Mitchell W. Schwarzer

The Emergence of Architectural Space: August Schmarsow’s Theory of Raumgestaltung
During the latter part of the nineteenth century, the study of history in Germany was confronted with various methodologies drawn from the natural sciences. Empirical observation of nature, positivist rule of facts, mistrust for metaphysics challenged both the traditional concern for rhetoric and the idealist school of descriptive history that had been in place since the eighteenth century. As the historian Johann Gustav Droysen wrote, "Nature and History are the widest conceptions under which the human mind apprehends the world of phenomena." Nature and human history, however, were not easily brought together. By the 1890s a major controversy on this point erupted within German historiography. Citing the factual consistency of the natural sciences, Karl Lamprecht argued for replacing what he referred to as the descriptive study of ideas with empirical methods. In his book German History of 1894 and in a series of earlier articles, Lamprecht called into question Leopold von Ranke's notion of transcendental forces not subject to causality and stipulated, rather, psychological forces as those basic to history.

This epistemological tension within general historical studies was also present in the history of art and architecture, which was in certain circles reconstituted under the imprint of the natural sciences. The study of the sense organs, in particular sight, proved especially influential for the visual arts. In light of great advances in theories of optical perception, works of art were positioned at the crucial intersection of the perceptive laws of mind and nature. Paintings, sculptures, and buildings were evaluated according to psychological and physiological criteria. Such investigations promised an independent methodological basis for art history. Against aesthetic paradigms, based on a priori notions of cognition and reason or a Hegelian teleology of the spirit, the movement of perceptual empiricism within art historical studies shifted inquiry from "the domain of values, the world of ideas" to "the realm of reality, the world of facts."

As perceptual empiricism took hold within art history, its application to architecture took the form of a new concept of space based on perceptual dynamics. Like other perceptual notions, the idea of dynamic space was transcribed from nineteenth-century scientific theories of vision concerned with how the mind and senses grasp three-dimensional forms and space. But while optical theorists hinted indirectly at the implications for a spatial conception of architecture, art historians began to look at space as essential to architectural creation. Among art historians, the writings of August Schmarsow played a compelling role in the overall formation of a spatial paradigm. In this essay I intend to investigate the intellectual background of Schmarsow's writings on architecture, to describe the salient features of his theory of Raumgestaltung, or spatial forming, and to evaluate its influence on subsequent thinking on architecture and space.

Schmarsow's writings on space and architecture are principally contained in the short book Das Wesen von architektonischen Schöpfung of 1893, the essay "Uber den Wert der Dimensionen im Menschlichen Raumgebilde" of 1896, and the methodological treatise Grundbegriffe der Kunstwissenschaft of 1905. Having spent most of his career as a professor of art history at the University of Leipzig, Schmarsow belonged to a generation of art historians, including Heinrich Wölfflin and Alois Riegl, who attempted to formulate a new disciplinary footing for the study of the visual arts. Far less known to Anglo-American readers than those of his contemporaries, Schmarsow's writings on architecture joined theories of visibility (Sichtbarkeit) and empathy (Einfühlung) to an awareness of the relativity of architectural expressions in history. In 1941 Bernard Berenson wrote that, before Schmarsow, space had been conceived as a negligible void and credited him with developing a theory of form in which "objects, no matter how large or how small, exist only to make us realize mere extension, and exist for that alone."

Schmarsow was the first to formulate a comprehensive theory of architecture as a spatial creation at the frontiers of the paradigm of perceptual empiricism. He differed most from other theorists in his insistence that bodily movement through space rather than stationary perception of form was the essence of architecture. Certainly, he wanted to rebut Wölfflin's theory of the essential role of bodily masses. Schmarsow's theories, then, posed a challenge to the hitherto dominant notion of form in architecture; yet his spatial focus possessed a critical blindspot to the possi-
bility that vision is not merely a scientific issue, but also culturally determined.

Theoretical Precursors

Schmarsow's articulation of spatial creation in architecture, like other late-nineteenth-century attempts to express a knowledge of art in the terminology of science, depended conceptually on earlier theories of psychological and physiological optics. George Berkeley's essay on optics of 1709 established a paradigm of experiential or associational perception that would exercise a profound influence on all subsequent theorists. His argument hinged on the problem that we observe three-dimensional objects with a pair of eyes that can only record vague two-dimensional patterns of light and color. He asserted that distance and form cannot be apprehended with the eyes alone; to form mental images of distance and magnitude requires the faculty of touch. Perception of visual space, then, results from the combination of memories of touch (tactile ideas) with immediate visual sensations.

Berkeley’s conjecture engrossed optical theorists well into the nineteenth century. If our mental images of spatial objects are an empirical combination of different visual and tactile sensations, how do these images relate to what we conceive as the real world? Likewise, how do we form the mental images that serve as representations of real objects? Approximately a hundred years after Berkeley, Johann Friedrich Herbart's theory of apperception postulated a set of mental processes in which concepts (Vorstellungen) are received through the senses, preserved by the memory, reproduced by the imagination, and combined anew. Herbart posed a strong challenge to the Berkeleyan paradigm of tactile-based spatial perception for he claimed that by eye movement alone "there is a constant blending of concepts gained, an incitation of those which are strengthened by perceptions of what lies outside the middle of the field of vision, and an innumerable multitude of reproductions interlacing one another." The conflict of Vorstellungen in the mind, the ceaseless arrest or blending of new sensations with those previously assembled, proved especially provocative to the new branch of philosophical studies known as psychology and set the tone for subsequent theorists.

Influenced by Herbart, Hermann Lotze further modified the Berkeleyan paradigm of tactile spatial perception through a doctrine of eye and body movement. Lotze's theory of "local signs" stated that, first, all spatial differences and relations among the impressions on the retina must be compensated by corresponding nonspatial and merely intensive relations among the impressions that exist without spatial form in the soul, and, second, from these, there must arise in reverse order, not a new actual arrangement of such impressions in extension, but only the mental presentation of such an arrangement in us. Local signs are memories of muscular feelings derived from the motions of the eye required to encompass the form of a visual object. For example, when we notice an object with our peripheral vision and then rotate our eyes to locate this object in the center of our vision, we are both creating new local signs (through the muscular action) and acting under the guidance of existing local signs. Our experience of qualities of the third dimension consists in our memory of the magnitude of the movement it took to bring the object into the line of clearest vision. Lotze described the perception of three dimensions as follows:

From the manifold of displacements which the particular visual images experience . . . we gain the impression that each line in an image originally seen is the beginning of new surfaces which do not coincide with that previously seen, but which lead out into this space, now extended on all sides, to greater or lesser distances from the line.

William Wundt likewise extended the discussion of how muscular movement contributes to ideas about spatial form, describing its influence on our judgment of distance, magnitude, and depth. His insight developed from the correlation between the expenditure of bodily energy and the perception of distance: Increase in motor sensation (or eye movement) leads to a rise in exertion that then induces a mental judgment of great distance. Distance is thus appraised by the effort it takes the body (and particularly the eyes) to scan the full extent of an object. Wundt asserted that vertical muscular movement is more difficult than horizontal because the former requires the use of auxiliary and complementary muscles. Distances perceived by vertical movement therefore appear greater. Similarly, upward eye movements involve a more intense sensation.
than downward movements and “forced or interrupted movements require more exertion than free and continuous ones.” Since the energy of starting eye movement is a greater percentage of the total eye energy, an acute angle, for example, appears relatively larger than an obtuse angle. In the same way, we overestimate the length of a straight line fixed by boundaries in comparison with a line whose limits are boundless. These observations led Wundt to affirm with Lotze that retinal (like tactile) impressions acquire spatial qualities through the coloring of related local signs. The formation of visual space is “a combination of this system of local signs arranged in two dimensions, with a system of intensive sensations of movements.”

As described so far, spatial ideas were seen as compounds of sensations. Despite substantial differences, the empiricist theories outlined here all shared the belief that spatial ideas are not a priori intuitions but the fusion of the impressions of bodily movements in the mind. Schmarsow’s indebtedness to nineteenth-century theories of optical perception lays in his acceptance of this associationist theorizing. Departing from Kantian aesthetics, Schmarsow detranscendentalized the concept of architectural space into a cognitive process by which spatial images are built up over time. This understanding allowed him to create an architectural historiography based on spatial expression. Schmarsow’s approach was unorthodox for its time, and it is worthwhile to inquire into its motivations. In Das Wesen der architektonischen Schöpfung, his proposal of spatial creation as the essence of architecture descended from interpretive debates in architecture, philosophical aesthetics, and art history. Renato de Fusco has commented that Schmarsow’s Raumgestaltung was an attempt to persuade critics and architects of the problem of space, in a period increasingly dominated by the stylistic eclecticism of art nouveau and an architecture characterized more by surface design than by essential structure.

The idea of space in architecture was earlier on embodied in the Greek notion of Taxis, the division of a building into parts. Subsequently, the classical tradition of writing on architecture took up the notion of space in regard to proportion and, with it, the idea of beauty. But the origins of Schmarsow’s idea of space can be found more immediately in eighteenth-century England and nineteenth-century Germany. In England, the neo-Palladian movement placed great importance on architectural circulation, the series of experiences a person undergoes moving through a building. At the same time, the articulation of the picturesque and the sublime dramaticized the mental experience of works of art. The link between space and architectural observation became overt. In Germany, by contrast, spatial concerns were interposed between those of function and construction. Half a century before Schmarsow, German architectural theorists engaged the question of the functional (and spatial) interplay between material forces and architectural forms. In the writings of Karl Bötticher, the tectonics of construction proceed from fundamental spatial requirements: for example, the space enclosed by a building determines its particular technology of roofing; the roof mandates constructive requirements from which a structural skeleton then emerges; finally, the entire system of constructive members forms the basis for artistic enterprise. The tension between spatial demands and constructive forms establishes an etiology for the architectural art.

Gottfried Semper’s appraisal of the production of architectural space followed Bötticher’s example. Unlike Bötticher’s tectonic preoccupation, however, Semper imagined architectural space as a nexus of social activity. Continuing a tradition dating back to Vitruvius, Semper considered the built enclosure and the separation of interior from exterior space to be the essential aspect of architecture. The issue for Semper, then, extended to the forming of space by the various material industries (foremost, the textile arts). Social and ideological considerations shape the building, as industrial forces create the formal contours of the spatial program. In 1870, prompted by Semper’s investigations, Richard Lucae wrote of the importance of the Raumbild, the spatial image arising in the imaginative mind of the architect and consisting of the effects of its dimensions, form, light, and colors. Thirteen years later, Hans Auer situated the development of space in architecture between the poles of practical needs (including climate) and the urge toward spiritual monumentality. By 1900 spatial concerns were assimilated into discussions of the principles
of architecture, and it became routine for architects to reflect on the fundamental oppositions between different spatial plans and circulatory patterns.31

Schmarsow’s focus on perceptual empiricism may, in a different light, be read against the legacy of the position of philosophical aesthetics toward architecture. Beginning with Immanuel Kant, philosophers had degraded architecture as a stepchild of the fine arts because of its emphasis on the practical.32 Convinced that the ideas inherent to it — gravity, cohesion, rigidity, hardness — were low grades of the will’s objectivity, Arthur Schopenhauer could dismiss architecture as a fine art.33 Schmarsow, then, perhaps directed his writings toward authenticating an integral basis for architecture within the other visual arts, grounding its functional and technological operations within a unique doctrine of spatial ideas.

If Schmarsow’s general interest in space can be accounted for by developments in architectural theory and philosophy, his particular notion of dynamic spatial perception cannot. For us to understand the direct influences for his theory, we must turn to the late-nineteenth-century art historical culture. Art historians of the period were increasingly attentive to the physical factors within artistic enjoyment and understanding, increasingly concerned with a visually founded correlation between internal states, perceptual faculties, and material forms. A conspicuous influence on art historical studies was Robert Vischer’s Uber das Optische Formgefühl of 1873, in which he adapted optical speculations on visual muscular activity (and their bearing on distance and depth perception) to the workings of artistic vision. Vischer was one of the first aesthetic theorists to stress that the eye in observing does not replicate a real object but, rather, manufactures a “formed image” through effort and emphasis. Moreover, Vischer agreed with optical psychologists that the mechanism of producing an optical image yields the precise character of the image produced. Schmarsow’s notion of the subject-centered creative act drew heavily on Vischer’s consideration of the similarity or dissimilarity of the object in comparison with, first, the arrangement of the eyes and, then, the construction of the entire body.34

Another important psychological inflection within art historical studies was the theory of empathy. Introduced by Theodor Lipps in his essay “Raumästhetik und geometrisch optische Täuschungen” of 1897, empathy came to be defined as a state of pleasure endured by a feeling of Zusammengehörigkeit, the consciousness of mutual belonging between the soul and the thing perceived.35 In empathy theory, the source of pleasure resides neither in the object nor in the subject, but in the relationship of the consolidating perception between object and subject. Lipps believed that we find ourselves literally in the other (a mitmachen eines inneren Verhaltens of another) because in the act of perception we experience their form as if we were one with them. Thus a fundamental rule of empathy is the subject’s absolute observation in the object.36 And so the more pleasurable the expressive movement (Ausdrucksbewegung) of the eyes in relation to an object, the more we consider that object beautiful.37 Generally, beauty results from our ability to perceive an object freely and unhindered. Lipps described this contrast between beauty and ugliness in spatial forms:

The beauty of spatial forms is my ability to live out an ideal sense of free movement in it. Opposed to this is the ugly form, where I am not able to do this, where my underlying compulsion to freely move within and observe the form is hindered and not possible.38

Other contemporary theories underscored the perceptual bond between the art work and its creator or observer. The form of the architectural work was, in the words of Konrad Fiedler, the “complete intellectualization of all material elements.”39 For Fiedler, the mental life of the artist constituted the constant production of artistic consciousness, artistic form being the immediate and sole expression of the consciousness, which was, in turn, a Herbartian process of sensory awareness and cognitive acts of apperception.40 Form and consciousness, in this view, are equally important, since undue emphasis on form results in material determinism, while preoccupation with consciousness leads back to the idealism of the aesthetic tradition.

Schmarsow adapted large parts of both Vischer’s and Fiedler’s conjectures on pure visibility as well as aspects of Lipp’s empathy theory. Nevertheless, his theory may be distinguished by its explicit understanding of the signifi-
cance of kinetic perception. Both Vischer and Fiedler stressed the sedentary artistic perception, privileging the work of art over the viewer. Lipps developed only a rudimentary idea of the potential of space, seeing spatial intuition as a way to visualize the inner soul life of matter through the physiognomy of the outer mass. Schmarsow’s realization that the perception of architecture occurs during the movement of the body through determined spaces was a clear advance. His notion of Körperempfindung, or bodily sensation, differs radically from the subjective Nacherleben, or “after experience” of the senses described by Lipps and even Wölflin. Körperempfindung is a vital process in which spatial form takes shape through the interaction of human stature, nature, and movement.

Architecture as Spatial Intuition

An exposition of Schmarsow’s theory of architecture as Raumgestalterin will make evident his concept of spatial intuition. Echoing empirical psychologists, Schmarsow reiterated that spatial intuitions have their own evolutionary history, developing from simple and unconscious impulses in primitive societies to sophisticated mathematical calculations that accommodate the most complex needs of the modern age. A crucial tenant of this process is the maturation and differentiation of spatial ideas through something akin to a Herbartian synthesis of associative perceptions. Spatial thinking therefore arises as a branch of consciousness and develops in complexity as new perceptions are gained and associated. Indeed, an understanding of architecture as Raumgestaltung can explain how our sensation of the chaotic world is transformed into what we term rational knowledge.

Schmarsow attempted to base all artistic creation on the feelings of the body (Körpergefühlen). Accordingly, each of the principal visual arts is to be understood as a means of depicting corporeal intuitions. Both painting (Flächengefühl) and sculpture (Körpergefühl) are concerned with representing the body. Space, however, while it can be represented in painting and in relief, can only be created and experienced in architecture. Architecture represents in tangible form the results of the body’s interactions with the world.

Described psychologically rather than historically, Schmarsow situated the dependence of spatial consciousness on human physiognomy. In 1903 he wrote that “the germ and central point of all art . . . remains man, and the human body.” As a rule, all spatial intuition arises from the interaction of the body’s sense organs with the body itself and with aspects of the material world — the two essential spheres of sensation. Generally speaking, the inner realm, or touch region (Tastregion), constitutes the site of bodily values (Körperwerte), while the outer realm, or sight region (Sehregion), widens our perceptive sphere into a series of initially flat visual impressions.

Schmarsow maintained that a rudimentary level of spatial consciousness begins in the inner realm. For example, from the tactile sensation of internal bodily combinations (head, joints, torso) and external bodily surfaces, a special inclination arises to a cubic conception and the visual and tactile handling of all tangible things. The first step toward spatial consciousness thus leads from bodily sensations to an awareness of the space and form of our own body as circumscribed by the space around it. The primordial position of the body in regard to external space is a standing figure whose arms are held down. This erect stance (aufrechte Haltung) is the essential axis of human relationships to the outside world and leads to the idea of height as our first dimension. Likewise, our own physiognomy, the symmetrical pairing of our two hands or eyes, forms the principle of the dimension of length. Like Lipps, Schmarsow accepted the importance of this schema for the judgment of art objects. Elementary aesthetic feelings of harmony, rhythm, and proportion supposedly all spring from the “family law” (Hausgesetz) of human nature.

The dimension of depth, however, is unaccounted for by autonomous human traits; instead, finding expression in the body’s movement through the world. Sense of depth, therefore, unlike that of height or length, is developed only through the locomotive rhythms in particularized space. It is here that the spatial consciousness truly emerges. In accordance with optical theories that emphasized the dependence of spatial understanding on movement, Schmarsow wrote, “The movement from place to place in the third dimension first brings us the experience of our
immediate extension." Like Lotze, Schmarsow conceived of space as the kinetic extension of bodily impulses into the world during movement. For example, as we move through a building, a continual stream of visual images combine in the mind to yield an ever-changing concept of spatial relations. The spatial perceptions created through movement are further developed in the mind in a process of associative enlargement of sensational knowledge.

The mature spatial consciousness associated with architecture is clearly dynamic. For Schmarsow, since all spatial awareness must originate within an apparently overriding concept of self-awareness, it follows that all architectural forms depend on bodily structure, sensation, and movement. The spatial form of a building can likewise be viewed as the result of a repertory of gestures and motions, a projection of desires and needs from the subject to the world. An enumeration of Schmarsow's overall engagement with architecture was rendered by Hermann Sörgel:

Man manifests in his activities from their first bud [Keim] a reflexive movement to the outer world. This can be divided into three ways: immediate spontaneity, work, or play. Each movement has its expression which is at the same time already an unconscious gesture, and therein lies the artistic power of creation. Schmarsow, in fact, wrote of architecture as the enlargement of bodily feelings into spatial feelings (Raumkörper von aussen). These principles were one of the earliest attempts to redirect the conception of architecture from formal to spatial essence, a condition wherein "the entire Raumgebilde appears to [its creator] as the exterior body of himself in general space, and along with that notion is displaced all the formations for the exterior building." Schmarsow also pointed out that "each figuration of space is first of all a surrounding of the subject, and because of this end, differs essentially from all efforts of kunsthändwerk." Accordingly, the spatial form of architecture is the figuration of human activities that necessitate some type of boundary: architecture is a functional art, the building of enclosed spaces within which people enjoy free and willful movement. Considerations of the façade, of ornament, of individual supporting members are subordinated to the overall urge for space. Architecture as spatial forming, in other words, is conceived not as an opaque and timeless entity, but as a living amalgamation of human impulses, created perceptually by its creator and its users.

Armed with his concept of the development of spatial consciousness in an individual's life, Schmarsow extended his theory to the emergence of different spatial forms in history. From his interest in origins, he proposed a spatial Urform arising out of his definition of Raumgestalterin. In Grundbegriffe der Kunstwissenschaft Schmarsow related how the art of architecture began with the fencing in of a space by four walls upon which a roof was added for protection from the elements: the paradigm of Laugier's primitive hut transformed into an elemental walled enclosure. Furthermore, he envisaged that buildings that accentuate their correlation to human activity (such as the nomadic tent or the bamboo hut) would provide better starting points for the historian than closed forms (such as the obelisk). Schmarsow's preference for activities understood in the observable terms of perception and movement clearly emerges here. Throughout his writings, we detect a predilection for the vital space over the silent form, the space whose contours are shaped by the demands of human life.

In applying his theory to historical periods, Schmarsow refrained from either speculative or materialist explanations, always basing his conclusions on perception. His historiography was greatly influenced by Alois Riegl's Stilfragen of 1893 and his Spätrömische Kunstindustrie of 1901. Riegl underscored the history of architecture as an evolutionary progression from haptic modes of perception to optical modes. In Spätrömische Kunstindustrie, Riegl stressed that ancient art (exemplified by the tactile perception of Egypt) searched for a comprehension of material essence, avoiding the representation of space and sacrificing the dimension of depth. Ancient art intended "representation of objects as individual material phenomena not in space but on the plane." An awareness of depth, Riegl believed, first appeared in the foreshortening and shadowing of the art of fifth-century Greece, but only reached full expression in the optically oriented art of Rome, exemplified by the Pantheon.

While adhering to Riegl's interest in tactile and optical
perception as well as to his advocacy of forgotten eras, Schmarsow's quarrel began with his repudiation of Riegl's haptic ideal of Egyptian art, which separated the perception of built forms from the visual capabilities of the viewer. Schmarsow argued, instead, that the subjective optical viewer is present in all eras of architecture. His real interest lay in the interiors of pilgrimage temples and he described a series of courtyards within the enclosed confines of the Egyptian temple complexes. The choreography of movement through these courtyards, commanded by societal needs, generated specific spatial ideas. In turning his scrutiny to the internal patterns of use of the temple, Schmarsow demolished Riegl's theory of the evolutionary path of the Kunstwollen from Egyptian to Greek architecture.

The whole of the Egyptian temple is a spatial composition for a long temporal sequence of impressions, which can only be compared with music or epic and dramatic compositions. Perception of the temple is a series of acts, especially if the performance of the experience here proceeds from no other viewing place than that of the human breast. Completely different is the Greek temple with its column rows around the oblong built form of the cella. Here the exterior is the main point. It is as though a courtyard of the Egyptian temple, with its columns on the inner side of the wall enclosure, was turned from inside to outside. Here (in the Greek temple) is truly a building of surveyable bodily volumes, but likewise determined through the preponderance of the length over the depth dimension.50

Schmarsow faulted Rieg's judgment of the fundamental goal of ancient architecture to be the creation of clear boundaries, of strong centralized entities. Accordingly, he wrote that "one wins a completely false impression, if the superiority of the inside as the only means of measure is not recognized or also only veiled."61 Since internal spaces are the "testing stone" of the artistic impulse (Prüfstein des Kunstwollens), the Greek temple is actually an isolated form. For Schmarsow, the essence of architecture resides in the generation of culturally stimulated rhythmic patterns of movement through enclosed inner rooms, passages, and courtyards. Transitional areas between spaces are of exceptional importance for his theory. Spatial openings, to one or more sides, marked by walls or by columns, increase spatial relations by linking and combining inner spaces.62

By applying this principle of description to buildings from ancient Egypt to Byzantium, Schmarsow abandoned Rieg's strictly linear historiography, likening, for instance, the traffic of people along the nave in early Christian basilicas to the promenades of Mesopotamian and Egyptian temple complexes.

Culture and Spatial Architecture

By giving epistemological preeminence to the relationship between the stature, movement, and perception of the human body and the spatial attributes of buildings and urban forms, August Schmarsow helped to formulate a new conception of architectural essence. His historical examination of spatial creation in architecture revealed aspects of human activity obscured by a preoccupation with studies of form. Schmarsow recuperated spatial thinking—originally the province of geometry and physics and later taken up by psychology and physiology—for an inquiry into man's kinetic relation to the built environment. Transforming an idea that dated back to Renaissance proportion studies, his spatial doctrines displaced the proportions of a static figure with the charged musculature of human movement.

In the twentieth century the persistence of spatial thinking in both design and architectural history underscores the importance of Schmarsow's theories of space. In modern architecture, his idealization of spatial perception may have contributed, in part, to liberating architectural understanding from traditional strictures. In architectural writing, the resonance of his thinking was directly reflected in a series of amendments to his fundamental characterization of the spatial consciousness. The voice given to space was first echoed in Paul Frankl's study Die Entwicklungphasen der neueren Baukunst of 1914.63 In this work, Frankl pointed to spatial composition as the leitmotiv of the Florentine and Roman Renaissance. Integrating Schmarsow's Raumgestaltung with Wolflin's stylistic polarities, he constructed a morphology of forms for ecclesiastical architecture based on spatial addition and division.

A few years later in 1918, in Theorie der Baukunst, Hermann Sürgel set forth a notion of "effective space" (Wirkungsraum) as a third phase in the delineation of spatial
consciousness. Enhancing what he saw as the earlier forms of spatial thinking (Renaissance one-point perspectival space and dynamic perceptual space), Sörgel proposed an underlying architectural spatial consciousness as the “self-evident connection of the spatial essence of architecture with the sober and fundamental demands of function inherent in the essence of building and living.” Schmarsow’s spatial theories were also influential for Paul Zucker. In an article written at the end of World War II, “The Aesthetics of Space in Architecture, Sculpture, and City Planning,” Zucker emphasized the spatial divisions that Schmarsow had previously given form to the three visual arts. Alongside architecture (shaped space and formed mass), Zucker rehabilitated sculpture as a spatial art (formed masses and spaces shaped by them) and added the new category of urbanism (shaped space and organized directions).

In architectural history and criticism of the 1920s and 1930s spatial concerns again came to the forefront. In 1930 Gustav Platz insisted in his history of modern architecture that “the abstract space without any decoration . . . represents the highest cultivated form of our time.” The architect R. M. Schindler wrote in “Space Architecture” of 1934 that modern architecture lies “in the minds of the artists who can grasp ‘space’ and ‘space forms’ as a new medium for human expression.” Finally, we have only to look to Siegfried Giedion’s immensely influential Space, Time and Architecture of 1940 as an exemplar of the accentuation of space as the basis for a modern syntax of architecture. This preoccupation with space developed alongside a metaphysics of modern design whose telos was understood as an outgrowth of human activities. Although Schmarsow’s direct influence on architects may have been negligible, his theory could be seen to have impacted (through intermediary critics) the development of modern architecture.

In modern design the free plan and the unornamented shell are central to the legacy of Schmarsow’s spatial thinking. Schmarsow’s championing of human spatial movement was consonant with later demands by architects for the adaptation of building plans to contemporary living conditions. The modernist preoccupation with shaping internal space to address functional needs is, in part, an outgrowth of perceptual ideas that stress spatial form as the extension of human life. Emphasizing interior space freed architects from the bonds of the formal block plan and allowed them to redirect their efforts toward those locomotive patterns derived from use. Modern architecture has also been characterized by an avoidance of historical ornament. In concentrating on the perception of spaces, Schmarsow relegated the historical vocabulary of forms to an afterthought. Such focused awareness of space provided a source of new imagery and expressive concerns, emphasizing abstract geometries and smooth surfaces.

August Schmarsow’s sensibility, however, showed itself not only in the study of architectural creation and perception through the lens of scientific theories of the senses, but also in the study of architecture viewed through cultural acts and values. He wrote that “the history of architecture is a history of spatial feelings, and with that, consciously or unconsciously, a foundational component of the history of Weltanschauungen.” At first glance, Schmarsow’s theory of Raumgestaltung appears more integrated with general cultural studies than those of Fiedler, Hildebrand, or Wöllfin. Hoping to find a perceptual explanation for the relationship between human essence and artistic production, Schmarsow went so far as to call for a collaborative effort among art historians, ethnologists, and anthropologists. Writing in commemoration of his eightieth birthday, Oscar Wulff remarked on Schmarsow’s desire both for an autonomy in the inquiry after architectural history and for the relevance of art historical studies within the humanities:

He demands indeed the establishment of the intuitive facts of the case with the severity of the procedure of observation in the natural sciences. He held, however, at the same time, that art history should be pursued in close connection to other cultural and historical studies, since it has equal rights with these other branches (e.g., literature) and is not merely a historical stepchild.

These remarks seem to make sense in light of Schmarsow’s own formulation of buildings as “the fossilized shells of long-destroyed cultural organisms.”

Yet is Schmarsow’s theory of architecture analogous to cultural history? Regardless of its pretensions and despite the
integrative possibilities in a spatial approach to the history of architecture seen as a sequence of psychologically derived expressions, Schmarsow expressed no real interest in knowing how different cultures perceived the spaces they created and used. Cultural values regarding building were secondary to impulses of the spatial consciousness. His concessions to the historical relativity of spatial appearances never extended into an analysis of the interaction between these appearances and unpredictable human factors. Likewise, he never engaged considerations of the impact of religious, social, and economic conditions on architectural space or the position of spatial perception within a greater social process of signification. Schmarsow’s typology of spaces, while admittedly based neither on a progressive Kunstwollen nor on other teleological agents of history, conforms to objective standards. In the end, he understood spaces in buildings according to a set of normative perceptive faculties. Were Schmarsow’s notion of Raumbildung the sole consideration of architectural style, for instance, the domed spaces of the most disparate periods of human history could be seen to possess essentially the same inspiration.76

Obviously inspired by Fiedler’s description of intellectual form making, Schmarsow conceived of architecture as the pure creation of spatial forms through the intellectual and perceptual development of the spatial consciousness. Consequently, the only reliable way to discern the manifestations of the architectural consciousness was through the unhindered interpretation of the built phenomena themselves. Restricted to the realm of art historical investigation possible under the paradigm of perceptual empiricism, Schmarsow’s theory was centered on an all-knowing subject. His idea of the history of architectural spaces rested on the ability of the art historian to recreate the reality of the building through deduction. Insofar as the building was a structure of hollows sculpted by human impulse, it became the art historical task to fuse this appearance of materiality with the motivations and spirit of its creator.

Schmarsow generated the descriptive propositions necessary for this endeavor from a set of spatial axioms. Since these axioms (Raumgefühl, for example) were derived from a scientific study of the senses, the unfolding of spatial ideas in buildings subordinated worldly manifestations to a normative manifold of the consciousness. Although architectural diversity could be accounted for by the different stages of a spatial consciousness, the universal notion of this consciousness denied the possibility of diverse cultural manifestations of similar spatial impulses. Ultimately, then, Schmarsow standardized human culture to the inclinations of the spatial consciousness. He turned to history to provide an explanation of the nature of spatial thinking. Like other art historians working within methodologies drawn from the natural sciences, he preferred to reconcile human creations with natural processes; yet in his elaboration of architecture as a grand historical narrative of the spatial consciousness, Schmarsow failed to recognize that the varieties of human spatial consciousness belong to complex sets of cultural ideas irreducible to any scientific model.

Mitchell W. Schwarzer received his Ph.D. in History, Theory, and Criticism from the Massachusetts Institute of Technology. He is Assistant Professor of Architectural History at the University of Illinois, Chicago.


5. The German Raumgestaltung translates literally as "interior decoration." Schmarow's use of the word, however, is more expansive and includes a conception of spatial information and spatial creation.

6. To this date, none of Schmarow's writings have been translated into English.


12. Ibid., 132.

13. In Der Symbolbegriff in der neuesten Aesthetik (Jena: Hermann Dufft, 1876), Johannes Volkel traces the development of this concept from Herder's student Robert Zimmermann to Robert Vischer and Conrad Fiedler.


15. The physicist Hermann Helmholtz further developed the dynamics of the formation of mental images with reference to Lotze's theory of local signs. See Hermann Helmholtz, "The Recent Progress of the Theory of Vision," trans. Philip H. Pye-Smith, in Popular Scientific Lectures, ed. Morris Kline (New York: Dover Publications, 1962), 175. In accordance with his "empirical theory of vision," Helmholtz suggested that we can create ideas of three-dimensional space because the sensations we receive from each eye are not exactly alike, while our mental images of spatial form are created from the synthesis of several visually derived images. Hence eye movement confers a present transmission of spatial form that is subsequently combined in a mental operation with previous images drawn from the cognitive faculties of imagination, association, and selection.

16. Lotze, Outlines of Psychology, 59.


18. Wundt claimed that for any two local signs, a and b, there will be a corresponding sensation of movement arising from the movement through the distance a-b and serving as a measure of that distance.

19. Wundt, Outlines of Psychology, 123.

20. Ibid., 125.


22. William James distinguished between sensations and perceptions: pure sensations are abstractions of objects or their attributes, while perceptions encompass the consciousness of further information associated with the object of the sensation. Accordingly, "sensations and reproductive brain-processes combined . . . are what give us the content of our perceptions." See William James, The Principles of Psychology (New York: Dover, 1986), 2:2-82.


26. Karl Bötticher wrote of the determining influence of the Raum einrichtung, or spatial organization, on the logical shaping of the plan and structure of a building in Die Tektонik der Hellenen (Berlin, 1838), 14.

27. As De Fusco writes, Schmarow was indebted to Semper for his interest in the genesis and evolution of artistic forms (Segni, storia e progetto, 10). Cornelius van de Ven also claims that Schmarow borrowed Semper's notion of "three moments," substituting rhythm for Semper's direction. Van de Ven writes that "Semper was the first to define the Semperian purpose as being identical to the creation of limited space, in which man could move around freely . . . Space meant not merely sheltering man's labor, but also his Play Room" (Cornelius van de Ven, Space in Architecture: The Evolution of a New Idea in the Theory of the Modern Movements [Assen/Maastricht: Van Gorcum, 1987], 90).

28. Nonetheless, Schmarow was critical of Semper's theory, characterizing it as a mistaken attempt to combine the technical and decorative arts. He felt that Semper's system of continual reinterpretation of certain formal motifs made architecture too dependent upon non-human factors. All the forms of architecture, Schmarow maintained, "are complete and special spatial works" that are indifferent to material use and construction technique. Whatever material unfolding of architectural form takes place, whether in the act of creation or that of observation, is actually an unfolding of intuition through the mechanisms of sight. The essence of architectural form is infected with movement, for "through the experiences of our visual sense . . . come to rest the intuition forms of the three-dimensional spaces" August Schmarow, Das Wesen der architektonischen Schöpfung (Leipzig: G. B. Teubner, 1893), 10.

31. The literature on space after 1900 is large, and attempts were made to found a journal concerning the spatial theme. See Hendrik Berlage, "Raumkunst und Architektur," Schweizerische Bauzeitung 49 (1907); Hans Cornelius, "Elementarge setze der künstlerischen Raumgestaltung," Die Raumkunst 1 (1908); Josef Scherer, "Gedanken über Raumästhetik," Neudeutsche Bauzeitung 9 (1913); Bruno Specht, "Raumkunst," Deutsche Bauzeitung 29 (1895); and Hans Streit, "Über Raumkunst und Raumstudium," Architektonische Rundschau 23 (1907).
36. Ibid., 141.
37. Ibid., 247.
38. Konrad Fiedler, Essay on Architecture, trans. Carolyn Reading (Indianapolis, 1948), 23. Fiedler wrote that "the genuine artistic spirit rules only where there is an obvious attempt to redeem the elements of architectonic form from an existence determined by and limited by materiality to the freedom of a purely intellectual expression" (p. 26).
40. Van de Ven, Space in Architecture, 83.
42. Schmarsow, Das Wesen, 22.
44. Ibid., 34.
45. Ibid., 41.
47. Ibid., 104.
48. Schmarsow was influenced by his contemporary Adolf von Hildebrand, whose book The Problem of Form in Painting and Sculpture (New York: G. E. Stechert, 1907) exercised a decisive impact on art historical studies of the period. Hildebrand's concept of spatial perception through motion—kinesthetic ideas—became a basis for reading the creative potential of artworks: "Our relation to the world of vision consists chiefly in our perception of its spatial attributes" (p. 17).
49. Sörgel, Architektur = Aesthetik, 47. See also Oscar Wulff's essay "Zu August Schmarsow's Rücktritt," Kunstchronik 31 (1919–20), for a discussion of Schmarsow's attachment to the formative laws of body rhythms as a substitute for extra-aesthetic features.
51. Schmarsow, Das Wesen, 19.
52. Ibid., 14.
53. Schmarsow, Grundbegriffe, 183.
54. Roberto Salvini, La critica d'arte moderna (Florence: L'Arco, 1949), wrote: "Specialmente nella critica dell'architettura egli ha saputo porre l'accento su valori inediti di ritmo e di movimento che non potevano trovar posto negli schemi del Riegl e che pure formano tanta parte — se non così esclusiva come appare all'autore — del linguaggio architettonico" (p. 27).
55. Schmarsow was not overly concerned with boundaries between venacular and high architecture, and his definition of architecture lay not in the typological oppositions of sacred and profane or monumental and merely useful but in historical realizations of spatial creation. All spatial enclosures—whether palaces, warehouses, or city squares—are instances of Raumbildung: "the nature of the Wohnbau, in contrast with the Monumentbau, is always concerned with growth, it remains entwicklungsfähig to a certain degree like a Lebewesen or even a collectivity of such, seen in the family and the essence of home that it develops and shelters" (Schmarsow, Grundbegriffe, 184, 190).
56. Schmarsow, Grundbegriffe, 192.
57. Ibid., 184.
58. Ibid., 188.
60. Sörgel, Architektur = Aesthetik, 164.
62. I omit reference to Camillo Sitte because the ideological development of Sitte's thinking does not stem from the optical sources common to Schmarsow's perceptually based spatial understanding.
67. For an overview of this unfolding, see Giulio Rosecco, Spazio: Evoluzione del concetto in architettura (Rome: M. Bulzoni, 1970).


70. Sokratis Georgiadis writes that Giedion took the development of space as “die Verwandlung der Erkenntnistheorie des sichtbar Raumes um ein Ontologie des gemachtbar Raumes durch August Schmarsow” (Sokratis Georgiadis, Siegfried Giedion: Ein Intellektuelle Biographie [Zürich: Institut für Geschichte und Theorie der Architektur, 1989], 209).

71. Stanford Anderson writes: “The shift in theoretical dominance from the tectonic conception of architecture to a spatial conception was fixed with August Schmarsow’s inaugural lecture at Leipzig in 1896 in which he characterized architecture as, essentially, the forming of space (Raumgestalterin)” (Stanford Anderson, “Peter Behrens and the AEG,” Oppositions 23 [Winter 1981]: 56).

72. Schmarsow, Das Wesen, 29.

73. Ibid., 5–6.


75. Ibid., 28.

76. See Richard Streiter, Ausgewählte Schriften (Munich: Delphin, 1913). Streiter rejected the preeminent role that Schmarsow gave to space for this reason: “In the great majority of cases Raumbildung alone is not enough to arrive at a characterization of artistic inspiration, that which can be described as the style of an epoch” (p. 117).

Figure Credits