

LARS SPUYBROEK



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of

ORNAMENT

ORNAMENT has become the outcast of art and architecture, and only tolerated as an early form of Pop, of making surfaces “communicate” a “language” of desire or value. In the following essay, Lars Spuybroek rejects this mode of thinking and argues that ornament is in fact a designed reformatting of an inherent expression of matter, generally known as patterning. Following this line of thought, he encounters a specific ambiguity: ornament is a form of making, but necessarily also an abstract form of making, which is the reason he reintroduces Semper in such a pivotal position in the essay. But, as Spuybroek argues, simply to continue following Semper would lead to historicism, and we would do better to amend his concepts via Ruskin’s expressionism: acts of making occur specifically in the transfer from abstract to concrete (here illustrated by a Gothic iron hinge) rather than simply from drawn to made. The essay is a shortened version of a chapter in the book Spuybroek is currently writing a book on John Ruskin and the ecology of design, which attempts to place Ruskin back at the center of contemporary aesthetics. 🍌

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**I**T is a hundred years ago now that Adolf Loos wrote *Ornament und Verbrechen*, connecting the use of decoration to criminality via the practice of tattooing, and decoration to the implied moral degradation of the pure by something impure: the application of a mask preventing modern man from seeing the object for what it is. We stopped believing this decades ago, but our disbelief never went beyond either postmodern irony or the traditionalist application of historical ornament. But both the turning upside-down of rules and the blind application of rules are still only forms of language and meaning rather than fundamental reinvestigations of ornament. My argument here will be that if we are to start such a reinvestigation, or in fact to consider a return to ornament, we will necessarily need to consider the impure, heterogenous state of matter, since ornament is profoundly related to matter and the way it structures itself while undergoing forces, be they natural or technological. Ornament and its close relative, texture, share the traces of being-made, or of being in-the-making.

**O**UR first task is to resist thinking of ornament as something applied to a plain surface, i.e., to resist the thought of an underlying, truthful nakedness, and to see both form and ornament as interdependent. After doing so, we will find matter is constantly active and in formation, taking on form and textural pattern simultaneously. When we follow this notion of pattern in the realm of ornament, we will encounter two main expressions, one based on tessellation or tiling and the other on ribbons interlacing. We will see that these are the two fundamental forms of ornament. In the realm of materiality, both play an opposite role in the expression of dimensions, though both tend to be *transdimensional* patterns, i.e., patterns that emerge in the crossing over from one dimension to the other – tessellation in the transition from surface to line, and ribboning in the transition from line to surface. 



WE start our journey by consulting John Ruskin, especially by reading *The Stones of Venice*. We turn our attention to a peculiar chapter in the first volume of three, entitled “The Wall Veil,” which is a bold piece of reasoning and rhetorics. As we follow Ruskin’s descriptions of the architectural elements in that first volume, *Foundations*, filled with all the so-called members, such as base, cornice and shaft, we find the one on the wall starting not with stones, stucco or symmetries, as one would expect, but with a three-page elaboration of a mountain, the “Mt. Cervin.” It is one of the highest mountains of Europe; we know it nowadays as the Matterhorn, located exactly on the border between Switzerland and Italy and having a slope facing each country. The narrative is breathtaking. Ernst Gombrich called Ruskin “a proto-expressionist,” and that is exactly what he is, somebody who perceives form as an expression of force, as a material index of forces gathering and converging onto a shape. 🌿 A mountain has “faces,” like a building; it orients itself in an environment. But it is simultaneously something that has been directed, vectorized, a cluster of many vectors making up the mountain as an architectural object:

“It has been falsely represented as a peak or a tower. It is a vast ridged promontory, connected at its western root with the Dent d’Erin, and lifting itself like a rearing horse with its face to the east.” And, a bit further on: “The eastern face of the promontory is hewn down, as if by a single sweep of a sword, from the crest of it to the base.”



IN short, the mountain is a mass sculpted by enormous forces, not an undifferentiated mass but one that is layered with courses of stone laid “in their successive order,” “of a thickness and strength continuously varying,” “laid by snowy winds and carved by the sunshine –

stainless ornaments of the eternal temple.” And, Ruskin adds with more surprise, the mountain “should be to us an example of the utmost possible stability of precipitousness attained with materials of imperfect and variable character.” Slowly, he combines the savage, picturesque mass of the Matterhorn with a structuring and layering of that mass that is as least as savage and imperfect, and proceeds, after the introduction of a geological aesthetics, to nail the final architectural argument in the critical coffin: “I believe we may conclude with great certainty that it is better and easier to strengthen a wall necessarily of imperfect substance.” And: “The decorative reasons for adopting the coursed arrangement, which we shall notice hereafter, are so weighty, that they would alone be almost sufficient to enforce it: and the constructive ones will apply universally.” 

 think what we read here is the first, and probably the only, theory that successfully relates massing to texture through interdependence. And it works from the inside out, so that it is a showcase of expressionism: while the mountain is being formed, it expresses its courses at the surface in a way that communicates the same set of forces. The form of the Matterhorn cannot be understood without the geological layering of the sediments that channel and guide the forces. The forces operate in two ways: from the inside out – constitutively – and from the outside in – erosively. However, the mountain’s texture – the “wall veil” – is surely not simply draped but encrusted, not like a nakedness that turns opaque at the surface like condensation: rather, it is a covering with its own material, a self-draping, a self-ornation. 

 We encounter a new theory of ornamentation here, which is simultaneously a theory of construction, “a third way” of treating architectural surfaces. Let us, for a moment, consider the other two, much more well-known: one is the un-draped skin that exposes the naked structure to the world, waving the

modernist flag of transparency, either literal or phenomenal. The second option is a theory of drapery, of draping as a separate act afterwards, which in fact keeps the structure naked underneath the cloth, without any transformation; it is simply a (postmodern) mask. Mask and skeleton, having persistently defined the flimsy metaphysics of architecture's history, are merely two sides of the same coin. Ruskin's is a third way that is different, coming from the inside like the first option but dressed like the second. In short, this is more a veil than a cloth: structure is pushed outward, but as it is exposed it transforms, like a crust on molten lava, or the canopy of a tree, or the texture of a mountain. It has a depth, though not one of space but more one of surface, which is exactly the definition of texture. 🍃



WE could, as so many have done before us, claim that Ruskin's geological notion of ornamentation is "naturalist," but the reverse observation is as valid or more so, and it is surely more surprising: art occurs everywhere, not so much

as something designed but as a working collaboration of accident and structure, that is, an undivided aesthetics of pattern and texture. This is an art of the world, or what Ruskin, in another context, calls the "earth-veil." What does not have texture? Texture always occurs at a point where surfaces start to show linearities, even actual lines, show themselves to be made up of lines – in a word, woven (texture stems from *texere*, weaving), or in another word, worn, and in yet another word, wrinkled. Thus, they are not necessarily made of fabric but occupy a zone of transition: are we seeing a bunch of lines or a surface? Our education has been thoroughly unambiguous and Euclidean: lines exist as contours and edges, delineating things as objects, enveloping them in universal three-dimensional space, releasing them from their backgrounds – but this idea cannot be maintained. Ruskin shows time after time in *Modern Painters* that there are only gradations and variations. That is, there are gradations not only of hue and brightness but of dimen-

sions themselves. Texture occurs when enough lines produce a surface, as when fibers nest and tangle, or when surfaces start to produce lines, like sharp waves on water or cracks in drying mud. It seems that only the in-between of line and surface truly exists, all that is not Euclidean, and that the finite dimensions are just illusory stations in active zones of transition. To slowly bring this into the framework and history of ornament, we, on the side of nesting fibers, need to look more closely at Gottfried Semper for the notion of weaving, and at Owen Jones for tessellation.  



SEMPER was a member of the advisory committee for the Great Exhibition of 1851, the same year his *Four Elements of Architecture* was published in German, though he had written it in London while in exile during the early 1850s. It was in the Crystal Palace that he saw the famous full-scale model of a Caribbean hut, a piece of architectural anthropology that became a well-known emblem of his thought. Architecture, he stated, consists of four elements, elements that are as much materials as techniques for processing materials. We should not fail to notice, before getting any more involved in Semper's thought, that his theory, though it deals with materials, is suprisingly devoid of materialism. He does not speak of brick or limestone, nor of iron and glass, which would support a materialist theory and immediately turn his theory into one of building rather than architecture (if we momentarily accept the distinction of architecture being a building's virtual organization and not its actual structure). This is why Semper is so important to our thesis: he uses matter not to end up at a fatal determinism but in order to perceive design as occurring at a point of transition from mass to matter, from building to architecture, in a zone of transfiguration essential to the emergence of ornament. 



EMPER'S four materials, the four elements as they would be used in order of construction, are the earth mound, the timber frame, the textile membrane, and the hearth fire inside. One starts building by first raising the earth to a level no water or animals can reach; then one drives wooden poles into the mound on each corner of the rectangular hut, building a timber frame, which is subsequently closed with woven or plaited leaves and ribbons and then heated inside by a fire, creating a comfortable climate. Of the four elements, one clearly plays the most important role in this evolution: textile, accompanied by techniques of weaving and plaiting: 🍃 🍏 🍃

*Decke, Bekleidung, Schranke, Zaun* (similar to *Saum*), and many other technical expressions are not linguistic symbols applied to the building at a later stage but clear indications of the textile origin of these building elements. (*Style*, 248)



HE making of a building, or more specifically the making of a wall, consists not only of the stacking of stones into a solid wall (*Mauer* in German) but of something that includes its former function and texture: 🍃

The wickerwork (*Flechtwerk*), the original space divider, retained the full importance of its earlier meaning, actually or ideally, when later the light mat walls were transformed into clay tile, brick, or stone walls. Wickerwork was the essence of the wall (*Mauer*)." And he adds in a note: "The German word *Wand* (wall), *paries*, acknowledges its origin. The terms *Wand* and *Gewand* (dress or garment) derive from a single root. They indicate the woven material that formed the wall. (*Four Elements*, 103–4)



FROM *Mauer* to *Wand* to *Gewand*: there are two transitions here. The first transfigures the solid wall into a fabriclike woven structure; the second considers that fabric as a dress, in a notion we know as Semper's *Bekleidungsprinzip*. In related twentieth-century architectural theories, which are generally based on his notion of tectonics (represented by wood) rather than that of textile, the first transition has actually been used to cancel out the second. What Semper saw as a design technique, and specifically one of ornament, modernism and its theorists turned into a building technique. When we look, for instance, at our contemporary hollow dry walls with their aluminum profiles finished with sheetrock, or at the typical Miesian reticulated curtain wall (a black, industrialized example of classicism), we can easily mistake them for Semperian *Wände*, because they seem woven, or at least composite and not monolithic. But this is not at all what Semper meant; he was talking about solid *Mauern* becoming *Wände* through the use of ornamentation, through *Bekleidung*, not through restructuring of the wall into a set of composite, hollow elements. Again and again, the Semperian elements have been taken literally, but modernist composite dividers and panelized cladding are conceptually as far removed from adorned, monolithic *Mauern* as they possibly can be. What has been used as a theoretical basis for shaking off ornament was *actually meant as a theoretical explanation of its emergence*, precisely because, at a certain point in ancient times, primitive open wickerwork dividers no longer sufficed and had to be replaced by closed, solid stone walls, but these were considered acceptable only if the woven and plaited patterns were retained, petrified in stonework. Why? Human cultural evolution became entwined with architecture as an art not of space but of atmosphere, and an art not so much of materials but of patterns and textures: 🍷 🌿

Hanging carpets remained the true walls (*Wände*), the visible bound-

aries of space (*Raubegrenzung*). The often solid walls (*Mauern*) behind them were necessary for reasons that had nothing to do with the creation of space; they were needed for security, for supporting a load, for their permanence and so on. Wherever the need for these secondary functions did not arise, the carpets remained the original means for separating space. Even where building solid walls became necessary, the latter were only the invisible, structure hidden behind the true and legitimate representatives of the wall, the colourful woven carpets. (*Four Elements*, 104) 🍏 🍏

**I**N short, the transfiguration of weaving into stonework explains the two most important traits of ornamental surfaces: their polychromatism and their configurational pattern, that is, the fact that many patterns of ornamentation still carry the typical under-over interlacing of weaving or the meandering ribbons of knotwork. Semper specifically understood this transfiguration as a material one, which he famously called *Stoffwechsel* in his 1863 book *Style*. 🍏 🍏

**H**E borrowed the terminology from his friend Jacob Moleschott, a Dutch physiologist who wrote in German about metabolism in plants and animals. The term *Stoffwechsel* can specifically refer to metabolism as it occurs in living organisms, and Semper's use is vaguely related to this, since in bodily processes chemical reactions constantly transform matter into energy, but Semper's theory is not so much one of a chemical process as of a technocultural one. What is so powerful about Semper's notion of the metabolic is that materials do not passively wait to be cast or chiseled but are a symbiotic part of activities, techniques and technologies. His theory does not make the stereotypical connection between clay, brick and wall, going from raw to finished in linear fashion, which would not explain anything; rather, he understands the

transition of architecture to building as proceeding from soft to hard. In this sense, his four elements are like the four ancient Greek elements (fire, air, water and earth), embodying the four states of aggregation. 🍀 🍀

**N**ORMALLY abstraction leads to idealism, i.e., pure formalist principles independent of material notions. On the other hand, materialism generally leads to a theory of building or construction, in which everything is driven by the connections between materials, their structural properties and their expression as such, rather than a theory of architecture. Semper steered clear of both “speculative aesthetics” and “mere engineering” and took an in-between position that is still extraordinary today: it is abstract because it is dressed but material because it is informed by both textile weaving and stone carving. In short, his theory is one of an *abstract materialism*, something quite unheard of and not yet well understood. Clearly, such an abstract materialism does not view substance as something to be cast in the mold of forms but sees matter as occupying fields of activity, as clustered and grouped with technical and aesthetic forces; it views matter *as being in transit*, as neither being raw substance any longer nor having yet entered the field of finalized forms. This notion brings Semper’s theory close to expressionism, which is generally classified as an individualist *Kunstwollen* rather than in the category of material skills and techniques. Techniques constantly probe the capacities of materials, and materials, with all their potential, are constantly on the lookout for new techniques. More precisely, techniques bring materials to life because they can dissociate themselves from a specific material but not from matter in general. In this way, they become living, abstract stations for moving materials into other domains. 🍀 🍀



THE textile *inhabits* the stone, not as a material but as a technique and a logic. Reciprocally, the stone also abstracts the textile, and the weaving can inhabit the stone only as ornament – how else? Since we cannot literally knit a building or a vase, the stone, and the carving, have to transform the fabric too; therefore, the abstraction of materials works in both directions: stone abstracts textile and weaving abstracts carving. It is not as if one material were literally in another, as if two materialities existed simultaneously; rather, one state of aggregation transforms into another, going from soft to hard, from pliable to rigid. This can happen to a single material, too, as when water becomes ice, lava becomes stone, or a face grows old. A material that solidifies as it cools, a group of threads weaving together into a fabric, always takes on a pattern during the transition from pliable to rigid. *Nothing passes through undecorated*. All such configurations, in which materials are arranged through a history of forces, we have come to call patterns. Of course, it is no surprise that the term “pattern” comes up in a discussion of ornament – dozens of books on ornament use it in their titles – but there is a much more profound connection at work, something truly material and abstract. Here is a well-known quote from Gregory Bateson: 

It all starts, I suppose, with the Pythagoreans versus their predecessors, and the argument took the shape of “Do you ask what it is made of?” or do you ask “What is its pattern?” Pythagoras stood for inquiry into pattern rather than inquiry into substance. (*Steps to an Ecology of Mind*, 455)



THE first part of the question apparently fits with the notion of passive mass awaiting a negative form to be molded in, as if the “made of” can be separated from the “it,” while the second question implies an appreciation of form in the manner of Ruskin’s Matterhorn or Semper’s *Stoffwechsel*: as matter transforms, undergoes a transition, it acquires a pattern, organizes itself by abstracting into a patterned state. Matter is both the material and the structure, which is not a structure of a final form but *the structuring of a zone of potential forms*. Seen from this angle, pattern is an abstraction that can never be idealized, never fully subtracted from matter; on the contrary, it gives direction to matter’s potential to become many forms, depending on the actual forces at work during the transition. The moment things take on a form, they also take on a pattern; there is no other way through. All things are made, and all things made are structured by the making. All things exist at a nexus of external forces and internal structuring. So far, there is no difference at all between natural and technical patterns; this is fully logical, since natural patterns, too, arise in massive factories – of climate and temperature change, for instance – with a continuous supply of matter to be transformed and a tendency to spill out products in great numbers, be they mountains, snowflakes or waves on water. 



LET us look at a few such patterns – call them what you like: natural patterns, matter-patterns, pattern-forms – and see what their properties are and how these properties might begin to drive our own technically produced patterns of ornamentation. For reasons that will become clear later, I would like to start with two that have some similar properties but occur in opposite circumstances of cold and heat: snowflakes and mud cracks. 



WHEN we look at Bentley and Humphreys' magnificent 1931 book, *Snow Crystals*, which depicts no fewer than 2,453 snowflakes, we see, of course, that no two are the same. We could call each one an individual, in spite of them all being hexagonal – in fact, *because* they are all hexagonal. We are not dealing with a hexagonal mold into which water is poured in some sky-high freezer. On the contrary, only a few water molecules are needed to start the growth process that creates a snowflake, not as a liquid that freezes solid but as a tree of spicules or dendrites, linear elements that progress in a solid state by branching, exploring the abstract space of possibilities in a consistent sixfold symmetry. It is undoubtedly a clear case of “uniformity amidst variation,” the paradigm of aesthetics for hundreds of years. Or, in Owen Jones' words: “See how various the forms, and how unvarying the principles” (*Grammar*, 157). Evidently, the varying principles do not operate at the same level of existence as the unvarying forms, or else it would not be possible for the two to coexist. 



UNIFORMITY does not occur at the same level as variation. The variation is real; the uniformity is abstract. To define the difference more precisely, the variation is explained by a consistency of behavior, not a sameness of form. What we think happens in space (“form”) actually occurs in time (“formation”). The consistency is periodic and rhythmic. Patterns are true expressions of formation as time-dependent; the spatial forms are only the final products of such periodicity, the remnants carrying all the information as a graph of the process. In wallpaper design, this problem appears in the realm of the technical, and more specifically in the use of the woodblock (in the nineteenth century, that is; we'll return to Jones' and Morris' designs later), which necessarily results in “unvarying principles of unvarying forms,” since techni-

cally it has always been impossible to produce multiplication without unvarying, *exact* repetition. As we all know, individual things in nature do not repeat exactly, though it would be ridiculous to say there is only variation, in the sense that all things are simply different from each other. Waves on water are similar enough that we can speak of a kind of *inexact* repetition, better known as iteration. The changes in the waveforms that appear during their repetition work iteratively to create more variation. ☺

**L**et us first proceed with the inverse of the snowflake. When we look at the way a mud puddle dries up in the blazing sun, we see a similar tendency toward pattern, toward a certain configurational schema that nonetheless never results in exactly the same patch of dried mud twice. A dried mud puddle is made up of mostly polygonal tiles, that much is obvious, but the tiles' edges are not very straight; they tend to zigzag, and some edges do not make it all the way but instead remain cracks in single tiles that end in a sharp tip surrounded by dried mud. This configuration, which we perceive as tiles laid one after the other, as in a dry stone wall or pavement, starts with the whole and breaks into the parts. We find many similarities between the snowflakes and the clay tiles, but there is an important difference: while in the snowflake the hexagonal contour is never filled, in the mud it is precisely this that is constantly materialized, though variably, as the outline of the tile. What is a *continuous* outline in the dried mud tile is only a *dashed* line in the snow crystal limiting the growth of the continuous lines of the dendrites.

**T**Hese two natural phenomena seem to present us with two different models for patterned ornament, each occurring in a transition from one material state to the other: water vapor into ice crystals and homogeneous mud into cracked, baked tiles. Suddenly, under critical conditions, a homogeneous materiality acquires a "graphic" (i.e., operating by means of lines), even diagrammatic, self-abstracted form in order

to pass into another state. All pattern emerges in a space between dimensions. We generally see dimensions as stations of the extensive, but in pattern formation we continually encounter dimensions as expressions of intensive material properties, of transitional states within matter. Why? Because all the external forces operating on matter can *only be processed internally*, through a restructuring. The ice crystal starts with lines that multiply into a surface; the mud tile begins with a clay surface breaking into a network of lines – in each case, there is a passage from one dimension to the other, but they occur in opposite directions: the snow crystal moves from a lower dimension to a higher one, the tile from higher to lower. The latter, an encrusted pattern we will call *tessellation*, consists of a system of *outlines*: the cracks, analogous to what we know in mosaic patterns as joints. The former proceeds by materializing not the surface patches but the lines in between, the *centerlines*, which branch, weave, nest, or otherwise multiply into a surface, a system of networked *ribbons*. So as ornamental systems, the two modes of multiplication, of moving between figures and configurations, are antipodal: the tessellated breaks, self-tiles, into polygons, because only polygons can fill a closed surface, while the ribboned operates by variable curving and branching ribbons that multiply into some variable interlaced group.



We have a world of weaving versus one of cracking. This is exclusively the *transdimensional* realm of pattern. We must look carefully into these separate approaches, which became separate schools of design, with very different protagonists, evolving along very different paths. We will first visit the world of tessellations and encrustations before immersing ourselves in the jungle of interlacing ribbons. It will come as no surprise that we find all the richness and beauty of tessellated encrustation in Owen Jones' *The Grammar of Ornament* of 1856.

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Owen Jones, *The Grammar of Ornament*: "Persian No. 2," 1856.



ITS title is already extraordinary and telling – the *grammar* of ornament – since before Jones the only books on ornament had been handbooks, manuals, and books full of examples to copy. Though his book contains a comparative analysis of ornament, grouping styles by nation or people and appreciating all the differences between them, its goal is a new one: finding a universal logic of ornamentation. Such handbooks normally depict all the various objects – keystones, lions flanking doors, fences, ironwork, wood carving, guirlandes, capitals, and so on, members all – but Jones’ does not. He concentrates on ornamental fields, on so-called diapers, rugs and fabrics – in short, on surfaces, and how they are constructed according to the logic of ornamental figuration. Ornamental fields are *structural*; they are constructions, or, as we call them, configurations; and for each category, he finds new sets of rules, new types of figures that have various properties enabling them to make bands, corners, or, most commonl, fields.



ONES’ focus on surfaces must certainly have been affected by his pivotal study of the Alhambra in Granada with Jules Goury, since Moorish ornament concentrates solely on the production of intricate diapers: complex, mathematical, even kaleidoscopic patterns of a tessellated geometry, a geometry of subdivided surfaces comprising polygonal patches fitted together in mesmerizing configurations. Looking at the *Grammar*, we immediately notice the minimal presence of the Greek and Roman – a mere two plates – and in the context of the whole book, they hardly seem to fit, decorated with just a few scrolls and meandering bands and some grotesques, but grammarlessly; they are more like formal entities, difficult to vary and certainly difficult to nest into a patterned diaper. They differ greatly from the Persian, the “Hindoo” (represented by all the fabrics Jones bought for the Great Exhibition), the Chinese, “Moresque,” Arabian and Indian. Jones’ is very much an Orientalist notion of ornament:

stylized, networked and always polychromatic. Each chapter consistently contains a number of full-page color plates in folio format and is introduced with an explanation of the figures, their rules of construction and their historical background. These introductory texts are generally more interesting than the famous 37 propositions at the beginning of the book, which lack precision in their attempt to abstract rules, which become so general that they lack the power of grammatical logic and are ultimately useless. In the chapter introductions, however, Jones uses text, annotations, numbering, diagrams (some large, some small enough to fit into a sentence), and illustrations, some very abstract, some very realistic, and all without color. 🍀

F we consider Jones' turn to abstraction within the framework of pattern we discussed earlier, however, as part of a passage from individual ("figural") variation to collective configuration, from a realm of movement to one of stillness, his grammar is a syntax that looks at global states of final order more than local rules of connectivity. Jones he was so affected by the Alhambra that his view of order became strongly influenced by the notion of tessellation as an overall harmonics of subdivision. We must keep in mind that in 1856 we were still half a century away from fully grasping the complexities of the various symmetries of tessellation, as worked out by Fedorov and Polya. There are seventeen different types of symmetry in the Alhambra, operating through the translation, rotation and reflection of polygonal tiles, including combinations of different types of polygons.

HOUGH tessellation does not in itself necessarily prefer the simple over the complex, Jones favored the more simply ordered types, such as grids and diagrids. It is important to note in advance that the reason I list tessellation as one of the two categories of ornamentation (the fact that it works from surface to line in its expression of interdimensionality) is not the same reason Owen Jones was interested in

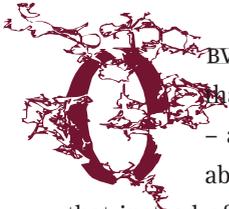
it. There is a “natural” schematism to tessellation, since it visualizes the lines of organization, though this does not mean that its way of configuring surfaces is inherently simplistic or without dynamics. Nowadays, we know of very complex, irregular, fractal and even aperiodic forms of tessellation. But merely because of its sense of schematism, in aesthetics tessellation tends to be associated with uniformity and the study of repetitive patterns, while the ribboned tends to be associated with an emphasis on variety. 🍃



RUSKIN was horrified at Jones’ inclination toward perfection, order, structure, harmony and repose – and rightly so. Today Ruskin is often shelved away as a one-dimensional naturalist, a position considered acceptable for an artist, since he or she “sees and therefore can only feel” and must necessarily register the unique and the varied. But things are different with pattern design, since it inherently has to deal with repetition, and, as we have explained, pure variation does not exist. Putting Ruskin at one end of the spectrum, however, on the side of empiricism as opposed to ordered idealism, would certainly oversimplify matters, and would not do him justice. He himself is to blame, however, as he so often took the liberty of changing his mind – “I am never satisfied that I have handled a subject properly until I have contradicted myself at least three times.” Therefore, if we want to get to the heart of the matter of ornament, we should quote him more than once, to be safe: 🍃

It is quite true that the art of India is delicate and refined. But it has one curious character distinguishing it from all other art of equal merit in design – it never represents a natural fact. It either forms its compositions out of meaningless fragments of colour and flowings of line; or, if it represents any living creature, it represents that creature under some distorted and monstrous form. To all the facts and

forms of nature it wilfully and resolutely opposes itself: it will not draw a man, but an eight-armed monster; it will not draw a flower, but only a spiral or a zigzag. (*The Two Paths*, “Conventional Art,” XVI, 265) 🍄 🥒 🍏



OBVIOUSLY, this quote of Ruskin only strengthens the accusation that he was a straightforward naturalist – if it is an accusation – and, perhaps worse, it supports the fatal opposition between abstraction and representation. We certainly will not argue here that instead of subordinating ornament to the orders of purist abstraction we will find a way out by rediscovering representation! There is no doubt that Semper’s motto is correct: “We should apply the methods of nature, not imitate nature.” It must be, because a painted picture of life is not identical to life at all, nor is a drawing of nature identical to nature; it simply makes us sadder, because such art separates us from life, traps us in a world on the other side of the glass without hope of escape. If the answer does not lie in schematic order nor in the representation of nature, where then? Fortunately, we need not look very far: we can find a contradictory quote by the same man:

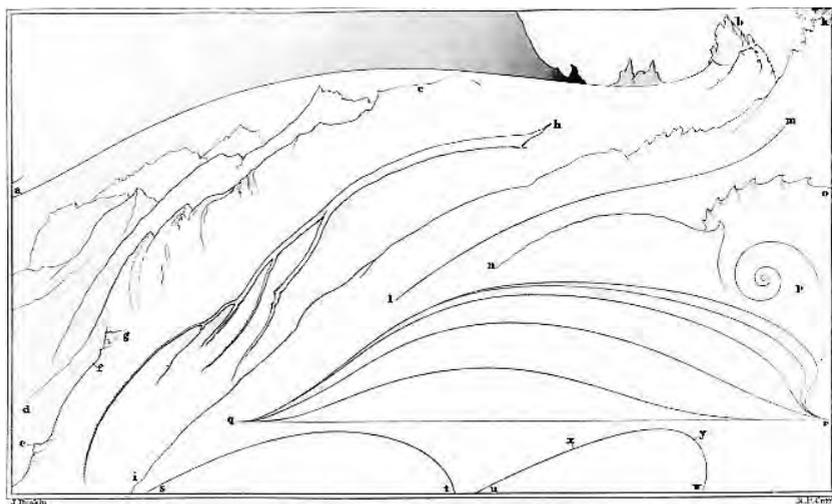
For instance, the line or curve of the edge of a leaf may be accurately given to the edge of a stone, without rendering the stone in the least like a leaf, or suggestive of a leaf; and this the more fully, because the lines of nature are alike in all her works; simpler or richer in combination, but the same in character; and when they are taken out of their combinations it is impossible to say from which of her works they have been borrowed, their universal property being that of ever-varying curvature in the most subtle and subdued transitions, with peculiar expressions of motion, elasticity, or dependence. (*The Stones*

of Venice, “The Material of Ornament,” IX, 266–7)

And, a bit further on:

... that almost all these lines are expressive of action or force of some kind, while the circle is a line of limitation or support. In leafage they mark the forces of its growth and expansion, but some among the most beautiful of them are described by bodies variously in motion, or subjected to force; as by projectiles in the air, by the particles of water in a gentle current, by planets in motion in an orbit, by their satellites, if the actual path of the satellite in space be considered instead of its relation to the planet; by boats, or birds, turning in the water or air, by clouds in various action upon the wind, by sails in the curvatures they assume under its force, and by thousands of other objects moving or bearing force. (*The Stones of Venice*, “The Material of Ornament,” IX, 268–9) ☺ ☺

**L**INES that are expressive of action or force” – it could easily have been the maxim of expressionism. Using the terminology I introduced earlier, I would say Ruskin here proposes replacing the *outline* of a leaf, which would depict its form and therefore be representational, with the *centerline* of a force. Form versus trajectory – we have definitely started to investigate ribbon ornament, that which works in the reverse direction from Owen Jones’ tessellations. And here is the answer we were looking for a page ago: a line that abstracts from the real, but not by reduction; a line capable of precisely registering the variation of the real. It is all in the quality of the lines, ones that manage transitions and guide forces. Ruskin actually indexes these in a diagram titled “Abstract Lines”; abstracted from glaciers, ballistics, leaves, mountains, they are all the same



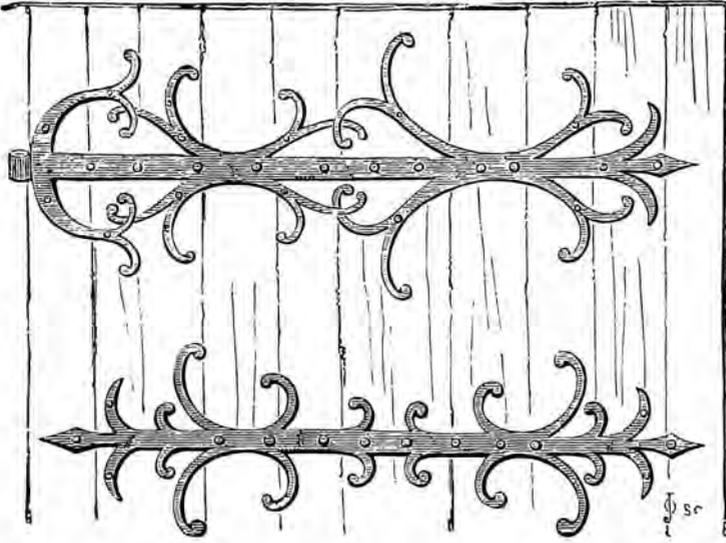
Abstract Lines

John Ruskin, diagram of "abstract lines," in "The Material of Ornament" (*The Stones of Venice*, vol. 2, 1853).

size, single lines of a consistent thickness. Ruskin's lines are abstract but not schematic; since he uses a single line to express all the subtle variations in force and matter, it can never be a simple curve like a circle. The diagram shows lines that are known mathematically as cubic functions (circles, ellipses and parabolas are squared); in physics, these are typically lines of not only varying *direction* but also varying *speed*. Changes in direction make lines into curves, but changes in speed add curvature to those curves.



EXT to Ruskin's S- and J-figures, however, we can add more such abstract lines to produce more variation. Let us look at a simple example, one from Gombrich's *The Sense of Order*: a twelfth-century wrought iron hinge on a wooden door of the cathedral in Montréal in France's Yonne valley. We can see how the linear element of



Drawing of wrought iron hingework in Montréal, Yonne, France (from: J. Starkie Gardner, 1907).

the hinge expands over the surface of the door, branching off to form curving, spiraling tentacles. Imagine that the hinge started out as a single straight line, moving from the left side of the door all the way to the right. We can imagine that the forces pulling on the hinge would be relatively strong and the local tension at the connection points between wood and iron would soon become too much; hence, the linear element of the hinge needs to spread itself out over the door, avoiding points of high tension. Logically, it must do so in continuity with the hinge point, branching out (forming a T-figure) and even bifurcating (into a Y-figure), ending in scrolls and tendrils (J-figures) that can spiral on as far as needed. The relationship among this set of figures is similar to the abstract code of a tree branch, is it not? But the hinge is not a tree, nor is it mimicking one or trying to rep-

resent one, though it acts “naturally.” While I lack the mathematical background to say precisely, I am quite sure that the dimension of that final branching iron line is no longer a clean 1.0 but something moving in the direction of the two-dimensionality of a surface, perhaps 1.26: a *transdimensional* number, a *relational* number. That is what makes a pattern: the iron, still malleable and soft in its abstract state, starts to grow branches with tendrils sprawling out over the surface, and there it rigidifies and becomes real. A *Stoffwechsel* takes place, brought about by the behavior of *abstract lines* following the logic of a *grammar*. There is nothing metaphorical at work here, nothing symbolic. There might well be a symbolic effect, but the symbolic can never be the driving mechanism. Language and meaning can never supply matter with the instrumentality of code. Of course, the soft condition of the iron is active during the design and the forging, but it is an abstraction that is not set apart from the real; it inhabits the real, like a genetic code of branching informing the still-hot iron. Frayed, unfinished, not fitting in any fixed format, the branching hinge simply manages forces and becomes ornate. 



IN a similar fashion, let us now look at William Morris' wallpaper designs: in particular, the “floriated diapers,” as he called them (*Some Hints on Pattern-Designing*, 265), become imperative at this point. Morris, like Ruskin, is always called an advocate of a naturalist theory of ornament, but let us take a careful look at the diapers of wallpaper designs like Acanthus and Myrtle. Since I classify this as ribbon ornament, it should operate from line to surface and, as such, always act to construct a surface, as a surface “in the making,” as Bergson and James would say. And, like the iron hinge, it should progress from (figural) movement to (configurational) rigidity. What are the constitutive elements of Morris' design? The twig, leaf and flower: always these three. Let us, for once, not look at these as representatives of an absent nature but simply consider what they

do, and study carefully the geometrical role each plays. The twig, of course, is linear and plays the role of the ribbon, branching, bending and interlacing. The flower plays the role of the tile, a small surface patch or a dot, managing more directions, radiating outward, in contrast to the twig. Between flower and twig, we find the leaf, which displays both directional linear and expansive surface behavior. In Morris' designs, the three elements have two options for interacting: they can *nest* or *entangle*. That is, they can either fill a surface by dovetailing together and filling each other's voids or they can overlap, leaves over twigs, twigs over twigs, leaves over leaves, and flowers on top such as we find in his Pimpernel or Myrtle designs.



WHEN we look carefully at the more complex Acanthus wallpaper, surprisingly, we discern only leaves in the pattern and no flowers or twigs; this choice of a single element is utterly daring, since it can make a pattern duller than a modernist wall. But see how the leaves behave: each has a thick main nerve, so it can act like a twig as long as it keeps its lobed contours close to that middle vein, but these large leaves tend to curl up and turn away from the surface, so much that they spiral backward and become rounded, pointing their lobed edges in all directions – in short, these leaves behave like flowers! Simply by modulating the directions of the lobes of the acanthus leaf, Morris makes it act out all the complex behaviors of twig, leaf and flower: the leaf mimics the other two and inhabits an in-between zone. A zone of transition is created, a zone of continuity, with lines constantly stretching out and curling up, animated by twisting lobes, in a way that is intriguing regardless of the repetitiveness of the guirlandes created by the leaves. Actually, the seriality (there are no balanced reflections in the Acanthus pattern) strengthens the rhythmicity of the whole design. The surface stays stranded and ribbed and hardly achieves two-dimensionality, but this is made up for the plunging in and out of the densely packed leaves. The



William Morris, "Acanthus" wallpaper, 1875.

Acanthus wallpaper is the finest ever made. Morris is crystal-clear in 1881's *Some Hints on Pattern-Designing*, in which he proposes a "new-born Gothic": 

As to the construction of patterns the change was simply this: continuous growth of curved lines took the place of mere contiguity, or of the interlacement of straight lines.

And, more theoretically:

Rational growth is necessary to all patterns, or at least the hint of such growth; and in recurring patterns, at least, the noblest are those where one thing grows visibly and necessarily from another. Take heed in this growth that each member of it be strong and crisp, that the lines do not get thready or flabby or too far from their stock to sprout firmly and vigorously; even where a line ends it should look as if it had plenty of capacity for more growth if so it would. 



Is there anybody left who would label Morris as a simple naturalist? I think the above proves that such a designation does not begin to cover what takes place in Morris' design of ornament, and this is equally true for his wallpaper, his book design and his rugs. The quality lies in the lines, in the abstract lines of force. "Growth" is generally denigrated as "organic," but we must be careful with such disqualifications, because organicism would mean behaving like something organic, i.e., being representational, and here we are discussing *the abstract life of lines*. To make the X-figure of a lattice come alive and start to actively vary is not easy, as we observed, but Morris mostly uses Y- and T-figures on variable curves and offsets each figural line sideways with the most complex lobed

or toothed contour – again, not merely to delineate a leaf but to elaborate on the line, to make it vary and fractalize. In short, the interplay between figures is only brought to a halt by internal coordination, never by an external, blocking force, and so it keeps that sense of *potential*, “a capacity for more growth,” which is precisely the realm of the transdimensional, because it is a situation *in the process of crossing over but not there yet*. When we compare Owen Jones’ wallpaper designs with Morris’, we can see that they definitely lack that overall sense of potential. It is not only that Jones always draws his flowers in orthogonal front or side views, usually as circles, but just as much because their stems are often cut off, the lines do not overlap, and there is no consistency of relationships between the flexible parts. And, though his lines are often flexible S-figures, they seem to have lost the capacity to vary. The difference is simply that with Jones we see the *end* of a process: it has reached that point of full repose and is at the point of going dead, making the whole pattern fall back into schematism.



**I***UT we do need a grammar of ornament:* we need rules for the abstract life of lines (though for a more complex behavior than Jones imagined). Ruskin’s diagram of abstract lines of force and action should be expanded, not only to encompass a larger number of figures but to include their (Gothic) interactions with each other, their configurational capacities. Since force is a field, it is shared, and all figures must interact, or, as Ruskin says elsewhere, “help” each other. We need S-figures for serpentine and J-figures for tendrils, Y-figures for bifurcations and T-figures for branching, even X-figures for crossing and Z-figures for zigzagging, and all these must be able to deploy all possible variations in direction and speed, i.e., force and action, plus all possible forms of interaction to form configurations. There must be variation *of* and *between* figures. Some ribbons should absorb the edges of the tiling, but not all the edges nor all the ribbons. In the realm of linear ornament, we

find a broad range of ways ribbons nest and/or tangle into a surface. The simplest are the Celtic bands, which consist of pure intertwinement and in which the centerline is offset on either side by two parallel lines that follow its contours, and the required complexity of the pattern is created by a floating between knotwork and plaiting. In illumination, such offsets tend to get more complex, especially in the case of tendrils, whose outlines start to acquire thorns and leaves. It is no accident that ribbons often take on a *vegetal* quality (tessellation is a more *mineral* form of ornamentation), since plants' twigs are like simple bands (not only in Morris' designs), while their leaves are offset into either smooth, lobed or toothed contours, and the flowers can form points of radiation, with many petals all growing in different directions. 



MORRIS'S wallpaper is not restless in comparison to Jones's reposed type; it is crucial to emphasize this. Ornament, especially in our times, is often associated with exuberance or ecstasy, in a Baroque notion of flesh and sensuality, which is nothing but an obtrusive form of classicism in which all ornament is subordinated to abstract structure. As with the Gothic, what needs to be established in ornament is simply a relatedness between us and things, a *fundamental sympathy*, which all design starts from (and must end with). Such sympathy without representation is *only* possible because of ornament. To elaborate on this a bit more, in the twentieth century we saw ornament replaced by texture, such as in the use of "natural" textures, often inspired by Japanese *wabi-sabi* design, or the use of "honest" materials, or less industrial craft techniques that left traces on the surface of the object. This was not an improvement. In fact, it has made matters worse: the care necessary in design, or what Ruskin calls the tenderness of art ("the first universal characteristic of all great art is tenderness," XVI, 281) has been obscured even more, because now the material and not the design takes re-

sponsibility for the sympathetic relationship, leading to a *naturalism without grammar* incapable of connecting the life of matter to the form of the object. There is simply no *Stoffwechsel*: the sympathy is not in the architecture but all in the building material. Natural texture should always be transformed into artificial ornament. We have seen so many buildings with copper cladding acquiring patinas, and modernist boxes overgrown with ivy or clad with rectangular wooden panels with visible joints and strong visible grain – but does the grain in any way manage the tessellated geometry of the panel (let alone the windows)? No, not at all: it solves no problem; it merely replaces the sympathy lacking in the design with a psychology of naturalism. 🍏



AFTER Morris and Jones, both trends began to evolve in very different directions. Jones found his successor in Christopher Dresser, and Morris found his partly in Art Nouveau, where the Ruskinian notion of the abstract line hit the dead end of aestheticism. A strange thing happens in Art Nouveau: the lines, by now having turned into enormous water plant stalks, sprout from structural members – columns, doorframes, the edges of posters and menus – and move back and forth at their tops, as if under water, ending in the extraordinary tendrils of so-called whiplashes. They exist in an oneiric state of horizontal movement but build nothing, no new relationships, unlike the Gothic meshworks: they just sprout and then tendrillize. In fact, this was the end of ornament. The split had by then already occurred; the naturalists dozed off in their cocooned interiors, while the Dressers were starting to become full-fledged abstractionists:

... Pictorial art can, in its highest development, only symbolize imagination or emotion by the representation of idealized reality [...], true ornamentation is of purely mental origin and consists of symbolized

imagination or emotion only. I therefore argue that decoration is not only a fine art [...], it is indeed a higher art than that practiced by the pictorial artist, as it is wholly of mental origin. (Christopher Dresser, lecture to the Royal Society of Arts, 1871)  



As one movement was dreaming away, the other was ignoring the senses and heading straight toward conceptual art. No one now need doubt where the origins of modernism lie. Mondrian found his predecessors not in Cézanne and Monet but in Jones and Dresser. Decorative art began to supply the fine arts with order and abstraction, taking a fatal turn against sympathy and tenderness. First, the tendency toward abstraction passed from Jones to Dresser and slowly became more schematic in its use of both line and color; then it fell entirely into the hands of Mondrian and Doesburg and ended in the black hole of Rothko and Judd. After that, we had the humor of Pop to play with, and the irony of Postmodernism, but all such movements did nothing but dance on the smoldering ruins of modernism. Deconstruction, in particular, amounted to a plundering of the collapsed edifice of abstraction. The fine arts ran away with the decorative arts, and even now when artists try to return to some kind of world of feeling, for example, by decorating museum walls with teddy bears, or try to return to sympathy, hugging people on the street in little moments of art, their actions are like those untreated wooden panels in architecture: nothing but psychotherapy after the trauma. Its effects have proven to be so persistent that to cure them we must resort to a more radical solution: a massive return to decoration. Artists have no way to structure their sympathy anymore. Why? Because they are locked in the museum, the festival, the gallery, or worse, the transitory media, leaving us with the white walls. Art ran off with decoration and has not yet returned the favor. Here, again, is John Ruskin:  

... no, it was an advised word – that “detestable” ornament of the Alhambra. All ornamentation of that lower kind is pre-eminently the gift of cruel persons, of Indians, Saracens, Byzantians, and is the delight of the worst and cruellest nations, Moorish, Indian, Chinese, South Sea Islanders, and so on. I say it is their peculiar gift; not, observe, that they are only capable of doing this, while other nations are capable of doing more; but that they are capable of doing this in a way which civilized nations cannot equal. The fancy and delicacy of eye in interweaving lines and arranging colours – mere line and colour, observe, without natural form – seems to be somehow an inheritance of ignorance and cruelty, belonging to men as spots to the tiger or hues to the snake. I do not profess to account for this; I point it out, and you will find it true if you look through the history of nations and their acquirements. I merely assert the fact. (*The Two Paths*, “The Unity of Art,” XVI, 307) 

 F there is one paragraph that has earned him continual mockery, it is this one, and though it is hard to see through the racism, I can come to only one conclusion: he was right. Right, that is, on the issue of cruelty being innate to abstraction, not on cruelty being innate to specific peoples or nations. The main issue of design is the choice between *cruelty and tenderness*; there is no other. I know what my choice is. Let us remember, for instance, the concept of cruelty at the heart of Antonin Artaud’s nihilism, developed in *The Theatre and its Double* (“The Theatre of Cruelty,” 1938):

Without an element of cruelty at the root of every spectacle, the theatre is not possible. In our present state of degeneration it is through the skin that metaphysics must be made to re-enter our minds. (1958: 99) 



ETAPHYSICS through the skin! I cannot imagine a worse nightmare – Artaud is here inventing a form of art torture. Even more explicitly a few pages later, he claims to “remove the shroud that lies over our perceptions.” He

means Ruskin and Semper’s veil. At least he is candid about his intentions: removing the shroud constitutes an act of cruelty and is typical of a century specializing in atrocities. John Ruskin was right, especially in hindsight, with the twentieth century between us and him: abstraction is cruel and perverse, because it wants to rip off the clothing off everything, to make everything naked. First the Protestant iconoclasts destroyed the Gothic, making books more powerful than architecture (as Victor Hugo taught us); then they destroyed ornamentation, in an effort to inject truth and meaning directly into the bloodstream. Obviously, since neither truth or meaning exists, all that remains is the act of obscenity and cruelty. Adolf Loos had it the wrong way round: *cruelty and criminality lie not in ornament but, on the contrary, in its absence*. It is not that Ruskin only believes things should always be dressed but that our perception itself needs them veiled, because feelings of tenderness are impossible unless we see something. Things cannot go without clothes. For more than a century now, the metaphysicians have made us believe that the truth lies beneath, and each of us has run out to rip off our share of veils. We have taken part in nothing less than the rape of things. To let only the mind see, as Dresser wanted, means to plunge directly into hysteria, to see with an unmitigated look, an eyeless look that immediately turns the face into a grimace. Things seen can now only leave a grimace of pain, because the bare object has a neurological hotline to the bare mind, waiting to be electroshocked by metaphysics. 🍷



Of course, ornament is in itself a sign of tenderness and an act of sympathy; cruelty only surfaces when we are confronted with an *absence* of ornament (something Ruskin, of course, could not conceive of). But now, at the end of our argument, we must correct him slightly: the presence of ornament is never a sign of cruelty, *in whatever form*, Arabic, Maori, English, Greek, whatever. Ornament is always care and tenderness by nature, because it is always a form of sacrifice (as Ruskin titled his first Lamp), in the sense that it is uncompensated work, in a way *pure* work, because it is perfectly useless: we only have “to dress it and to keep it.” As I have said, ornament is often mistaken for a sign of exuberance, a kind of special treatment, a dressing-up for a special occasion, but in fact it is simply *dressing as keeping* – an everyday act, the act of care as work, calm and dutiful, like gardening. 🌱 🍷

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