Illustrazioni e logiche associative. Cortocircuiti tra immagini della scienza, dell’arte e dell’architettura

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Le illustrazioni di carattere scientifico non servono solo per veicolare informazioni tra addetti che operano nello stesso ambito all’interno del quale sono concepite e generate. Spesso modelli concettuali espressi attraverso illustrazioni possono migrare tra discipline diverse aprendo possibilità di inaspettati sviluppi. Le immagini, infatti, hanno potere di comunicare suggestioni diverse, andando dunque oltre al loro compito di raffigurare i contenuti per i quali sono state elaborate. Forme, colori, artistici comunicativi, schemi, notazioni, ideogrammi, figure geometriche, forme diverse di rappresentazione possono “rivolte” e restituire il visibile ma anche “costruire” un’idea del possibile. Le immagini dunque il potere diano a tutti a passare col mezzo di condivisione dei codici figurativi che usano. Anche qualora non si parli lo stesso “linguaggio iconico” si incorra in fratturamenti. Hans Georg Gadamer ci ha insegnato che questi non sempre generano conseguenze negative, anzi, possono aprire nuove strade interpretative. Le immagini organizzano, d’altronde, la nostra memoria e il nostro pensiero e sono in grado di far scaturire una molteplicità di associazioni - come ha dimostrato Aby Warburg con la pratica ermeometrica esercitata sulle immagini nel suo Bilderatlas. La proprietà associativa è di altro ordine di riflesso dell’immagine e ci consente di cogliere, di ricordare e di rivelare tanto elementi della realtà quanto interi sistemi di ordinamento della nostra memoria e di nostri modi di interagire con la realtà stessa. Quando operiamo per alterare la realtà percepibile producendo nuove immagini, come avviene con l’arte o con l’architettura, inevitabile è che la creatività si alimenti con altre immagini e suggestioni. Il gioco dei rimandi può essere più o meno esplicito nell’opera compiuta, ma sarà comunque colto in virtù delle proprietà associative che sarà in grado di sollecitare dando vita a sua volta a nuove possibilità di sviluppi figurativi e/o concettuali.

Parole chiave: euristica, immagine, interpretazione.

Illustrations and associative logic. Short circuits between images of science, art and architecture

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Although the main purpose of scientific illustrations is to facilitate the sharing of information between operators working in environments in which they are widely understood, drawings of conceptual models may also be used in other fields, often with the consequence of generating new, unexpected developments. The power of images to communicate ideas other than the context for which they were originally designed means that shapes, colours, communicational expedients, diagrams, notes, ideographs, geometric figures and different forms of representation not only “show the visible” but also propose a way of “constructing the possible”. Indeed, images have the power to speak to everyone, regardless of their knowledge of the figurative codes employed. Even when those who “read” the images are familiar with different “iconic languages” and there is a strong risk of misunderstanding, Hans Georg Gadamer teaches us that this does not always lead to negative results but, on the contrary, often paves the way for new interpretations. Images organize our memory and thoughts and enable us to generate multitudes of associations, as demonstrated by Aby Warburg’s exploitation of hermeneutics in the composition of Der Bildneratlas. However, the ability to stimulate the power of association is a feature peculiar to the image as images enable us to capture, remember and exploit not only elements of reality but also entire systems of ordering our memories and interacting with reality. Inevitably, when artists or architects endeavor to change perceived reality by producing new images, their creativity is fuelled by other images and ideas. Yet, regardless of the degree of explicitness of the references used in the finished work, the references are understood as a result of the power of association. This is the key to generating new figurative and/or conceptual developments.

Keywords: heuristic, image, interpretation.
the visual, and just as resourceful and visually reflect as in painting, even though its pur poses might be entirely different. The great twentieth-century theoretical physicist Paul Dirac (1902–1984), for all that he followed an analytical path to scientific innovation, ultima tely recognized the role of an aesthetic sense in the intuitions of science. Surveying the history of art, we find: the influence exerted on the Post–Impressionists by book illustrations brimming with solid shapes, colours and splotches; Odilon Redon (1840–1916), Wassily Kandinsky (1866–1944) and László Moholy–Nagy’s (1899–1946) scrutiny of images of the microscopic world, the interest in the geometric structures that under pin the natural world that can be seen in Stefan Bertalan’s (1930–2014) work in the early 1970s or even earlier, in the forms of German Expressionist architecture; the fascination exerted by forms derived from fractal geometry in contemporary design and architecture. Nor should it go unmentioned that Albert Einstein recognized that for his intuitions to solidify into something of use, they first had to be subject to a process of formalization. Before an aspect of physical reality could be described analytically, his intuitive model had to become an image in his mind. The forms and content of scientific imagery and information graphics, in attempting to co–informazionali, nello sforzo di fornire una versione razionale e figurativamente comprensibile di forme complesse, risultano anche i più instabili delle immagini artistiche perché «si basano meno sulla somiglianza e più su pratiche interpretative specialistiche che, nel tempo, cambiano e si perdono con facilità».

n the late 1950s, Edward Norton Lorenz (1917–2008) in his 1963 article on deterministic chaos, stressed that such images were taken up by other researchers and studied as a dynamic system from multiple viewpoints, and ended up entirely divorced from the application for which Lorenz had formulated it in the first place. Many years later, Lorenz’s graphic model was once more adopted as a sort of conceptual diagram by American architect Steven Holl, who was developing his plans for an extension to the Science Museum at the Cranbrook Institute of Science in Michigan, which he designed for the grounds of the Gallery of Modern Art in Edinburgh. The diagrammatic representation of Lorenz’s system of differential equations has therefore ger erated – and continues to generate – fertile examples of interdisciplinary “transliteration” that, in turn, give rise to heuristic procedures that unite the sciences and the arts. Scientific visualization, meanwhile, is based on simplifying, abstracting, labeling, marking, and schematizing the chaotic phenomena of
nature into orderly graphic forms8. Beginning with natural disorder and working through successive abstractions, scientific images reach a figurative synthesis analogous to that which emerges from the processes at the heart of artistic representation.

The success enjoyed by the scientific illustrations of German biologist Ernst Haeckel (1834–1919), in particular, was to acknowledge the influence of Haeckel’s studies of the generally accepted, ‘deformed’ style of his contemporaries. One of these was Scottish artist and architect Charles Rennie Mackintosh (1868–1928), who was profoundly affected by the illustrations in Haeckel’s book Kunstformen der Natur, which were discovered among the archives of the German constructivist painter, sculptor and set designer Naum Gabo (1890–1977) and influenced his famous “Spheric-Theme” sculptures, geometric works he classified as “constructions in space.”

The skeleton of the NassaLLia, in particular, bears a resemblance to a number of Gabo’s transparent sculptures and the tetrahedral motif of the composition titled Torsion (c. 1929). Thanks to their polyhedral symmetries, Haeckel’s Radiolaria have persisted – indeed they have enjoyed much success – in more recent years among the most popular morphologies used in the field of digital design, with tangible effects detectable even in the worlds of architecture and product design as we see in the series of lamps and light fittings designed by Ross Lovegrove for Artemide between 2009 and 2012.

Shapes, colours, communicative devices, notation, graphics, ideograms, geometric figures: different forms of representation, then, can be “revealed” the visible – or made it visible once more – but can also “construct” an idea of what is possible. The relationship of Point and Line to Plane is a model on which Art posited by Wassily Kandinsky, and which were central to an education in composition in his Bauhaus lessons, became a communal reference point when the sixth volume of the Bauhausbühler (Punkt und Linie zu Fläche. Beiträne zur Analyse der malerischen Elemente) reached the presses in 1926. From that point forward, Kandinsky’s analytic method, amplified by the illustrations in his book, and furthermore by his own body of artistic work – has continued to exert an influence on artists and architects, forever opening the way to new expressive, compositional and communicative forms.

An explicit reference to points, lines and planes,
nes is found in the technical drawings for the Parc de La Villette in Paris – designed by Bernard Tschumi in 1982 – specifically the articulation of the park’s pavilions (points), pathways (lines) and themed areas (planes). The references do not end there, however. Points, lines and planes also figure in the basis of the graphic notational system invented by Tschumi in “designing” the fireworks display for the park’s opening night. Even musical notation, by translating the impression of the musical note into expressive graphic form, can weave fruitful relationships with other creative spheres. In the 1950s, progressive composers broke with the traditional five-line staff and started experimenting with new expressive forms of musical notation. Not only can we say that the call to arms represented by graphic scores such as that of John Cage (Five Pieces for Piano), Udo Kasemets (Timepiece for a Solo Performer) and Philip Krumm (Sex/Piano/Tape), the path of associative logic inevitably leads to the visual language of architecture and the urban setting. Others, meanwhile – those of Walter Mays (Sketch for sound block one from Music of Mountains) and Gianni-Emilio Simonetti (Analyse du str. age), for instance – seem to belong to a realm of pictorial abstraction and the world of pure graphic design. Images, then, have the power to speak to us all, regardless of whether we share in the figurative codes they employ. Even when those who “read” the images are familiar with different “iconic languages” and there is a strong risk of misunderstanding, Hans Georg Gadamer (1900–2002) teaches us that this does not always lead to negative results but, on the contrary, often paves the way for new interpretations. Furthermore, images organize our memories and our thinking. They are capable of unleashing a multitude of associations, weaving a fabric of relationships, as demonstrated by Aby Warburg (1866–1929) with the hermeneutic treatment of images in his Bilderatlas Mnemosyne16. However, the ability to stimulate the power of association is a feature peculiar to the image as images enable us to capture, in addition to communicating the experience of music in a visual manner. With some of the scores in Notations, such as those by Joe Jones (Five Pieces for Piano), Udo Kasemets (Timepiece for a Solo Performer) and Philip Krumm (Sex/Piano/Tape), the path of associative logic inevitably leads to the visual language of architecture and the urban setting. Others, meanwhile – those of Walter Mays (Sketch for sound block one from Music of Mountains) or Gianni-Emilio Simonetti (Analyse du str. age), for instance – seem to belong to a realm of pictorial abstraction and the world of pure graphic design. Images, then, have the power to speak to us all, regardless of whether we share in the figurative codes they employ. Even when those who “read” the images are familiar with different “iconic languages” and there is a strong risk of misunderstanding, Hans Georg Gadamer (1900–2002) teaches us that this does not always lead to negative results but, on the contrary, often paves the way for new interpretations. Furthermore, images organize our memories and our thinking. They are capable of unleashing a multitude of associations, weaving a fabric of relationships, as demonstrated by Aby Warburg (1866–1929) with the hermeneutic treatment of images in his Bilderatlas Mnemosyne16. However, the ability to stimulate the power of association is a feature peculiar to the image as images enable us to capture, in addition to communicating the experience of music in a visual manner. With some of the scores in Notations, such as those by Joe Jones (Five Pieces for Piano), Udo Kasemets (Timepiece for a Solo Performer) and Philip Krumm (Sex/Piano/Tape), the path of associative logic inevitably leads to the visual language of architecture and the urban setting. Others, meanwhile – those of Walter Mays (Sketch for sound block one from Music of Mountains) or Gianni-Emilio Simonetti (Analyse du str. age), for instance – seem to belong to a realm of pictorial abstraction and the world of pure graphic design. Images, then, have the power to speak to us all, regardless of whether we share in the figurative codes they employ. Even when those who “read” the images are familiar with different “iconic languages” and there is a strong risk of misunderstanding, Hans Georg Gadamer (1900–2002) teaches us that this does not always lead to negative results but, on the contrary, often paves the way for new interpretations. Furthermore, images organize our memories and our thinking. They are capable of unleashing a multitude of associations, weaving a fabric of relationships, as demonstrated by Aby Warburg (1866–1929) with the hermeneutic treatment of images in his Bilderatlas Mnemosyne16. However, the ability to stimulate the power of association is a feature peculiar to the image as images enable us to capture,
or conceptual developments. There are many examples of artists, designers and architects – and most likely scientists, too – collecting images to nourish their own particular creative process. In most cases, these collections stay locked away in studios and studies – a fine example is the enormous quantity of photos, printed matter and illustrated books and magazines that were found in the studio of Francis Bacon in Rees Mees in London, and catalogued only after the artist’s death – but occasionally they are made public and organized in “atlas” (in homage to Warburg), miscellanies or even in full-scale installations.

Not published until 2007, Gerhard Richter’s Atlas documents the personal collection of photographs (taken by Richter or found elsewhere), newspaper-cutting collages and sketches that the artist assembled from the mid-point of the 1970s onwards. This collection, and Richter’s own arrangement of the various images it contains, promises to bring us closer to the artist’s cognitive and artistic processes and the basis of a technique that takes photography and mimics its outward forms. But it also offers a record of the collective history of the visual culture of the period involved. As such, it seems possible – as Cristina Baldacci writes – “to read the Atlas as a sort of historical novel in which images are elevated from the status of vehicles of personal recollection to become testimonies of shared memories.” In addition to offering access to the photographic repertoire that has fed into Richter’s work over the years – especially in the way in which images are transformed into an instrument of synthesis and communicative strategy – the moment the Atlas was shared with a wider public, it became a piece of common heritage, offering new hooks on which to hang the understanding of the world and enabling us to give new directions to that which we see around us. This process of sounding and ordering contemporary culture’s visual heritage according to a personal scheme and transforming it into an instrument of synthesis and communicative strategy – if not quite of design, in the truest sense – is a modality that art increasingly shares with architecture. Even though such a tendency has been in evidence since the 1920s, it is important to recognize that it was especially with the publication,
in 1995, of S.M.L.XL
(launched by architect Rem Koolhaas and graphic designer Bruce Mau), that visualization of the project, and the "concept" in particular, came to prevail over the "architectonic object". Spread over more than 1,400 pages, projects from the first two decades of the OMA architectural firm (Office for Metropolitan Architecture), which Koolhaas himself established, are presented through the traditional media of architecture (drawings and photographs of real objects) combined in side-by-side and overlaid with scientific illustrations, statistical diagrams, functional diagrams, infographics from various sources and photographs from newspapers, the art world and all sorts of images in which form and content are acquired, of intuitiveness, of the properties of materials, and of the process through which the design concept is finalized. Not only does association of the images facilitate the comprehension of the material that is also laid out in the form of text, it also allows the observer to share in the process in which form and content is created is very often left entirely to the observer, accompanied by travel diary entries, stories, notes and so on) (captions, essays, manifestos, photographs, infographics from various sources, cuttings from newspapers, the art world and all sorts of images in which form and content are acquired, of intuitiveness, of the properties of materials, and of the process through which the design concept is finalized. Not only does association of the images facilitate the comprehension of the material that is also laid out in the form of text, it also allows the observer to share in the process in which form and content is created is very often left entirely to the observer, accompanied by travel diary entries, stories, notes and so on) (captions, essays, manifestos, photographs, infographics from various sources, cuttings from newspapers, the art world and all sorts of images in which form and content are acquired, of intuitiveness, of the properties of materials, and of the process through which the design concept is finalized. Not only does association of the images facilitate the comprehension of the material that is also laid out in the form of text, it also allows the observer to share in the process in which form and content is created.

Haute-Cant, 2004); Francis Bacon’s use of photography and all sorts of images in his working processes, as documented by Martin Harrison in Francis Bacon: incunabula (London: Thames & Hudson, 2008); Hans Darboven’s monumental and encyclopaedic installation Katalogschube 1880–1983, 18. Gerhard Richter Atlas, D.A.P./Distributed Art Publisher; First Thus edition, 2007. The Atlas documents a body of over 5,000 images, arranging them in 600 plates that bring together photographs from various sources, cuttings from German magazines such as «Siero», «Bunte Illustrierten», «Quick», «Revue», alongside Richter’s own photographs, taken while travelling, and collages, sketches, drawings and plans. 19. Balducci 2004, s.p. 20. O.M.A. KOOLHAAS, R. MAU, R. 1995, S.M.L.XL. New York: The Monacelli Press, pp. 1376. 21. REDER, J., UMEMOTO, N. 2006, Atlas of Novel Tectonics: New York: Vincent Scarpa Architectural Press, pp. 255. 22. 1995, S.M.L.XL (edited by architect Rem Koolhaas and graphic designer Bruce Mau), that visualization of the project, and the “concept” in particular, came to prevail over the “architectonic object”. Spread over more than 1,400 pages, projects from the first two decades of the OMA architectural firm (Office for Metropolitan Architecture), which Koolhaas himself established, are presented through the traditional media of architecture (drawings and photographs of real objects) combined in side-by-side and overlaid with scientific illustrations, statistical diagrams, functional diagrams, infographics from various sources, cuttings from newspapers, the art world and all sorts of images in which form and content are acquired, of intuitiveness, of the properties of materials, and of the process through which the design concept is finalized. Not only does association of the images facilitate the comprehension of the material that is also laid out in the form of text, it also allows the observer to share in the process in which form and content is created.
Thus we are immersed in a “database”\textsuperscript{22} culture, where the user is free to look, search and find connections in an infinite, deconstructed collection of images that are simply waiting for inclusion in the creation of ever–novel networks of knowledge and meaning. With time, we have learned to recognize the database’s own aesthetic, insofar as it comprises a particular cinematic language. The field of visual studies has analysed the products of art, of graphic design, new media, photography, scientific illustrations, stamps and promotional posters. So far, architecture has been excluded, as if architecture did not feed on images, nor, indeed, generate them. In fact, it would be of great value to include the visual products that feed into our built culture, and the images which it, in turn, contributes to the great “database”. Spanning science and art, plans for buildings that never made it past the page, the shifting images described by the built environment, the drawings and the graphic notation used in communication – and not only in construction – are all awaiting a new process of exploration and reconfiguration that will allow them to stake a broader, more meaningful claim within contemporary visual culture.


