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German Art History and Scientific Thought

Beyond Formalism

Edited by
Mitchell B. Frank and Daniel Adler

ASHGATE

'Look at your fish': Science, Modernism and Alois Riegl's Formal Practice*

Margaret Olin

Alois Riegl probably would not have cared for this essay. Riegl was neither a 'modernist' nor a 'scientist'. He distrusted the art historical followers of Darwin, regarding with hostility the encroachment of what he saw as the 'materialism' of the natural sciences on the study of ornament.¹ Accordingly he sought to defend the borders of the new field of art history.

But he did parallel the achievement of the artist with that of the scientist, because both made discoveries about the natural world and natural law through observation. The designer of ornament, like the designer of nature, created structures in which each achievement built on that of its predecessors. Riegl paralleled the development of theories about nature with artistic progress and even (art) historical scholarship. In *Spätrömische Kunstindustrie* he compared mechanical-causational, magical and chemical-scientific theories with what he called the *Kunstwollen* and its attitude toward space.² Did some of his ideas of the methods of art historical scholarship come from the 'natural sciences'?³

The Culture of Visuality

The culture of visuality, in the nineteenth century, fostered the development of a specialized mode of perception shared by science and art history. Specifically, when it was said that art studies demanded scientific methods, comparative anatomy was usually the science one had in mind. The techniques of visual analysis, description and classification on which Riegl embarked in all his early work, including the general developmental lines he drew when he studied ornamentation, linked him directly to comparative anatomy in the natural sciences.

The development of scientific methods in art history is often traced to Giovanni Morelli. Morelli trained as a doctor, but rather than practice medicine, trained further and studied comparative anatomy.⁴ He would later draw the parallel himself between science and art connoisseurship.⁵ Morelli wrote that one needed method to study art, and specifically, 'this method, as I take it, can only be of that experimental kind which from the time of Leonardo da Vinci and Galileo, to that of Volta and Darwin, has led to such glorious discoveries'.⁶ He compared the connoisseur's knowledge to that of the anatomist, the botanist and the zoologist, who must be able to 'distinguish a fig from a pumpkin at a glance, or the young lion from the domestic cat'.⁷ He made fun of the art historian for whom a '*general impression* produced upon him by a work of art, be it a picture or a statue, is quite sufficient to enable him to recognize the master at the first glance'.⁸ Morelli's 'experimental' method was that of close observation: 'Only a close observation of the forms peculiar to a master in his representation of the human figure, can lead to any adequate results.'⁹ He distinguished 'genuine artists', whose works were worth studying, from 'imitators who, in the history of Art, as in that of Science, only figure as mere nonentities'.¹⁰ The passage repeatedly associates artists and art historians with scientists.

It was difficult to distinguish experimentation from observation, and therefore what Morelli meant by 'experiment' was a bit murky.¹¹ But his notion of close looking is clearer. It was, he wrote, 'no such easy matter as might be thought to discern the forms peculiar to a master; and ... just as the acquisition of a foreign language demands time and toil, so the eye requires long, very long practice, to learn to see correctly'.¹² Using the term 'causative nature' to describe the link between language and art, he made both seem to be the domain of science.¹³ The artist speaks in the language of art, which is connected to the local spoken language. The art historian must acquire a reading knowledge of both.

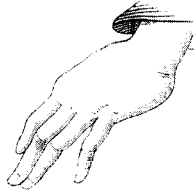
By the time Riegl studied with Morelli's disciple Moritz Thausing, the necessity of close looking was already embedded into the curriculum, and the connection between it and the natural sciences was assumed. Like Morelli, Thausing similarly emphasized the specialized training of the eye. While he distinguished it from the specialized training of the hand of the artist, thus distinguishing art and scholarship, he repeated the comparison Morelli had made between language and art, and even published a system of visual notation for phonetics.¹⁴ He compared the work of the art historian to that of the natural scientist in its 'exact observation and continual comparison', differing only in the fact that the objects of study were harder to come by and that it is impossible to experiment with them.¹⁵

In Morelli's system of connoisseurship, the work of art seemed perhaps particularly close to natural observation, because, in his discussion of the drawings and paintings by Italian Renaissance artists, Morelli ignored those characteristics of works of art that we would identify as artistic treatments of

gegen jeder selbständige Maler seine eigene Art, die Landschaft und, was noch mehr sagen will, die Form



Fra Filippo Lippi.



Filippino.



Antonio Pollaiuolo.



Bernardino dei Conti.



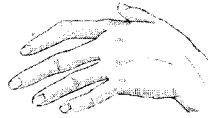
Giovanni Bellini.



Cosimo Tura.



Bramantino.



Botticelli.

der Hand¹ und des Ohres aufzufassen und darzustellen.

2.1 Hands, from Ivan Lermolieff (Giovanni Morelli), *Kunstkritische Studien über italienische Malerei*, Leipzig: F.A. Brockhaus, 1890, p. 98.

the subject, such as the brush strokes or chiaroscuro used to depict earlobes or hands, in favor of earlobes and hands themselves, as though the choice of models, not artistic interpretation, differentiated the artists (Figure 2.1). 'With Palma Vecchio', he wrote, 'the hand is always more bony, and therefore more quattrocentist, if I may say so, than with his pupils. The Bonifazio Veronesi make the hand more bloated and spongy, the fingers more pointed than Palma Vecchio. In Cariani the hand is similar to that of the Bonifazio, only coarser and brawnier.'¹⁶ He added that these artists also chose to depict different breeds of lapdogs.¹⁷ Morelli thought that drawings better displayed 'the family features, both intellectual and material, of the different masters and schools', but only because of the treatment undergone by paintings after they were made: 'painted works have come down to us in most cases so disfigured by the tooth of time or the paw of the restorer, that very often we can no longer recognize in them

the hand and mind of the artist.¹⁸ An alien hand had experimented with the specimens and ruined them.

Morelli's frequent reference to botany and anatomy as a point of comparison suggests the relationship between his method and the method he learned as a scientist, in association with other scientists. He quotes, in his *Italian Painters*, from a biography of one such associate, Louis Agassiz, a famous Swiss scientist with whom Morelli travelled to study glaciers. Agassiz classified fossil fish, and developed a theory that related the varieties of humankind to the varieties of animal life in the areas that they originally inhabited. He later moved to the United States, where at Harvard University he founded a museum and a field station for marine studies, educated a generation of American scientists, published a series of lectures that explained his scientific method, and continued his classifications of fish, mollusks and coral reefs.¹⁹ His students left reports of his extraordinary teaching methods, most of which he had probably developed in Europe. Morelli quotes from one of these accounts, according to which Agassiz's teaching centered on observation:

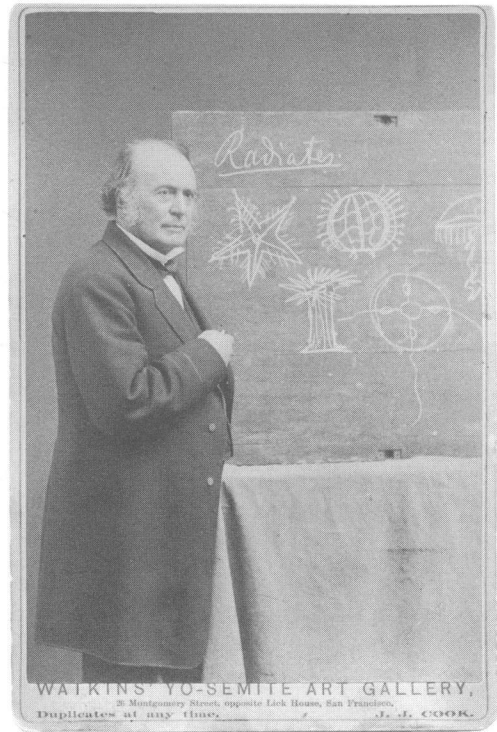
Observation and comparison being in his opinion the intellectual tools most indispensable to the naturalist, his first lesson was in *looking*. He gave no assistance; he simply left his student with the specimen, telling him to use his eyes diligently, and report upon what he saw. ... His students still retain amusing reminiscences of their despair when thus confronted with their single specimen; no aid to be had from outside until they had wrung from it the secret of its structure. But all of them have recognized the fact that this one lesson in looking, which forced them to such careful scrutiny of the object before them, influenced all their subsequent habits of observation, whatever field they might choose for their special subject of study.²⁰

In the canonical story, Agassiz demanded that his student 'look at your fish'. There are variations, but the gist is that the student is given a single specimen of a fish in a tin pan, and told to look at it without reading or consulting any experts on fish, and to 'find out what you can without damaging the specimen'.²¹ When he is ready, he should report what he sees. The fish is unsavory; the student is 'sickened by the stench of old alcohol'; he has trouble taking care of it.²² In some versions it occurs to the student to draw the fish, which earns him a measure of approval.²³ The student may feel ready at the end of the day or in a week, depending on the version (the nauseating odour sometimes plays into the story here), so he spends an hour telling his teacher what he knows. Agassiz listens, but then sends his student back with a stern warning. The student discards his first notes, and another week or so of ten-hour days spent staring at the fish ensues. At the end of the story, the student returns with something that the teacher is at last ready to hear. The student has learned to look.

Alois Riegl always considered himself a disciple of Thausing rather than Morelli, but he inherited at least the scientific culture of the gaze through Thausing from Morelli.²⁴ In doing so, however, he picked up less the method than the concern for close observation itself and, most significantly, the results,

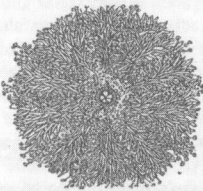
that is, a concern for formal systems and the importance of visualizing them. Riegl differed from Morelli in Riegl's more sophisticated notion of representation, an understanding that brought him closer to Agassiz than to Morelli. To Morelli the specimens appeared to be hands themselves – his examples were representational. Representation, however, was not the overriding principle of the specimens studied by Riegl and Agassiz. Ornaments, after all, were not exactly pictures of anything, and works of nature do not represent anything beside themselves.²⁵

A sea urchin does not represent a star fish (Figure 2.2). But Agassiz, in his *Methods of Study in Natural History*, shows how by manipulating the structural parts, the research scientist can conceptually transform all echinoderms into one another. The spherical sea urchin, he explains, has a 'mouth' with five surrounding parts that act as jaws, each one with a tooth in the centre (Figure 2.3).



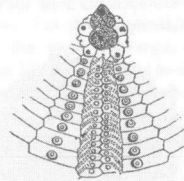
2.2 Photograph of Louis Agassiz drawing radiates, 1872, from the Archives of the Ernst Mayr Library of the Museum of Comparative Zoology, Harvard University.

much as possible in these papers, make use of the unfamiliar terms oral and ab-oral regions, to indicate the mouth with the parts diverging from it and the opposite area towards which all these parts converge.*



Sea-Urchin seen from the oral side, showing the zones with the spines and the suckers; for the ab-oral side, on the summit of which the zones unite, see the wood-cut on the next page, which shows a portion of that region.

water-tubes which are their locomotive appendages. For this reason these narrower zones are

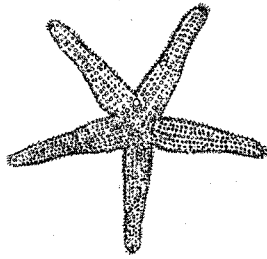


Portion of Sea-Urchin representing one narrow zone with a part of the broad zones on either side and the ab-oral area on the summit.

called the *ambulacra*, while the broader zones intervening between them and supporting the spines are called the *interambulacra*. Motion,

2.3 Sea Urchins, from Louis Agassiz, *Methods of Study in Natural History*, Boston: Ticknor and Fields, 1863, pp. 211–12.

may be stretched out indefinitely; then split the it, and lies between them. The adjoining wood-
 five broad zones along the centre, and draw them cut represents a single ray of a Star-Fish,
 down to the same level with the mouth, carry-
 ing the ovarian plates between them. We have



Star-Fish from the ab-oral side.



One arm of Star-Fish from the oral side.

then a star; just as, dividing, for instance, the drawn from what we call its lower or oral side.
 peel of an orange into five segments, left, of Along the centre of every such ray, diverging

2.4 Star Fish, from Louis Agassiz, *Methods of Study in Natural History*, Boston: Ticknor and Fields, 1863, pp. 214–15.

The plates, which are important to locomotion, continue around until, at the other, 'aboral' side, they terminate in five 'eyes'. If the spaces between the plates were infinitely expandable, one could imagine pulling and twisting each set of plates around itself so that instead of five narrow plates, the creature would have five arms, each of them terminating in an eye (Figure 2.4). Using imagination and powers of observation, in other words, it is possible to transform a sea urchin conceptually into a star fish, thus establishing a relationship between the two.²⁶ Hence the scientific utility of close observation.

Riegl proceeded similarly to make his point about the significance of the lotus ornament (Figures 2.5–2.8). His use of schematic drawings to

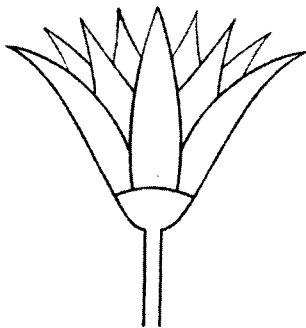


Fig. 7.

Lotusblüthe in Profilsicht.

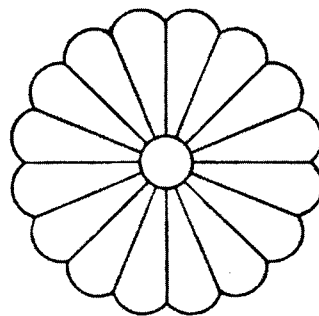


Fig. 12.

Stumpfbliättrige Lotusblüthe in Vollansicht (Rosette).

(left) 2.5 Lotus blossom in profile view, p. 48, fig. 7; (right) 2.6 Blunt-leaf lotus blossom in full view, p. 53, fig. 12. Both from Alois Riegl, *Stilfragen*, Berlin: Georg Siemens, 1893.

trace such features as the droplet, and the 'crowning fan of leaves', from the lotus to the palmette and finally to the Greek acanthus vine or the arabesque resembled the classificatory efforts of scientists such as Agassiz.²⁷ Like Agassiz, he identified a class, in this instance a class of ornament that originated in various views of the Egyptian lotus. To do so he disassembled the ornament, as Agassiz did with his creatures, into components, or views, and then put the components together differently. *Stilfragen* can be considered an essay in classification of a species of ornament.

Agassiz did not regard the differences he traced as adaptive in either a strict or a loose Darwinian sense. Star fish were not improvements on sea urchins, and he did not think that one of these animals evolved into the other. Their differences exemplified the order and variety of God's creation. He objected to the theory of evolution, which he called the theory of 'transmutation', because he thought there was 'a repulsive poverty in this material explanation, that is contradicted by the intellectual grandeur of the universe'.²⁸ One might now call him a proponent of 'intelligent design'. Riegl, less antagonistic than

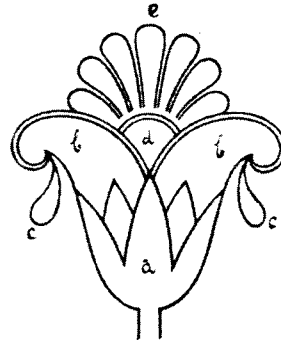
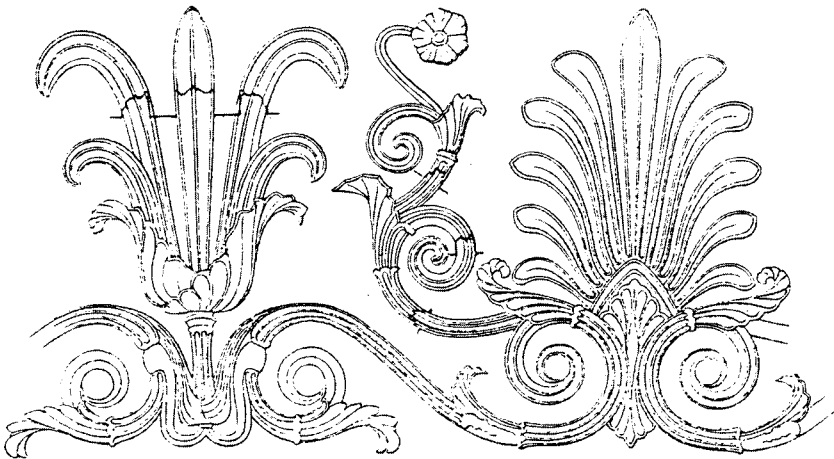


Fig. 16.
Lotusblüthe in halber Vollansicht.
(egyptische Palmette.)

2.7 Lotus blossom in half-full view, from Alois Riegl, *Stilfragen*, Berlin: Georg Siemens, 1893, p. 59, fig. 16.



2.8 Acanthus ornaments, from Alois Riegl, *Stilfragen*, Berlin: Georg Siemens, 1893, p. 213, fig. 113.

Agassiz to evolution, traced what he called 'development' in design and did not hold Darwin responsible for the excesses of 'Darwinism'. He resembled Agassiz, however, in his distrust of the 'materialist' idea that ascribed changes in design to adaptation to material necessity.²⁹ While Riegl's view of diversity in design was more 'evolutionary' than that of Agassiz, therefore, he thought, like Agassiz, that design enjoyed an intellectual, not a materialistic, evolution. The forms of Riegl's plant ornaments fulfilled functions, just as did Darwin's successive animal forms, but they were design functions. His 1993 work *Stilfragen* argued that successive versions of the palmette filled and represented surfaces better.³⁰ Insofar as Agassiz aimed at revealing the 'intelligence' of God, rather than the material process of adaptation, Riegl's use of the term 'Kunstwollen' in *Stilfragen* remained close to Agassiz's spirit. For Riegl, (human) 'intelligence' caused forms to evolve.

The Culture of Engagement

But after *Stilfragen*, the notion of detached viewing on which Riegl based his findings began to come apart. The ornaments that Riegl discussed in *Stilfragen* represented the surface of an object, constituting the kind of work that Morelli, Agassiz and Thausing thought of as scientific.³¹ In his later work, *Spätrömische Kunstindustrie* (1901), however, the ornaments and other works Riegl studied represented the perceptual categories, touch and sight. These were qualities of the viewer, not of the objects or the surfaces covered by the ornament. In addition, Riegl introduced a new understanding of the *Kunstwollen* in *Spätrömische Kunstindustrie*, according to which ornaments represented not only the perception but also the desire of the viewer.³² Art history no longer made use of detached viewing; it represented viewing, detached or not, and came to represent the struggle between the two kinds.

Touching was the trope for this engagement, in part because it stood, as it did in perceptual theory, for relationships between the viewer and space: the viewer's orientation in space, and the distance between the viewer and the object. This characterization of touch arose from the recognition that both the object and the viewer are things in the world. Later still, in *Das holländische Gruppenporträt* (1902), Riegl explicitly identified an ethical element in perceptual representation.³³ By analyzing the glances and gestures shared between figures in a group portrait and between the viewer and the work, he turned the work into a network of relationships, and made the viewer, thus engaged, part of the work and indispensable to it (Figure 2.9). The notion of detached specialized viewing still governed these studies, as it had *Stilfragen*, however, because the viewing conditions



2.9 Dirck Jacobsz, *Een Groep Schutters*, 1529, Rijksmuseum, Amsterdam.

could be read into the fibulae, the buckles, the group portraits and Ruisdael's landscapes. The hands did not matter only as specimens of particular masters; what mattered was where, or to whom, they were pointing.

In the early twentieth century, something also happened to Agassiz's fish. Modernist writers, who understood artistic observation as innocent, but intense, played an important role in the fate of Agassiz's fish. As Robert Scholes has documented, the fish, thanks to a classics professor and a poet, became a trope of literary criticism.³⁴ Lane Cooper, the classicist responsible for the dissemination to the humanities of the Agassiz myth, wrote in 1917:

Most persons do not, in fact, discern the close, though not obvious, relation between investigation in biology or zoology and the observation and comparison of those organic forms which we call forms of literature and works of art. ... We study a poem, the work of man's art, in the same way that Agassiz made Shaler study a fish, the work of God's art.³⁵

Training in visual analysis in one field, for example science, would apparently suit the pupil for visual analysis in any field, for example literature.

Ezra Pound was one of the literary thinkers who understood this message. He helped Agassiz's methods, in the United States, become associated

with a legendary way of describing the close attention necessary for any kind of scholarship or study and an inspiration for literary modernism and new formalism. Pound began chapter one of his book *ABC of Reading*, first published in 1934, with Agassiz:

The proper METHOD for studying poetry and good letters is the method of contemporary biologists, that is careful first-hand examination of the matter, and continual COMPARISON of one 'slide' or specimen with another. No man is equipped for modern thinking until he has understood the anecdote of Agassiz and the fish.³⁶

He continues with a colourfully embellished version of the 'anecdote', concluding: 'At the end of three weeks the fish was in an advanced state of decomposition, but the student knew something about it.'³⁷ The anecdote of Agassiz and the fish remained current at least until the high school years of the present author, where a Latin teacher introduced it in class and identified its subject as our academic proavus, or perhaps even abavus.³⁸

In the 1980s, when Scholes discussed Agassiz, his purpose as a literary critic was to plea for an awareness of the constraints and possibilities of discursive modes. He emphasized the relationship of Pound's use of the anecdote to modernist literary criticism. The fish, he demonstrated, became the starting point of a disagreement (with John Steinbeck) over the sufficiency of looking. For Pound, it was enough to look and describe. For Steinbeck, the important thing was to understand how it felt to grapple with the fish. Counting the spines on the dorsal fin of a fish stinking of formaldehyde was one thing, wrote Steinbeck, but 'If the sierra strikes hard on the line so that our hands are burned, if the fish bounds and nearly escapes and finally comes in over the rail, his colors pulsing and his tail beating the air, a whole new relational externality has come into being.'³⁹ If Steinbeck's discussion of the sierra built on Ezra Pound's discussion of the sunfish, then perhaps another addition to the discourse of the fish is Ernest Hemingway's 1952 book, *The Old Man and the Sea*.⁴⁰ The story concerns the efforts of an old man alone in a boat to catch a giant marlin. By the time the man has grappled alone with the fish for the entire novella, he ends up exhausted but victorious, the destroyed carcass of the fish attached to his boat. The old man barely looks at the fish, but learns to know it well. Hemingway's story could be considered a novella length critique of Pound's 'Anecdote of Agassiz and the Fish', emphasizing the same disassociation between looking and grappling that Steinbeck had noted.

Or, to rephrase, looking and touching.

The alternation between looking and touching in the stories of the fish plays out the contest between an engaged and a formalistic approach. In fact, the conflict was already present in Pound's account of Agassiz and the fish. The fish is destroyed in Pound's account, but in the several

versions of the story that stem from Agassiz's own time, students recount the pains they took to keep the specimens wet and replace them in alcohol every night. Pound made the change, Scholes suggests, to make it a better story.⁴¹ But why does the fish's destruction make a better story, unless, in his exploration of plain 'looking', Pound already grasped the threat of destruction it involved. Perhaps this is why the aura of decomposition (and its accompanying odour) lurks about this passage rather than that of alcohol.

The conflict between looking and touching was already implicit in Agassiz's thought, according to which several aspects of looking demanded a kind of grappling. Field work was one of them. Agassiz travelled widely and urged his students to travel as well to collect samples in the wild. Late in life he established a school to enable teachers to study science from nature during the summer.⁴² Even stationary looking, however, could also be a bodily activity. Drawing, for example, and even the use of complex instruments were essentially physical. Agassiz's descriptions evoked the physicality of work with microscopes. In reference to the study of the ovarian egg, he described the:

exhausting kind of labor which the naturalist must undergo who would make an intimate microscopic study of these minute living spheres ... the deeper insight he has gained by long training in steadiness of hand and eye, as well as in the concentration of intellect that makes the brain work harmoniously with them, he cannot communicate ... I think people are not generally aware of the difficulty of microscopic observation, or the amount of painful preparation required merely to fit the organs of sight and touch for the work. In old times men prepared themselves with fast and vigil for entrance into the temple; ... It seems an easy matter for a man to sit down and look at objects through a glass which enlarges everything to his vision; but there are subjects of microscopic research so obscure that the student must observe a special diet before undertaking his investigation, in order that even the beating of his arteries may not disturb the steadiness of his gaze, and the condition of his nervous system be so calm that his whole figure will remain for hours in rigid obedience to his fixed and concentrated gaze.⁴³

Looking is a whole body experience.

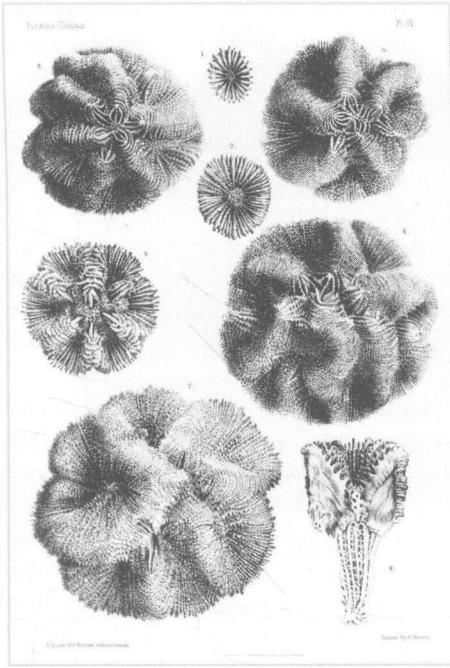
In previous work, I understood Riegl's notion of the sense of touch in the context of the dialogic nature of his theory. Touch validated a representation and signified its reality. Giving each side of the relationship the reality it needed to maintain contact without losing its individuality, it thus connoted the reality of human contact. I tried to bring this notion of touch to bear on contemporary theory.⁴⁴ But the tension between touch and vision, as Riegl described it, could be seen as pointing to the tension already in existence in the nineteenth century, between visual formalism, which threatened solipsism, and engagement in the world, which Riegl associated with the reality imparted by the sense of touch. Riegl seemed to have stumbled upon

what became a basic contradiction in modernism: between the detachment of formal analysis of the isolated work of art and the need for art to involve hands-on engagement.⁴⁵ His turn to theories of perception may have signalled his commitment to uniting the two.

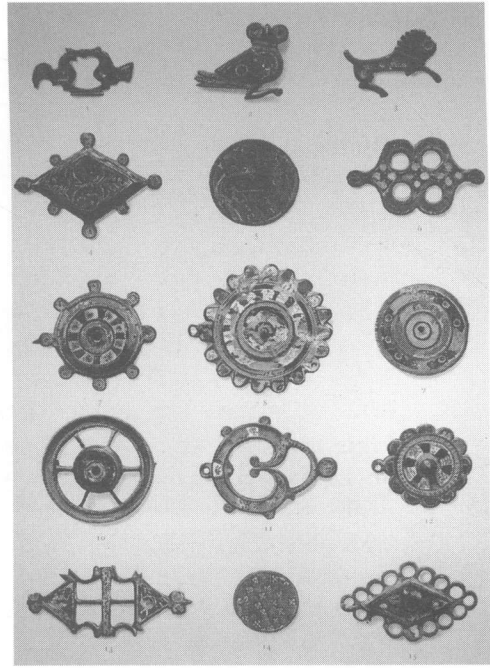
Indeed, Riegl turned to these theories in the late 1890s, shortly after leaving his position at the Museum of Art and Industry, where he valued the opportunity to work with actual objects. Hands-on experience was also valued in science. Historians of science and some others have recently drawn attention to the relationship between scientific research and the field of art history. Like natural science, art demanded engagement with the objects that one studied and the world from which they came, while natural science is, like art, a science of museums, collecting and conservation. As Lorraine Daston has noted, botanists visit original specimens (holotypes) in museums just as art historians travel to museums to look at original Van Eycks or Cezannes.⁴⁶ Increasingly, both pursuits demanded small empires. Agassiz was a natural-historical analogue and predecessor to Riegl, and enjoyed a similar institutional apparatus.⁴⁷ Preservation was important to both scholars. Agassiz travelled widely to collect specimens, opened his own museum, and taught conservation of the specimen along with looking at it, insisting that his student keep the specimen moist and replace it in alcohol for the night. "No man is fit to be a naturalist," said he, "who does not know how to take care of specimens."⁴⁸ Riegl travelled widely to collect examples of embroidery, later to visit paintings in museums. He wanted very much to run his own museum, but was not as lucky as Agassiz; perhaps he, too, should have emigrated to the United States.⁴⁹

Both of them published findings in large 'atlases' illustrated with lavish plates (Figures 2.10–2.11). Both felt strongly about the importance of fieldwork, as a letter from Riegl to Wickhoff shows. They had been discussing photographs of a monument, and Riegl wrote to Wickhoff with some ideas about them. After three pages about the date of the monument, he continued:

[but] I hold it as absolutely necessary that the specialist who has the contract with the academy to publish the material (and that is you) must first have seen the material, and secondly have guided the hand of the copyist. According to my experience, the copyist does not see what the art historian sees, even in the case of the applied arts, not to mention the figural arts, where a single mark or spot of colour has its significance and can change the whole meaning. It would in my opinion not be worthy of the academy to publish something whose object the scholar in charge had not seen. Therefore I believe you must get used to the idea that you need to go on the trip. The costs wouldn't amount to nearly as much in relation to what the publication would gain thereby. You can travel to Syria via Lloyd, and from there a caravan has to be fitted out regardless. It won't make any difference if one more man goes along. ...⁵⁰



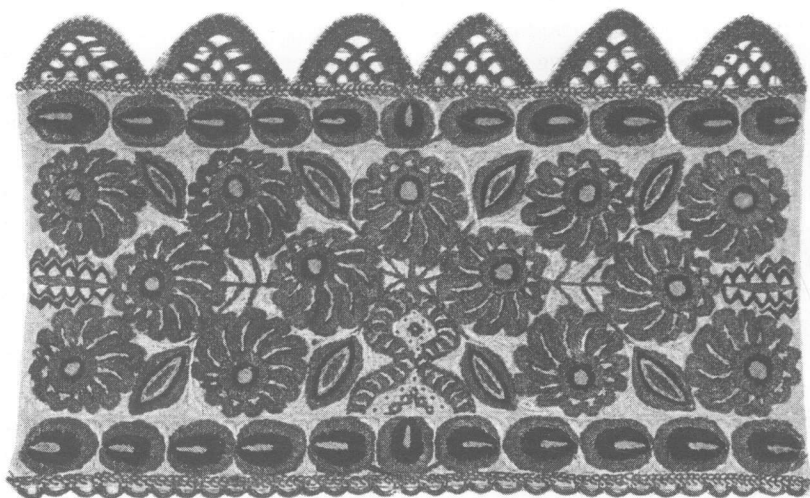
(left) 2.10 Louis Agassiz, *Isophyllia dipsacea*, from *Report on the Florida Reefs*, Cambridge, 1880, plate VII.



(right) 2.11 Fibulae, from Alois Riegl, *Spätromische Kunstindustrie*, Vienna, 1901, plate VIII.

This vision of the extent to which one should be willing to go to see things first hand seems to have convinced Wickhoff: Riegl assumed responsibility for the text.⁵¹

Agassiz provides a model, in the natural sciences, not only for the interdependence of looking and touching, but also for the centrality of collecting and conservation to the process of formal analysis. In fact, the interplay between looking and touching involves the interplay between preservation and destruction, between lived experience and the detachment of observation. Collections helped determine whether a craft would become a museum piece literally, or whether it would remain a living force. Riegl began and ended his career as a hands-on art historian. In his role as curator of textiles in the Austrian Museum of Art and Industry, he travelled about the empire assessing the textile handcrafts and collecting examples in Bohemia and Vorarlberg. These travels did not just result in collections, they resulted in decisions about whether the crafts were to be encouraged: he helped decide which handcrafts to preserve, and how, and which would live out their natural lifespan, preserved after their



(In the Museum für Österreichische Volkskunde, Vienna)



(In the Museum für Österreichische Volkskunde, Vienna)

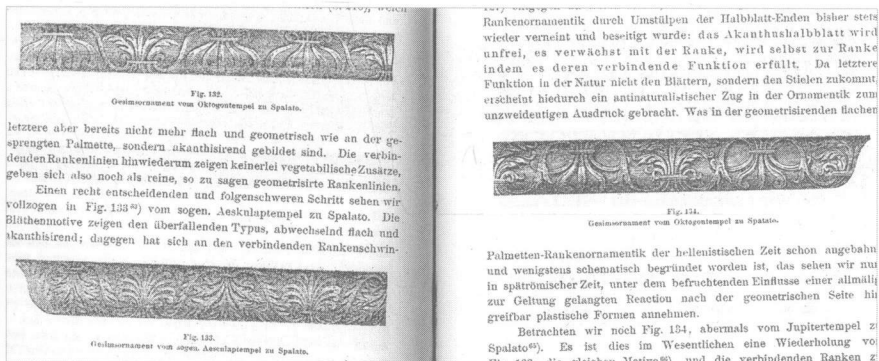
- 2.12 Embroidered cuffs, Bohemia, from Charles Holme, ed., *Peasant Art in Austria and Hungary*, London: The Studio, 1911, nos. 244-7.

demise only in documentation and photographs.⁵² Small samples could be collected and placed, like dried plants, in museums (Figure 2.12).

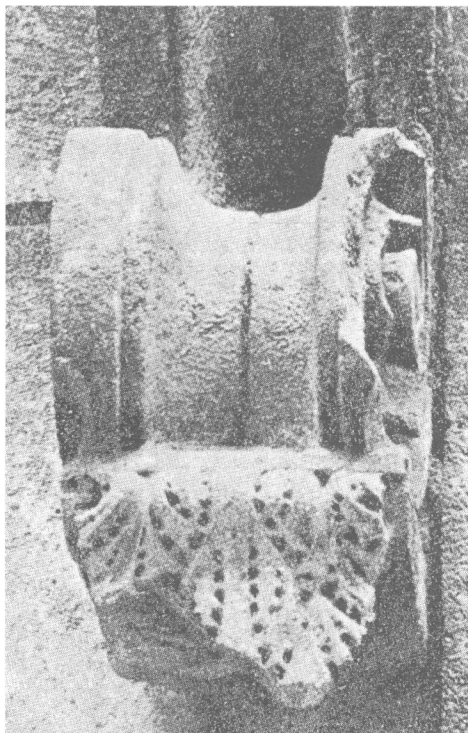
Since Riegl could not have his own museum, however, he eventually did something much more radical. He made the whole world his museum. As Conservator General of Monuments, his preserved samples were now much larger than dried plants, and more consequential. In his thinking the issue of the viewer became much more fraught. The monument did not exist as a monument if it did not engage the viewer.⁵³ An 'intentional' monument was built for the purpose of being a monument. An 'unintentional' monument was made monumental by its viewers. There was no detached viewing in his theory of monuments.

Ultimately there was barely anything to view. In Riegl's concept of the value for age, a monument need be little more than the feeling aroused in a viewer as a building, or a painting, disintegrated before him, or as the writing on a document turned pale. Even the historical value of a monument was not a fact, but a value. Historians served to support and deepen these feelings of the masses, but the masses would be able to grasp the feeling for age on their own. Riegl's view of the historian's significance for historical preservation is suggested by changes in his publications when he turns to this subject. In comparison to his other writings, Riegl mentioned few specific works in his essays on monuments. Plates, drawings, or other illustrations are rare. It would seem that in his work on monuments, Riegl was not even trying to be a detached scientist. He was instead trying to be an 'attached' one, who sought meaning for art history in the real world.

Successive references to the Palace of Diocletian at Split between 1893 and 1903 map the changes in his view of the historian's practice. In 1893, in *Stilfragen*, he illustrated ornamental motifs from the Temple (the baptisterium) to show their relation to the palmette, using illustrations taken from Robert Adam's famous book (Figure 2.13).⁵⁴ He did not need to



2.13 Ornaments from temples in Split, from Alois Riegl, *Stilfragen*, Berlin: Georg Siemens, 1893, pp. 254–5, figs 132–4.



2.14 Ornament from the Baptisterium in Split, from Alois Riegl, *Spätromische Kunstindustrie*, Vienna, 1901, p. 40, fig. 4.

know what they were made of and how in order to study them.

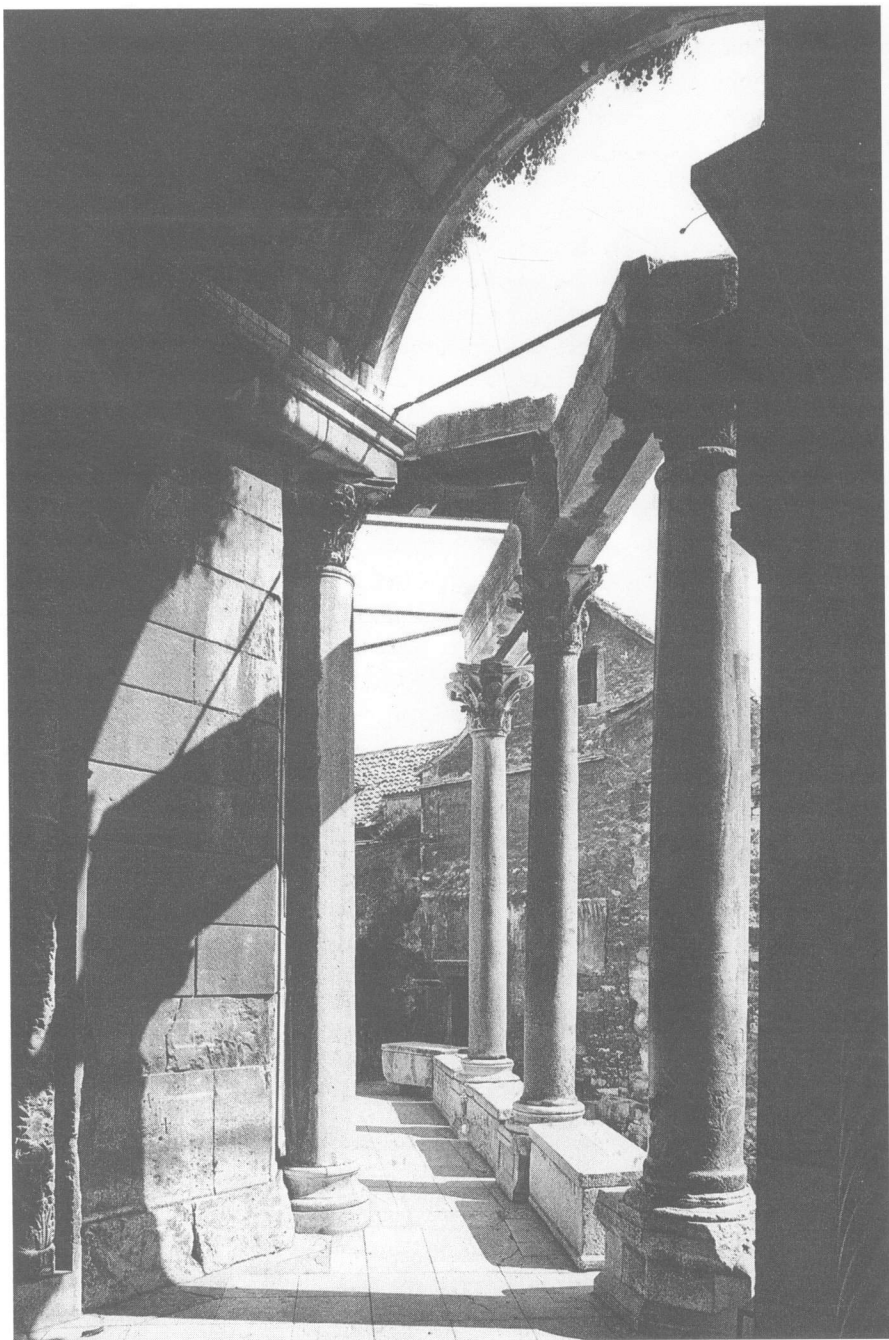
In *Spätromische Kunstindustrie*, he illustrated different palmette motifs from the frieze in the temple of Jupiter (baptisterium) in order to discuss how they used the bore technique to catch the light (Figure 2.14). He did not illustrate the frieze in the octagon in the cathedral (Mausoleum), which he said was too dark to photograph. Instead, he validated his findings by climbing up to touch them so that 'I can report on the way they were made not only on the basis of visual examination, which in this case would have been insufficient, but also on the basis of touch.'⁵⁵ Standing on the rather precarious-looking outcroppings over the columns, he touched the reliefs in order to determine that they were indeed undercut to separate them from the background and produce deep shadows (Figure 2.15). In this way, touch proved opticality.

In his report on the palace for the monument commission, however, he did none of this close looking. There, he argued that the buildings around the cathedral (Mausoleum) should not be torn down because the ruins 'present themselves more favourably, in the painterly sense, by means of piecemeal inspection from close up than by a free overview from a distance (Figure 2.16).⁵⁶ Thus Riegl called upon scientific expertise less often, and in a much less rigorous sense in the practice of historical preservation than he had in his scholarly works, relying instead on the general impression that Morelli had rejected as unscientific.

The desire to tie artistic representation to the world informed Riegl's theory from the beginning.⁵⁷ Indeed, he went beyond artistic representation to identify, as the ultimate goal of the modern cult of monuments, the 'natural monument' where 'the last remnant of egoism, that which pertains to humanity, is overcome, and complete altruism is reached in the participation in the past of nature beyond humanity'.⁵⁸ The inclusion of natural objects not only suggested that the ethical responsibility to preserve extended beyond mankind's egocentric concerns, it also suggested



2.15 Interior of Diocletian's Mausoleum, Split.
Photograph: Nenad Gattin.



2.16 Peristyle, Palace at Split.
Photograph: Nenad Gattin.

the extension of art history's territory into the natural world. For Riegl, to venture into the realm of historical preservation was a step in the direction of engaged looking.

But as art history placed its hands on more and more of the world, art history began to disappear. As Riegl turned the whole world of man-made objects, buildings and streetscapes and finally the natural world as well into his museum, he theorized his profession's demise. In Riegl's theory of historical preservation, he continued to play out the contest between notions of evolution and the painstaking tactile investigation of the individual thing. He advocated using a synthetic method to determine the place of each object in an evolutionary schema. But he knew that the evolutionary schema would take over, and the individual object would become subservient to the system. The historian, used to close study of individual objects, would have to draw the consequences of his notion of evolution.⁵⁹ Historical preservation, Riegl's attempt to move into the real world, forced him to foretell first the death of the individual monument and then the gradual dying out of the art historical profession. The specialist's skill in looking, which Riegl valued would disappear in favour of a kind of looking that anyone could master, if master is even the right word.

Something similar happened in science. Agassiz's youngest student acknowledged that Agassiz was working with outmoded ideas in a past era of science, citing his failure to accept Darwinism. Since Agassiz, he wrote, 'the theory of evolution has passed far beyond the hypothesis stage'.⁶⁰ Agassiz's racism has also been exposed.⁶¹ Indeed his conviction that separate creation accounted for the different varieties of man supported racism.⁶² But although the student had rejected his professor's teaching, he did not wish completely to reject his methods. In the present day, he complained, science had become so immersed in theory that observation of real objects had been neglected:

But one unfortunate tendency of this erudite study of what I may call the Mendelian phyllotaxy of life is to turn the beginners from contact and towards theory. A new vocabulary has been introduced – this applicable not to things that are, but to semi-metaphysical conceptions regarding them.⁶³

He argued that the time had come to reintroduce fieldwork, the observation of real things, into scientific training:

Select such subjects that your pupils cannot walk without seeing them. Train your pupils to be observers, and have them provided with the specimens about which you speak. If you can find nothing better, take a house-fly or a cricket, and let each hold a specimen and examine it as you talk ... There should be a little museum in every school-room; a half-dozen Radiates, a few shells, a hundred insects and a few fish, reptiles, birds and mammals would be sufficient to teach well.⁶⁴

In 2002, an edited volume, *Agassiz's Legacy*, retraced in the memoirs and personal recollections of scientists, the steps whereby the natural sciences had moved away from the fieldwork that was the hallmark of Agassiz's approach, to theory. Generalists were disappearing because students were being pushed into early specialization. The book evoked Agassiz in a plea for the reintroduction of fieldwork into scientific training. 'It is our responsibility,' the editor concluded, 'to ensure that we help produce the next generation of Agassiz's heirs.'⁶⁵

The same path could be traced for art history. While Riegl's theory has found ever more applications, his preoccupation with close looking is not only forgotten, but its association with the ideology of racism has thrown formal analysis increasingly into disrepute.⁶⁶ It may now be the moment not to reintroduce formal analysis unquestioningly into art history, but rather to encourage an enquiry into close reading examining its implications, the different forms it has taken, its history, and its potential as a tool for research. If so, Riegl's formal practice could serve as a starting point.

Notes

* In Memory of Philip J. Pauly.

1. A. Riegl, *Stilfragen: Grundlegungen zu einer Geschichte der Ornamentik*, 2d ed., Berlin: Richard Carl Schmidt, 1923, vi, pp. 10–11. See also Riegl's lecture notes for 'Geschichte der Deutschen Kunst', a course given in the winter semester, 1892–93, in which he compares the application of comparative linguistics to complicated issues concerning the origins of the Indo-Germanic peoples, to the effect of Darwinism on the natural sciences, where it is applied indiscriminately to even the most difficult problems. Riegl *Nachlaß*, Institut für Kunstgeschichte, University of Vienna, Carton 2, folder 1, 9. See in addition the essay in this volume by Mitchell B. Frank for the use of evolutionary narrative strategies in art history.
2. A. Riegl, *Spätromische Kunstindustrie*, 1901, 4th ed., Darmstadt: Wissenschaftliche Buchgesellschaft, 1973, pp. 402–5.
3. My work allies itself with the work of historians of science, especially L. Daston and P. Galison, *Objectivity*, New York: Zone Books, 2007.
4. J. Anderson, 'Giovanni Morelli's Scientific Method of Attribution – Origins and Interpretations', in H. Olbrich (ed.) *L'Art et les révolutions*, Strasbourg: Société Alsacienne pour le Développement de l'Histoire de l'Art, 1992, vol. 5, pp. 136–7.
5. H. Zerner, 'Giovanni Morelli et la science de l'art', *Revue de l'art*, 1978, vol. 40, pp. 209–15; C. Ginzburg, *Clues, Myths, and the Historical Method*, trans. J. and A.C. Tedeschi, Baltimore, Md.: Johns Hopkins University Press, 1989, pp. 96–125.
6. G. Morelli, *Italian Masters in German Galleries*, trans. Louise M. Richter, London: George Bell and Sons, 1883, p. 2.
7. G. Morelli, *Italian Painters: Critical Studies of their Works*, trans. C.J. Ffoulkes, London: John Murray, 1900, pp. 5–6.
8. *Ibid.*, p. 19, emphasis in the original. See also M. Hatt and C. Klonk, *Art History: A Critical Introduction to its Methods*, Manchester; New York: Manchester University Press, 2006, pp. 50–55, esp. p. 51.
9. Morelli, *Italian Masters in German Galleries*, p. 2.
10. *Ibid.*
11. On the difficulties and history of distinguishing these two concepts, see Daston and Galison, *Objectivity*, pp. 242–3.

12. Morelli, *Italian Masters in German Galleries*, p. 3.
13. The comparison between art and language was not arbitrary: 'This relation between audible and visible speech, between the spoken and the painted or modeled tongue – or, to speak more plainly, between the two forms in which the same spirit expresses itself, viz., the language of words, and that of art – this relation, I say, between the two modes of expression proceeds from no external coincidences, but from what we may term *causative Nature*.' Ibid., pp. 3–4. This conception of the relation of the verbal and the visual was at least as old as Herder and, in the visual arts, Winckelmann, and would be more fully developed in Hegel. See A. Potts, *Flesh and the Ideal: Winckelmann and the Origins of Art History*, New Haven, Conn.: Yale University Press, 1994, pp. 23–32, 96–100.
14. M. Thausing, *Das natürliche Lautsystem der menschlichen Sprache: mit Bezug auf Brücke's Physiologie und Systematik der Sprachlaute*, Leipzig: Engelmann, 1863. See also M. Gubser, *Time's Visible Surface: Alois Riegl and the Discourse on History and Temporality in fin-de-siècle Vienna*, Detroit: Wayne State University Press, 2006, pp. 113–14.
15. M. Thausing, 'Die Stellung der Kunstgeschichte als Wissenschaft', *Wiener Kunstbriefe*, Leipzig: E.A. Seeman, 1884, p. 145.
16. Morelli, *Italian Masters in German Galleries*, p. 192.
17. Ibid., pp. 192–3.
18. Morelli, *Italian Masters in German Galleries*, p. 7.
19. Agassiz accomplished the classification of fossil fish while still in Europe. His underlying assumption of the relationship between man and his geographical origin recalls Morelli's insistence that the art connoisseur trod the very soil on which the art was created. On Agassiz, see E. Lurie, *Louis Agassiz: A Life In Science*, Chicago: University of Chicago Press, 1960.
20. Morelli, *Italian Painters*, p. 74, n. 1, quoted from J. Marcou, *Life, Letters and Works of Louis Agassiz*, New York, London: Macmillan, 1896, vol. 2, p. 566. The passage also occurs in L. Cooper, *Louis Agassiz as a Teacher: Illustrative Extracts on his Method of Instruction*, 1917, rev. ed., Ithaca, N.Y.: Comstock Publishing Co., 1945, pp. 32–3, where it is identified as stemming from E.C. Agassiz, *Louis Agassiz, his Life and Correspondence*, Boston: Houghton Mifflin Company, 1885, pp. 564ff. Unless otherwise identified, all of the anecdotes related in what follows are from Cooper's book. Probably the most colourful of these stories is the memoir of Samuel H. Scudder, *ibid.*, pp. 55–61.
21. Ibid., p. 41.
22. Lurie, *Louis Agassiz*, p. 240. On the alcohol, see also Cooper, *Louis Agassiz as a Teacher*, pp. 41; 56–67.
23. Cooper, *Louis Agassiz as a Teacher*, p. 58.
24. Riegl mentions Morelli briefly in the notes for two of his courses, using his pen name Lermolieff. See Alois Riegl, 'Geschichte der deutschen Kunst', course offered winter semester, 1892–93, Riegl *Nachlaß*, Kollegen Heft II (1): Sächsische Kunst, p. 56; "Kunstgeschichte des Barockzeitalters," winter semester 1894–95, Riegl *Nachlaß*, Kollegen Heft IV (1), XVIII. Jahrhundert, p. 81.
25. In this particular, the concept of an ornament as an organism, my interpretation might be reconciled with an argument made by Christopher Wood, in which an ornament is seen first and foremost as a 'wrought thing'. See C. Wood, 'Riegl's *mache*', *Res*, 2004, vol. 46, pp. 155–72.
26. This exposition comes from L. Agassiz, *Methods of Study in Natural History*, Boston: Ticknor and Fields, 1863, pp. 209–17.
27. Riegl, *Stilfragen*, pp. 59; 333.
28. Agassiz, *Methods of Study in Natural History*, iv. He declared himself willing, however, to be convinced that evolution was part of God's plan, and some have maintained that, towards the end of his life, he was. See also P. Bebergal, 'With Agassiz, Darwin, and God in a Collection's Inner Sanctum', *Harvard Divinity Bulletin*, 2008, vol. 36; T.F. Glick (ed.) *The Comparative Reception of Darwinism*, Chicago: University of Chicago Press, 1988; E. Lurie, 'Louis Agassiz and the Idea of Evolution', *Victorian Studies*, 1959, vol. 3, pp. 87–108.
29. Riegl, *Stilfragen*, vi.
30. M. Olin, *Forms of Representation in Alois Riegl's Theory of Art*, University Park, Pa.: Pennsylvania State University, 1992, pp. 73–81.
31. Ibid., pp. 81–9.

32. Ibid., pp. 132–7; 148–54.
33. Ibid., pp. 155–70.
34. See R. Scholes, 'Is there a Fish in this Text?', *College English*, 1984, vol. 46, p. 653.
35. Cooper, *Louis Agassiz as a Teacher*, pp. 2–4.
36. E. Pound, *ABC of Reading* (1934), London: Faber and Faber, 1951, p. 17.
37. Ibid., p. 18.
38. Dr Gertrude Drake, the editor of several Latin readers and other texts, taught at New Trier Township High School, Winnetka, Illinois, and later at Southern Illinois University.
39. J. Steinbeck, *Sea of Cortez*, New York: Viking, 1941, quoted in Scholes, 'Is there a Fish in this Text?', 653.
40. Ernest Hemingway, *The Old Man and the Sea*, New York: Scribner, 1952.
41. Scholes, 'Is there a Fish in this Text?', 660.
42. Lurie, *Louis Agassiz*, pp. 379–81.
43. Agassiz, *Methods of Study in Natural History*, pp. 297–8.
44. Olin, *Forms of Representation*, esp. pp. 180–87.
45. On this problem, see M. Olin, "'It is Not Going to be Easy to Look into Their Eyes": Privilege of Perception in *Let us Now Praise Famous Men*', *Touching Photographs*, Chicago: University of Chicago Press, 2012, pp. 21–49.
46. L. Daston, 'Type Specimens and Scientific Memory', *Critical Inquiry*, 2004, vol. 31, pp. 153–82.
47. M. Winsor, 'Louis Agassiz's Notions of a Museum', in M.T. Ghiselin and A.E. Leviton (eds) *Cultures and Institutions of Natural History*, San Francisco: California Academy of Sciences, 2000, pp. 249–71.
48. Cooper, *Louis Agassiz as a Teacher*, p. 56.
49. On Riegl's aspiration to be director of the Museum of Art and Industry, and his sadness at losing his place at the museum, see M. Dvořák, 'Alois Riegl', in J. Wilde (ed.) *Gesammelte Aufsätze*, Munich: Piper, 1929, p. 289; D.C. Reynolds, 'Alois Riegl and the Politics of Art History: Intellectual Traditions and Austrian Identity in fin de siècle Vienna', unpublished dissertation, University of California, San Diego, 1997, pp. 236–45.
50. Riegl to Wickhoff, 3 March 1901. Wickhoff *Nachlaß*, Institut für Kunstgeschichte, University of Vienna, Carton 2.
51. In the end, Riegl's health was deemed too fragile for him to make the trip, and he had to be content with overseeing the illustrations. After he died, Wickhoff wrote the catalogue essay after all. See A. Riegl and D.H. Müller, 'Vorwort', *Kusejř 'Amra*, Vienna: K.K. Hof- und Staatsdruckerei, 1907, pp. I–VIII; F. Wickhoff, 'Der Stil der Malerei', and 'Erklärung der Tafeln', in *ibid.*, pp. 203–12.
52. A. Riegl, *Volkskunst, Hausfleiß und Hausindustrie*, Berlin, 1894, pp. 71–2. See also Olin, *Forms of Representation*, pp. 24–30. For a longer, in depth study of this work, see G. Vasold, *Alois Riegl und die Kunstgeschichte als Kulturgeschichte: Überlegungen zum Frühwerk des Wiener Gelehrten*, Freiburg im Breisgau: Rombach, 2004.
53. See R.S. Nelson and M. Olin, 'Introduction', in R.S. Nelson and M. Olin (eds) *Monuments and Memory, Made and Unmade*, Chicago: University of Chicago Press, 2003, pp. 1–10.
54. Riegl, *Stilfragen*, pp. 255–6. The illustrations are from R. Adam, *Ruins of the Palace of the Emperor Diocletian at Spalato in Dalmatia*, London, 1764, plates 30, 37, 46.
55. Riegl, *Spätromische Kunstindustrie*, p. 161, n. 1.
56. A. Riegl, 'Bericht über eine im Auftrag des Präsidiums der k.k. Zentral-Kommission zur Wahrung der Interessen der Mittelalterlichen und neuzeitlichen Denkmale innerhalb des ehemaligen Diokletianischen Palastes zu Spalato durchgeführte Untersuchung', 1903, in E. Bacher (ed.) *Kunstwerk oder Denkmal?: Alois Riegls Schriften zur Denkmalpflege*, Vienna, Cologne, Weimar: Böhlau, 1995, p. 178.
57. In this respect Riegl could be related to discourses about applied and pure sciences, although he would not have understood these terms in the sense of the later scholarly debates discussed by Christian Fuhrmeister elsewhere in the present volume.

58. A. Riegl, 'Neue Strömungen in der Denkmalpflege', *Mitteilungen der ZentralKomission*, 1903, vol. 3, pp. 90–91.
59. Olin, *Forms of Representation*, pp. 179–80.
60. D.S. Jordan, 'Louis Agassiz, Teacher', *The Scientific Monthly*, 1923, vol. 17, p. 406.
61. B. Wallis, 'Black Bodies, White Science: Louis Agassiz's Slave Daguerreotypes', *American Art*, 1995, vol. 9, pp. 39–60.
62. See comments on the racial implications of the theory of separate creation in M. Olin, 'Jews Among the Peoples: Visual Archives in German Prisoner of War Camps During the Great War', in M. Sheer and R. Johler (eds) *Anthropology in Wartime and War Zones*, Bielefeld: Transcript Verlag, 2010, pp. 255–77.
63. Jordan, 'Louis Agassiz, Teacher', p. 406.
64. *Ibid.*, p. 411.
65. E.H. Gladfelter, *Agassiz's Legacy: Scientists' Reflections on the Value of Field Experience*, Oxford; New York: Oxford University Press, 2002, p. 423.
66. Riegl's and Agassiz's views of painstaking close looking is very different from Sedlmayr's and Pinder's goal of training one's vision so as to attain the ability to make split section visual judgments described by Daniela Bohde elsewhere in the present volume. But the discussion of ideological associations with art historical methodology there and in the chapter by Ian Verstegen is relevant to this context.