

Göller

The work of Adolf Göller (1846–1902) was almost unknown in the late twentieth century, until his most remarkable work was translated into English and edited by Harry Mallgrave.¹ As a professor of architecture, Göller's concerns were much more focused on the formal issues of his discipline than were Robert Vischer's, but this concentration allowed him to produce one of the clearest and most systematic studies of the relation between the history of art and human nature. His ideas were applied most widely in his major publication, *Die Entstehung der architektonischen Stilformen: Eine Geschichte der Baukunst nach dem Werden und Wandern der Formgedanken* (The Origin of Architectural Styles: A History of Architecture According to the Origin and Development of Ideas of Form) (1888). They emerge most clearly, though, in the lecture 'Was ist die Ursache der immerwährenden Stilveränderung in der Architektur?' (What is the Cause of Perpetual Style Change in Architecture?). This was delivered originally at his institution, the Stuttgart Technische Hochschule, and published in a volume of his essays in 1887.

The lecture begins with a contrast between the wealth of the products of nature and the similar riches of the creations of the human hand. It then moves quickly onto a celebration of human vision: 'Within ourselves have emerged the tiny optical apparatus that reflects the mightiest phenomena within a minute compass and also the awesome faculty that carries optical images into our consciousness and enables us, with a sense of delight, to extract the beauty of form from outline and light and shadow.'² This prepares for a reflection on evolution as a feature both of the natural environment and the world of human creations, and the admission that, while people have long reflected on the laws governing nature, they have not thought enough about the laws governing changes in the human sense of beauty.

Reminding his audience of the sequence of European architectural styles that led to their present stylistic situation he remarks, 'We

know what is happening, but we cannot stop it. It is only too obvious that we are following a law, the same law that once pushed the High Renaissance itself into the Baroque, the early Gothic into the late Gothic – the same law that has carried every other style from ascent to flowering and from flowering to decay.' It is this law that will be Göller's topic: 'I shall endeavour to identify the psychological causes from which our sensibility to the beauty of the decorative forms of any architectural style changes with time and to show how the individual's attitude to individual form accounts for the inevitability of the perpetual style change in architecture.'³ He will not discuss painting or sculpture because with those arts the form is indissoluble from content. He will instead concentrate on architecture, because only with architecture is it possible to distinguish 'pure form' as something which can please us without evoking thought. As he says,

the pleasure of pure form is still an unsolved riddle of science . . . with pure form, feeling is presented without thought; here the course of meaningless lines, the relation of meaningless proportions, the play of meaningless light and shade, is sometimes a source of great pleasure, sometimes entirely indifferent to us. Vainly do we in either case ask the reason why. Vainly do we search our minds for the explanation of a feeling that has nothing to do with thought.⁴

It is this problem that he sets out to solve.

First, though, he has to dispose of a solution that has already been offered by others, one based in the mechanics of vision. Any explanation, he argues, has to take into account the nature of the visual process:

We know that the observer's eye, in following the lines of the form, will turn back and forth, up and down, by means of its muscles; we know that the light rays fall on the retina of the eye and stimulate the ramification of the optic nerve; we know that this stimulus is conveyed by the optic nerve to the brain. What happens there is still unclear as a mechanical process: it is the conscious imagining [*Vorstellung*] of form. If the form is beautiful as pure form, pleasure appears in none of the first three processes but only in the last – in the conscious imagining.⁵

Given this process he considers the suggestion that pleasure in form is connected with some 'pleasurable feeling in the eye's motor system'. It may be true that we prefer looking at straight lines and regularly curving lines rather than broken straight lines and irregular

curves, but this cannot be due to the 'physical process of muscular movement', partly because the muscular movement would vary depending on the position of our head and partly because proportion, which is an important source of pleasure, is not associated with muscular movement at all. The pleasure, in other words, is rooted not in the physiology of the muscles, but in the mind, and so, implicitly in the physiology of the brain.⁶

It is this intellectual pleasure that is his concern. The principle concept he relies on for this is the idea of the 'memory image' (*Gedächtnisbild*), that is the image of something that we slowly build up in our memory after repeated viewings: 'The mental work that we do in forming the memory image of a beautiful form is the unconscious mental cause of the pleasure we take in that form.'⁷ The process involved is like that through which we are 'imprinted' with beautiful forms during our education. In other words, 'The individual's sense of form is dependent on memory content, that is to say, on images of forms seen earlier and retained in the memory.'⁸ The process is not simple. For example, with a large object which has many views it takes a lot longer to build up the necessary series of memory images. What is important, however, is that when, in the end, the image is complete, the pleasure immediately diminishes, producing a third law: 'Our pleasure in the beauty of a meaningless form diminishes when its image becomes too clear and complete in our memory. It is this far-reaching psychological law of "jading" [*Ermüdung*] of the sense of form, which imposes perpetual style change on architecture.'⁹ The remorselessness of this law is illustrated by the way in which it applies to all forms even the most beautiful:

Architectural history shows that everywhere, even with the noblest forms, jading is inevitable. Those Doric columns of the golden age of Greek architecture were soon no longer slender enough; the Roman entablatures and capitals of the first century were soon no longer rich enough; the facades of the High Renaissance were soon too flat! How are we to explain the abandonment of the most beautiful forms created by the masters of the greatest ages of architecture and their replacement by others that, in our opinion, have lesser value? Is there any explanation other than that jading is independent of the value of the form?¹⁰

However, it is equally important that in the case of a work such as a painting or sculpture – or even a cathedral – where viewing brings with it reflection and deep intellectual feeling, the jading does not take place. The law applies only to forms that mean nothing but

form. Göller's argument is not as seamless as he would like. Clearly it is questionable whether it is possible to separate off form as form in architecture in this way and impossible in the other arts, but the principle that the building up of a memory image leads eventually to jading is a clear one. The neurological processes he assumes are now widely recognised, although today they would be presented rather differently.

The best example of the way in which Göller's theories fit with the findings of modern neuroscience is in his consideration of the way architects avoid jading. One way is simply to use familiar elements to make different compositions. Another is to use them in different combinations. A third is simply 'to intensify [*steigern*] the charm of old forms' by lengthening the proportions, increasing the ornament, deepening the shadow, multiplying the mouldings or the verticals or the horizontals.¹¹ This last approach is close to that now analysed under the heading of the 'peak shift' phenomenon. The term originated in the 1950s when it was shown, using 'peaks' on graphs, that pigeons who were rewarded for pecking at a colour of a particular wavelength and not rewarded for pecking at another colour would peck most enthusiastically if the wavelength of the first colour was changed in a direction away from the wavelength that brought no reward. In later experiments more relevant to the study of artistic response it was similarly shown that rats which are trained to associate a reward with a rectangle rather than a square will react even more positively if one dimension of the rectangle is extended to make it look even less like a square. Both sociobiologists and neuroscientists have used the phenomenon to explain stylistic change in art.¹²

Göller makes interesting qualifications of his law. For example, he claims that older designers are more likely to avoid jading by introducing new compositions and combinations, while young ones with their less well-formed memory images are more likely to just try to intensify existing features, a predisposition also more apparent in lay people for similar reasons. He evidently regarded such a process of intensification as particularly dangerous because it was easy for people to go on changing until they have gone too far in a particular direction. Yet another qualification is that the more buildings that are built in a particular period the faster the change will occur, as happened in the Middle Ages, or in Göller's own time. As a result it is possible to put all these factors into something resembling a scientific equation: 'The pace of progress varies in the different centers of a style, depending on the level of building activity and on the involvement of older and younger talents. In this way, more or less

significant centers are formed that dominate a particular region and establish a local stylistic trend.¹³ No examples are given to illustrate or demonstrate the claim, but it is clear enough to allow readers to test it against their own experiences should they so wish.

The same is true of an equally clear claim, one that can be thought of as drawing together the observations of Winckelmann, Ruskin and Taine and giving them a much more systematic formulation: since local experiences are so important, there can be no universally valid assessment of the beauty of architectural form:

If we find a similar sense of form among members of a narrow circle, it is because the images of the same landscape, the same works of their ancestors, the same domestic and communal lives, and in particular the same architectural works have influenced their sense of form, and the unanimous judgement of those members is then assumed to be a kind of objective knowledge. Thus there exists a certain collective sense of form among contemporary members of a family, of a school, of a city, of a nation, and of humanity as a whole. But the wider we draw the circle, the less will be the agreement and the greater will be the differences in the individual sense of form; the longer the circle subsists, the greater will be the change that takes place between the beginning and the end.¹⁴

This paragraph is perhaps the most remarkable in the whole essay and one of the most perceptive in the history of art.

Thinking in terms that are much broader than those used in the rest of the text, he uses the idea of the 'memory image' to argue that anything in the visual environment, landscape, material traditions, the apparatus of people's private and public lives is liable to influence their visual tastes. Anything that an individual looks at frequently is liable to lead to the formation of memory images in his or her brain and cumulatively these memory images will lead to the establishment of a distinctive 'sense of form'. Such a sense of form will then be shared with all other individuals who have similar visual experiences. And this allows it to be applied at a range of levels from the family, through the school, city and nation to humanity. It is sufficient that people share the space where the experiences are located. Also important is sharing the same time, although, given the way memory images accumulate to create a sense of form, there will usually be a great measure of continuity. Göller's 'sense of form' thus anticipates features of Baxandall's 'period eye', but significantly does not stress the conscious social formation so crucial for Baxandall's 'social history of style'. Instead, he emphasises the purely

passive exposure to the visual environment, the impact of which is indeed much easier to confirm using modern neuroscience. The disappointment is that the claim is purely theoretical. Unlike Baxandall, he gives no examples of such a 'sense of form' in practice.

The essay ends with some reflections on the consequences of 'jading', beginning with the observation that, although it may seem a bad thing because it has meant the death of great styles, it has in fact been beneficial in preventing stagnation and promoting innovation: 'The jading that affects the sense of form is not inimical to architecture; on the contrary it is essential to its development.'¹⁵

The clarity and coherence of Göller's theory is largely a product of his concentration on a single art form, architecture, and the breadth of his knowledge of that art form. Architects in late nineteenth-century Germany had a greater knowledge of architectural forms than those of any other place or period. Not only were they aware that there had been a rapid sequence of styles in their own territories, frequently influenced by external traditions, they were also able to travel by train taking in many examples in a short period. This allowed them to follow the sequences of monuments within Germany as well as acquire an awareness of foreign traditions by pursuing them to their roots in Italy, France and elsewhere. Students of the visual arts of Göller's generation, especially German students, given their country's central position in Europe, were, like Darwin on *The Beagle*, exposed to a wider range of data in the field of their primary expertise than anyone had been previously. As a result they would have unconsciously become more and more sensitive to patterns of variation through time and from place to place. Picking up on sensibilities that were emergent in Ruskin and Taine, who experienced similar privileges, but to a lesser degree, and being, through the influence of scientists such as Helmholtz and Heinrich Hering, more conscious of the new understanding of the brain, writers like Vischer, Göller and Wölfflin sensed patterns of variation in artistic behaviour that remained unperceived by others with a narrower knowledge. They were also conscious enough of their own neural make-up to explain them in neuropsychological terms.

For someone such as Göller whose professional position gave him an interest not in all the arts, but in architecture alone, the formulations that resulted could be startlingly clear. Since the data he was working with came from a single field it was more easily synthesised. As he went from city to city, from building to building, he would have unconsciously experienced the formation of a plethora of memory images in his own brain before he used the idea of memory image

formation as the basis for his theory of architectural change. It was because of this convergence in his experience of architecture that he could build such an ambitious theory. It was also, however, sadly, because of his isolation in that field that his ideas had relatively little impact, although, as we shall see, they were powerful enough to be attacked immediately after their publication by Heinrich Wölfflin.

Wölfflin

Heinrich Wölfflin (1864–1945) had been exposed to a similar convergence of circumstances as Göller. Indeed, the same factors would have affected him more intensely. Being younger, the new knowledge of the brain would have affected him more deeply, and, coming from Switzerland, centrally placed between Germany and Italy, Austria and France, he was in an even better position to enjoy the benefits of the advancements in rail travel. He also benefited from the improved access to images of works of art made possible by photography. And all this meant more to him because he was trained partly as an art historian, first in Basel with Jakob Burckhardt (1818–1897), and then in Berlin and Munich. Wölfflin began working along similar lines to Göller, developing his own new theory about the response to art, and especially architecture. This was articulated in a brilliant short doctoral dissertation *Prolegomena zu einer Psychologie der Architektur* (Prolegomena to a Psychology of Architecture) (1886), when he was only twenty-two, a year before Göller's essay.

His starting point is the need to explain why everybody feels the expressive power of architecture. Laymen find that buildings have moods and art historians find that they illuminate the characters of periods and peoples.¹ Like Göller he noted how some have suggested that this is an optical phenomenon, reflecting the different ways in which the muscles of the eye react to curves and zigzags, but for Wölfflin this is simply not adequate to explain the richness and complexity of our response to architectural forms. Wölfflin is sympathetic to Robert Vischer's idea of a bodily reaction, but feels that what he is discussing is an imaginative, that is a mental, rather than a physical, response.

In his view we have to consider that the whole body is involved: 'The optic nerve-stimulation directly causes an excitation of the motor nerves, which produces a contraction of particular muscles.'² Wölfflin here for the first time explicitly describes a visual experience in terms of an interaction of the visual and motor system. However, he is also anxious to stress that the reaction stimulates not just bodily