

CHAPTER TWELVE: LOWER BEAUTIES

Introduction

Having looked closely at Garbett's phenomenology of perception, it is now necessary to return to what Garbett termed, the *greatest triumph of the inductive sciences*: the proof of a relation between sound and colour. How was this analogy established, and how does it relate to the more traditional analogy between sound and harmonic proportions? Where does he go from there? This chapter, which covers the subjects discussed in chapters two and three of Garbett's *Treatise*, is concerned with his re-interpretation and re-formulation of traditional architectural values such as symmetry, rhythm, contrast, polychromy etc. in terms of the underlying aesthetic principles derived from eighteenth philosophy such as the principle of unity amidst variety. It ends with a quick look at how these principles impact on his re-invention of the concepts of the Sublime and the Picturesque.

Harmonic colour: Newton's Analogy between sound and colour

The science of colour, or chromatology, was, in the early in the nineteenth century entirely dominated by Newton's discoveries as presented in his *Opticks*.¹ Newton is also the source for the analogy between colour and sound which is the subject of this paragraph. Newton's legacy, although stifling in its authority during the eighteenth century, was slowly being loosened at the beginning of the nineteenth by the innovative work of Johann Wolfgang Goethe, Sir David Brewster, Thomas Young and Sir John Herschel.²

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1. Books which provide a general backdrop to this part are Mach (1953); Whittaker (1960) and Rothschild (1973). More recently there is Kemp (1990).
 2. The only truly negative criticism of Newton's thinking had come from Goethe. Goethe's *Theory of Colours* was an attempt to respond to Newton's physical analysis by adopting a psychological and physiological approach. **The Necessity of Architecture, Chapter Twelve**

The Newtonian analogy between colour and sound had been elaborated on by various people such as the Scottish painter D. Ramsey Hay, who had arrived at it through George Field.³ Both of these

approach. Goethe's book was translated into English by Charles Eastlake and published in 1840. Garbett did not want to criticise Newton and Goethe's provocative stand against the divine Newton's status may have detracted from the book's cover-appeal. Even so, Goethe uses a direct Aristotelian empiricism in his theory of colour which Garbett would have found appealing and useful, that is why it is a little surprising that Garbett did not even acknowledge the book's existence.

3. For D.R Hay's reliance on the theories of George Field see Brett (1986) p. 339 & 348. cf. Hay (1844) Garbett, who does quote Hay on form and ornamental design, does not mention his *Laws of Harmonious Colouring* of which the fifth edition came out in 1844, suggesting it

based their science on that conducted by Brewster and Newton as well as from the tangential work of Buffon.⁴ Neither Field, Hay or, for that matter Garbett, mention the work of Thomas Young. Young had been introduced to the science of optics through his interests in acoustics. This interest led him to the elaborate on Newton's analogy

was a commanding book. Neither does he mention George Field's influential *Chromatography; or, A treatise on Colours and Pigments, and of Their Power in Painting etc.*, (London 1835) This book was to have enjoyed 5 editions by 1885. Field's *Chromatography* was a broader version of his much earlier *Chromatics, or an Essay on the Analogy and Harmony of Colours*, which came out in London in 1817. See Brett's bibliography, Brett (1986) p. 337-338.

4. Buffon's work on physiology and Optics are contained in his *Mémoires* to the Académie des Sciences between 1737-1752.

between the two senses eventually arriving at the re-establishment of the wave- or undulatory theory of light. Thomas Young's work on light was used extensively by John Herschel on whom Garbett relied heavily for his theory of colour.⁵

The argument defending the analogy between colour and sound is relatively simple:

*.. as both light and sound affect their respective organs by an inconceivably rapid repetition of vibrations or pulsations, so, in both cases, it is found that the pleasurable-ness of the sensation, whether of sound or colour, increases just in proportion as these vibrations are more regular, isochronous, or equal-timed.*⁶

The immediate conclusion was obvious: Regular vibration = soothing whereas irregular vibrations = irritable. From this

5. Herschel (1845).

6. *Treatise*, p. 35.

simple equation Garbett was able to derive his *first law of harmonious colouring*:

*...the more isochronous the vibrations of any given colour may be, the more pleasing will it be in itself, apart from fitness and association.*⁷

This had been a conclusion arrived at by Frank Howard, whom we shall return to presently. Garbett's first law of harmonious colouring would eventually turn into the nauseating common-place which insists on all children's toys being brightly coloured. This brightness was then supplemented by the instinctive lust for variety as formulated in Garbett's third law of harmonious colouring:

*variety of colouring is abstractly (without reference to fitness, &c.) more pleasing than monotony, especially when the colours that adjoin each other have their vibrations in the harmonic ratio of 4 to 5, that is when they form contrasts...*⁸

7. *Treatise*, p. 40.

8. *Treatise*, p. 40.

Particular significant here is the attempt to superimpose musical proportions onto Herschel's measurements something that Hay had attempted without relying on Herschel's empiricism. When it was published in 1838, Frank Howard's *Colour as a Means of Art for Amateurs* had asserted that isochronous colours would be pleasing to the mind. Howard believed that physical science, when it eventually got round to it, would reveal that the duller tones of each colour would prove isochronous while the gaudy and harsh tones would prove non-isochronous. In Howard's system of colouring, the duller tones were equated with musical notes, while the harsher colours were equated with mere noise.

The attractiveness of this proposition did not escape Garbett although he saw its error:

The error probably arose from the artist, absorbed in the higher excellencies of his art, mistaking a mental for an ocular beauty. If he had observed the conduct of

*children, who look only for the latter [ocular beauty], he would have perceived that it is the crude positive colours which are the sweets of the eye, and that the tones are its bitters, or, at least, its insipid ordinary food.*⁹

When science did eventually get around to measuring the frequencies of colours it provided Garbett with the necessary evidence to turn Howard's theory around:

Harmony of colour, writes Garbett, is perfectly identical with [the harmony of sounds], only on account of the comparatively limited range of the eye's sensibility to vibration, as compared with the ear's (Sir John Herschel considers the whole compass of the scale of visible colours to correspond only to the interval called in music a minor sixth): it happens that in this case there is only one harmonic

9. *Treatise*, p. 36. Garbett calls Howard an Eminent artist. It is possible that he confuses him with the better known Henry Howard his father. Frank Howard (1805 (?) - 1866) was a painter of Shakespearean subjects who never gained wide recognition. cf. *DNB & Thieme Becker*. When he edited his father's lectures he supplied a useful personal bibliography: *A Course of Lectures on Painting, Delivered at the Royal Academy of Fine Arts*, by Henry Howard, esq. R.A., Secretary and Trustee, and Professor of Painting to the Royal Academy. Edited, with a Memoir of the Author, by Frank Howard, Author of the "Spirit of Shakespeare," the "Sketcher's Manual," "Colour as a Means of Art," the "Science of Drawing," &c., London, Henry, G. Bohn, Yorks Street, Covent Garden, 1848.

ratio; that is to say, that, though a given note in music may harmonise with many others, as the third fifth, octave, twelfth, &c. above it and the same below it, a given colour in the spectrum can only have one harmonic, viz. that vibration which in music would be called the third (...) so that, between the vibrations of two colours that harmonise, there is always the same ratio as between the two nearest musical vibrations that harmonise, viz. the ratio of 4 to 5.¹⁰

And this argument is backed by a row of columns in which Herschel's measurements of colour vibrations are juxtaposed according to the harmonic ration of 4:5. Thus a Pythagorean relation between colour and sound is reinstated, leading directly to Garbett's third law of harmonious colouring as quoted above.

Polychromy

Harmonious colouring plays an important but negative role in Garbett's theory.¹¹ He uses it primarily to dispel the myth that the

10. *Treatise*, p. 38.

11. For background see Collins (1965) pp. 111-116

correlation between a sound and a length of string can underpin the theory of harmonic proportions. (see below) In the actual use of colour in buildings Garbett's other two laws of harmonious colouring (2 & 4) are more directly applicable. These are used to promote the neo-classical attitudes of Reynolds summarised in the dictum that *Nature does not colour its large objects very brightly*. Bright colour is the exception and not the rule:

..in architecture, or at least in all its grander forms, varied colouring should have as little place as it has in the elephant, the oak or the mountain-chain.¹²

That observation is the basis for the second and fourth law of harmonious colouring. The second goes as follows:

..isochronous colours (...) have a more exciting effect on the retina than those which are of the same brightness but non-

12. *Treatise*, p. 41.

*isochronous, the repose afforded by a change from the former to the latter is also grateful; so that we should follow the example of nature's works, throughout which the sober, mixed, or subdued tones are the rule, and the pure isochronous colours the exception: for it is a less evil to be unable to find excitement, than to be unable to find repose.*¹³

The fourth law rehearses these arguments and comes to the conclusion:

*That as variety is an exciting quality, owing to the rapid changes which each point of the retina undergoes, the change from variety to sameness of colour is required for repose; so that here, again, we should imitate nature, in which sameness of colouring is the rule, and variety the exception; the former being found in all large and grand objects, and broad surfaces, and the latter only in small and scattered organisms.*¹⁴

13. *Treatise*, p. 40.

14. *Treatise*, pp. 40-41.

Elephants, great stretches of land and mountains etc. are given one subdued tone by nature, with at most some softly graded variations in colour, here and there brightened by the sparkle of a flower or a smaller animal. Repose is an aesthetic criterion which achieves a beauty by way of the feeling of rest it instils. It is a quality where beauty comes nearest to the idea of well-being. The word rest links beauty to a number of morally admirable states, such as happiness and grandeur. In order to be grand a building must exude repose. Repose and by extension the colour that induces repose obtains a moral power:

[in] mountains (..), if covered with vegetation, there is a sort of utilitarian necessity for variety of colour; and yet as soon as we retire to the distance requisite to see the whole, or a portion large enough to be grand, the atmosphere interposes its blue veil, and reduces the whole to sameness. What can more distinctly show

*that nature will not suffer polychromy in her Doric works.*¹⁵

To illustrate the truth of this proposition we need only reach for our Caran D'Ache coloured pencil-box, the cover of which contains the full range of his reasoning.

Garbett's rules for contemporary English architecture rested on the well-reasoned balance between monotony and variety as put forward in his second and fourth laws of harmonious colouring. With regard to his judgement on the great debate about Greek polychromy, Garbett appeared decided on a purist's stand largely inherited from Quatremère de Quincy. This stand was enriched with a delightful ingredient from the great anti-Greek, Ruskin:

As for the painted ornaments on the Parthenon, if they had been contemplated in the design, they would certainly have been carved, or (if flatness were wanted)

15. *Treatise*, p. 165.

*inlaid, and not executed in so mean a manner.*¹⁶

This passage is a clear echo from Ruskin's *Lamps of Beauty and Sacrifice* which insist on similar priorities in the application of decoration.

Garbett's purism is to some extent compromised by his attitude to the use of colour in older buildings:

*In a great and ancient building whose polychromic decorations have been sobered down by ages of neglect till hardly distinguishable, a singular majesty is acquired from this circumstance.*¹⁷

He is quick to add that this is not due to the polychromy itself but to the age of the building. Even so, this is the reasoning of a man weakened in his purist's resolve. It takes two to tango after all, *this singular majesty* might be caused by age, but it

16. *Treatise*, p. 166.

17. *Treatise*, p. 165 note.

could not have arisen without the polychromy being there in the first place. Once this statement had sown the seed of doubt with regard to his beloved Greek temples, he could not resist protecting his rear guard by leaving the door ajar on the issue of polychromy in Greek architecture. First he writes that if his favourite Greek temples were painted it was not done by the builders but done much later.¹⁸ Then he concedes yet more ground:

*If there were any colouring on the Doric temples in times of Doric taste, it must have been confined to a few members, and intended to enhance the general monotony.*¹⁹

This solution would not have been altogether unacceptable to his master in this issue, Quatremère de Quincy, who, as Robin Middleton points out, indicated a blue vault with gold mouldings in his hand-

18. *Treatise*, p. 164.

19. *Treatise*, p. 165.

coloured plate of his reconstruction of Phidias' *Jupiter Olympien* even though the rest of the architecture, and especially the outside, retained the mantle of blanched purity that Winckelmann, Goethe and other 18th-century scholars had conferred on it.²⁰

Form and the problem of ocular beauty

We now have to concentrate on one of the great Quichotic windmills of architectural aesthetics, namely, the problem of harmonic proportions. In Garbett's theory, the concept of harmonic proportion stands or falls with the question as to whether there is such a thing as an ocular beauty of form? Is form something that can be dissociated from memory and association? Garbett did not think so. He would not go as far as Francesco Milizia, who ridiculed the *fruitless search* by François Blondel and Robert Morris for harmonic proportions and rejected the mere possibility of an abstract beauty of form out of hand. Milizia argued

20. Middleton (1984) p. 176.

that a form by itself could not hurt the sense it addressed. That was the main criterion by which the concept of an ocular or sensual beauty was allowed. On that basis, form must be a beauty addressing itself to the mind alone. Garbett insisted, however, that there were some form-related phenomena which could be called ocular. One such ocular beauty is spacing.

Equal spacing

Equal spacing is related to Garbett's concept of sensual beauty for the simple reason that it can be shown to hurt the sense it addresses if the dose is wrong: too many sets of equi-distant lines can hurt one's sense of sight. *Ipsa facto* equal spacing is essentially an ocular percept. Nevertheless Garbett's advocacy of equal-spacing in architecture with regard to the placing of windows and so forth, has an eminently intellectual ring to it, especially if a building may be considered polite when its standardised elements such as windows are regularly arranged.

Harmonic Proportion

The same does not apply to proportion. The fact that two bits of string can produce harmonising notes when plucked in quick succession, does not mean that those lengths of string harmonise visually. That is Garbett's starting point. Colour, on the other hand, bears a direct analogy to sound in that both are a question of vibrations. Frequencies in colour and sound can both be contrasted harmonically. Lengths of wall do not vibrate; forms and the outlines of houses cannot be plucked and cannot, therefore, be reduced to a frequency related to a wave-length. This rather obvious reason why harmonic proportions could be said not to work was, strangely enough, not used by Garbett. His rejection of the idea that a harmony results from harmonically contrasted proportions was instead based on the rather inadequate argument of precision. Garbett echoed the detractors of harmonic proportions saying that if the proportions of the breadth and height of a building are *ever so slightly* altered there is

no difference in beauty. This may be true. But what he leaves out is that the same is essentially true for sounds and colours, be it on a much smaller scale. The wavelengths of colours and sounds can also vary ever so *slightly* without immediately sounding false, or changing colour perceptibly.²¹ Therefore, even if there was an argument to disprove or weaken the theory of harmonic proportion it could not and cannot be that one.²² His rejection of harmonic proportions is therefore dogmatic and historical rather than properly inductive or empirical, failing to take full account of his own premises. He does not however supply us with an alternative system of proportions other than the inadequate one of empirical minima

21.The A produced by the hobo is now officially set at 440 hertz, nevertheless it used to vary from orchestra to orchestra by a number of hertz.

22.This also goes for Rasmussen's use of the same tired argument in his book *Experiencing Architecture*.

and the vague statement that proportions have to be appropriate. Appropriateness is not explained in terms of spatial volumes. Instead the argument bends away from discussing individual volumes to discussing their relation in terms of symmetry.

Symmetry and the art of reconstructing ephemera

Garbett's demand for outward symmetry in architecture derives from the ubiquitous appearance of outward symmetry in the phenomena of the creation.²³ Ubiquity in nature makes any form of practical or indeed philosophical justification for the application of symmetry to buildings

23.cf. Tabor (1982) pp. 18-24; March (1979) 106 ff. Another work specifically on symmetry, not mentioned by Tabor is Hambridge (1920) & (1926). Garbett does not mention Hay (1846) which he may well have consulted. Important general sources on symmetry are Weyl (1952), Thompson (1988) and Salomon Bochner (1973) p. 345-352.

superfluous; it is a source of authority which can allow itself to go unquestioned in a book which professes to derive its architectural principles from the study of nature.

Having said that, Garbett did indirectly provide further justifications to back up his stand on symmetry. J.B. Papworth had attributed the oblong plan of Grecian temples to desire on the part of the Greeks of *avoiding all approach to show*.²⁴ Garbett, paying tribute to the undoubted sense of modesty possessed by the ancient Greeks as a people, came up with a less humble explanation taking account, not of a state of mind but the needs of ritual. Although the cube was the most perfect instance of contrast, he argued, and although the cube was symbolic of perfection, it was necessary from a dramatic point of view, to distinguish the entrance side of the temple from the

24. *Treatise*, p. 139.

others.²⁵ The entrance had to be in the centre of one of the two narrower sides, so that the person entering the temple could embrace the largest area in one glance, enabling him to pay tribute to the theatrical demands of the liturgy. The entrance of a palace on the other hand, had to be in the centre of the long side of the oblong so as to make all the apartments within the building readily accessible. On the basis of this principle he rejected the temple of Palmyra as no more than a *piece of barbaric pomp*, being in fact a profanation: a temple with the aspirations of a palace.²⁶

A more direct argument for the use of outward symmetry was concerned with movement and the psychological

25. *In all measurements of the temple no cube occurs but that of the "most holy place"*. *Treatise*, p. 138. The scriptural texts referred to are 1 Kings 6, 20; Rev. 21, 16.

26. *Treatise*, p. 139. An interesting confirmation of this idea are the exceptions Versailles and Tsarkoye Seloe. The entrance for visitors to the king or tsarina were, in the case of Versailles in the north wing so that the visitor had to endure a ritualistic program of personal diminution. The same is true for Tsarskoe Seloe where the visitor's entrance was placed right at the end of the 350 meter palace so that he or she had to proceed through a gradual crescendo of magnificence.

reconstruction of normality. This may sound cryptic but is based on the truism that the eye is rarely in the position to perceive exact symmetry. There are all sorts of conditions, such as for example, the position of the eye in relation to the symmetrical object and the movement of the eye in relation to the symmetrical object, or vice versa, that distort perception. The example given by Garbett was of the contorted or moving human body. When perceived directly, the moving or the contorted body is in a complete mess, limbs akimbo. For some reason this does not disturb us. Therefore, it does not matter if one cannot see symmetry directly, it is more important that one can *deduce* its presence. When we see a person in movement we do not perceive that person's symmetry, we deduce its presence from the processing of sequential percepts and comparing that with our experience. Bodily symmetry which can be so deduced

conforms to our expectations of health with which is meant normality.²⁷

Any permanent deviation from symmetry in nature, in those cases where symmetry is *de rigueur*, may be considered a deformity. Deformity was, until the twentieth century and the violent nihilism of the modern movement, an irreducible form of ugliness. It's ugliness needed no explanation because it was considered self-explanatory. On that basis Garbett was able to conclude that a building had to be outwardly symmetrical. Only ephemeral disturbances of movement, such as the play of light and shadow, the effects of age and weathering and the position and movements of the spectator were allowed to affect a building's symmetry to add to its intellectual appeal.

Garbett's second thesis with regard to the problem of symmetry posited that outward symmetry in nature was always maintained whatever the internal arrangement of parts,

27. *Treatise*, p. 45-46.

or organs. This was a highly original idea, strongly and succinctly argued: internal symmetry, he wrote, is frequently wasteful and not organic! Garbett did not take account of the fact that internal symmetry in nature *is* maintained whenever there are coupled organs, such as the lobes of the brain, the kidneys, lungs, etc. Taking that factor into consideration, internal symmetry is only ever disturbed in cases where there are single organs to be dispersed about the body, such as the liver, stomach, pancreas, intestines, heart, etc.

Nevertheless this rather refined analogy holds water, especially with architecture. In buildings exact internal symmetry is only justifiable on practical grounds, in cases where, for instance, marriage does not entail a fusion of domestic rituals but merely their coupling; where the queen of France, for example, is entitled to half the space offered in the palace and a separate household. An obvious example of this is Versailles. Le Corbusier was, incidentally, to use the same analogy with regard to internal symmetry in

his theory of urban planning. In contradistinction to Garbett, however, Le Corbusier did not apply the full rigour of the analogy by insisting on external symmetry as a complementary principle.²⁸

Unity amidst Variety

Garbett's aesthetics is pervaded by Hutchesonian philosophy. One principle penetrates every one of Garbett's principles, that is the conviction that beauty is the perception of a relation. In Garbett's system that relation implied a tension between opposites, between, more specifically unity and variety, order and chaos. That tension, as in the case of symmetry, did not need to be seen directly. It was more important to be able deduce its veiled presence through a process involving the senses, the imagination and the intellect. Garbett's arguments concerning the deducibility of symmetry in fact illustrate Hutcheson's influence on him rather clearly in that the deducibility of

28. Tabor (1982) p. 21.

symmetry rather than its direct perception makes the value of such a quality relative to all sorts of contingencies.²⁹

In fact Garbett subordinates all his proximate principles of architectural beauty to the principle of unity amidst variety. These include the demands for equal-spaced repetition and bilateral symmetry which we have already discussed, but also what he decides is a preference of curves to straight lines, the preference of curves of contrary flexure, the preference of curves of varying curvature and the demand for

29. Hutcheson's principle ultimately derives from Plato's *Phaedrus*, 249b *It is characteristic of Human Reason to seek unity in multiplicity.* in: Iris Murdoch (1977) p. 3. In Hamilton's translation of *Phaedrus*, cf. Plato (1986) p. 55, section 249, it is translated very differently: *It takes a man to understand by universals, and to collect out of the multiplicity of sense-impressions a unity arrived at by a process of reason.*

unity or consistency of character in the application of these principles to building:

It is hardly possible to state collectively these proximate principles, without being led a step higher, to a generalisation, which reduces them all to a broader principle, though still only a proximate one. This has commonly been stated as the combination of UNITY with VARIETY. It is best explained, perhaps, in the words of Dr Hutcheson, who states as an axiom, (with regard to mere formal beauty,) that where the uniformity is equal, the beauty of forms is in proportion to their variety; and when their variety is equal, their beauty is in proportion to their uniformity.³⁰

Garbett maintained the opposition of unity versus variety, as far as *they cannot exist together in regard to any one quality*. But this did not mean that the artist had to try to keep some happy medium between the two. Far from it. There could be no

30. *Treatise*, p. 51-52.

compromise, the confrontation of the principle of unity with that of variety had to be a reconciliation of extremes. Too much uniformity would inevitably result in monotony. Too much variety, would conversely lead to confusion. But the amount is relative as too much implied not an absolute amount but surrender and domination.

Neither unity nor variety can ever be carried too far, if, for every instance of the one, and instance of the other be also found. It is an error to say that, in any composition, one of these qualities is in excess: it can never be in absolute excess; it is the other quality which is in relative deficiency.

A good example of an architectural element where the principle of unity amidst variety was carried to sublime heights is the ionic volute as opposed to the logarithmic spiral of Archimedes. Another was the serial progression of St Brides' steeple.³¹ In both of

31. Garbett avails himself of the opportunity to refer back to the problem of Harmonic proportions and the argument

these the rate of change in direction and volume respectively is

Contrast versus Gradation

A development of the principle of unity amidst variety and a further symmetrical opposition in Garbett's theory is the principle of Contrast versus Gradation which may be seen as a central concept in his normative strategy.

Reynolds and earlier theorists, such as Hogarth, anticipate Garbett on the subject of contrast as a compositional element in painting. As far as architectural design is

of precision ...any one may easily convince himself that the smallest perceptible alteration in the height of any one of [the four phases of the geometrical progression in the steeple] would destroy the beauty of the whole;- a very different effect from any that is observed in deviations from the 'harmonic proportions,' on which some insist and place so much reliance. Treatise, p. 57.

concerned Garbett certainly went furthest and was most consistent in forcing their opposition into such a well-behaved law of design.

Garbett defined contrast as a perfect similitude between two adjacent objects in certain respects, accompanied by a wide difference in some other respect.³²

*Resemblances he wrote, are quite as necessary as differences, and indeed must be more numerous. There can be no contrast between two things that are altogether different.*³³

Gradation is not specifically defined by Garbett, apart from the implication that it forms a direct opposite to contrast, but it can be taken to refer to the gradual passage from one state to another. The difference between the two consisted for Garbett in the degree of abruptness in which the change was effected. Contrast referred to the abrupt dislocation dividing

32. *Treatise*, p. 58.

33. *Ibidem*.

two similar entities, while gradation described a single but variable entity, slowly undergoing metamorphosis. Because of the abruptness of the change contrast expressed power. It had undergone force and was on that basis able to express force. Gradation on the other hand was itself the agent of slow change. That ease expressed malleability, even delicacy.

A Greek example: flutes and columns

The Doric order was, as far as Garbett was concerned, the perfect embodiment of the principle of contrast. Every detail in the Doric order had been generated by the consistent application of that principle. Columns, he argued, were fluted for no other reason than to enhance the principle of contrast. Garbett scoffed at the idea of fluting having been copied from women's clothing or the bark of trees. It was obvious to him, not without a certain self-congratulatory impatience, that a rounded smooth shaft would introduce an unbearable amount of gradation into the Doric order:

*Nothing could be so contradictory in principle to everything else in the Doric order as the sleek fatness of a completely rounded shaft, whose mass only gives it clumsiness without the slightest expression of power. A Dorian entirely debarred from the use of flutings would have made his columns square.*³⁴

A column had to be round for the sake of convenience and because it imitates nature by being round. The authority of nature is always irreducible and has therefore to be taken for granted; nature is its own justification. The fact that Garbett did not try to justify the greater convenience of a round column probably has something to do with his impatience to get to the crux of the problem, which was to reduce the unbearable levels of gradation in round shafted Doric columns and restore the order as the epitome of contrast and restore the Greeks as the most

34. *Treatise*, p. 150.

rational of formalists. Even a polygonal shaft consisting of twenty sides would not show enough contrast of light and shade from one plane to the next when lit from one point. Such a shaft would still show too much gradation to a Greek. This could be reduced, however, if one were to exaggerate the shaft's polygonal character by making each plane concave. Each plane would thus be transformed into a right-angled nook, forming a beautiful example of contrast where the expression of strength, repose and power is increased while that of clumsiness is avoided.

Garbett did not believe that the entasis in columns was introduced by the Greeks to procure the optical illusion of greater length.³⁵ Instead he favoured the view that the entasis was adopted to stop the column appearing slightly concave. This would have helped to increase the impression of squareness, and therefore of contrast. Not of the column itself, but, significantly, of the intercolumn. On

35. *Treatise*, p. 116.

entering the temple, Garbett argued that people experienced the void rather than the mass. Spherical perspective, which works on the assumption that optical images are received on a spherical surface, the retina, requires architects and designers to compensate for the concavity of the retina. Garbett posited that the intercolumn was given an exaggerated squareness by the fact that its sides were rendered slightly concave by the entasis and that this exaggerated squareness was further emphasised by the fact that the width at the top of the intercolumn was greater than the width near the ground.³⁶

The subordination of forms

The principle of contrast versus gradation gave Garbett a framework to institute a taxonomy of forms which would successfully force each class of form into a hierarchical relationship to the other classes. This hierarchy could then determine priorities in composition. The starting point for this

36. *Treatise*, pp. 153-155.

system of classification was Hogarth's *Analysis of Beauty* (1753).³⁷ The actual influence of Hogarth on Garbett was limited however. The *line of beauty* may have stood for the epitome of fitness, variety, uniformity, simplicity, intricacy, and quantity to Hogarth, to Garbett it was simply a curve of *artificial contrary flexure*. The line of beauty had to take its proper place in a strict hierarchy of forms, where each class was allocated its proper function within the composition of a building.

Garbett's method of classification was partly derived from the theorist Joseph Jopling who classified the different modes of joining two lines into four orders.³⁸ The whole spectrum was however defined by the extremes of contrast versus gradation,

37. *Let every object under our consideration, be imagined to have its inward contents scoop'd out so nicely, as to have nothing of it left but a thin shell.* Hogarth (1753) p. 7. also Hipple (1957) p. 56.

38. Jopling (1849); on Jopling see Colvin. Jopling designed a fascinating method of drawing volutes and determining the entasis of a column. He needs to be given serious historical treatment.

resulting in five basic divisions of form related to their inherent expression. Power, as the result of the exclusive application of the principle of contrast, occupied one end of the spectrum, while delicacy, as dependent on the fluidity of gradation, occupied the other end.

The first category of forms concerned rectilinear and rectangular forms. These submitted to the most extreme application of the principle of contrast from which all curves, being instances of gradation, were excluded. Perpendicularity represented the greatest possible difference between two straight lines while the greatest difference between light and shade is the difference between a plain surface and its verso when lit from one direction. But, as Garbett observed, in such a situation only one plane could be observed at a time. Therefore, the greatest *visible* contrast in light and shade could be achieved by two planes standing at right angles to each other.

If contrast is characterised chiefly by right angles and straight lines, then an obvious first step away from this extreme is

the use of oblique angles, which constitutes the second category. Having disposed of straight lines we come to his theory of curvature. The curve showing least gradation is the simple curve. After that there is a category for curves of a different equation meeting and forming a flexure. This category includes Hogarth's line of beauty, for when two curves of different mathematical equations meet there is, however small, always an instance of contrast at their point of fission. This contrast is avoided only in the last category where curves of the same equation meet to form a line of flexure.

To sum up, we have:

1. Rectilinear and rectangular forms;
2. Rectilinear but oblique angled forms;
3. Curvilinear forms without contrary flexures;
4. Curvilinear forms with artificial contrary flexures;
(Hogarth's line of beauty)

5. Curvilinear forms with natural contrary flexures.³⁹

The point of this hierarchy was to give the designer a strict set of priorities with regard to the application of forms in predetermined situations:

*Beauty consists neither in delicacy nor in its expression, but in the correct expression of whatever quality the object really possesses.*⁴⁰

A building is a complex organism. To reflect that complexity Garbett allows the architect to several if not all classes of forms at once in one building. The building thus becomes a many-sided character, as subtly composed as any human individual. To achieve this complexity there must be an

39. *Treatise*, p. 85. The distinction between the words natural and artificial flexures refers to the idea that artificial flexures are contrasted and natural ones are gradated. The former's artificial nature seems to refer to the fact that that particular curve flexure does, according to Garbett, not occur neither in nature nor in Greek architecture but primarily in Gothic architecture.

40. *Treatise*, p. 86. note.

organisational principle which decides on priorities, determining which forms are appropriate to specific situations. The architect needs a system of subordination which is not imposed by man, but one that is imposed by nature in that it can be seen to operate in nature without our interference. This natural hierarchy should allow the ordered integration of the different classes to make up a whole in the same way Cuvier had devised a system of the subordination of organs.⁴¹

If those forms exhibiting most contrast are expressive of strength then they must obviously be used in those parts of a building where strength is needed and seen

41. Garbett knew of Cuvier later in life, he mentions him in one of his exegetical pamphlets, it would be interesting to think that he derived this system of the subordination of forms from Cuvier's ideas concerning the subordination of organs, I have no evidence to this effect however. on Cuvier see Steadman (1979)

to be needed, namely the supporting elements or structural parts of a building. This condition becomes the first principle of Garbett's system of architectural composition: forms must be distributed according to the structural requirements of a building. A second principle, connected with the one just mentioned, is that forms must become visibly lighter as their distance from the ground increases. It is a principle well illustrated by the human pyramid, where the strongest and most solid men are nearest to the ground. The lighter the person, the higher his or her position is relative to the ground. This sequence is similarly echoed in the classic order in which the various architectural orders may be superimposed upon one another, such as in the colosseum. The third and last principle of organisation decides on the relative social importance of each feature and determines the choice and distribution of appropriate forms. These three principles were subsequently translated into three laws:

I. That in buildings of different destinations, features which are of the same importance, and placed at the same heights relatively to the whole buildings to which they belong, should never be found belonging to a graver class of form in the building of the lighter destination, and vice versa.

II. That in the same building, and at the same height above the ground, principal and structured members should never belong to a lighter class of form than subordinate features, nor these to a lighter class than ornaments.

III. That in the same building, features of the same degree of importance, but situated at different levels, should never belong to a graver class of form at the higher level than at the lower.⁴²

The Greeks were faithful to these natural laws, even omitting to adopt the dentils

42. *Treatise*, p. 87-88.

from the ionic order when they imported the order from *their ionian neighbours*, because they considered *rectangular forms inappropriate to such minor features*, so near the top of a composition aiming altogether at greater delicacy and elegance than their national [read Doric] style.⁴³ The Romans, who were less particular about the issues of Taste, adopted Grecian forms but forgot the underlying principles inaugurating the slow process of degeneration which led to *the chaos of architectural manners between the fall of the Roman and the rise of the Gothic systems*.⁴⁴ The Gothicists were able to recover the lost knowledge of a natural system of subordination, banishing all rectangular details from their ornament:

...at length [the Gothicists] established a consistency nowise inferior to that observed in the Finest Grecian works, though confined to a narrower scale; the forms of

43. *Treatise*, p. 90.

44. *Treatise*, p. 92-93.

the fifth class being found only in the smallest ornamental carving...while those of the first class almost completely banished from every thing except the grand divisions and masses of the building, and are never found in any details, not even those of the basement.⁴⁵

The principle of subordination suggested an interesting hypothesis concerning the causes of decline and architectural degeneration:

As the lighter classes of form are indisputably the most beautiful in themselves, apart from fitness, there is generally, when the art is in a progressive state, far more danger of their encroaching on the domains of the graver classes than there is of the contrary evil. Accordingly, it was in this way that the Greek, the Gothic, and the Italian systems all declined and fell after their perfection had been reached, and change began to be sought no longer

45. *Ibidem*.

for the sake of improvement, but for the sake of change.⁴⁶

The Sublime

It was somehow inevitable that the concept of the sublime would be rationalised according to the principles discussed above. The sublime, Garbett argued, did not depend on magnitude or quantity, instead it insisted on the proper subordination of forms and the exclusive application of the principle of contrast in the design of the building.

The Doric order represents the purest and most rational application of the principle of contrast. The temples built by the Dorians are sublime to a unique degree. Yet, when they are compared in size to those Egyptian buildings which are known to exhibit sublimity, they are no more than cottages. In other words they are far more *efficient* at procuring that quality called sublime than any other style of building. Egyptian buildings on the same

scale as Doric temples may be called curious, mysterious even, but never sublime. The same is true for Gothic buildings; they need to treble or quadruple their measurements in order to attain sublimity. Most Greek temples are no larger than Parish churches, and who would consider a parish church sublime...; picturesque maybe, pretty, mysterious, but hardly sublime!

Once the sublime was suitably conventionalised into axioms Garbett was content to leave the definition of the sublime to others, most notably Ruskin. Garbett quoted at length the passage in "The Lamp of Power" which has since become one of Ruskin's classic statements:

that the relative majesty of buildings depends more on the weight and vigour of their masses than on any other attribute of their design; mass of everything, of bulk, of light, of darkness, of colour, not the mere sum of any of these but breadth of them; not mere broken light nor scattered

46. *Treatise*, p. 97.

*darkness, nor divided weight, but solid stone, broad sunshine, starless shade.*⁴⁷

Like the principle of unity amidst variety, the sublime relies not on a compromise between extremes, but on the tension created by their forced coexistence.

Meanness

The treatment of the sublime is surprisingly brief in the *Treatise*. Perhaps that is because it really serves as an introduction into a much more urgent problem facing contemporary English architecture, which is the opposite of the sublime, namely the concept of lightness. Lightness was an attractive concept during the first half of the nineteenth century. The reason for this, without wanting to be cynical, was undoubtedly that lightness was one of the few aesthetic qualities which could make a building cheaper. The concept came under threat as soon as Ruskin insisted on *weight and vigour*. It was further rejected

47. *Treatise*, p. 101. cf. Ruskin, *Seven Lamps*, "Lamp of Power," p. 124. On Ruskin's concept of the sublime see Landow (1971).

by Garbett who called it *the paste-board treatment of buildings peculiar to modern England*.⁴⁸ With that judgement the concept of *lightness* changed its name to suit the temper of the prose and became instead the problem of *meanness*, a theme which, in the years following the publication of the *Treatise*, was to become one of Garbett's fiercest obsessions.

The problem really concerned sharp practices in architecture and the discrepancies between the design and the finished product. In order to lure his client, the architect made his building on paper look far more attractive, solid and vigorous than the cost of execution would permit. In Barry's designs for the Houses of Parliament, for instance, the recesses of the windows appeared about three feet thick according to Garbett. In the executed building they were reduced to no more than a foot thick. This accusation was followed up with a quick calculation as to how much the architect has robbed the public of

48. *Treatise*, p. 102.

apparent solidity and produced the unforgettable slogan: *Give us back our 112,000 cubic feet.*⁴⁹

The Picturesque

Garbett devotes very little space to the picturesque. What he does say is little more than a derivative echo of Ruskin's ideas but without the latter's subtle arguments and brilliant resolution of the concept in the lamp of memory. Garbett does not appear to have grasped the full (social) implications of Ruskin's concept of Picturesque.⁵⁰ Having said that, Garbett does isolate the interesting phrase in Ruskin's lamp of memory which defines the picturesque as a "*Parasitical Sublimity.*"⁵¹ The picturesque and the sublime behave in a way similar to Alison's power, versus delicacy. The picturesque is a quality

49.Ibidem.

50.On Ruskin's Concept of the Picturesque see Landow (1971).

51. *Treatise*, p. 106; Ruskin, *Seven Lamps*, "The Lamp of Memory," § XII, p. 217.

achieved by the workings of an external agent on the object. The sublime, on the other hand, is a quality which is intrinsic to the object. The picturesque is a *display, in the extraneous and adventitious circumstances of a thing, of such qualities, as, transferred to the thing itself, would conduce to sublimity.* The picturesque may be defined as a secondary quality:

The same depth, and prevalence of contrast in a building, which, when produced by evident design, leads to nobleness, or at least obviates meanness; when resulting from chance (either by the falling of a building to ruin, or the unforeseen clustering of buildings together,) constitutes the picturesque.

To support this argument Garbett tries to translate Ruskin's ideas into his own, more axiomatic program concerning the principle of the subordination of forms. The Picturesque can be achieved through the accumulation of all the physical elements conducing to sublimity with a studied exclusion of all those principles relevant to beauty. These include the uniformity of halves, or bilateral symmetry, equidistant

repetition and the principle of gradation in general.⁵² That is as much as to say that picturesque as a principle relevant to architectural design must ultimately be rejected on the grounds that it is a quality which relies totally on the arbitrary and the accidental effect of time and circumstance to achieve its effects and therefore not on the beautiful necessity exhibited in the design of nature. The picturesque is the Rembrandt of aesthetics.

52....*the beauty of gradation (...) while it is only prejudicial to real sublimity, is destructive of this sort of 'parasitical sublimity,' called the picturesque. Treatise, p. 108.*