to the 'extrinsic' realities of architecture (ecology, building technologies, etc.) and 'intrinsic' gaps or inconsistencies that constitute the kernels of values that resist paraphrase, caption, or explanation.



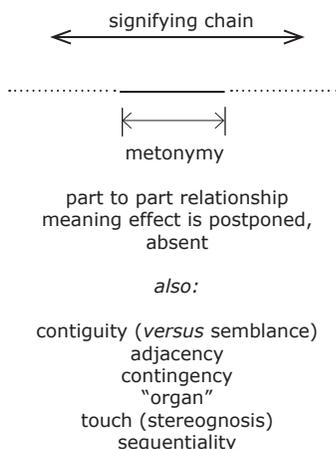
Three motives may be imputed to Vitruvius in his articulation of the three 'classic' architectural values of *firmitas*, *utilitas*, and *venustas*. The first is the idea that architectural accomplishment constitutes a kind of *completion*, a unity brought to component parts that, on their own, are highly differential. Secondly, by inclusion of *venustas*, Vitruvius considers that not only the objects of architecture are important but also their 'audiences', and that esthetics can be considered apart from use and even solidity, even when the occupants of a building are busy enjoying its conveniences. The third Vitruvian aspiration seems to be indicated simply by the highly differential nature of the three components: that 'architecture', whatever it might be, is a unity that is not allowed to transcend difference but must find a certain *topological congruence* that cannot be 'flattened out' on to a map or representation (i.e. considered from some extrinsic point of view outside of architecture).

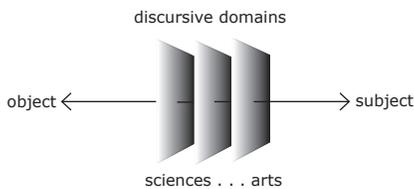
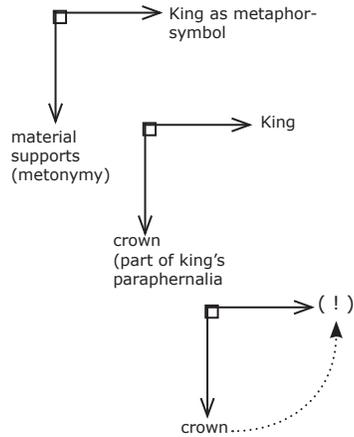
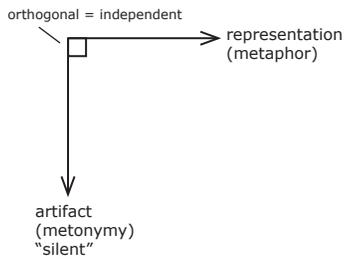
The topological form of the Vitruvian triad can be compared to the Borromeo knot (and, hence, to Lacan's use of this form) in that the relation of any two elements is dependent on the relation to an (absent) third. In the design of the Borromeo rings, the relations of any two elements can be described as 'metonymical' — a condition of contiguity, of touching, of contingency. In language, metonymy has to do with the meaning effect generated by a partial string of signifiers, where the signified (referent) as such is *postponed or absent*. For example, the crown, one element of the king's symbolic paraphernalia, 'stands for' the king. Detached from the king (absence of the referent, the signified), it still has a certain uncanny power, as if to say that the order of cause and effect has been reversed: 'whoever wears the crown is the king'.

Metonymy in architecture has to do with how boundaries are drawn to make parts that have this representative magic. In this sense, every project is but a fragment of other possible projects, and the house implies the city: the 'meaning effect' of the utopian microcosm. Because every built project is a 'partial object' — a fragment in comparison to a larger whole that it specifies by asserting itself as an example of 'how things should be done' — the boundary is significant because it relates to the 'reality out there', what is in popular terms 'the solid world of facts'. But, there are also 'inside frames' that refer to a kernel of the Real that, in every architectural project, works as the gambler's 'tell', or truth-revealing detail. This can be an internal unintended inconsistency, a hidden flaw; or, as in the work of Carlo Scarpa, it can be a detail that reveals the entire idea of the building. In ancient building practices, this kernel would be addressed by sacrificing a victim and burying it with ritual that secured its place as the guarantee of the building's solidity and security.

TWO kinds of partiality, TWO kinds of boundaries, and TWO kinds of 'Reals', one lying outside and the other lying inside, as a kernel of truth, constitute architecture's ability to specify meaning effects while limited to the literal specifications of *firmitas*, the 'contract drawings' that tell the contractor how to put up the building. How does this happen?

Metonymy prepares the way for metaphor — an image of unity that turns the boundary of a project into an arbitrary frame that could be moved in any direction and still be a frame of a consistent world lying beyond the literal limits of the project. Metaphor is required to conceive of the unity of the triad of Vitruvian virtues, but it must





be sustained by a fantasy that covers the 'partiality' of the metonymical project, the outside Real and the inside Real. How does metaphor work?

A diagram of metaphor and metonymy, as vectors connected by an orthogonal angle, describes how metonymy works silently within metaphoric representation, which is the 'received meaning' attributed to an architectural work. The necessarily fragmentary nature of any literal communication gives rise to a 'meaning effect', where the fragment is taken to be sufficiently representative. The set of contract drawings does not specify every aspect of even the materiality of a building, but it is taken, by mutual agreement, to be sufficiently representative — enough to get the building constructed. *Any two* of the Vitruvian elements could be considered as combinations of metonymy and metaphor. If *utilitas* is the basis for the hoped-for (meaningful) outcome of *firmitas*, we have the essential structure of the sacrifice of foundation rites. *Utilitas* becomes the fetish value<sup>1</sup> of a victim, buried beneath the foundation stone. Quite literally, utility supports the concrete integrity of the building by being 'silenced' in the ritual of sacrifice.

Alternatively, *firmitas* could be seen as the 'silent operator', determined by relationships of contiguity, that affords the building's 'symbolic' usefulness. The orthogonal angle guarantees independence of *utilitas* and *firmitas* as different orders of decision-making. Given that a certain function is desired, there are many material procedures that might accomplish that end. Conversely, wood can be used to construct a house, a temple, a fort. Orthogonality/independence corresponds to the relation of two rings in the Borromeo knot: one lies on top of the other without intersecting. Their bond is determined by a 'third ring' — in this case *venustas*. Why make a temple out of wood instead of stone? The choice becomes one of esthetics (or a deeper value hidden in the term *venustas*).

Just as the crown, separated from the king, is able to take on a certain 'demonic' power through its status as a 'partial object' (where the *absence* of the king is a constitutive factor in the power), the role of the third thing as the 'absent element' can be attached to some object that, in turn, takes on a numinous quality: a *mysterium tremendum et fascinans* ('fearful and fascinating mystery') as Rudolf Otto in his book, *The Idea of the Holy*, might say. Absence can be manifested in many ways: inaccessibility, invisibility (or blindness), incommensurability, paradox, contradiction, the uncanny. Where, in the relationship between any two of the Vitruvian elements, a third is 'made absent', that third becomes the 'name' and in many ways the determinant of the orthogonal relationship, something that guarantees the 'two qualities' of their 'hinged' relationship: independence and bonding. And, because one of the elements of the hinged pair is a 'silent operator', this silence is translated into a boundary condition specified by this third, missing, element.

**Making Specifications.** How does architecture differ from other fields? Apart from the obvious focus of its concern on the conditions of the built environment, the key lies in how architects make their intentions specific. Amidst the variety of types of communications involved with architecture, the central feature of architecture as a practice is the set of drawings used to instruct the contractor how to bring the building into being. They do not convey 'ideas' but, rather, metonymical procedures, written in the imperative voice.

Other fields are not so different. Scientists specify theories by describing experimental data. Literary critics do the same with the evidence of creative writing. Artists also specify; their creations require perhaps the most material of realities used by any field: a here-and-now that constitutes an objective event directed towards a 'subjective' reception. The differences among fields seems to be in how and to what degree the terms of specification value and depict the objective or the subjective, the 'Real' of externalities or the 'Real' of subjective being. These two poles, operating in tension, mean that, for example, no matter how alien the interaction of subatomic particles to the subject as such, physicists must still use rhetoric (i.e. subjective considerations of the audience) to convince their colleagues of the truth of their theories. And, no matter how impulsive or personal an artist's expression, the art object or event must dwell exclusively in a material form.

On one hand, this suggests that the architectural triad of *firmitas*, *utilitas*, and *venustas* is not unique to architecture; that its terms are made to express the compromise between the external Real and the internal, subjective Real. On the other hand, this suggests that architecture itself is bound to consider how the more universal conditions of the 'Borromeo' topology constitute the template against which the three terms of its operation must be understood.

**The Symbolic, the Imaginary, and the Real.** In an important sense, Lacan's specification of the three 'elements' of the psyche (or subject, or mind ...) is fundamental. Why? This has to do with the relation of any form of specification, in any field, to the way signifiers are arranged, and how signifiers are used to specify things that resist signification. Clearly, Vitruvius was aware of this 'problem' in his choice of elements, one which could be specified clearly (*firmitas*), one which was the subject of the collective fantasies about what buildings are *for* (*utilitas*), and the completely unsymbolizable value of beauty, *venustas*. The symbolic, imaginary, and Real are about the powers and limits of signification, not about the three elements as categories to be 'explained' in alternative vocabularies.

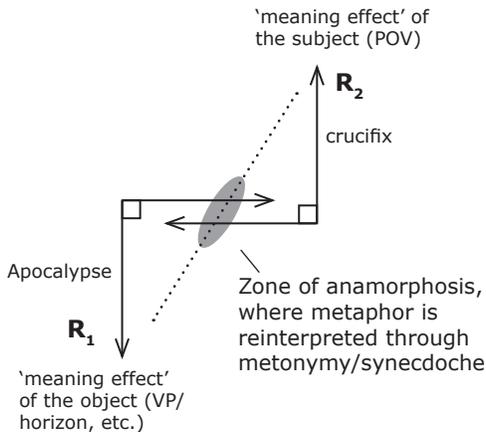
<sup>1</sup> A fetish involves the communal acceptance of something 'known to be false' or, at least, imaginary. It contrasts an 'actual' reality with a stronger, imaginary Real.



Taking the issue of signification seriously is not so difficult; in fact, it is a part of architecture's historical means of dealing with such things as the image, the dream, magic, desire, and decorum. I cannot cover even a fraction of these here. Instead, I will put forward some shorthand 'relationships' that can be recognized in the historical examples already familiar to the reader. The first is that of *anamorphosis*: an 'image-within-an-image' that, typically, must be viewed from a specific spot to correct the geometrical distortion that, viewed face-on, appears only as a blur. The most famous case in painting is, perhaps, Hans Holbein's painting, *The Ambassadors*, a straightforward portrait of two gentlemen beneath whose feet an elongated blur reveals itself from the right angle to be a *memento mori* skull. Anamorphosis is more general than the case of the geometrical distortion. It can be present in figure-ground relationships, puns, and other elements concealed within salient material.

Anamorphosis is one prototypical means of placing, within the 'orthogonal' relationship between a voiced and a silent element, a third, 'absent', thing. Why anamorphosis? If the silent element is the fragmentary metonymy that creates a basis for the imagistic or symbolic 'meaning effect', then anamorphosis is the condition by which metonymy's necessarily missing parts return to the field of meaning as a kind of 'epiphany' (cf. James Joyce). The technical term for this return is 'synecdoche', the form of metonymy where the part asserts the role of the whole. Isn't this the case with Holbein's skull? The ambassadors are represented by material paint, applied with such skill that we suppress our knowledge that the painting is 'really' oil and pigment on wood and say that it 'is' a representation of two men. A function of this paint is the 'blur' that appears to violate the rules of perspective and representational clarity. Yet, by finding the subjective correlate (the point of view) to this 'objective' smudge reveals a meaning that transcends the required division of object and subject. In fact, in this particular case, Holbein went to extensive pains to involve this anamorphic image in a geometry that connects the skull to a crucifix nearly hidden by the green curtain. Together, elements sketch out an isosceles triangle whose vertex matches the angle of the sun ( $27^\circ$ ) at 4 p.m. over London on Good Friday, 1533, the precise date and time calculated to be the Apocalypse ( $3 \times 500 + 33$ , Christ's age at the time of crucifixion).

The 'Real' of the apocalypse is, therefore, the 'anamorphic' and synecdochic 'return' that erupts within the context of carefully segregated means and end of representation. It is the 'venustas' that binds together the utilitas (representation) and firmitas (painterly technique and material basis) of the painting. The fact that anamorphosis shows how the Real can operate 'in the plane' of the material specification suggests a complex of relationships that expands the original orthogonal angle model.



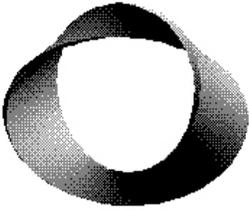
**Idiotic Symmetry.** With three elements in the Borromeo topology, it's necessary to show how two of them can be related in a way that 'circles around'. In every case, there will be 'two related things' connected by an 'absent' third. On the smallest scale, we could show a 'hinge' of two orthogonal (independent but connected) vectors and give, as a 'name' of this hinge, the missing element. This is an abstract approach, however. Each successive relationship of the 'next two' elements would have to be re-labelled, with three such conditions described by its own diagram.

There is a basis for going beyond this segmented approach, based on the idea that there are two 'versions' of the Real — an 'external' Real ( $R_1$ ) corresponding to the popular culture idea of 'reality out there', and an 'internal' Real ( $R_2$ ) that is a gap in 'ordinary reality' that corresponds to paradox, self-reference, and other inconsistencies 'native' to subjectivity itself. This  $R_2$  is akin to the statement of the Cretan Liar who says 'All Cretans are liars', leading us to the 'circular' consideration that, if he is telling the truth, he is not telling the truth; or, if he is lying, then he is truthful.

These two kinds of Real point constitute two kinds of boundary conditions.  $R_1$  has to do with the idea of an external limit,  $R_2$  with an internal limit. The former is commonly encountered in the idea of the horizon, an outer bound that, like a vanishing point, moves as we move. Just like the pot of gold at the end of the rainbow, we cannot reach it. As soon as we think we do, it vanishes and/or relocates. This does not mean that we cannot fantasize about reaching such a boundary. Like Dorothy in *The Wizard of Oz*, we can have a concussion and imagine a benevolent cyclone that transports us to this 'impossible' Real as a domain of magical beings.

Is there a relation between  $R_1$  and  $R_2$ ? A stronger form of this question would be, 'Is there a symmetry?' This would in effect be a form of 'suture', the

'impossible' identity between the center and periphery expressed in Pascal's metaphor of God as a being whose 'center is everywhere and center nowhere'. Mythographers would note that such was the idea implicit in the hearths/altars of shamanistic cultures who identified the central fire with the four 'quarters' of the sensible universe, and sought evidence of gods intentions by dissecting organs of sacrificed animals. The relation of temples (*tem* = 'to divide') to the quartered sky has been widely documented.



In topology, as well as in the closed curved Einsteinian universe, there is no center or edge, which is to say that any point works *simultaneously* as a center and edge. With the Möbius band, there is no twist except when the band itself is cast within a projective space, an artificial externality that the Möbius band, as a topology, does not have. The 'twist' is the logical impasse between evidence that there are two sides to the strip and evidence that there is only one side. This twist occurs anywhere and everywhere; it is intrinsic to the topology of the Möbius band.

With these considerations as justification, the two 'Reals' — extrinsic and intrinsic — can be adopted as the basis for their symmetrical relationship. What, then, might be the 'twist' that makes this a 'non-intuitive' (intransitive) relationship? By coupling two orthogonal vector pairs, we can state both the 'objective' and 'subjective' interests of specification — the poles that define discourse by the specifications that come to terms with the competing interests of the subject and 'objective' material conditions. With objective interests situated with the 'external Real', or  $R_1$ , subjective interests, such as point-of-view, reception, meaning effects, etc., can be situated with the 'internal' or intrinsic Real,  $R_2$ . To make the vector pairs symmetrical, one must mirror the other vertically as well as horizontally. This fortuitously approximates a Möbius band if the extremities of each are connected with a line running 'across' and 'through' (both descriptions must be in some sense accurate) the intersection of the vector pairs.

What is the intersection? If the 'specifications' of the various forms of discourse are counted as 'enunciations' or 'representations', then the model of Holbein's anamorphic-haunted portrait can be used. The crossing/intersection of the image (imaginary) by the Real is, in Holbein's and other cases, the anamorphic blur implicating the connection of the (metonymical) interests of the subject and the object. In the former case we have the 'impossible' re-location of the subject, identified with a 'kernel' of the self, so to speak (a demonic element, a 'spirit'). In the latter we have the 'inaccessible' horizon that can be reached only at the expense of an 'apocalypse' of meaning, where we imagine reality as a two dimensional image through which we escape *via* a hole or tear, as in Giotto's painting of an angel rolling up the 'painting' of human history, or the exit door in the final scene of *The Truman Show*, allowing Truman to escape the artificial ecosphere constructed to dupe him.

The symmetrically arranged vector pairs, the termini  $R_1$  and  $R_2$  locations and their criss-cross anamorphic line, the plane of representation/specification where metonymy reasserts itself as synecdoche, are means of elaborating the Borromeo knot while preserving its logic of the 'absent third' within a persistent symmetry. Within this matrix of graphic elements, the metaphoric logic of any set of elements aspiring to (1) completeness, (2) complexity, and (3) predictability, or rule-based behavior — i.e. 'system' — leads to some diagram including the symmetry of parts qualified by an 'illicit' element that quilts together the otherwise 'flat' elements so that a topology rather than a flat-space graphic is the real result.

Any diagram is speculative, temporary, and only partially successful. The point is not accurate, authoritative representation as such but, rather, the construction of a temporary bridge across which speculation may smuggle such illegal goods as insights connecting otherwise hostile forms of discourse, Rosetta stones capable of resolving conflicting terms and vocabularies, and keys unlocking ideological impasses. The Vitruvian goals of completion (naming everything that's important to name), inclusion of the audience as well as the objects of architecture, and a resistance to collapsing the complexity of architecture as a 'space of enunciation', however much this space may itself resist characterization, have been met if such a diagram can, even briefly, allow such contraband.

Or, perhaps it is like the joke about the factory worker whose wheelbarrow of straw was searched every day by security guards who found nothing, who later confessed to a retired guard after he himself had settled into a comfortable old age, that after all it was wheelbarrows he was smuggling. To use another analogy, if our desire to make our procedures and assumptions transparent is like arithmetic, our self-reasoning in practice is like geometry and algebra, and our unanticipated discoveries like calculus, our ability to extend beyond the discourse specific to our terms and practices depends on topology, which, like Coleridge's 'willing suspension of disbelief', allows us a form of knowledge-without-knowing, a practice that tells us what we have 'found' without looking.