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## Regaining Complex Perception Gestalt Thinking in 20th Century Architectural Theory

Modern architecture and urban planning after World War II were largely dominated by reductionist tendencies. This situation provoked reactions not least in the theory and teaching of architecture. Colin Rowe (USA) and Bernhard Hoesli (Switzerland) were two of the influential characters that reintroduced a complex spatial-visual perception into architecture and urban design. It is possible to demonstrate that this vanguard in the theory and teaching of architecture in the second half of the 20th century was based on ideas and findings which had been disseminated by Gestalt psychology and its precursors since the late 19th century. This article offers an insight into this history of reception, the ways in which it unfolded and the transformations that occurred along the way.<sup>1</sup>

### The Zebra Motif – Shel Silverstein, Josef Albers, and Wolfgang Metzger

In 1981 Shel Silverstein (1930–1999) published a collection of poems entitled *A Light in the Attic*. This collection contains the poem *Zebra Question*, which starts as follows:

“I asked the zebra,  
Are you black with white stripes?  
Or white with black stripes?  
And the zebra asked me,  
Are you good with bad habits?  
Or are you bad with good habits?  
Are you noisy with quiet times?  
Or are you quiet with noisy times?  
[..]” (Silverstein 1981, 125).

One observes that a central notion of Gestalt psychology, namely the *figure/ground relationship* and the reversibility of figure and ground connected with that, has found its way into poetry. The poem not only provides a mental preparation for a topic of this article – the ambiguous readability and interchangeability of

<sup>1</sup> For a more comprehensive discussion of the adoption of Gestalt and pre-Gestalt notions in the theory and teaching of architecture and urban design see: Steinert 2014.

figure and ground – but also underpins the author’s perception that the figure/ground relationship has become one of the most successful and widespread Gestalt notions in 20th century arts and related fields.

But how did Gestalt notions developed in Central Europe in the first half of the 20th century find their way into North American arts and poetry in the second half? Josef Albers (1888–1976), a German artist who first learned and then taught at the Bauhaus, was an important connecting link. In 1933, after the closure of the Bauhaus, he and his wife Anni emigrated to the United States. There he taught at the Black Mountain College (1933–1949), at Yale University (1950–1960), and other universities. Already at the Bauhaus, Albers had discovered the notions of Gestalt psychology, which were among the foundations of the pioneering investigation into the relativity of colour perception and the interaction of colour he conducted in the United States. (For a recent summary of the connections between Gestalt psychology and the Bauhaus, with special emphasis on Albers, see: Boudewijnse 2012.)

The zebra motif likewise appears in Albers’s teaching as an impressive illustration of the figure/ground relationship:

“Central to all of Albers’s courses were the principles of Gestalt theory [...]. He was especially influenced by Indian designs in which the figure and what is usually treated as background are of equal importance, and he challenged doubtful students to determine whether the zebra is a black animal with white stripes or white with black stripes” (Harris 1988, 53).

The influence of Gestalt psychology on Albers’s work and teaching is a matter of fact. Moreover, he was one of the characters who transferred the notions of Gestalt psychology into the sphere of art and design while simultaneously transporting them from Central Europe to North America. There they came into effect also in architecture.

But is it by pure chance that Silverstein and Albers illustrated the figure/ground phenomenon by employing the example of the zebra? This would be an improbable assumption. Rather it turns out that the connection was already established by Gestalt psychologists themselves, namely in the first edition of Wolfgang Metzger’s *Gesetze des Sehens [Laws of Seeing]* (Metzger 1936). This book contains a photograph of a zebra, accompanied by the question: “The zebra: is it white with black stripes or black with white ones?” (Metzger 2006, 11; cf. Metzger 1936, 10). Thus Albers’s question and Silverstein’s playful poem have a common basis some decades before in the investigations of the Gestalt psychologist Wolfgang Metzger (1899–1979). The poem is only one of numerous examples illustrating the sweeping success of the figure/ground relationship in

all fields of art and design<sup>2</sup>. This is also, and especially, true for the theory of architecture and urban design in the second half of the 20th century.

### **Figure/Ground – Colin Rowe, *Collage City*, and the Cornell Urban Design Studio**

One notices that the figure/ground phenomenon is often illustrated by black-and-white diagrams. This manner of representation coincides with the drawing methods of architecture and found its way into urban design, too. The Urban Design Studio at Cornell University was established by Colin Rowe (1920–1999) in 1963 and was in existence until 1988. Already in the middle of the 1960s and under the influence of Gestalt, the site plans drawn in the Urban Design Studio were developed further to real figure/ground plans. With the help of such plans it became possible to work on the layout of a whole city or parts of it as if it were an artistic composition. Moreover, the reversibility of figure and ground contributed to overcoming ‘modern architecture’s object fixation’<sup>3</sup>, in which space had become scarcely more than an accidental leftover between solitary buildings. The interpretation of the site plan as a kind of Gestalt diagram opened up the possibility of working on the shape of public space, thereby reading it not as background but as figure.

Indeed, the most important feature of figure/ground plans is their ambiguity which allows one to alternately read the structural mass as well as the exterior space defined by it as figure. In terms of Gestalt psychology this seems to be a trivial insight. For 20th century urban design it indicated a paradigm shift. While modern architecture had often placed detached buildings within the no man’s land of unshaped open spaces, now the treatment of the city as a shaped entity became possible again. The attention to the figure quality of public space was established by the reversibility of figure and ground in urban design thinking after 1960.

In contrast with that, the urban planning conception of classical and post-war modernism was dominated by detached buildings and linear buildings which could no longer be brought into a spatial relationship with each other. In their case a reversal of figure and ground is hardly imaginable. The fixation on the single architectural object makes the treatment of the exterior space as a shapeable and consciously shaped figure impossible. Thus urban design found itself in a predicament. It was largely renounced in the period of modern architecture and was substituted by urban planning, which arranged architectural objects in an egalitarian manner, governed by the aspects of hygiene, lighting, and sunlight penetration. Urban planning itself petrified in a sort of functionalism which was

<sup>2</sup> Christian Morgenstern (1871–1914) is another poet with occasional echoes of Gestalt psychology. Cf. his poems *Der Lattenzaun*, *Naturspiel* and *Si duo faciunt idem, non fit idem*.

<sup>3</sup> An expression coined in: Rowe & Koetter 1978, 58.

characterized by bleakness and a lack of imagination, and widely disregarded every single human being's aesthetic need for a complex spatial-visual perception of the (built) environment.

In this situation, in 1973 Rowe and Fred Koetter (born 1938) devised their essay *Collage City*, first published in 1975 (Rowe & Koetter 1975; book edition: Rowe & Koetter 1978). *Collage City* fostered the idea that urban fabric can be developed from architectural fragments. This helped to overcome the idea, still in effect in modern architecture, that the layout of a city or part of it should follow *one* single urban design conception. The formation of urban fabric is possible even if these fragments belong to differing urban design conceptions from different periods. The models for this approach were found through the analysis of historic examples. In the work of the Urban Design Studio, the emblematic figure/ground plan of Wiesbaden (Germany) became an outstanding exemplification of that. (For a reproduction see: Rowe & Koetter 1978, 82. The plan has been republished several times.)

In Wiesbaden there are places to be found where the basically antagonistic modes of urban fabric and detached buildings are correlated by the conjoined formation of a spatial body. Reading the spatial body as figure is a prerequisite for such an observation. This works in a figure/ground plan, which derives from Gestalt psychology and found its way into architecture and urban design by way of modern art. Since the 1960s the equivalence of structural mass and public space as well as their mutual reference have become fundamental principles of this approach to urban design.

The essay *Collage City* was directed against the excessive simplification of complex conditions and the isolation of buildings: a phenomenon that proved to be predominant already in classicizing architecture, but especially in post-war modernism. The principle of Gestalt psychology, that the isolation of single elements and the disregard for their interrelations is an improper reduction of actual complexity, was thereby transferred to an urbanistic approach. This way of thinking had been prepared not least by the *tessuto urbano* (urban fabric) studies conducted already in the 1950s by Saverio Muratori (1910–1973) and his disciples, surveying Italian quarters and towns. In contrast to post-modern architecture, the attention of *Collage City* was directed not towards architectural style but towards the perceptual basis of architecture and urban design, i. e. it aimed, among other implications, at *presenting a complex spatial-visual perception*. Therefore, *Collage City* is a period-independent concept of complexity, and with it urbanity.

With their conviction that spatial-visual perception is more complex than is comprehensible in an atomistic and positivist resolution of reality in the manner of natural science, the vanguard of architectural theory were affiliated with the

Gestaltists. Further, the postmodern idea of contradiction in architecture is close to the ambiguity in the interpretation of illustrations investigated by Gestalt psychology (cf. Venturi 1966).

The projection of the three-dimensional structure of a city in two-dimensional figure/ground plans may be criticized; these plans gain persuasive power mainly from their graphic appeal, but radically reduce the actual complexity of the city. Rowe himself later limited the usability of two-dimensional figure/ground plans for the design of three-dimensional urban form when he ironically wrote: “[...] the figure/ground technique will lend itself to the description of cities mostly on flat sites and, mostly, with a ceiling of about five stories; and, apart from that, it doesn’t work.” (Rowe & Middleton 1996, 24) Nevertheless figure/ground plans represent a significant approach to urban design since they allow consideration and equilibration of overall urban form similar to the composition of an abstract work of art. Figure/ground plans are still one of the most appropriate modes of representation of urban form if one wants to understand and work on spatial qualities.

In the same passage as that cited above, Rowe indicates his relation to Gestalt psychology in the following way: “[...] my own taste for gestalt confrontations must clearly derive from Robert Slutzky in Texas, meaning, before that, from Josef Albers at Yale and from Johannes Itten in the very early years of the Weimar Bauhaus” (Rowe & Middleton 1996, 24).

As a result of my research it seems to be obvious that Gestalt psychology was the master discourse for the subject of complex perception during the 20th century. The influence of Gestalt notions in the second half of the 20th century, especially in North America, largely originated from the immigration of European scholars and artists. The findings of Gestalt psychology contributed to questioning the predominant paradigm of functionalism, attended by reductionism and positivism, especially in the field of urban design. It was gradually replaced by a more complex conception of man and his environment. Thereby the belief in functionalism, unambiguousness, and planning in subsystems, which was present in the first half of the 20th century, gradually declined.

The application of Gestalt psychology to arts and architecture taking place between 1930 and 1960 was formative in the development of the vanguard of architectural theory between 1950 and 1980. Apparently, the transmission of ideas was effected by a few particular characters. Two authors and their books, which are situated at the intersection between Gestalt psychology and arts, played a major role in the transfer of ideas from Central European psychology of the 1920s to North American architectural theory of the 1950s to 1970s: György Kepes (1906–2001) and his book *language of vision*, published in 1944; Rudolf Arnheim (1904–2007) and his *Art and Visual Perception* of 1954. Both books are

strongly influenced by the findings and terms of Gestalt psychology, and they became widely read standards. It seems as if the influence of Gestalt psychology on North American theory of art and architecture originated, in large part, from these two authors.

The immigrants were the decisive agents for the transmission of ideas. Without them the discourse in architectural theory would probably have been different. Besides Kepes and Arnheim, Albers was another immigrant and influential character at the intersection between Gestalt psychology and art. At Yale, Albers was a teacher of the upcoming artist Robert Slutzky (1929–2005). So Albers directly influenced Rowe's environment, and with it architectural theory. I refer to the so-called 'Texas Rangers', a group of young teachers in architecture who met in the mid 1950s at the University of Texas at Austin. Among them were the architectural theorist Rowe, the painter Slutzky, and the Swiss architect Bernhard Hoesli (1923–1984). For the history of the 'Texas Rangers' see: Caragonne 1995. Alexander Caragonne writes about Slutzky's formation:

“As a painter, Slutzky had studied color under Josef Albers at Yale, and he remained permanently fascinated with the relationship between architecture and painting. Although untrained as an architect, Slutzky had had an interest in the connection between cubism, the De Stijl movement, and modern architecture. Significantly, he had also completed a thesis at Yale inspired by the relationship of twentieth-century art to Gestalt perception psychology. The classical Gestaltists Kohler, Koffka, Arnheim, Wertheimer, et al. were therefore all quite familiar to him. As he says, ‘I came to Texas thoroughly imbued with an understanding of Gestalt psychology as critical to an understanding of twentieth-century painting’” (Caragonne 1995, 11f).

Kevin Lynch (1918–1984) is another example of the effect of Gestalt psychology on urban design theory. This is demonstrated by his well-known study *The Image of the City*, which was published by the Joint Center for Urban Studies at the Massachusetts Institute of Technology and Harvard University. In this book he uses Gestalt phraseology such as 'form qualities' and 'figure-background clarity' (Lynch 1960, 105).

When the approaches developed in the USA subsequently were transported back to Central Europe, Bernhard Hoesli played an important role in that. In 1968 and 1984 respectively, he published German translations of the essays *Transparency* (Rowe & Slutzky) and *Collage City* (Rowe & Koetter). Furthermore, he spread their ideas among architecture students during the 20 years of his *basic course* (first year course) at the Eidgenössische Technische Hochschule Zürich (Swiss Federal Institute of Technology Zurich).

### Phenomenal Transparency – Colin Rowe, Robert Slutzky, and Josef Albers

The notions of Gestalt psychology and its precursors were one of the most important fundamentals for the preparation of *Transparency. Literal and Phenomenal*, which is an essay on ambiguity in architecture and one of the most influential concepts in 20th century architectural theory. It was jointly devised by Rowe & Slutzky in 1955 in two parts but not published until 1963 (part one) and 1971 (part two). However, the ideas included in *Transparency* immediately took effect in architectural teaching at Austin and later Zurich and other universities. The essay differentiates modern architecture into buildings equipped with *literal transparency* – a term which refers to the light transmittance of large glass surfaces and the effects caused by it – and those equipped with *phenomenal transparency*. The latter applies to the effect of apparent transparency of forms described by perceptual psychology. It arises from multiple possibilities for the organization of visual sensations. The authors first introduce phenomenal transparency by means of cubist paintings and proceed by applying this concept to architecture. Obviously Rowe & Slutzky derived their concept of phenomenal transparency from Gestalt psychology, but probably without being aware of that initially. This is intimated by the fact that they do not refer to the primary literature of Gestalt psychology but, among others, to Kepes's *language of vision* of 1944. In particular, they quote from Kepes's chapter on *Transparency, interpenetration* and the only paragraph in it that offers a Gestalt psychological approach to the phenomenon of transparency (cf. Kepes 1944, 77–85, here: 77).

Albers was another source of the notion of phenomenal transparency for Rowe & Slutzky. It is possible to show that the three Gestalt precursors Ernst Mach (1838–1916), Christian von Ehrenfels (1859–1932), and Friedrich Schumann (1863–1940) for their part had an influence on artists like Paul Klee (1879–1940) and Albers (cf. Teuber 1976; Steinert 2014).<sup>4</sup> And in *Gesetze des Sehens* Metzger already gave examples of phenomenal transparency ('scheinbare Durchsichtigkeit', cf. Metzger 1936, 106f. with fig. 131; Metzger 2006, 123–125 with fig. 131; there the term 'apparent transparency' is used), which anticipated Albers's studies contained in his fundamental serigraphy work *Interaction of Color* (1963).<sup>5</sup>

Metzger demonstrated phenomenal transparency with a figure apparently depicting the superimposition of an oblique black beam and a light-grey cross on a grey ground. But actually there is no continuous black beam and no cross. Rather the part of the figure where both forms apparently overlap is cut from

<sup>4</sup> Three exemplary works by the three scholars should be mentioned: Ernst Mach, *Beiträge zur Analyse der Empfindungen* (1886); Christian von Ehrenfels, *Ueber 'Gestaltqualitäten'* (1890); Friedrich Schumann, *Einige Beobachtungen über die Zusammenfassung von Gesichtseindrücken zu Einheiten* (1900).

<sup>5</sup> In particular, in the textbook accompanying the set of plates there are two paragraphs dealing with *Color Mixture in Paper. Illusion of Transparency and Transparency and Space-Illusion. Color Boundaries and Plastic Action* (cf. Albers 1963, 32 f. and 36–38, chapters IX and XI).

grey cardboard, in the exact shape of the overlap. This causes human perception to complement the grey cardboard with the adjacent black shapes as a continuous beam, in doing so assuming the existence of transparency. As is well known, this is due to Gestalt principles, the principle of good continuation in particular.

A second perception can be noticed: The illusion of transparency at the same time causes the perception of a stratification of forms or layers in a *shallow space*. The beam seems to be located *behind* (or *in front of*) the cross though objectively all forms are situated in the same plane. Both perceptions are crucial to the conception of phenomenal transparency in architecture; formulated about half a century ago, it is still relevant.

Slutzky studied at Yale from 1951 to 1954, immediately before starting as a teacher at Austin and writing *Transparency* with Rowe. In the same year, 1954, Arnheim's book *Art and Visual Perception* was published, largely influenced by the findings of Gestalt psychology. In the paragraph on the perception of depth levels Arnheim shows a woodcut by Hans Arp accompanied by diagrams depicting five possible spatial readings as a stratification of up to four planes (cf. Arnheim 1954, 185–192, here: 187–189). Arnheim writes:

“The perceptual factors are balanced against each other in such a way that several spatial conceptions are equally possible. [...] It will be seen that the various perceptual factors may work with, and against, each other. In Arp's woodcut the powers of these factors are proportioned in such a way that the result is fluctuating and ambiguous. This effect is welcomed by some modern artists – for example, by Picasso and Braque in their cubist pictures – because it undermines the material solidity of the visual world. The older masters, who wished to enhance solidity, preferred compositions that, although not forgoing the counterpoint of antagonistic factors, added up to a system of clearly defined dominances. There was no doubt as to the particular location of each unit in the system of depth planes” (Arnheim 1954, 187).

This view on modern art as a means for the creation of artifacts that offer ambiguous readability probably appealed directly to Rowe & Slutzky. In Arnheim's book the cited passage is followed by an idea which in my opinion was understood by Rowe & Slutzky almost as a work assignment and which might have been one of the essential inspirations for the *Transparency* essay. Arnheim writes:

“It would be tempting to chart, with the section method of Figure 177 [Arnheim's diagrams that accompany Arp's woodcut depicted in Figure 176], the spatial structure of paintings, sculptural reliefs, round sculpture, or buildings belonging to different style periods. We should find characteristic differences in the number of levels employed as well as in their arrangement. [...] Such an analysis is likely to yield significant results even though it neglects the volume of objects and the slant of surfaces, which must be considered in any more comprehensive study of space” (Arnheim 1954, 187 and 189).

This is a concise and exact characterization of what Rowe & Slutzky did shortly afterwards in their *Transparency* essay.

But the occupation of Gestalt psychologists with phenomenal transparency became also a *direct* source for Rowe & Slutzky's *Transparency*. The 1971 publication of the second part of their essay is prefaced with an emblematically typeset quotation from Wilhelm Fuchs's treatise *On Transparency* (cf. Rowe & Slutzky 1971, 287; Fuchs 1938)<sup>6</sup>, directly illustrating Fuchs's words, but also alluding to Albers's picture series *Homage to the Square* begun in 1950. Thus the introductory quote is ambiguous in itself and represents in an unusual way the topic of the essay: multiple readability and the superimposition of forms.

The train of thought presented by Rowe & Slutzky is much more subtle than can be summarized in this outline.<sup>7</sup> Suffice it to say that they first describe the perception of frontally organized planes in a shallow space by means of cubist paintings. This is complemented with the equivocal, fluctuating reading of the plane order. Subsequently these principles are applied to certain buildings from the period of classical modernism. Rowe & Slutzky confront the Bauhaus building at Dessau by Walter Gropius (1883–1969) with several projects by Le Corbusier (1887–1965). They state, quite polemically, that the famous workshop wing of the Bauhaus building with its curtain wall is simply diaphanous and beyond that scarcely allows multi-plane readings. Contrary to that there is phenomenal transparency inherent in the buildings of Le Corbusier, which suggests multiple readings and a distinct stratification of space. Thus phenomenal transparency, described in 1936 by Metzger and before in 1923 by Fuchs, became the mark of quality for a refined architectural design.

Hoesli as an architecture teacher at Zurich made the conception of phenomenal transparency in architecture practicable in a pragmatic way. In 1968 he defined phenomenal transparency, somewhat one-sidedly but with great didactic success, as a phenomenon of ambiguity: "Transparency arises wherever there are locations in space which can be assigned to two or more systems of reference – where the classification is undefined and the choice between one classification possibility or another remains open." (Hoesli 1997a, 61).

In this way the phenomenon described by Gestalt psychology was immediately made practicable for architectural design. It became useful especially for the integration of new buildings within an existing situation, since it facilitates the

<sup>6</sup> Fuchs's treatise was published in *A Source Book of Gestalt Psychology* (1938). The book contains condensed English translations of a number of Gestalt studies originally published in German. For the unabridged original version cf. Fuchs 1923.

<sup>7</sup> The subtleties, insinuations and associations integrated in their brilliant essay cause every résumé to be highly deficient. (Nevertheless, the essay has been summarized several times as a basis for subsequently dealing with some of its aspects.) Indeed, the tracing of the manifold sources, inspirations and implications of Rowe & Slutzky's *Transparency* constitutes the most extensive part of my book.

mediation between an ideal building type and the irregularities of the site. Here phenomenal transparency consists of the superimposition of different ground plans and grids with differing orientations. This produces spatial situations with ambiguous assignments, as defined by Hoesli. This was not a new principle at all but had been widely ignored during the course of the 20th century, when the predominant idea was to erect solitary buildings on a tabula rasa. The baroque Parisian *hôtels particuliers* are impressive examples of how an ideal building type can be implemented within the conditions of urban fabric such as irregular building lots and enclosed road building lines (cf. Dennis 1986).

This might appear very simple, but the idea was a significant step towards neutralizing the contrast between modern architecture and traditional urban form, i. e. between detached buildings and urban fabric. Hoesli overcame modern architecture's object fixation by the application of a so-called 'transparent form-organization', thereby mediating between the differing requirements of the single building and the larger urbanistic correlations, a task which had been performed little by classical and post-war modernism.

I still want to further illustrate the relationship between Gestalt psychology and urban design thinking. The transposability of melodies is a classic example of the existence of Gestalt qualities. Melodies consist of individual notes with specific pitches in a specific order. If one transposes a melody into another key, the melody remains recognizable, although every single element of which it consists has been altered. Obviously the nature of the relationships between the elements is an essential aspect of Gestalt.

But this is, at the same time, an eminently urbanistic idea since it is capable of turning the architect's attention from the element – the single building which has to be projected – to an awareness of the whole – i. e. to the form of the city within which the building will be placed. Consequently urban design can be described as the establishment of relations between the buildings, and between buildings and exterior space. The intention is the formation of the city as a shaped and recognizable entity.

This has an astounding implication: Provided that the concerns of urban design are sufficiently considered, a high-quality urban form can arise from fairly average buildings. The historic city centre of Berne (Switzerland) is an example of that. It has been included in the UNESCO world heritage list not for the uniqueness of several of its buildings but for its impressive overall appearance based on the modular mediaeval town layout. On the one hand, the single building is of less importance than is commonly assumed. But if, on the other hand, the majority of the buildings do not subordinate to the urbanistic context, the city as a shaped entity is challenged.

In 1982 Bernhard Hoesli wrote an *Addendum* to *Transparency*. There he described phenomenal transparency as an instrument of urban design: “Phenomenal transparency is a means of form-organization that permits to incorporate the heterogeneous elements in a complex architectural or urban tissue, to treat them as essential part of collective memory and not as embarrassment” (Hoesli 1997b, 99).

### Conclusion

In my book on *Complex Perception and Modern Urban Design* I show that the new findings of Gestalt psychology and its precursors, which have been disseminated since the late 19th century, were among the main sources of inspiration for architecture teachers such as Hoesli, Rowe, and Slutzky in the second half of the 20th century. At the same time they incorporated a range of new ideas from other fields of arts and research emerging between 1880 and 1930, prominent amongst which was art history. The common denominator of these ideas is the acceptance of complexity, and therefore the renunciation of positivist restrictions dating from the 19th century.

The sophisticated conceptions of *Collage City* and *Transparency* were derived from a fundamental criticism of the state of modern architecture and urban planning: Both architecture and planning were conducted mainly by considering solitary architectural objects, frequently attended by a reduced vocabulary of forms. This became manifest especially in post-war modernism, and did not permit a complex spatial-visual perception. The two conceptions presented here were an attempt to overcome reductionist tendencies and the rationalist either-or of the modern age in favour of establishing more complex relationships and permitting the both-and. The importance and the practicability of that had been demonstrated by Gestalt psychology. Although notions of Gestalt psychology and its precursors became part of the fundamentals for the vanguard in architecture, the relationship between architectural theory and Gestalt has rarely been explicitly expressed. The reason for this was the way Gestalt notions were transferred to architecture. The spread of Gestalt notions to architectural theory was achieved by the standard works on art and design influenced by perceptual psychology. Therefore the representatives of a complex perception in architecture were apparently not in every case aware of dealing with Gestalt ideas.

Complex perception in architecture and urban design comprises multiple relations, ambiguous readability, the integration of the different, the both-and, and the awareness of history. All of this progressively became possible because of a paradigm shift from reductionist views towards complexity. Gestalt psychology was one of its preconditions, since it challenged atomistic and reductionist tendencies which gained influence during the 19th century and which had a large effect on modern architecture of the 20th century.

It seems that the minority that had been infected by the importance of a complex perception and a complex representation could not get away from it any more. Or, in Rowe's words: "Well, one may see this or not. And always there are, in the words of Le Corbusier, *des yeux qui ne voient pas*. But *if* you have realized it, it is a message – or even insight – forever" (Rowe 1997, 278; retranslation: T. St.).

### Summary

Modern architecture and urban planning were largely dominated by reductionist tendencies. This situation provoked reactions not least in the theory and teaching of architecture. Colin Rowe (USA) and Bernhard Hoesli (Switzerland) were two of the influential characters that reintroduced a complex spatial-visual perception into architecture and urban design. It is possible to demonstrate that this vanguard in architecture in the second half of the 20th century was based on ideas and findings which had been disseminated by Gestalt psychology and its precursors since the late 19th century. This article offers an insight into this history of reception, the ways in which it unfolded and the transformations that occurred along the way.

**Keywords:** Architecture, urban design, figure/ground, transparency.

### Zusammenfassung

Die moderne Architektur und Stadtplanung wurden weithin von reduktionistischen Tendenzen beherrscht. Dies führte nicht zuletzt in der Architekturtheorie und der Architekturausbildung zu Gegenbewegungen. Colin Rowe (USA) und Bernhard Hoesli (Schweiz) waren zwei der einflußreichen Persönlichkeiten, die in Architektur und Städtebau wieder eine komplexe räumlich-visuelle Wahrnehmung einführten. Man kann zeigen, daß diese Avantgarde der Architektur in der zweiten Hälfte des 20. Jahrhunderts in hohem Maße auf Vorstellungen und Erkenntnissen der Gestaltpsychologie und ihrer Vorläufer seit dem ausgehenden 19. Jahrhundert aufbaute. Der Beitrag gibt einen Einblick in diese Rezeptionsgeschichte, ihre Wege und die Veränderungen, die dabei stattfanden.

**Schlüsselwörter:** Architektur, Städtebau, Figur/Grund, Transparenz.

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