

OBJECTIVE SPACE

Walter Gropius' Perception-oriented Approach to Space

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Abstract

As the first part of a comparative analysis of Walter Gropius' concept of space and space formation with those of August Schmarsow and Aldo van Eyck, this paper primarily deals with Gropius' *aesthetic* concept of space. The essential argument developed here is that a specific contradiction characterizes Gropius' concept. On the one hand, within the Neues Bauen he particularly deals with space from the perspective of the human subject, trying to make the modernist notion of space tangible. On the other hand, he also neglects the significance of the corporeal, that is, the anatomic-physiological constitution of man in space. On the basis of this neglect, he also neglects the aesthetic significance of experiencing architectural space as one's own (relative) enclosure and consequently refers to architectural space first and foremost in terms of volumes and their pure spatial arrangement.

This paper further relates Gropius' aesthetic concept of space to his use-, production- and planning-related concept of space formation and touches on the mutual complementation of both concepts within his overall conception of architecture.

Introduction

The following text is a (shortened) extract¹ from my dissertation, which deals as a whole with two architectural movements of twentieth century Europe that coincided in the ambition to directly connect architectural design - particularly through spatial design and associated theoretical concept- with human life and social reality. First, it is concerned with the so-called Neues Bauen, which focused on practical use and production at the beginning of the twentieth century. Second, it is concerned with Team Ten, which continued to develop that ambition after the Second World War, while focusing on the immediate experience of and socio-psychological identification with architecture and the built environment.

Essential to the dissertation is to analyze the positions of Walter Gropius and Aldo Van Eyck, and to do so from a specifically *space-forming* perspective. This approach is based on the assumption that space formation plays a fundamental role in directly connecting spatial design with human life and social reality. Here, space formation is to be understood as the creation and structuring of physically defined

¹ The examination of the aesthetic concept of space and space formation of other members of the Neues Bauen is almost completely left aside here.

spaces by means of spatial arrangement, physical enclosure/separation and spatial opening/connection of spaces. Space formation plays such a fundamental role since it unites spatial aesthetics and sociospatial purposiveness of architectural design, making the latter aesthetically effective. However, in which way did Gropius and Van Eyck refer to space formation? What aesthetic concept of space and space formation is to be found in their approaches, and how did they address the use-related and sociospatial purpose of space formation? The hypothesis guiding the answer to these research questions is that both positions are, in a different way, limited in their aesthetic concept of space and space formation as they are limited in their reference to the socio-spatial purposiveness of space formation.

The chosen text is part of the third chapter that is about Gropius and the Neues Bauen and exclusively deals with his *aesthetic* concept of space and space formation. The essential argument developed here is that in comparison to August Schmarsow's theory concerning human perception of space, Gropius neglects the significance of the corporeal, that is, the anatomic-physiological constitution of man in space. At the same time, within the Neues Bauen he particularly deals with space from the perspective of the human subject, trying to make the modernist notion of space tangible. On the basis of this neglect, he also neglects the aesthetic significance of experiencing architectural space (and its formation) as one's own (relative) enclosure and consequently refers to architectural space, first and foremost, as volumes and their pure spatial arrangement.

By developing this argument (particularly in comparison with Schmarsow's perspective), this analysis goes beyond existing research on Gropius' aesthetic notion of space and of architecture as the art of space (Claussen 1986, Müller 2004) and discloses its specific contradiction. In addition, this analysis goes beyond the existing research on Gropius' use-, production-, and planning-oriented concept of architectural design (i.e. Argan 1951, Herbert 1959, Franciscano 1971, Wilhelm 1983, Claussen 1986, Sommer 2010), in particular with regard to Karin Wilhelm's comparison of Gropius' corresponding concept of space and space formation with Schmarsow's aesthetic theory of space. Therefore, in combining the analysis of Gropius' concept of space and space formation, my approach shows the correlation between his aesthetic concept of space and that of his use-, production- and planning-oriented notion of architectural design, in general, and of space formation, in particular.

Walter Gropius' aesthetic concept of space and space formation

Although Walter Gropius always recognized space as an essential category of architectural design, an explicit examination of space and space formation is quite rare in his large collection of statements on architecture, produced over a period of more than fifty years. His first comment on space and space

formation is to be found in a speech he gave at the Folkwang museum in Hagen in 1911.^{2,3} Dealing with space at an artistic level, he points out that the actual task of architecture is the design of material forms and, "as a necessarily implied consequence, the limitation of space."² He makes a similar statement in the essay *Der stilbildende Wert industrieller Bauformen* for the yearbook of the Werkbund in 1914.⁴ In both texts Gropius attaches to physicalness, and to the corresponding aesthetic feature of impenetrability, the quality to generate and ensure both a certain monumentality and sense of security. He does so in the context of discussing the style-generating potential of the new industrial way of building, a potential he correspondingly claims for the materials steel and glass, despite the rather antimemorial as well as the principally transparent character of both. Gropius is convinced that 'with each material element one can generate physicalness' and accordingly argues that 'the artistic genius finds ways and means to create the feeling of security and physical impenetrability, even with bodiless materials as glass and iron.'⁵

Transcendental, computable and physical space

Although we can conclude from the above mentioned quote that from the beginning of his career Gropius conceived space formation as an artistic matter, in the early years he apparently was not interested in further theoretical examinations of this subject. At the beginning of the Bauhaus period this attitude considerably changes. In 1921 and as a first attempt to setup an architectural class,⁶ Gropius initiates a lecture course with the title 'Raumkunde' (space theory).⁷ Even though his statements on space still remained at a quite general level,⁸ he succeeded to formulate, as an integral part of this course, his own theoretical notion of architectural space, focusing on the creation of space as the essential artistic content of architecture and, correspondingly, as an essential task of the designing architect.⁹ In his approach he directly combines the design-related level of architectural space with an aesthetic concept of space, via the sensuous perception thereof.

In this regard, Gropius defines architectural space as comprising three principal human relations to space: first, a sensuous, or rather visual perception of space as an objective reality outside ourselves,

² *Monumentale Kunst und Industriebau*, Gropius, [1911] 1987, 28-51.

³ Gropius, [1911] 1987, 29.

⁴ In: *Der Verkehr*, Jahrbuch des Deutschen Werkbundes 1914, 29-32.

⁵ *Der stilbildende Wert industrieller Bauformen*, Gropius, [1914] 1987, 59.

⁶ A plan that was not realized, however, until the appointment of Hannes Meyer as a head of a separate department of architecture in 1927.

⁷ *Ms Raumkunde*, Gropius, 1921-22.

⁸ This certainly has to do also with the fact that from this course only his own manuscript in note form exists.

⁹ The quality of developing an own approach we can also conclude from the fact that he did not at all refer to the construction-related theory of space formation of Paul Klopfer (Klopfer, 1926) who, due to an initiative of Gropius, had a lectureship at the Bauhaus until 1922.

to which he refers as physical space; second, a rational recognition of space as a three-dimensional mathematical construction of the human mind, defined as computable or mathematical space, and third, an inner vision and psychological intuition of a fictitious space, represented by the term transcendental space. Together, all the three spaces, or rather human relations to space, constitute Gropius' notion of the 'artistic space' of the architect.

As Ulrich Müller points out, Gropius' concept of space seems to be strongly influenced by Herman Sörgel's aesthetic theory and his three-part system of the aesthetics of architectural space, published in 1918, three years prior to Gropius' first lecture on 'Raumkunde'.¹⁰ The similarity between both concepts lies in the three-part relation between the human being and architectural space: an optical, a computable and a transcendental relation, in the case of Gropius; a visual, an intellectual and a psychological relation, in the case of Sörgel. In this way, both distinguish a physical-visual, an intellectual and an emotional relation between man and space. Furthermore, both systems imply a holistic understanding of the relation between man and architectural space, comprising mind, body and soul, even though the reference to the body is confined to the eye.

Nonetheless, Gropius' approach clearly differs from that of Sörgel, as Gropius first of all deals with the artistic-productive level, transferring, as it were, Sörgel's perception-related approach onto the *active* process of the architect creating architectural space. As a result, the coinciding definitions substantially differ in their specific interpretation. To the realm of the intellectual, for instance, Sörgel refers in terms of a rational *recognition* of space, recognizing its nature of physical production and userelated purpose, and being connected to terms as material, construction and purpose. Gropius, in turn, refers to the realm of the intellectual in terms of a rational *construction* of space, constructing space geometrically, emphasizing a mathematic-analytical examination of space, its measurement and computation.

On the occasion of the first Bauhaus exhibition, in 1923, Gropius incorporated his concept of the architect's artistic space, in his contribution to the catalogue of this exhibition.¹¹ Here, he explicitly explains 'artistic space', that is, the creative process of an architecture-artistic forming of space, as being constituted by those three different human relations to space. Furthermore, he defined the psychological intuition of space, to which he referred as transcendental space, as the main source of this creative process; a source which rushes, as it were, to its physical implementation by means of the intellect, that is, by means of geometry and proportion:

¹⁰ Müller, 2004, 36. As explained in the first chapter, Sörgel's three-part system of the aesthetics of space is constituted by three different, each other complementing and so-called 'contents of perception:' a visual, a psychological and an intellectual one, that is the emotional experience, the intellectual understanding and the optical perception of space. ¹¹ *Idee und Aufbau des Staatlichen Bauhauses Weimar*, Gropius, [1923] 1987, 83-92.

'Man invents the fictitious space of illusiveness, of inner visions and ideas by means of his intuition, by the metaphysical power that he draws from the universe; he feels the correlation between the modes of its appearance, of colors, tones and sensualizes with them laws, dimension and numbers. However, this space of vision urges to its implementation in the material world; with mind and craft the material is conquered.

(...)

*However, the creative process of the intuition and the design of space is principally simultaneous in nature (...) Only the one, whose knowledge and skill respond to all natural laws of statics, mechanics, optics and acoustics, and who finds in their combined mastering the steady instrument of bringing the spiritual idea he carries inside into existence, is capable of creating the moving and vibrant artistic space.'*¹¹

This synthetic approach towards architectural space, connecting the realm of (aesthetic) intuition with the artistic realm of rational design and material-technical execution, principally distinguishes Gropius as a practicing architect, who principally refers to the realm of aesthetics to make it fruitful for artistic practice. This linking of aesthetic and design practice, however, touches his fundamental purpose-related approach towards artistic design as *objective* design. In fact, as discussed later in my dissertation chapter, Gropius interestingly argued in favor of neutralizing individual expression, as a result of his demand to unite artistic practice and industrial production. Here, in contrast, he emphasizes the individual nature of the spiritual idea, the artist *'carries inside'*.

Gropius' pure psychological 'space of intuition'

As it becomes evident in the above-mentioned quote, for Gropius the soul plays just as central a role as it did in Sörgel's aesthetic theory. Due to his explicit artistic approach, however, Gropius refers to the soul as the essential origin of artistic activity rather than as the essential medium of aesthetic experience. With this specific connection between human soul and artistic activity Gropius targets what Schmarsow already described with the term 'creative instinct' (schöpferische Trieb): the inner motivation and driving power of artistic activity. In terms of architecture, Schmarsow qualifies creative instinct as a specific desire (volition) for space and, via the notion of that human 'space of intuition' (Anschauungsraum), connects it to the corporeal, that is, anatomic-physiological constitution of the human being in and perception of space, constituted by the senses of sight and touch, as well as that of the real and imaginary movement in space. This direct linking of both 'creative instinct' and intuition to the corporeal constitution in and perception of space does not exist in Gropius' approach. In his

¹¹ Gropius, [1923] 1987, 84.

thinking, Schmarsow's focus on the anatomic-physiological constitution of man, that correspondingly integrates the sensory perception and corporeal examination of space, is replaced by a pure psychological concept that takes an inner feeling or vision of space as the very point of departure. Here, that inner vision replaces, so to say, both 'creative instinct' and 'space of intuition', and the latter gets as far as we still can speak about a *space* of intuition - a pure psychological meaning.

With this, Gropius does not link the human sense of self to any kind of body-related constitution in and perception of space. He apparently conceives aesthetic experience as a phenomenon that exists rather independent from the immediate physical-spatial context, in which we principally exist, and from our corporeal constitution within this context. As a result, Gropius' conception of the aesthetic subjectobject relation between the human being and architectural space necessarily misses the notion that the experience of the latter really extends from one's own body. Accordingly, it misses the aesthetic significance of the experience of architectural space as one's own (relative) enclosure.

Motion of space instead of corporeal movement through space

The absence of the fundamental physical-spatial constitution of the human subject, regarding the aesthetic of architectural space, comes also to expression in Gropius reference to movement. In this regard, he refers to *motion* in and of space instead of forms of human movement¹² in space. We find an architecture-related explanation for the corresponding analogy of motion and space in a lecture Gropius gave in Geneva in 1933, even though it is via a quote from Moholy-Nagy. But Gropius explicitly introduces this quote as the best definition of 'a modern feeling of space'.¹³ Under the sub-title '*instead of statics: kinetics*' Moholy-Nagy had written in his well-known Bauhaus publication from 1929: 'Von Material zu Architektur':¹⁴

'Formerly the architect constructed his buildings from visible, measurable, and wellproportioned volumes, calling them 'space creations'. But real spatial experience rests on simultaneous interpenetration of inside and outside, above and beneath, on the communication of the in and the out, on the often invisible play of forces present in the materials and their relationships in space. (...) Space creation is an interweaving of the parts of space, which are anchored, for the most part, in clearly traceable relations of motion, extending in all directions as a fluctuating

¹² Movement essentially differs from motion as to represent an active mode of motion, that is, requiring a force that cause the motion, for instance mechanical or corporeal power. Although this differentiation in German language does not exist and in both meanings the term ‚Bewegung‘ is used, also Gropius uses ‚Bewegung‘ in combination with space exclusively used in terms of motion, that is, not as an active mode of motion.

¹³ *'Les principes createurs de l'Architecture moderne'*, Gropius, 1933, 10.

¹⁴ And published in English version under the title: 'The new Vision' in 1930.

*play of forces. The structuring of this space creation is put into effect: on the measurable plane by corporeal limitations, and on the non-measurable plane by the flowing fields of force.*¹⁵

A similar reference to motion, in terms of a fluid interpenetration of in- and outside spaces, is to be found several years later in the already above mentioned article: *'Is there a science of design?': 'It is evident that motion in space, or the illusion of motion in space produced by the artists magic, is becoming an increasingly powerful stimulant in contemporary works of architecture, sculpture, painting and design. In architecture today there is a preference for transparency, achieved through large areas of glass and through undercutting and opening parts of the building. This transparency aims at producing the illusion of a floating continuity of space. The buildings seem to hover; space seems to move in and out. Sections of the infinite outdoor space become part of an architectural space composition which is carried beyond the building into its surroundings. Space seems to be in motion.'*¹⁶

An important difference between both statements is Gropius' qualification of *'motion in space'* as an artistically created *illusion*. With this, he explicitly acknowledges that space itself cannot be in motion, but rather allows motion. Yet, also Gropius does not broach the issue that the created illusion of motion in space is intrinsically tied to the projected imagination of motion of whatever physical object or the imagination of movement of the perceiving subject, itself. Therefore, also he eventually misses the idea that, in aesthetic terms, the artistically created illusion of motion in space essentially is based on the relative neutralization of the physical-spatial enclosing of the human subject.

Despite this neglect, Gropius differs within the Neues Bauen by arguing from the perspective of human perception, even though he only does so in psychological and mental terms. Accordingly, he refers to motion as a specific *human* way of grasping space itself, that is, in its all-sided (infinite) extension. On this understanding, we find the term motion in his aforementioned text for the catalogue of the first international Bauhaus exhibition in Weimar, in 1923. In particular, he introduces motion as one of the two original elements of space, or rather of a general human vision of space:

'The original elements of space are: number and motion. By means of number man is able to distinguish objects, is able to understand and structure the material world. Just through divisibility the object comes off from the primary substance and receives its own shape. (...) The

¹⁵ Moholy-Nagy, 1929, 211. Quoted from the third revised edition, 1946, 62.

¹⁶ Gropius, [1947] 1955, ... As Zurfluh (2009) remarks, the term 'fluid space' was established as a design-related term just in the forties, first in the writings of Johnson, Giedion and Hilbersheimer and linked, in the first instance, to Mies van der Rohe's architecture, in particular of the house Tugendhat and the German Pavilion at the international exhibition in Barcelona, 1929. Therefore it also appears in the case of Gropius just in this post-war text. One exception is the speech of the music- and arthistorian Walter Riezler at the fourth congress of the journal 'Für Ästhetik und allgemeine Kunstwissenschaft' in Hamburg, October 1930. Nonetheless, this term retrospectively very well describes the idea of motion in space, as being already present in the twenties within the Neues Bauen.

*force we call motion puts the numbers in order. Both number and motion is a conception of our finite brain, which is not able to grasp the concept of infiniteness.*¹⁷ By emphasizing the subjective perspective of the human being on space, Gropius thus relativizes the notion of space as an absolutely superordinate reality. But, at the same time, he still refers to space in its objectively all-encompassing reality and likewise conceives *architectural* space, and its formation, as the implementation of space as such, albeit in the form of a human vision of it. Here, the other distinctive element is the human capacity to capture space in the shape of defined partitions of space, making that space, as such, tangible in the unity of motion.

Corresponding to this reference to space as defined partitions, Gropius even addresses architectural space as having a certain representational, object-like nature. At least, we can deduce this from the above mentioned quote from 1914, in which Gropius already linked built form and spatial atmosphere in the sense that '*the artistic genius finds ways and means to create the feeling of security and physical impenetrability, even with bodiless materials as glass and iron*',¹⁸ as well as from the just mentioned text from 1947, where he argues that '*a harmonious relation between the building masses and the hollow portions of space, which they define or enclose, is the essential aspect of the architectural effect.*'²⁰

Volumes of Space

The specific contradiction within Gropius's aesthetic concept of space is that, on the one hand, he attempts to make space as such in terms of motion and infinitive extension tangible. On the other hand, he principally starts from a pure psychological perception of space and neglects the corporeal constitution of man in space and the aesthetic significance of the experience of architectural space - and particularly of its formation - as one's own (relative) enclosure. At an artistic level and following his guiding principle that 'the original elements of space are number and motion', Gropius' notion of architectural space is first of all that of defined volumes of space and their *pure spatial* composition. The element of a physically created enclosing and opening definitely plays a part.

Interestingly, his aesthetic concept of space corresponds to his *use-related* approach to space formation. Here, the neglect of the corporeal dimension and that of relative enclosure finds its counterpart in the neglect of the socio-spatial meaning of space-formation, which is to separate and interconnect spaces by means of a relative material enclosure. In line with the general aspiration of the

¹⁷ Gropius, [1923] 1987, 84.

¹⁸ 'Der stilbildende Wert industrieller Bauformen', Gropius, [1914] 1987, 59.

²⁰ Gropius, [1947] 1955, ...

Neues Bauen to design use itself, Gropius' use-related reference to space formation focuses on the expedient function to design '*life processes*', as he formulates it. Additionally, the artistic notion of architectural space as pure volumes of space corresponds to his production-technical and socioorganizational approach towards space formation, as abstract volumes of space perfectly function as a projection screen of both a production-technical and socio-organizational implementation of use.

This, in turn, leads to a principal criticism of Gropius' fundamental approach to architecture. An approach that is characterized by the claim of an organic unity between artistic design and the industrial age, a unity that incorporates the aesthetic and use-related needs of human beings and that attempts to free both artist and user from individual restriction and socio-cultural alienation. It is a unity that meets both needs under the condition of the industrial modern age. However, due to the restricted aesthetic concept of space and that of the socio-spatial meaning of space formation, this unity misses the corporeal and socio-spatial concreteness of human existence and a human relation to architecture.

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