

Imagining the Organic City

Modern Tropes of Organization

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Abstract

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This thesis examines three 'organic tropes' of modern architecture and urban design, addressing different crucial moments of change within modernist discourse. Attention is focused on the institutionalization of 'town planning' at the turn of the last century; the shift during the post-war years; and the beginning of urban debate in Japan during the early 1960s. The study builds upon the thesis that 'the organic' constitutes a basic trope of a modernism that reinvents the term over and over again. In its ambivalent relationship to modernity, which it both embraces and rejects, the organic hovers between progressivist and nostalgic imaginations.

There has been relatively little enquiry into 'the organic' as part of the larger system of modernism in architecture and urbanism. This is because of its unclear identity. Historically, urban organic rhetoric emerged in times of change, revision, or when a debate about basic principles of planning practice was at stake, in times that were experienced as crisis. The rhetoric of the organic springs from the desire or need to reconcile conflicting parts into a coherent whole. The urban schemes discussed here, such as Patrick Geddes' vision of an organic city, or the megastructures of the metabolists, are based on contradictions taking in aspects of individual agency and collectivity, or fragmentation and totality. Attempting to take a holistic perspective on urban processes and city change, they opened up for a range of political issues concerning authority in city planning and the status of the citizens in this procedure. Beside formal questions we find organizational concerns that go beyond static plans in envisioning sustainable futures through the thinking in processes and the proposal of programs.

This text explores discursive and theoretical works with a distinct programmatic character, which have primarily taken place at the level of visions rather than through actual materializations in the city fabric. These works are considered in the context of their projective model character, and their relevance for the discourse on cities and citizens, the nature of planning, and urban design.

Keywords: organic, nature, organism, prototype, model, types, objèt type, evolution, morphology, division of labour, city, cell, society, biology, modernism, vision, Patrick Geddes, valley section, urban design, CIAM, Team 10, megastructure, metabolism, group form, structure, symbol, Japan, information, organization.

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Introduction

Anthropocentrism – Organic city – The aesthetic organic – The functional organic – Urbanism and modernity – Outline

This dissertation examines three 'organic tropes' of modern architecture and urban design, addressing different crucial moments of change within modernist discourse. Attention is focused on the institutionalization of 'town planning' and its inauguration as an academic subject at the turn of the last century, the shift during the post-war years, and the beginning of urban debate in Japan during the early 1960s. The study builds upon the thesis that 'the organic' constitutes a basic trope of a modernism that reinvents the term over and over again, continuously adapting it to the shifts in an urban discourse. In its ambivalent relationship to modernity, which it both embraces and rejects, the organic hovers between progressivist and nostalgic imaginations. The thesis concentrates on clarifying several organic positions, to highlight in which way they differed, and in what respect their arguments had also grown out from one another, and had partly returned transformed, in the dress of novelty. In this way the thesis reveals critical moments in the debate of city planning and architecture that have consciously and unconsciously organized and reorganized both fields. This text hereby explores discursive and theoretical works with a distinct programmatic character, which have primarily taken place at the level of visions rather than through actual materializations in the city fabric. These works are considered in the context of their projective model character, and their relevance for the discourse on cities and citizens, the nature of planning, and urban design.

Michel Foucault's groundbreaking *Les mots et les choses* (1966)¹ has provided an understanding of the discourse during the shifts from classicism's static concepts to modernity's concepts of change, which are expressed in the possibility of the emergence of modern sciences. These include biology as in evolutionary theories, linguistic studies that engage in the origin and development of languages, and the formation of the field of political economy, which views economy not in fixed terms, but as bound to processes. In Foucault's view, these apparent changes are not connected to historical events such as new discoveries through scientific research, as this is usually done, but to a cultural shift happening on the level of 'archaeological' strata. He describes this change as linked to the emergence of the individual as a living, speaking, labouring, and thinking subject, paradoxically connected to the understanding of its own finitude. It finds expression in the emergence of human sciences, which Foucault discerns from 'proper sciences.' At this point he locates the erosion from operative *categories* into mere *images* as with the notion of the organic in nineteenth-century sociology. This thesis takes this differentiation as a point of departure and attempts to unearth the instrumentality of the image in urban and architectural theory, in what is here called 'the trope of the organic.'

The trope of the organic forms a spatial figure. The use of the linguistic term 'trope' implies that the organic goes beyond a mere analogy as it is also an image. Through the shifts in the application of the notion of the organic, which

¹ Michel Foucault, *Les mots et les choses* (Paris: Editions Gallimard, 1966).

will be discussed, it becomes clear that this image responds in no way to fixed categories, but that it is above all a fiction. 'Trope' is a term which designates an instance of figurative language such as metaphor or metonymy. It describes a figure, a trajectory. This may be imagined spatially, as two nodes or locations between which there is a trajectory. The function of a trope is to bring features or conditions from one location to the other, by which the two locations are conjoined. As a function, this mediacy facilitates both narrative organization and strategic thinking. In this sense, a theoretical trope replaces one linguistic whole with another that the 'mind can grasp.'² The two stand in a mimetic relationship. The trope of the organic envisions wholeness, the world is hereby imagined 'as if' rather than 'as it is,' making possible a metaphorical transposition that bridges the gap between obvious contradictions, reconciles otherwise incompatible opposites, synthesizes antithetical views, or that simply reorganizes contrasts that otherwise can't come together, in a rhythm of becoming and declining. The trope of the organic unites and exemplifies a range of quite diverse instances. It exemplifies nature as idea, as process, and as Gestalt. It thus transports the image of 'life' as a pre-eminent quality.

Nature and anthropocentrism

A normative way of regarding nature assigns values to nature. Ecological theorists distinguish and criticize anthropocentric and biocentric positions in a debate of different conceptions of nature in relationship to human practices.³ In general terms, an anthropocentric viewpoint centres on human beings as the measure of all things, in which the world is regarded in terms of human values and experiences.⁴ This attitude can easily be associated with a renaissance humanism that quite literally derived an architectural system of proportions in the geometry of the idealized male human body.⁵ Although recognized as different systems, nature and culture were seen as harmoniously interconnected in a cosmological and holistic view of the world intersecting in the abstract representation of man that mirrored both natural and architectural principles. In a modern anthropocentrism, on the other hand, nature possesses no value in itself beyond those attributes assigned to it. As nature is not seen as a *world ordering system* any more, its status has changed from an authority to a *resource* or *reserve*, in respect to material and energy, but also with regard to human psychological needs. The motives to protect non-human surroundings derive from nature's role of fulfilling

² Anders Johansson, *The Architectural Metaphor* (Doctoral Dissertation, KTH School of Architecture, Stockholm), 2003. pp. 73-74, 99.

³ Kerry H. Whiteside, *Divided Natures. French Contribution to Political Ecology* (Cambridge, Mass./London: MIT Press, 2002), p. 2.

⁴ 'anthropocentric,' Webster's Third New International Dictionary, unabridged, Merriam-Webster, 2002. <http://unabridged.merriam-webster.com> (2006-01-01).

⁵ Diana Agrest, in her article 'Architecture from Without: Body, Logic, and Sex,' argues that logocentrism and male anthropocentrism underlays the system of architecture from Vitruvius till Le Corbusier's modulator through making architecture an image of man as an analogue to man's body. From this architectural system, woman is excluded and woman's body is repressed, and determined as an outside. In: *Architecture from Without. Theoretical Framings for a Critical Practice* (Cambridge, Mass./ London: MIT Press: 1991), pp. 173-193.

human *interests*. In this sense nature is reduced to either a limit or a ground for human or cultural activity.⁶ A biocentric standpoint, however, grants all living beings and inanimate nature a value of their own.⁷

In a modern architectural debate, a range of different design attitudes comment on the qualities of human-nature interactions in various ways. Different standpoints can be found that hover between an anthropocentrism that wants to draw a clear dividing line, and sees nature inherently different from humanity, to more organic attitudes that envision a synthesis of nature and culture. However, a separation into two distinct fields is impossible. An anthropocentric rhetoric that stresses the importance of technological progress in the struggle over nature can be found in Walter Gropius and Le Corbusier, who frequently speak of the necessity of dominating nature through technological means. Although in Le Corbusier we also find the vision of a perfect harmony of man and nature, which strongly recalls the ideals of renaissance humanism, as well as the modern idea of environment as an anthropological category.

Organic strands evolve, not necessarily always springing from romantic tendencies, as in Goethe's botanical and aesthetic studies, but just as often positioning themselves in relation to scientific knowledge, as we see in the work of the Scottish biologist and city planner Patrick Geddes in the beginning of the twentieth-century, and in the human ecology of the Chicago School of Urban Sociology in the United States during the 1920s.

In an American context, nature takes another instrumental position than in Europe, where the discourse has long moved away from a classical understanding of mimesis, now questioning nature's authority through more progressive attitudes. For America, however, the paradigm of nature and the organic return as an alternative model to Beaux-Arts architectures, eclecticism, and historicism all associated with an old Europe, pictured as in decline. The writings of Louis Henry Sullivan, and his employee for a while, Frank Lloyd Wright, give witness to an idiosyncratic interpretation of nature's role for artistic production. They attempt to integrate the position of the autonomous genius that receives its concepts through intuition à la Kant, bypassing nature with the idea of an expanded mimetic relationship to the natural world where inspiration is found through nature contemplation. With democracy as the base for an organic society and organic architecture, they propose a merger that incorporates nature to an anthropocentric logic. In their architecture this is expressed in a sort of underlying formal geometry that presents the common logic for the design, encompassing plan, structure, volume and ornament, which is seen as a sort of eternal or universal value complemented by an actual concern for the materiality of the building. In a progressive attempt to bring together and to synthesize 'nature and the machine,' to use Wright's words, technology is not viewed as an outcome of a competitive struggle against nature, it is rather seen as a complement to natural

⁶ See also Elizabeth Grosz, 'The Natural in Architecture and Culture,' *Architecture from the Outside. Essays on Virtual and Real Space* (Cambridge, Mass./ London: MIT Press, 2000), pp. 91-105.

⁷ Annette Voigt 'Die Natur des Organischen – "Leben" als kulturelle Idee der Moderne,' *Spielarten des Organischen in Architektur, Design und Kunst*, edited by Annette Geiger, Stefanie Hennecke, Christin Kempf (Berlin: Dietrich Reimer Verlag, 2005), pp. 37-49.

forces and natural products, whereby nature and technology would stand in a mimetic relationship. The natural was to be discovered in the technical and vice versa, the technical in nature. Nature is the source of all creative activity to which it lends meaning. It is hereby not necessary to understand nature rationally; it is possible to explore it emotionally. Sullivan's and Wright's double understanding of nature as functional and spiritual is seen as the basic ground from which functionalism developed in Europe, where this complex theory will gradually be stripped from its initial esoteric and political connotations.

A city vision that Michael Hays has called posthuman, and which involves an organic rhetoric, is Ludwig Hilberseimer's *Groszstadt Architektur* of 1927, a scheme so abstract and cleaned from the presence of anything alive, be it human or non-human, that the organic appears here only as a notion of total organization. The scheme basically proposes an efficient reorganization of infrastructure in relation to different functions and 'cells' in what Hilberseimer calls an organism. This radical proposal redistributes the functions of working and living in three dimensions, interlaced and linked by infrastructures such as train systems and elevators. Thus, it connects to the techno-romantic visions of the futurists, and can be viewed as one of the most important precedents for the metabolist projects of the 1960s. This example shows that the organic emerges also in schemes that stress progress and the technological aspect of planning and architecture.⁸ In this urban organic conception, nature in the sense of matter or material presence has disappeared. It remains in its quality of an all-encompassing organization, as a terminology, and as a hyper-image.

Organic city

The analogy of a city as an organism has emerged in frequent intervals since the beginning of modern town planning. It is not only a spontaneous metaphorical depiction for grasping the complexity of the phenomenon city, with its physical, economic and social processes in constant flux, but a transcription from earlier sociological notions of the organization of society and community, now transferred to the form of the city, as will be shown. Organic metaphors as they appear in Le Corbusier's publications, which discern and relate essential functions of the city in such images as parks as lungs, and centres as the heart of the city are more or less only illustrations of Le Corbusier's rhetoric, without direct organizational implications.

Beyond mere comprehensive images, the organic is above all programmatic, and has expressed different aspirations. In the formative years of 'town planning,' at the turn of the last century, the image seemed not only to offer the possibility of a dynamic representation of a city, which corresponded to its actual rapidly changing environment at the time, it also promised a remedy for the conflicts that this transformation brought with it. The organic opened up for a holistic view on cities in times that were otherwise experienced as uprooting, disruptive, and alienating. Hence the city organism itself is endowed with a positive potential, a value, which goes far beyond organizational and functional considerations of the city in that its discourse has, at different times, depicted also

⁸ K. Michael Hays, *Modernism and the Posthuman Subject. The Architecture of Hannes Meyer and Ludwig Hilberseimer* (Cambridge, Mass./ London: MIT Press, 1989).

parameters such as harmonic unity, experience, psychological tendency, perception and feedback, and spiritual development.

As a social vision attached to the conception of a city-organism, we find the attempt to reorganize the relationship of the individual to society often in the striving for a community without authoritarian structures, which is self-organized and self-determined. The idea of society as an organism without a state that organizes it from above was central to anarchist thinkers and activists, at the end of the nineteenth century, as could be seen in the city visions of the geographers Peter Kropotkin and Elisée Reclus, and the Scottish biologist and city planner Patrick Geddes. Here the organic served as a counter-image to a capitalist society presented as ‘unnatural,’ while at the same time liberal thinkers such as Herbert Spencer discovered the natural model in competition, realized, in Darwinian terms, precisely through capitalism. Both strands, despite their opposite views, were inspired by each other: the organic offered a future vision and a program for a society that developed in a ‘natural’ reciprocal relationship with its environment; the instrument for that, the organic city, promised to overcome the social contradictions that progress had inflicted on society.

The aesthetic organic

The ‘organic’ occurs as an aesthetic-ethical agenda in the reform movements at the end of the nineteenth-century. Although springing from a social engagement, they are not concerned with changing an all-encompassing underlying structure as in Marx; their strategy can rather be called primarily *visual*, and concentrated to particular places. In the creation of an image of an organic architecture and town planning, conveyed in the forms of organic layouts of buildings and gardens that oppose the geometry of the metropolis, a change of behaviour and moral attitude of the citizens is envisioned. The implementation of such forms could work partially, but have an even larger impact on people since everybody could *see* them. These new forms were often modelled on indigenous types, as in the work of Hermann Muthesius, and thus experienced as familiar. To which degree social form is thought to be mirrored in the visible physical form of the city at the time is illustrated by the sociologist Werner Sombart’s argument in the opening pages of ‘Warum gibt es in den Vereinigten Staaten keinen Sozialismus?’ (‘Why is there no Socialism in the United States’, 1906), where he underscores the organic origin and formation of the historical European city, contrasting its features with the geometric and rational structure of American urban centres, whose ‘square form . . . must have banished from the start any idea of a naturally developed, “organic” settlement.’⁹ In this quote the European city is presented as lacking structure but as showing character instead, which it required over a long time, as a sign of higher quality.

Another perspective forms an aesthetic aspect of organic architecture, which takes on a much broader meaning. It relates the notion of actual regional cultures to a particular place, in practice as an invariable out of which ever new forms could become produced, as in Patrick Geddes’ notion of an organic city. All architectural and urban culture has developed out of the difference of particular

⁹ Quoted in: Francesco Dal Co, *Figures of Architecture and Thought. German Architecture Culture 1880-1920* (New York: Rizzoli, 1990), p. 71.

social *types* that grew from a certain natural environment, such as the hunter, the shepherd, the farmer, etc., migrating and making the city. Although the actual agents of the universal types would constantly transform their milieu and develop new forms, they were still all connected to their origins and thus created a cultural continuity between past and present; binding together what has fallen apart in Marx, the city and the countryside. Geddes hence idealistically bridges the fissure that has emerged through modernity by simply denying it. He and others utilize an underlying functional-structural idea of the city, from where basic elements recur in ever new visible forms. Rather than a static image of a place, a range of visualization techniques are suggested that unfold in motion and connect experiences on different scales. This plays a crucial role in making Geddes' idealistic product, the organic city, work. In the viewer's subjective visual experience lies the potential for constituting a geographical self as a model for modern citizenship.

The functional organic

The terms 'organic' and 'functional' are related and not opposed. They both can be traced through the idea of functional adaptation, which was a basic premise for the way modern biology looked at the development of organisms, as well as how modern architecture related to the idea of function and form. Functionalist theories of architecture made strict adaptation of form to purpose the guiding principle of design.¹⁰ In the functionalist architecture of the 1920s, there is a shift away from the former discussions of alienating production methods, towards issues of occupation. Adrian Forty states that '[t]he interrelationship of architecture and use was now presented as the primary content of architecture, not just in opposition to "aesthetics," but taking its place, to constitute a wholly new meaning to that concept.'¹¹ Forty differentiates architectural modernism from its precedents (Arts and Crafts) through this concern with an aesthetic of occupation. However, he points to the term *Zweck* (purpose), which 'was used by German-speakers both to signify the fulfilment of immediate material needs – utility, but also in the sense of inner organic purpose, or destiny – in the sense of "function" used by [Louis] Sullivan,' to demonstrate that functionalism went far beyond the meaning of rational construction in the sense of '*Realismus*.'¹² What is seen as natural is often also assumed efficient, functional, useful, meaningful, true to material, beautiful, and sustainable. In a modern discourse of design, the technical-rational and the organic often belong together and can hardly be separated, as both ways of thinking draw from the same source.¹³

The shift of focus from a critique of modes of production to a positive concern for new forms of occupation can also be seen in connection with the institutionalization of architecture and town planning at the beginning of the

¹⁰ Edward De Zurko, *The Origin of Functionalist Theory* (New York: Columbia University Press, 1957), p. 4.

¹¹ Adrian Forty, *Words and Buildings. A Vocabulary of Modern Architecture* (London: Thames&Hudson, 2000), p. 183.

¹² *Ibid.*, p. 181.

¹³ Annette Geiger, Stefanie Hennecke, Christin Kempf, *Spielarten des Organischen in Architektur, Design und Kunst* (Berlin: Dietrich Reimer Verlag, 2005), p. 10.

twentieth-century. New mass-production methods offered the prospect of cheaper housing with the promise of higher living standards; but they also provided a new aesthetic image of inhabitation. Under these conditions, the role of the architect transformed from a skilled craftsman into an educated scientist-architect, now located outside of the community. The loss of the user/producer's organic connectedness was supposed to be compensated by a complete *symbolic* image of a new form of 'organic community,' no longer based on difference as in Geddes, but now expressing a generalized social *collectivity*, which, according to the German critic Adolf Behne, will 'crystallize out of the mass.'¹⁴ The term 'organic,' as well as the concept of 'community,' have hereby disconnected from their former aspect of unity of place, culture, and tradition. The architectural critic Francesco Dal Co evaluates the quality of this notion of the 'organic' in German architectural culture during the 1920s as an attempt to cover up the conflicts that had occurred in the course of societal change. According to Dal Co, who takes recourse to Nietzsche, the organic spins 'a "spider's web" over the difference between knowledge and power, and in its threads, language and knowledge, technics and design, tectonic activity and art, function and meaning, *Zeitgeist* and tradition, culture and civilization, all are intended to be reconciled.'¹⁵ The change in the understanding of the organic from a mimic interpretation of organic function to an abstract image of the functional as something progressive that excludes the vernacular, the traditional, and the metaphorical, comes across in a letter of 1924 by Behne addressed to the architect Hans Scharoun: 'A building should be organic, but never an 'organism' in the sense of living nature – because this is impossible! That is to say, an abandonment of all organicisms in principle – a portal is not a mouth; it does not suck – etc. . . . We must also take care not to get into a biological relationalism. . . . In my opinion, it is dynamic architecture in particular that must be absolutely rational, to the point of being as cold as ice – otherwise it will end up as drama.'¹⁶

Organic post-war rhetoric

The debates about self-organizing and self-generated structures in the early part of the century will recur in the 1950s as an aesthetic question. The image of picturesque vernacular architecture, as in the much praised iconic 'Italian hill town,' will become an aesthetic model for urban design that, through visual experience, would reorganize the former functionalist city as it had been launched by CIAM (*Congrès internationaux d'architecture moderne*) at their 1933 congress and publicized with the *Athens Charter*. The International Congresses for Modern Architecture, which were founded in 1928 at La Sarraz, Switzerland by a group of

¹⁴ Adolf Behne, 'Art, Craft, Technology' (1922), in Dal Co (1990), p. 338.

¹⁵ *Ibid.*, p. 20.

¹⁶ 'ein Bau sollte organisch sein, aber niemals ein "Organismus" im Sinne der lebenden Natur – weil er das nicht sein kann! Also prinzipieller Verzicht auf alle Organicismen – ein Portal ist kein Maul, saugt nicht – u.s.w. . . . Auch müssen wir uns davor hüten, in einen biologischen Relationismus hineinzugeraten. . . . Meiner Ansicht nach muss gerade die dynamische Architektur unbedingt rationell, bis zur Kälte einer Hundeschnautze sein – sonst gerät sie in Dramatik!' quoted in Dörte Kuhlmann, *Lebendige Architektur. Metamorphosen des Organismus* (Universitätsverlag Weimar, 1998), pp. 159, 269 n426. Translation by Brian Manning Delaney.

the leading modern architects, had previously put forward the functional city as a response to what was seen as universal existential needs: housing, work, leisure, and transportation. After the war, these specialists saw it as their task to expand their views on urban environments for the 'masses,' from a focus on functions to architecture and artworks that went beyond needs and had the potential for creating a landscape of differentiated identities suitable for a 'community.' This shift is announced by the suggestion of new aesthetic concepts such as 'new monumentality' from within CIAM. In providing a symbolic landscape, the individual user or consumer was meant to participate in the sense of engaging emotionally in an environment that was still exclusively designed by experts. The search for a new visual sensibility was continued by the open challenge of former CIAM principles by a younger group within CIAM, which would become known as Team 10. This group turned against functional zoning and proposed a hierarchy of 'atmospheres,' following Patrick Geddes' terms and visual devices. The field of urban design develops more or less out of a discussion on the visual qualities of city space as a means to regain a sense of organic wholeness, which demonstrate the various picture-books created during this period.

By the end of the 1950s an organic urban concept recurs with the metabolist movement in Japan, which responds to the previous discussions within CIAM and Team 10. The reorganization of the organic serves above all as an emancipation from a western-dominated cultural discourse, and presents the fast-growing Asian megacity as a conceptual alternative to the European metropolis and American large city. Metabolism discusses an integration of structural and symbolic solutions for megacities, extending from permanent 'spines' and 'tree' structures that give the city of constant flow and change its basic infrastructure and its symbolic image. Everything else, physical and programmatic, is subject to change within its inherent life cycle. Such megastructures clearly distinguish between public structure, a matter for the expert, and private pre-fabricated capsules, the consumer's choice, at least theoretically. Megastructures have never been built in this form, instead they present a hyper-image in an international discussion on urbanism, which no longer extended from the ideology of the old European city as the organic model, but from a new structural invention, which simulated growth, and could eventually be initiated anywhere and anytime.

The use of the organic trope has made urban dynamics and spaces communicable, but it has also naturalized urban functions and units such as the centre and the neighbourhood, thus appropriated them ideologically. In doing so it frequently conceals the underlying political forces that have shaped them. In organic urban conceptions, the city as an organized entity naturalizes and veils its organized nature via its organic image. With the claim of an organic totality, it tends to ignore conflicting political ideas concerning how such an organization should look like, should be planned, and in particular how it should be governed and directed.

Urbanism and modernity

In his book *The Origins of Modern Town Planning* (1967), the urban historian Leonardo Benevolo looks at city planning through a Marxist ideology critique.¹⁷ Modern town planning appears here as a field that did not occur simultaneously with the technical and economic developments that created and transformed the industrial town, but instead came about later when these changes began to be felt, and to present a conflict. He views modern town planning as not more than a reform movement, a corrective intervention. Benevolo distinguishes between two antithetical schools, which first approached the problems of the industrial town. On the one hand utopians such as Owen, St. Simon, Fourier, Cabet, and Godin stressed that planning must start from scratch and proposed theoretical types of community quite distinct from the existing towns. The other group he describes as specialists and officials who viewed each problem separately, without having any overall vision of the town as a single organism. With this he distinguishes also a political attitude from a technical one. However, he sees the second group that introduced health regulations and services in towns, and who worked with technical and legal means to implement these improvements, as the founders of modern town-planning legislation, and thus as that group who actually gained a major influence on the dynamics of city planning. The technical aspects of town planning were easily accepted, but the political and socio-economic considerations had been discarded. Thus, Benevolo views modern town planning as drifting apart, not only from experiment, but also from political discussion, tending to become increasingly a purely technical matter at the service of the established powers. In the picture he draws, planning paradoxically develops towards a detachment from social problems, leaving such questions to the state in which service it acts, and at the same time taking the position of a specialist, apparently able to regulate the balance of the various forms of community ideally and definitely. Benevolo's conclusion is that town planning must take on the political debate, and different from Marx and Engels who rejected city planning as an instrument for societal change, must become a vital factor in the creation of a democratic society. Thus, Benevolo's writing of urban history represents also a project.

In *L'urbanisme, utopies et réalités* (1968), the urban historian Françoise Choay similarly presents the rise of urbanism as a reaction to the forces of modernity, which are either rejected or embraced.¹⁸ In her story of the development of urbanism, she also makes several emblematic distinctions, between utopian pre-urban thinkers and a group of followers, which she further discerns in two main categories, among others the nostalgic *culturalists*, such as Patrick Geddes (in her reading) and the forward looking *progressivists* such as Le Corbusier. Choay does not present the conflict between a pragmatic urbanism and opportunistic schemes of technocrats and administrators as a forming force in urbanism and urban theory. What we receive however is an overview of a variety of modern movements in urbanism, often in contradiction with each other,

¹⁷ Leonardo Benevolo, *The Origins of Town Planning* (London: Routledge and Kegan Paul, 1967), translated by Judith Landry, originally published as *Le Origini dell'Urbanistica Moderna* (Bari: Editori Laterza, 1963).

¹⁸ Françoise Choay, *L'urbanisme, utopies et réalités*, (Paris : Edition du Seuil, 1968).

stressing the difference of the strands under the umbrella of modernism, which is otherwise more often pictured as monolithic.

In her seminal work *La règle et le modèle. Sur la théorie de l'architecture et de l'urbanisme* (1980),¹⁹ Choay traces the origin of modern urban theory in two textural figures, still present and intertwined: the utopian model, as in Thomas More's *Utopia*, and the architectural treatise, or rule book, as in Albertus' *De re aedificatoria*. She attributes the term 'urbanization' to the Spanish engineer Ildefonso Cerdá's *Teoría general de la urbanización* of 1867, designating both the process of urbanization and the new discipline yet to be formed: urbanism. Urbanism is here a science deduced from the analysis of urbanization and aiming at the formulation of future proposals. Cerdá's urbanism is built upon the recognition of communication, transportation and human circulation, and the technological revolution that enabled them, as the great transformer of city space, in the past and in the future. Urbanism resides in the relation of the two operative poles of habitation and circulation. In Choay, Cerdá is the precursor of this great reduction in urbanism, but also one of the first who discovered in movement a dimension in the urban phenomenon that had been ignored until then. Thus, Cerdá's city is in motion, with fluctuating boundaries that cannot be fixed, and with an endlessly mobile population. Claiming the scientific status of urbanism, he treats his subject according to two approaches, quantitative and structural, retrieving his conceptual tools from history and from anatomy and physiology. In a chapter on urban functionality Cerdá appropriates some operating principles and terminologies from biology for his own domain. He adopts concepts of regulation for his analysis of urban functions like circulation, nourishment, and digestion, as applied in Georges Cuvier's classification of living species, and from Jean-Baptiste Lamarck's theory of adaptation. The city is a species whose members have by definition the same specific organization, while possessing, like living organisms, their own individual particles. As other writers of his time, Cerdá sees the city's pathology in the economic system, capitalism, which exploits the working class, and leads to land speculation, rendering urban space dysfunctional. It is this dysfunctionality of urban space that constitutes not only the most apparent symptom of the social malady but also its cause. The category of the organism for the city appears in Cerdá as a biological transcription in order to distinguish between normal and healthy, or pathological urban space.

Architecture and Modernity (1999), by the architectural theorist Hilde Heynen, complicates Choay's distinct categorizations in *L'urbanisme, utopies et réalités*, and further develops the ambiguities of a discourse of modern architecture that envisions change while at the same time clinging to traditional architectural values such as harmony and permanence.²⁰ Heynen distinguishes here between *programmatic* and *transitory* conceptions of modernity, which she relates to *pastoral* and *counterpastoral* modernisms as a reflection or reaction to the conditions of living imposed by the socioeconomic process of modernization

¹⁹ Françoise Choay, *The Rule and the Model. On the Theory of Architecture and Urbanism* (Cambridge, Mass./ London: MIT Press, 1997), originally published under *La règle et le modèle. Sur la théorie de l'architecture et de l'urbanisme* (Paris: Éditions du Seuil, 1980).

²⁰ Hilde Heynen, *Architecture and Modernity* (Cambridge Mass./ London: MIT Press, 1999).

and the experience of modernity. Different from Choay, she does not treat these conceptions as fixed categories; they occur alternating or all at once, viewing the ambiguity of modernity whose character they tentatively attempt to capture. In Heynen's reading the advocates of a programmatic position interpret modernity as being first and foremost a positive project of progress and emancipation. They emphasize the liberating potential that is inherent in modernity. In contrast, a transitory approach radicalizes the desire for innovation and the revolt against tradition, which gradually becomes autonomous mechanisms, as we can see in the avant-garde movements. Modernity becomes an aesthetic of change for the sake of change, and thus loses its immediate relation with any progressive perspective, Heynen claims. Two modern concepts of time evolve, one we could see as evolutionary, where progression follows a linear path from the lower to the higher, while the transient concept instead resembles an indeterminate eternity, as in a cyclic process. Consequently, a *pastoral* modernism denies the contradictions, dissonances, and tensions that are specific to the modern, and sees modernity as a concerted struggle for progress, uniting workers, industrials, and artists around common goals. In a view of this sort, Heynen says, the bourgeois modernity of capitalist civilization and the aesthetic modernity of modernist culture are given a common denominator while the underlying conflicts and discrepancies are ignored. Politics, economics, and culture are all united under the banner of progress. Progress is seen as harmonious and continuous, as though it developed to the advantage of everyone and without any significant interruptions. The entire early functionalist program of the *Siedlung* can be viewed in terms of this attitude. In *Architecture and Utopia* (1976) the architectural historian and theorist of the Venice School, Manfredo Tafuri, gives of account of how modern architecture has gradually given up its modernity critique and subordinated its progressive program under capitalist market forces.²¹ A *counterpastoral* view is exactly the opposite; it regards modernity as characterized by divisions and fragmentation, by irreconcilable and insoluble contradictions, and by the collapse of an integrated experience of life as in the negative thought of Friedrich Nietzsche's philosophy, as well as in the architectural works and texts of Adolf Loos.

The organic project is through and through a positive one. In organic urban thought the experience of modernity and the vision of a *program* oscillates between a progressive project and an attempt to unearth an underlying cultural code, an invariable, or a universal. We often find a denial of the conflicts inherent in modernity, as in a *pastoral* view, while nevertheless the organic urban visions predominantly and idealistically turn against capitalism as the all-encompassing organizational form of modern life subordinating every individual. Due to these ambiguities, organic visions as those by Geddes and later the metabolists in Japan have only covered a marginalized position, outside of the establishment, from which they criticized pragmatic modern city planning and architecture. However, they are more than just an episode, having profoundly influenced and altered the urban rhetoric; they still fire the imagination of architects and urban designers.

²¹ Manfredo Tafuri, *Architecture and Utopia. Design and Capitalist Development* (Cambridge Mass./ London: MIT Press, 1976), translated by Barbara Luigia La Penta, originally published as *Progetto e utopia. Architettura e sviluppo capitalistico* (Bari: Guis, Laterza & Figli, 1973).

Outline

The research for this thesis developed from an interest in the area of conflict between authoritative planning and alternative models, as in the case of an ‘organic’ approach. My question is how these models have been constituted, and how they became transformed in a shifting modern discourse in urbanism and architecture. The imagination of ‘grown’ urban structures as a tentative model for ‘good urban design’ evolves during the post-war years, when urban design and architecture engage in questions of change, democracy, and the consumer’s choice. It hereby utilizes and transforms a nineteenth-century trope. The debates it has triggered touch on many issues, far beyond aspects concerning physical plans and the city’s economy, issues that are still relevant for city planning today. It has involved questions in respect to the political and economical pattern out of which actual planning practices evolve; the debates have focused on topics of social and spatial justice, such as exclusion, segregation and mobility, of democracy and participation, and they have posed the question: how and by whom should cities be planned?

The thesis is structured in three parts. In the first part, two chapters provide a background on the paradigm of nature in relation to architecture and the city. They discuss the emergence of the organism, and the application of this concept in architectural and urban theory. The second part, divided in two chapters, is concerned with the formation of the nineteenth-century organic trope in relation to the city before WWII, and its reorganization during the post-war years. The last part regards the trope of the organic in relation to Japan. In three chapters it studies its notion in Japan under the forces of westernization, in respect to a western gaze that views Japan as organic, and in a re-adaptation of the trope in the work of the Japanese metabolists at the beginning of the 1960s.

The first chapter discerns two concepts of nature, one in which nature appears as an essential and static, and another that emphasizes nature’s capacity to change. It is argued that both notions of nature were still relevant for modernism. In this context, the antique concept of mimesis is traced, which will disappear with Immanuel Kant’s notion of the organism. The ‘discovery’ of the organism announces an epistemological shift as laid out in Michel Foucault’s seminal book *Les mots et les choses*. The chapter follows this transition from the static taxonomies to synthetic systems, and finally to the emergence of evolutionary theories and their broad reception in a variety of fields such as architecture and urbanism.

The second chapter studies the impact of the epistemological shift, discussed in the previous chapter arguing that the status of nature in architectural theory changes from an *authority* into a *value* in the discovery of the organism for architecture. With a new anthropocentric viewpoint the concept of a universal *model* of architectural form such as Laugier’s primordial hut changes and diversifies in the imagination of dynamic *types* that transform in relation to cultural shifts as in Quatremère and Semper. Different applications of natural and biological analogies in a modern architectural discourse are laid out as in the work of Henry Louis Sullivan and Le Corbusier. It will be shown that a modern architectural theory reorganizes the classical thought of nature *and* the modern

conceptions of evolution for naturalizing the processes of progress and technological change.

The third chapter traces the emergence of a trope of the organic in an urban discourse. The trope occurs first in sociological thoughts that take the division of labour as their point of departure as in Karl Marx, Emile Durkheim and Herbert Spencer. The functional-structural aspect of the organic conflicts with psychological-moral notions also ascribed to the trope as in Ferdinand Tönnies' *Gemeinschaft and Gesellschaft* and John Ruskin's project of a moral economy. It is argued that both strands fuse in new urban conceptions, as in Patrick Geddes' vision of an organic city in the beginning of the twentieth-century, and in the human ecology of the Chicago School of Urban Sociology during the 1920s. It is shown that with a changing view of the city, new organic concepts occur, addressing issues of urban growth, mobility and change. Technology, earlier recognized as an aggressive transformer of society and city space, receives the role of an enabler and enhancer of new urban experiences, as in Lewis Mumford's *biotechnics*, and the right-wing Ernst Jünger's aspirations for an *organic construction* of society.

The fourth chapter is concerned with a critique of the urban environment that develops during the 1950s. After WWII, the organic re-emerges as a counter-model to the functionalist city. The CIAM debates focus on new aesthetic concepts as a means for a larger social reorganization of society, from the masses to differentiated 'communities.' Stressing values of spirituality, democracy, and community, new emotional and symbolic qualities in urban environments are sought after in a new *image* of the city. Team 10 challenges CIAM's premises with spatial and topological models orientated on existing social realities. The thesis will show how in a search for a more integrated view of the city, different theories of urban vision are developed for the reorganization of the community by learning to see afresh. A range of urban picture- and pattern-books appear that map and study the city. These pattern books are mainly focused on organizing urban space according to visual and symbolic categories. Through the new paradigm, the urban designer emerges as the creator of an urban scene.

The fifth chapter introduces a study of an organic trope in and of Japan. It provides an historical background for Japan's search for a native architecture after the countries' forced modernization. It traces Japan's 'westernization' in the discourse of the making of a modern Japanese architecture and urban planning. The thesis will show that the strict separation between Japanese culture and western technology as conceived in a 'double-layered structure,' where techniques can be imported separated from western cultural connotations, contributed to the endless discussions on imitation. The accusation of imitation will form one of the central themes in an intercultural debate between the west and Japan.

The sixth chapter gives two western accounts of Japan's organic essence, those of the architects Frank Lloyd Wright and Bruno Taut. Both create a personal fiction of Japan, where Wright unearths the principles of 'organic architecture' in Japanese art, while Taut discovers the roots of modern architecture in the Japanese house. In these counter-images to the west, Japan appears as natural, authentic, pure, and cultured, but also as 'weaker' and in danger of loosing its fine traditions under the impetus of westernization and the imitation of the west. These images form stereotypes that are still discussed in the Japanese architectural media during

the post-war years. This situation largely forms the background for a shift in the imagery of Japanese architecture at the end of the 1950s, as discussed in the next chapter.

The seventh and last chapter explores the operative use of an organic trope in the urban debate in Japan in the 1960s. The beginning efforts of decolonialization in large parts of the world had an impact on the architectural debate in the industrial states both in the east and the west. It is argued that with the metabolist movement in Japan, the trope of the organic recurs as a proto-postmodern image where questions of cultural identity and the invention of a native style are at stake. Beside the vision of a complete reorganization of urban and regional space after the atomic bomb, and the systematization of public works in relation to private property, the issue of planning practice in general is once more the focus of critique.

I Nature, organisms and architecture

The relation between nature and architecture has held a central position within western architectural history. Concepts such as the mimesis of nature have formed some of the key themes in aesthetic discourse for centuries. Nature appeared here in a position of authority shaping a certain architectural canon constituting rules and suggestions. The authority of nature came under question with the ‘discovery’ of the concept of the organism as laid out in philosophy by Immanuel Kant’s *Critique of Judgement* (1790). At the same time the natural historian Georges Cuvier starts to reorganize a taxonomy of living species according to their complex of functions instead of their visible characters. These events would have a decisive impact on how nature was conceptualized from then on. It can be said that the organism challenged former classical static ideas of nature. It introduced a new logic in allowing the rethinking of organization in hierarchies of networks. The new system recognized new factors for development such as the environment or the milieu, and it enabled the thinking of change under evolutionary terms.

The organic emerged above all else as a normative term in contrast to the mechanical, where the organic was distinguished from mere mechanical processes that required an external animation through self-organization. This imagination will gain social and political significance during the nineteenth century, and it will become transcribed into organizational thought of the city. It is prefigured already in Kant’s comparison of the democratic state form with an organism, in contrast to the mechanical authoritative structure of an absolutist regime.

In a modern architectural and urban discourse, nature and the organic have served as holistic models for a number of different theories, discourses, and narratives, even of conflicting ones. They act as analogy, metaphor, or image to architecture, to which they lend an air of self-evidence and legitimacy. Several notions of nature or the organic have emerged in architectural critique, legitimizing certain forms over others with reference to nature’s self-moving and self-organizing forces. They exhibit moral, aesthetic, political and normative attitudes, and address questions of authorship.

The first part of this thesis is divided into two chapters. The first chapter takes up the ‘discovery’ of the ‘organism’ as part of a larger epistemological change, giving rise to new forms of organization and to new disciplinary fields, and it inquires into their significance for the development of modern urbanism and architecture. With Kant’s account on the organism, it is shown how the power of nature changed under the discovery of the organism from a former stable *authority* into more relative *values*. The second chapter engages the question of how nature became a modern architectural and urban myth. The *formal* classical *prototype* (à la Plato), and a *historical* notion of diversified and diversifying architectural and urban *types*, recur reorganized in a functionalist rhetoric of typing and standardization in relationship to the shifts in modes of production and urban demand. Under a capitalist logic the formation of ‘type objects’, or standards, is presented as an evolutionary development in an attempt to declare progress and all its implications as a natural process.

1 An Archaeology of the organic

Nature as paradigm – The advent of the Organism in Kant – Foucault's notion of archaeology – The shift from character to function – Organic principles – Origin and evolution – Nature in the natural and human sciences

The imagining of nature's productive and reproductive forces has served as a living model, paradigm, paragon, example, or pattern in architectural production since antiquity.²² If for a long time, human skilfulness was understood in terms of the mimesis of nature, this attitude changed simultaneously with the discovery of the organism and an interest in the principle of life. This shift of interest would trigger not only the development of modern sciences such as biology, but also new models for an architectural discourse from the middle of the eighteenth century. The reference to nature is further complicated through reflections on 'evolutionary' progression and transformation during the nineteenth century, which conflict with the idea of nature as an unchangeable essence. These perspectives are still relevant in the debate of the organism in modern architecture.

With the break of modernity, a discourse of nature continued as a point of reference in several discussions on the form of the state, the city, the society, and the community.²³ There has been a range of coloured meanings at work. In a social and political critique, several positions can be discerned that frequently recur, putting one concept over the other as required. Nature is seen as the primitive condition before human society, in the sense of an original innocence to which society has to return.²⁴ Or a scientific argumentation refers to laws of nature as more precise than customary or common laws as brought about by humans. Laws based on convention and tradition appear here as an imperfect human product vis-à-vis the more worthy nature. Eventually, nature will lend conceptual depth to urban imaginations that emerge for the sake of renewal and invention, for creating an urban myth. For example, the similarity of nature and the city, as it was posed in Abbé Père Marc Antoine Laugier's city imagined as a park, has been a conscious ideological turn of enlightenment architecture against the scientific appropriation of nature in order to control urban structure of the *ancien régime*. Laugier's postulation of 'uniformity in detail' versus 'chaos, disorder and a wild variety in the general lay-out', will later form the base for Le Corbusier's claim in *Urbanisme* (1924): 'Town planning demands uniformity in detail and a sense of movement in the general lay-out.'²⁵

²² Nature derives from a root in the past participle of Latin *nasci* 'to be born' from which also *nation*, *native*, *innate*, etc. originate. Raymond Williams, *Keywords* (New York: Oxford University Press, 1985), p. 219.

²³ For example, Edmund Burke in his *Reflections on the Revolution in France* (1790) turns against modernity and rejects the antique view that constitutions can be 'made' or rationally planned in favour of the attitude that they must 'grow'.

²⁴ See Williams (1985), pp. 222-223.

²⁵ Le Corbusier, *The City of Tomorrow and its Planning*, originally published as *Urbanisme* (1924), translated by John Rodker (1927), published in *Essential Le Corbusier: L'Esprit Nouveau Articles* (Oxford: Architectural Press, 1998), pp. 72-76.

‘Nature as the first things’ and the scientific attitude pointed rather to ideal states than to processes ‘taking place’.²⁶ However, we also find arguments for a *natural society*, which emerges from its practical activities in relationship to a particular landscape. Here, the ‘natural’ refers to a *self-generated organic community* that has formed through customs and cultural processes over a long time span in relation to its specific surrounding. The culture of this society is considered as natural as the nature in which this culture unfolds.²⁷ The rift between the recognition of forms of practice and process, on the one hand, and the urge for the formulation of universal values survives in modern conceptions of nature and society, for example in Patrick Geddes’ imagination of an organic city, which will be discussed in chapter three.

Modernism would *reinvent* both thoughts, focusing on the universal ‘natural’ needs of ‘men’ in general, supported through scientific investigations as a point of departure, *and* on the image of the self-generated ‘community’, formed under ‘natural’ processes, which has intuitively cultivated *universal* patterns and forms in their everyday objects, their dwellings, and their settlements as in an evolutionary process. Both would require a radical break from conventions and traditions, where design was imagined as formed either by intrinsic laws of nature or under the effect of external natural forces.

Nature as paradigm

The relationship to nature in architecture and aesthetics has changed from a mimetic understanding to more scientific models. The meaning of mimesis, as we still understand it today, goes back to Plato and Aristotle. The term is in no way unambiguous; it has been used in the sense of imitating, bringing out/ expressing, and re-presenting, not only with regard to art, but also in relation to politics, law, and education. Mimesis is mostly viewed as a pre-modern aesthetic concept. In contrast to this, there are voices claiming that mimesis has constantly recurred transformed. It gained importance in a critique of modernity as an operative concept through its resistance to mere instrumental thinking.²⁸ Walter Benjamin and Theodor Adorno’s aesthetic theories emphasize the critical capacity of mimesis against instrumental reason as mimesis includes, beside functional considerations, also the aspect of experience.²⁹

²⁶ There are more differentiations of nature such as *natura naturans* (naturing nature) and *natura naturata* (natured nature), which, separating nature into an active and a passive part, occur frequently in renaissance discourses. The idea itself can already be found in antiquity.

²⁷ See also Kenneth Olwig, *Landscape, Nature and the Body Politic* (Madison: The University of Wisconsin Press, 2002), p. 55-56. Olwig points out that in this case, the concept of nature did not dichotomize between nature and society, but rather saw them in terms of community relations that changed through time.

²⁸ For example the philosopher Gunter Gebauer, and the anthropologist Christoph Wulf show that mimesis and a discourse on mimesis continued throughout and became especially relevant for a modernist critique. Gunter Gebauer and Christoph Wulf, *Mimesis. Kultur-Kunst-Gesellschaft* (Hamburg: Rowohlt, 1992).

²⁹ The architectural theorist Hilde Heynen has taken up the mimesis debate in relation to architecture in her *Architecture and Modernity* (1999), where she argues that the concept of mimesis continued to inform architectural theory in the twentieth century. Heynen (1999), p. 6.

An account on the initial notion of the aesthetic concept of mimesis is given here briefly as it contains already both notions of nature as universal truth and nature in its inherent capacity to grow and change. Plato understands mimesis as the production of a world of appearances, and thus inferior to the original idea. The world of ideas perceptible only intellectually forms Plato's original model for the sensually experiential world. A conception of mimesis evolves that separates the image from reality. Only a differentiation between reality and the fake enables progression in knowing.³⁰ In Plato's thinking, architecture takes a more elevated position than the other arts. It is not mimetic in itself, but it uses the mimetic model to come closer to the original principle. Plato's description of geometrical ideal bodies in *Timaeus* as the principles for all visible things will have an impact on architecture especially during the renaissance, and even appears again in Le Corbusier's theoretical reflections.³¹

In Aristotle, who developed the first notion of the organic, natural things are things that have a principle of growth, organization and movement. The world of nature is not divided as in Plato, it is an immanent world of self-moving things expressed in process, growth, and change. This development takes on successive forms in which each stage is the potential of its successor. However, it cannot yet be called an 'evolution', because the kinds of change and of structure exhibited in the world of nature form an eternal repertory and are related logically, not temporarily, to each other. The change is cyclical, and circular movement is here a characteristic of the perfectly organic. The process of the world is a self-causing and self-existing process with a *tendency*, or teleological implications about ends, towards which natural processes are directed.³² Everything in nature is constantly developing, that is realizing itself or becoming in actuality what it always was potentially.³³ The concept of mimesis is thus restricted to the thinking of an original or precedents, which it can only 'imitate' in exemplary forms.

³⁰ Only immaterial forms or ideas are truly real in Plato's theory of the idea. The realm of existence is separated into *eidos* (eternal idea) and *eikon* (images of the idea). Everything existing expresses and depicts (*mimesis*) its form (*eidos*). The *eikon participates* in it (*methexis*), while the form, on the other hand, *is with* the individual thing (*parousia*). If art (painting, sculpture, and poetry) imitated nature, the result would be *eidolon* (phantasma, simulacrum), an image of an image, a fake competing with the original idea. Thus, a craftsman's work was more genuine than the work of a painter as her/his product would bring out the idea itself, whilst the painter could only accentuate the difference between original and copy, or the defect of the phenomenological vis-à-vis the ideal form, whereby no further knowledge of the thing itself was required. But also the craftsman does not produce new things in the phenomenological world; the respective blueprint would be existing already as pre-given in an ideal and for that reason static cosmos. See Gunter Gebauer and Christoph Wulf (1992); Sven-Olov Wallenstein, 'Kapitel 1. Grekiska begynnelse,' *Den klassiska arkitekturens filosofier* (Stockholm: Alfabet, forthcoming 2007); Hans Blumenberg, 'Nachahmung der Natur,' *Wirklichkeiten in denen wir leben* (Stuttgart: Reclam, 1999), pp. 55-103.

³¹ For a more extensive discussion, see Wallenstein (forthcoming 2007).

³² R. G. Collingwood, *The Idea of Nature* (London, Oxford, New York: Oxford University Press, 1960), p. 81-83.

³³ *Ibid.*, p. 92. Aristotle's definition will ground the tradition of '*techne mimetai ten fysin*' (*art in general imitates the method of nature*), not as the reproduction of an eidetic existing, but as the fulfilment of a productive process or action. In this sense, for art the generative

The concept of mimesis undergoes many transformations. Its notion will be radically changed under the development of sciences, where interest shifts from natural appearance to the laws of nature, and from exemplary models to general rules. Although it can be said that natural sciences build on cultural imaginations developed through mimesis, the natural sciences will break away from this concept and open up new possibilities. Reality is not perceived as determined but can become *constructed* according to recognized rules. René Descartes, in *Discours de la méthode* (1637), emphasizes the idea of freedom in the independency from the factually given through rational formula; nature was more important as something objectively possible than existing.³⁴ Infinite yet unrealized possibilities open up when the *blueprint* based on laws of nature is known. In *Discours*, Descartes develops the metaphor of the city in relation to knowledge. Old cities that have ‘grown’ irregularly through successive extension and imposition are all badly laid out, he states, in comparison to regular building, which springs from the fantasy of only one planner, and is conceived for an open space.³⁵ Besides that he negates all factors of experience – of anything existing, any traces, material or human – Descartes’ abstraction prefigures the ideal image of a modern city planner. In Descartes we find the relationship of nature and artifice reversed. Natural formations are perceived as accidental, and human production appears as technical and aesthetic necessity.³⁶ Thus not nature but constructive terms determine a value system for a hierarchy of different types of production. Descartes separates science from art, as art’s connection to a bodily habitus, to exercises, and physical dispositions prevents a universal prevalence of its results.³⁷ Handicraft production was understood as only an imitation as long as the products were seen as substitutes, reinforcements, or functional equivalents of organs or of organic activity. Constructions, on the other hand, functioned mechanically independent from natural examples. For example, against a modern understanding of ‘organisms’, the clock was not a part that extended from an organ, but was an ‘organism’ in itself with its own laws.³⁸

With the paradigm of construction during the seventeenth and eighteenth centuries, natural activity is largely seen as derived from uniform and purely quantitative forces and movements that follow the law of cause and effect. Explanations through teleology, desire, and the attempt to explain nature as permeated by a tendency or endeavour to realize its forms, as in Aristotle, were

side of the notion of nature for mimesis was crucial; art went beyond the factual existing and was aiming at the fully realized form (*entelechia*), meaning the extrapolation of the process of becoming (*genesis*) in respect to the destination (*telos*). However, there were no individual possibilities for creating new things. See Wallenstein (forthcoming 2007), and Blumenberg (1999), pp. 73-74.

³⁴ Hans-Liudger Dienel, *Herrschaft über die Natur? Naturvorstellungen deutscher Ingenieure 1871-1914* (Bassum: GNT-Verlag: 1997), p. 38.

³⁵ Sven-Olov Wallenstein, *Den moderna arkitekturens filosofier* (Stockholm: Alfabet, 2004), p. 159.

³⁶ Blumenberg (1999), p. 89.

³⁷ Gebauer and Wulf (1992), p. 206.

³⁸ Wolfgang Krohn, ‘Die “Neue Wissenschaft” der Renaissance’, *Experimentelle Philosophie. Ursprünge autonomer Philosophie*, Gernot Böhme, Wolfgang an den Daele, Wolfgang Krohn (Frankfurt am Main: Suhrkamp, 1977), p. 80-81.

excluded.³⁹ In *Discours de la méthode*, an idealized world that can be formulated in a universal mathematical language (*mathesis universalis*) is built upon the thinking subject. With the help of Descartes' method, universal knowledge beyond the historical and the regional is thought possible.⁴⁰ Descartes reduces his world construction to non-sensual images of schematic prototypes that are strictly non-mimetic. The production of these images happens according to an exact method and with clearly defined rules. With the renouncement of mimesis however, the Cartesian philosophy experiences a 'loss of world', which will form a theme throughout modernism.⁴¹

The advent of the organism in Kant

In his *Critique of Judgement* (1790) the philosopher Immanuel Kant turns against Descartes' mechanical worldview. Kant's text counts as the first more extensive discussion of the 'organism'. There have been earlier notions describing similar phenomena such as Gottfried Leibniz's monad, but it is Kant's formulation of the organism that forms the main reference point when discussing qualities of an organic organization in contrast to a mechanical one. In Kant's reading, the relationship of nature and art is complicated by the prominent position an autonomous and reflective individual takes within the process of experiencing nature. Although Kant formulates universal values that are not object to change through time, it is the subjective faculty of the thinking and experiencing individual that reveals knowledge about nature in the way it relates to it as values. Kant presupposes that we are able to *understand* objective concepts of nature as a closed set of laws; we can think them, but we cannot know *the thing in itself*.⁴² A bridge, however, is provided by imagination, which unites subjective intuition with concepts of an object so as to produce cognition. Imagination is also significant in Kant's aesthetics where it 'plays freely' between universal idea and subjective feeling. Imagination, which goes beyond concept⁴³ in Kant, will become the main focus point for a romantic revolution, and will become significant again at the end of the nineteenth century as a conceptual vehicle in the attempt to bridge the gap between the sciences and humanities.

Kant recognizes that certain things in nature, such as organisms as well as nature as a whole, cannot be explained under mechanical terms alone.⁴⁴ Kant

³⁹ Collingwood (1960), pp. 93, 111-112.

⁴⁰ Gebauer and Wulf (1992), p. 162.

⁴¹ *Ibid.*, pp. 206-208.

⁴² Paul Guyer, 'Kant Immanuel: 13 Design and autonomy,' in E. Craig (ed.), *Routledge Encyclopedia of Philosophy* Vol 5 (London: Routledge, 1998), pp. 194-195. Collingwood (1960), p. 117; Werner S. Pluhar, 'Translator's preface,' in: Immanuel Kant, *Critique of Judgement* (Indianapolis/Cambridge: Hackett Publishing Company, 1987), translated by Werner S. Pluhar, p. xxxviii.

⁴³ Immanuel Kant, *Kritik der Urteilskraft*, Introduction VIII, Ak. 192. Following editions and translations of Immanuel Kant's *Kritik der Urteilskraft* have been used throughout the text: *Kritik der Urteilskraft* (Hamburg: Felix Meiner Verlag, 2001); *Critique of Judgement* (Indianapolis/Cambridge: Hackett Publishing Company, 1987), translated by Werner S. Pluhar; *The Critique of Judgement* (Oxford: Clarendon Press, 1952), translated by James Creed Meredith.

⁴⁴ [Part II. §79, Ak. 417].

defines an organism as follows: ‘*An organized product of nature is one in which everything is a purpose and reciprocally also means.* In such a product, nothing is gratuitous, purposeless, or to be attributed to a blind natural mechanism.’⁴⁵ An organized being is not a mere machine, for a machine has solely *motive power*, whereas an organized being possesses inherent *formative power*, which communicates to matter that lack it, thereby organizing it. This force is a self-propagating formative one, which cannot be explained by the capacity of movement or mechanism alone.⁴⁶ As such, organisms require, besides a mechanistic, also a teleological consideration.⁴⁷ However, Kant insists that we have no justification for adopting a *constitutive concept* of natural organisms as a teleological product of actual design; we are only entitled to use an analogy between organisms and products of purposive design as a *regulative concept* for reflective judgement to conduct research into objects. In other words, considering organisms in respect to their purpose is a purely heuristic strategy.⁴⁸

The purposiveness of nature and organisms results from their functionality. The term functional is not to be understood in an outer expediency in practical terms, as useful for others, but refers to nature and organisms in themselves as a *natural purpose*.⁴⁹ Its functionality is based on the assumption that the organism is in itself both cause and effect.⁵⁰ It produces itself in three ways. First through reproduction: it is cause for other individuals of its kind in the same way as it is also an effect because it is a descendant of its own kind. Second, the organism produces itself as an *individual*. As an autonomous individual, it grows and develops in functional connection with its environment, not only through metabolism, but also through inner organization and behaviour.⁵¹ And third, the organism produces itself through its parts. All the parts of the organism in their form and function are necessary, and connect to a unity in their reciprocal dependence in which they are reciprocally cause and effect of their form. In this way the form of the whole determines the form and connection of all parts. The preservation of a part depends on the preservation of all the other parts in reciprocity.⁵² Every functioning of an organ presupposes the functioning of the other organs for which the organ is itself the presupposition of their functioning.

⁴⁵ [Part II. § 67, Ak. 378], in Pluhar (1987).

⁴⁶ [Part II. §65, Ak. 374].

⁴⁷ [Part II. §61, Ak. 360; §72, Ak. 390].

⁴⁸ [5: 375], Paul Guyer, ‘Kant Immanuel: 13 Design and autonomy,’ in E. Craig (ed.), *Routledge Encyclopedia of Philosophy* Vol 5 (London: Routledge, 1998), pp. 194-195.

⁴⁹ [Part II. §64, Ak. 372].

⁵⁰ [Part II. §64, Ak. 371-372]. Kant distinguishes between efficient causes, where one thing affects another, which applies to machines; and final causes, or ideal causes, where things can reproduce themselves, which relates to organisms. Kant did not have a conception for the principle of life yet. Nature was analogous with life of which we cannot know what it is [Part II. §65, Ak. 375], and where it comes from [Part II. §68, Ak. 383].

⁵¹ [Part II. §64, Ak. 371] Kant distinguishes here between a product and an educt. To *produce* means literally ‘to bring forth’ something including giving it its form. To *educer* is merely ‘to bring out’ something that already has a predetermined form. Pluhar (1987), p. 250.

⁵² [Part II. §64, Ak. 372, §65-66, Ak. 376].

An organ is useless without the body in which it fulfils its function.⁵³ It follows that there must be an antecedent concept to the object as a whole, which determines the production of the parts, which in turn determine the character of the resultant whole.

Kant approaches nature by teleological judgement regarding its purpose, or by aesthetic judgement in respect to its beauty. The (objective) purposiveness of nature is judged by *understanding* and through *reason*. The beauty of nature is judged aesthetically, in terms of its formal (subjective) purposes, according to feelings of pleasure or displeasure. How we judge nature aesthetically will influence the way we view beauty in art.⁵⁴ In this relationship, nature and art belong to different domains, but they can be called analogous through our reflection of them as we view them on account of their *external* intuition, the way we can experience them. This excludes the transference of *intrinsic* principles of nature to art.⁵⁵ For the production of art, this means that although the artist is proceeding by the intention to produce an object in accordance with the concept s/he has of it, the intention must not show in the work: the work must *look* like nature even though we are aware that it is art.⁵⁶ Hence even though this beauty does not actually expand our cognition of natural objects, it does expand our concept of nature, namely from nature as a mere mechanism to the concept of that same nature as art.⁵⁷ In other words, beauty in art is the same beauty as beauty in nature. By the same token, nature is beautiful if it also looks like art.⁵⁸

In a productive process, imagination as a productive cognitive power creates another nature out of the material that actual nature gives it. Nature lends the material, yet we process the material into something quite different, namely into something that surpasses nature.⁵⁹ But very few are in fact able to produce something new. Kant refers here to the *genius* who has the ability to apprehend the rapid and transient play of imagination and to unite it in a concept that allows communication without the constraint of rules (a concept which for that reason is original, and reveals a new rule that could not have been inferred from any earlier principles or examples). All the others can follow the example of the genius, and for them art is a matter of imitation for which nature, through the medium of the genius, gave the rule.⁶⁰

As said before, aesthetic judgement extends from subjective feelings of pleasure or displeasure, but it also presupposes the universal idea of the beautiful thing - it must contain interpersonal agreement.⁶¹ It is not based on a concept that can be proved scientifically, but goes beyond mere conceptual thinking and analysis. A synthesis is reached through the faculty of imagination, which

⁵³ Annette Voigt 'Die Natur des Organischen – "Leben" als kulturelle Idee der Moderne,' *Spielarten des Organischen in Architektur, Design und Kunst*, eds.: Annette Geiger, Stefanie Hennecke, Christin Kempf (Berlin: Dietrich Reimer Verlag, 2005), p. 44.

⁵⁴ [Introduction VIII, Ak. 193, Part II, §65, Ak. 375].

⁵⁵ [Part II, §65, Ak. 375].

⁵⁶ [Part I, §42, Ak. 301; §44-45, Ak. 306-307].

⁵⁷ [Part I, §23, Ak. 246].

⁵⁸ Pluhar (1987), p. lxxvii.

⁵⁹ [Part I, §49, Ak. 314].

⁶⁰ [Part I, §49, Ak. 317-318].

⁶¹ [Part I, §1, 203; §6-8, Ak. 212-216].

apprehends something in its variety through empirical intuitions. In an aesthetic judgement it mediates or *harmonizes* between subjective feeling and the objective universal so that cognition may arise.⁶²

The ability to judge depends on the autonomy of the subject, free of all constraint by theoretical or moral concepts on the one hand.⁶³ On the other hand, when claiming universal agreement, all mere subjective interests must be kept out.⁶⁴ Judgement is based on a 'free play' between imagination and understanding.⁶⁵ The recognition of the freedom of the individual is one of the basic foundations of Kant's thought. Although he does not mention democracy directly, *imagination* that forms the bridge between the subjective and the objective universal can also explain the functioning of an organic state, which in Kant would be something like a democracy.⁶⁶ Such an understanding would legislate a *synthetically universal*,⁶⁷ i.e., a universal in the sense of a whole that includes determination of the particular in that whole as active parts, without contingency, with a purpose based on an idea. Thus it could be called an organism. Kant connects political claims with aesthetic experience. He concludes his critique of aesthetic judgement with the suggestion that it is in our enjoyment of beauty that our vocation as autonomous agents becomes not just a 'fact of reason', but a matter of experience as well.⁶⁸ With this, Kant has formulated a new theoretical position that extends from the autonomy of the individual. Kant disregards mimesis in respect to aesthetic processes. The capacity of judgement addresses an autonomous subject, characterized by a rational mind, with a minimum of social features, who does not take recourse to traditions and practical activities.

The notion of nature has changed from an authority outside of human control to a set of assigned values, and thus from an exploration or representation of given forms to the possibility of invention. Kant formulated a theory of the organism, which demonstrates the autonomy of the individual and its relation to

⁶² [Introduction VII, Ak. 190-191; Part I. §34-36, Ak. 286, 288] In this case, a general universal refers not to universal laws such as laws of nature, but is based on a general agreement.

⁶³ [Part I. §8, Ak. 216, Part I. §32-33, Ak. 283-285].

⁶⁴ [Part I. §6-7, Ak. 212, Introduction VI. Ak. 187].

⁶⁵ [Part I. §35, Ak. 287, §49, Ak. 317-318].

⁶⁶ Kant introduces the idea that a monarchy which was ruled by its own constitutional laws was analogous to an organism, while an absolute monarchy, a despotic state, where everything referred to one individual, presented, in a symbolic way, a mere machine [Part I. §59, Ak. 352]. Democracy is nowhere mentioned, but Pluhar suggests that Kant probably alludes to the formation of the United States when he writes: 'the analogy of these direct natural purposes can serve to elucidate a certain [kind of] association [among people], though one found more often as an idea than in actuality: in speaking of the complete transformation of a large people into a state, which took place recently, the word *organization* was frequently and very aptly applied to the establishment of legal authorities, etc., and even to the entire body politic. For each member in such a whole should indeed be not merely a means, but also a purpose; and while each member contributes to making the whole possible, the idea of that whole should in turn determine the member's position and function' [Part II. §65, Ak. 375, n. 38], Pluhar (1987), p. 254.

⁶⁷ [Part II. §77, Ak. 407].

⁶⁸ Paul Guyer, 'Kant Immanuel: 12 Taste and autonomy,' in E. Craig (ed.), *Routledge Encyclopedia of Philosophy* Vol 5 (London: Routledge, 1998), pp. 193-194.

civil society. In this context, he looks at ‘organized nature’ as self-organized from within rather than as something that receives its form externally and is steered from outside. Following the break down of classics’ representational continuities will be explored in giving an account of the epistemological shift from the classical age to modernity through Michel Foucault’s *Les mots et les choses*. Hereby the reorganization of forms of knowledge in respect to nature and the sciences and their implication for the idea of design will be explored.

Foucault’s notion of archaeology

In *The Order of Things* published in 1966, Foucault develops the historical notion of an archaeology of knowledge.⁶⁹ He develops his archaeological system from the observation that similar changes occur in apparently very different disciplines at the same time. He focuses thereby on the particular example of the shift from classical to modern epistemology. What Foucault describes is a major break in western thought, a turning away from a former static cosmology towards a scientific and aesthetic system that is fundamentally based on change itself. According to Foucault this shift appeared in an epistemological space that went beyond adjacent fields. This space was established through ‘a network of analogies’ between various areas as different as the classical disciplines of ‘natural history’, to the ‘the analysis of wealth’, and a ‘general grammar.’ Foucault points to a *reorganization* within only a few years, around 1800, whereby the tradition of general grammar was replaced by a historical philology; natural classifications were ordered according to the analyses of comparative anatomy; and a political economy was founded whose main themes were labour and production.⁷⁰ With his notion of *archaeology*, Foucault is disinterested in laying-out a particular history, such as the history of biology, the search for origins of sciences, or the continuity of great historical divisions. Rather an archaeological study, he points out, looks out for the discontinuities, and for that reason focuses on the *discursive practices*, demonstrating that the history of a concept relies not only on its progressive refinement - its continuously increasing rationality - but is as much a product of the conditions of the fields that have organized it on a conscious and unconscious level.

In Foucault’s reading epistemological shifts and changes in scientific discourse cannot fully be *explained* through scientific progress, the formulation of new scientific problems, or the clash of different standpoints (from the processes of scientific consciousness); neither can they be triggered by a ‘negative unconscious’ in the form of invisible obstacles. For this reason, Foucault intends to *reveal* a ‘positive unconscious of knowledge’⁷¹ that he finds embedded in the common rules which the natural historian, the economist, and the grammarians define in their objects of study, their concepts, and their theories at a certain time

⁶⁹ Michel Foucault, *The Order of Things* (London: Routledge, 1997), edited by R. D. Laing; originally published in French under *Les mots et les choses* (Paris: Editions Gallimard, 1966). Throughout the text I have used the English, the French original, and the German version, *Die Ordnung der Dinge* (Frankfurt a. M.: Suhrkamp Taschenbuch Wissenschaft, 1990), translated by Ulrich Köppen.

⁷⁰ Foucault (1997), pp. x-xii.

⁷¹ Revealing in the sense of presenting or describing it. Foucault (1997), p. xi.

and as expressed in particular modes of *representation*. Consequently, an appropriate question to pose for unearthing a positive *unconscious* of knowledge would not focus on the analysis of the change of a paradigm itself, but on the conditions that had to be fulfilled for making a discourse coherent and generally true, and also to give it, at the time when it was written and accepted, value and practical application as scientific discourse. In short, this means that conditions for change have to be culturally attained *before* a shift in scientific discourse is even possible, opposite to a historical viewpoint that assumes that change is triggered *by* scientific progress or certain events.

What Foucault suggests here is a structuralist model where it is not through the acquisition of new knowledge that scientific discourses change, but through a new way of systematizing existing knowledge under different viewpoints.⁷² Change happens as a sort of ‘surface movement’: ‘as modification and shifting of cultural interests, a redistribution of opinions and judgements, and the emergence of new forms in scientific discourse.’ In a more fundamental way, the event concerns ‘not the objects aimed, analyzed, and explained in knowledge, not even the way of knowing and rationalizing them, but the relation of representation to that which is posited in it.’⁷³ In this sense, the discovery and the experience of the individual, and the self-experience as individual, form a new viewpoint and a precondition for the redistribution of existing knowledge through a now transformed epistemological space. This led to modern representations of ‘man’, ‘as the positive ground of modern empirical knowledge,’ which in turn ‘constituted man’s particular mode of being and the possibility of knowing him empirically.’⁷⁴ Fundamental changes around 1800 can be seen then, more particularly, in relation to the new and broad interest in *the principle of life*, which opened the field for vitalist theories, organic biology, and economics positing man as a labouring subject into the centre, as a relevant construct for modernity and its aesthetics. Biology was erected on this term of life, which it presupposed and not discovered. A positive unconscious of knowledge constituted the base or archaeological system, which was common to a series of scientific representations or products such as the ‘organism’, which would enable a theory of evolution. In return, the trope of ‘the organic’ in the nineteenth century travelled to fields as different as biology, philosophy, sociology, economics, aesthetics, art, architecture and urban thought.

⁷² Ibid., pp. 129-130.

⁷³ Ibid., p. 238. An example for a revaluation under these terms is Foucault’s reading of the emergence of Marxist theory in the middle of the nineteenth century, formerly seen as a singular event: ‘Marxism exists in nineteenth-century thought like a fish in water: that is, it is unable to breathe anywhere else.’ From this viewpoint, Marxism did not introduce a real discontinuity at the deepest level of Western knowledge; it rather belonged to and perfectly blended into an epistemological arrangement that welcomed it. Thus, it had no power to modify it, since it rested entirely upon an archaeological strata where the conflicts and projections in the bourgeois and revolutionary economy were prescribed. For Foucault, Marxism is a part and a consequence of a larger event, which he terms an ‘anthropology as discourse about the natural finitude of man.’ (257-62) This event can simply, and in respect to Marx paradoxically, be denoted as the arrival of the *individual* as organism, and as a labouring and speaking subject.

⁷⁴ Ibid., p. 385.

The shift from character to function

'Up to the end of the eighteenth-century,' Foucault states, 'life itself did not exist. All that existed was living beings, which were viewed through a grid of knowledge constituted by *natural history*.'⁷⁵ Natural history divided the things in nature into three categories: minerals, plants, and animals. Compared with this, the modern science of biology distinguishes between living and non-living bodies, organic and inorganic. Life will be a new quality, which produces and organizes itself autonomously, and is, on the other hand, determined by its environment, with which it stands in a relationship of reciprocity.⁷⁶

Foucault designates natural history as the nomination of the visible according to a technically controlled observation. Observing meant then to see systematically only few things, or as Linnaeus expressed it: 'every note should be a product of number, of form, of proportion, of situation.'⁷⁷ These four values affecting and determining any given element or organ were what botanists termed their *structure*. Structure reduced the entire field of the visible to a system of variables all of whose values could be designated. It was therefore possible to establish a *continuous* system of visible *identities* and *differences* existing between natural entities: a *taxonomy*.⁷⁸ This was an artificial or arbitrary ordering device, which superimposed on living beings made it possible to compare the structural differences of all species. It established a prescriptive and closed system whereby nature was looked upon as dead matter, or as a machine.

In the classical age, nature had a history only insofar as it was susceptible to continuity through successive variations. It was the project of a complex being towards which nature makes its way from the starting point of simple elements that it gradually combines and arranges until reaching the apex of the terminal species: the human being.⁷⁹ Continuity was assured through memory and through a project. We find the idea of a *prototype*, in Johan Wolfgang Goethe's conception of the *Urpflanze*, the primordial plant. Goethe began from the assumption that nature produced an essential form with which it 'toyed', and in the course of play brought forth the infinite variety of life.⁸⁰ In a letter to his friend Johann Gottfried von Herder in 1787, Goethe even develops the vision that in understanding the model and the corresponding key, plants could become *invented* into infinity. Even though they were not actual, they *could* exist, not as imaginary shadows or mere appearances, but through inner law and necessity. Consequently, this law could become applied to everything alive:

⁷⁵ Ibid., p. 128.

⁷⁶ Voigt (2005), p. 45.

⁷⁷ Linnaeus, *Philosophie botanique* (French translation 1788, originally published as *Philosophia botanica* in 1751), § 327, quoted in Michel Foucault (1990), p. 176.

⁷⁸ Foucault (1997), pp. 134-136.

⁷⁹ see also Foucault (1997), p. 154-155.

⁸⁰ Johan Wolfgang Goethe in a letter to Frau von Stein, July 9 1785. <http://www.goethe-net.de/botanik.htm>, 2005-12-21. See also Philip C. Ritterbush, 'Organic form: aesthetics and objectivity in the study of form in the life sciences,' G. S. Rousseau, *The life of an idea*, (London/ Boston: Routledge & Kegan Paul, 1972), p. 34.

The archetypal plant will be the strangest growth the world has ever seen, and Nature herself shall envy me for it. With such a model, and with the key to it in one's hands, one will be able to contrive an infinite variety of plants. They will be strictly logical plants – in other words, even though they may not actually exist, they could exist. They will not be mere picturesque and imaginative projections. They will be imbued with inner truth and necessity. And the same law will be applicable to all that lives.⁸¹

Goethe's original plant was a law of form to which every individual plant related as an actual case. After his first journey to Italy (1786-1788), Goethe drops the model of the primordial organism of the *Urpflanze* in favour for the conception of a primordial organ, the leaf. Through *metamorphosis*, the organ leaf changed into multiple parts of leaves, calyx, corolla, and filaments. Due to the simplicity of the smallest element, which essentially stayed the same but modified through progression, the greatest variety of forms could be achieved, which were still all connected through the general and original organ.⁸² Metamorphosis worked in the growth from germ layer to the diversification into different parts of the developed plant. It described a life cycle in the seasonal transformation from leaves into blossoms and fruits and as cause for the existence of different plant species. In his *Metamorphose der Pflanze*, Goethe also postulates that plants are constituted through the inner law of nature, and modified through the law of 'outer circumstances'.⁸³ Still, the *Urpflanze* is not yet an ancestor in an evolutionary sense, but an ideal type from which all plants could be derived intellectually.

Goethe's term 'morphology', which he developed on the basis of his reflections on the metamorphosis of plants and animals, would gain significance in a debate on architecture and urbanism as will be shown in the second part of this thesis. Goethe envisions morphology as a discipline yet to form, which will reveal the connection, and bring together even closer, a 'scientific desire' with a 'drive to art and imitation.' In the sense of Kant, just as nature can serve as the interpreter of art, art can help to understand nature.⁸⁴ Opposite to the conventional analytical methods of the sciences that were based on the dissection of a dead object in its smallest elements as in anatomy, in morphology a higher maxim of organism was at stake that regarded an organic object in terms of its quality of being alive.

⁸¹ Goethe in a letter to Herder, Neapel, May 17 1787, 'Aus der "Italienischen Reise,"' *Vermischte Schriften* (Frankfurt am Main: Insel Verlag, 1993), p. 132. English translation by R. R. Heitner, in 'Italian Journey,' *Goethe: The Collected Works* (Princeton: Princeton University Press, 1989), p. 299, quoted in Adrian Forty, *Words and Buildings. A Vocabulary of Modern Architecture* (London: Thames&Hudson, 2000), p. 155.

⁸² Goethe (1993), pp. 358-379. Goethe's striving after universal forms had an influence the French zoologist Geoffroy St Hilaire's system of comparable anatomy based on the doctrine of an ideal fundamental type. Ritterbush (1972), p. 46.

⁸³ *Versuch die Metamorphose der Pflanzen zu erklären*, appeared in 1790. See also Goethe (1993), pp. 353-354, 358-379, and 551-563. Ritterbush calls Goethe one of the first students of environmental influences on plants, an aspect of nature that occupies a central position in modern biology. Ritterbush (1972), p. 34.

⁸⁴ Caroline van Eck, *Organicism in nineteenth-century architecture. An inquiry into its theoretical and philosophical background* (Amsterdam: Architectura & Natura Press, 1994), p. 112.

Observations focused on movement and change of living exemplars as their real essence. In relating his found laws of form in nature to architecture, Goethe reformulates a theory of classical architecture not in terms of static laws but in terms of the morphology of its form.⁸⁵ Through his morphological understanding of the principles of antique architecture, Goethe found a way of granting classical architecture a unique status without having to take recourse to the traditional authority of Vitruvius, or to any other historical treatise.

At the end of the eighteenth century, the general principles of *taxinomia* preserve their validity. Yet the technique that makes it possible to establish the character is modified, which will also replace the idea of the static prototype.⁸⁶ Beginning with the natural historian Georges Cuvier, the identity of species is to be determined by a set of differences as well, but the differences emerge in this case from the background of their *organic unities*, from *internal systems* of dependencies (such as respiration, and circulation).⁸⁷ *Character*, which was derived from visible marks, is now subordinated to *function* in living beings. The general area of knowledge is no longer that of visible identities and differences, but an area that is characterized by organic structure, that is, of internal relations between elements whose totality performs a function. These organizations are *discontinuous*; they do not form a table of unbroken simultaneities. The link from one organisation to another can no longer be the identity of one or several elements, but must be the identity of the functional relations between the elements in which visibility plays a subordinated role.⁸⁸ With Cuvier, the reference to function and the uncoupling of the level of identities and differences give rise to new relations: ‘All the organs of one and the same animal form a single system of which all the parts hold together, act and react upon each other; and there can be no modification in any of them that will not bring about analogous modifications in them all.’⁸⁹ Organic structure is no longer about independent variables, but about systems governed by one another and responding to each other in a reciprocal way.⁹⁰

⁸⁵ From Johann Wolfgang Goethe, *Italienische Reise*, October 25 and 27, 1786, quoted in van Eck (1994), pp. 109-110.

⁸⁶ Foucault (1997), p. 226.

⁸⁷ *Ibid.*, p. 145. Cuvier researched in paleontology and zoology. In 1795, he was made professor of animal anatomy at the newly formed Musée National d’Histoire Naturelle in Paris.

⁸⁸ Foucault (1997), p. 218. See also Forty (2000), p. 175.

⁸⁹ Georges Cuvier, *Rapport historique sur le progrès des sciences naturelles depuis 1789* (Paris 1810, p. 330), quoted in Foucault (1997), p. 265.

⁹⁰ *Ibid.*, p. 266. Tobias Cheung, in his book *Die Organisation des Lebendigen – Die Entstehung des biologischen Organismusbegriffs bei Cuvier, Leibniz und Kant* (Frankfurt am Main : Campus, 2000) claims like Foucault that the thought of living beings as organisms formed with Georges Cuvier. Cheung shows that the structural kernel of organismic organization as developed by Cuvier, corresponds to the dynamic unity of the monadic body in Gottfried Wilhelm Leibniz’ philosophy. (*Ibid.* p. 39) This structural kernel of Leibniz, which he developed in his monadology eighty years before Cuvier’s ‘Leçons d’anatomie’ (1805) transforms via Kants’ transcendental-philosophical system, which points to organic bodies as purposes of nature (*Naturzwecke*), to the term of *life* in comparable anatomy (*Ibid.*, p. 16). Cuvier did not find the theory of the organism through empirical observation of reality; it was inspired by culturally existing ideas such as the

Organic principles

Foucault distinguishes four different ways in which organic structure occurred as a base for taxonomies. First, in the form of internal *hierarchies* of characters where character is based upon the existence of essential functions of the living being. Second, character is only the visible point of a complex and hierarchical organic structure in which *function* plays the essential role. Third, *the notion of life* (of which Kant did not yet have a concept) becomes indispensable to the ordering of living beings. Living species can be classified only because they are alive, according to what they do rather than to what they are, and on the basis of what they conceal, their organizational pattern. Classification means now to relate the visible to the invisible, to its deeper cause. It is the coherent *totality* of an organic structure that 'weaves together the visible and the invisible.' Fourth, although the concept of organic structure already existed in eighteenth century natural history, it had never been used before the end of the century as a foundation for ordering nature. Through the work of Jussieu, Vicq d'Azyr, and Lamarck,⁹¹ it begins to function as a method of characterization: it *subordinates* character of one to another; it *links* them to functions; it arranges them in accordance with an architecture that is internal as well as external, visible and invisible; and it radically separates between the organic and the inorganic. The organic becomes the living, which produces, grows, and reproduces. The inorganic is the non-living, which neither develops nor reproduces, and death.⁹²

The transition from a *taxonomic* to a *synthetic* notion of life is indicated by the revival of vitalist themes in the early nineteenth century. From Foucault's archaeological point of view, what are being established at this particular moment are the conditions of possibility for a biology. In a scientific practice this means the appearance of two correlative techniques, analysis and synthesis, which trigger new qualities of cognition on a different level of abstraction. The first one is constituted by comparative anatomy. By actually cutting up bodies into distinct parts, resemblances were disclosed that would otherwise have remained hidden.⁹³ The second technique is based on anatomy. Through the law of interdependence of the parts of an organism, necessary *networks* connecting any point in the body with any other can be established. Thus, in certain cases, a single element may be enough to suggest the general architecture of an organism. An entire animal may be recognized 'from a single bone.'⁹⁴ At the end of the nineteenth century, one will find a wide variety of different organic conceptions in all kinds of areas, from an understanding of a rather functional correlation of organisms in the biology of Wilhelm Roux and Ernst Haeckel on the one hand, to the psychological-physiological approaches of a free organic aesthetic extending from vitalism and the neo-vitalism of Henri Bergson's *Evolution créatrice* (1907) and Hans

cultural idea of individuality. This idea had to develop historically as a possibility of thought and was to be realized politically. Discussed in Voigt (2005), p. 45.

⁹¹ Botanist Antoine Laurent de Jussieu (1748-1836), neuroanatomist Félix Vicq d'Azyr (1748-1794), botanist, zoologist and paleontologist Jean-Baptiste de Lamarck (1744-1829).

⁹² Foucault (1997), pp. 227-232.

⁹³ *Ibid.*, pp. 266-269.

⁹⁴ Cuvier (1810), p. 329-30, quoted in Foucault (1997), p. 270.

Driesch's *Philosophie des Organischen* (1909) on the other.⁹⁵ One of the great themes of the nineteenth century will be 'evolution', which would not only preoccupy biologists, but resonate through sociology, aesthetics, art, architecture, and urban thought.

Origin and evolution

In the eighteenth century, the need to determine continuity became a requirement for all of natural history so as to establish an order in nature and to discover general categories within it. There was no evolutionism and transformism in classical thought, for time was never conceived as a principle of development for living beings in their internal organization.⁹⁶ Through the introduction of the premises of time and place (natural history had not known a biological term for milieu⁹⁷) biological beings become autonomous at the same time as they become regional. The living body finds itself subjected to a continuous relation with all that surrounds it.⁹⁸

We still find the conception of a succession from simple life forms towards more complex species in Lamarck's evolution theory of 1809. Jean-Baptiste Lamarck had reflected upon a selective evolution already around 1800,⁹⁹ but his theory did not yet include the idea of the origin of new species as in the sense of that Charles Darwin's did later.¹⁰⁰ The study of palaeontology made it clear that fauna and flora had been very different in past ages than they were then. A way of interpreting this new knowledge was by assuming that organisms did not develop through a line of ancestors all specifically identical with themselves, but through specifically different forms, so that the specific form itself underwent change in time. This hypothesis was greatly strengthened, or even suggested, by the study of human history, where forms of political and social organization seemed to have undergone a similar evolution. These considerations led to an entirely new conception of the generative process. Whereas nature had hitherto been credited with an effort to reproduce fixed specific forms of life, it was now conceived as attempting to produce ever new and improved forms. This meant forms that would be better *adapted* to their specific environments.¹⁰¹

In Lamarck the possibilities of an active development of an individual in confrontation with a certain environment was in the foreground. Specific

⁹⁵ Annika Waenerberg, 'Das Organische in Kunst und Gestaltung – Eine kurze Geschichte des Begriffs,' *Spielarten des Organischen in Architektur, Design und Kunst*, edited by Annette Geiger, Stefanie Hennecke, Christin Kempf (Berlin: Dietrich Reimer Verlag, 2005), p. 30.

⁹⁶ Foucault (1997), pp. 147-150. See also Collingwood (1966), p. 133.

⁹⁷ Foucault refers to Georges Canguilhem on the non-existence of the biological notion of the term 'environment' in the eighteenth century. Georges Canguilhem, *La connaissance de la vie* (Paris, 2nd edition, 1965, pp. 129-54.), Foucault (1997), p. 164, n. 58.

⁹⁸ Foucault (1997), pp. 273-274.

⁹⁹ Lamarck published *Philosophie zoologique* in 1809 as the first scientific explanation on the richness of species.

¹⁰⁰ Charles Darwin's influential work *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life* appeared in 1859 in London.

¹⁰¹ Collingwood (1966), p. 134.

adaptation resulted before all in an active change of behaviour, which would directly and permanently influence the form of organs. Constant use would cause organic structures to increase proportionally, and disuse would cause them to shrink slowly. These newly acquired traits or characters would be hereditary to the next generation. Lamarck emphasized a gradual, active self-regulation of the individual in relationship to its environment, and a progress from the lower to the higher. He viewed evolution as a directed process of increasing complexity and perfection, too slow to perceive but observable in the fossil record, and not driven by chance. Unlike Cuvier, he did not believe in the extinction of species; for him, species disappeared when they transmuted into new ones at a higher level.¹⁰² At the same time, new species on the most primitive level were constantly created. Darwinism on the contrary knew only passive heredity through 'natural selection'. Changes took place in the generation series of the species. The individual with its characteristics can maintain itself in an environment or it will be sorted out according to the principle of the 'survival of the fittest'.¹⁰³ Opposite to Lamarck's positive or active conception of evolution, Darwin proposes a passive evolutionary concept, devoid of consciousness and of moral attributes.¹⁰⁴

In *The Origin of Species*, Charles Darwin argues that evolution is a function of 'natural selection' brought about by a struggle for existence.¹⁰⁵ Darwin had no true grasp of the principles of heredity; he thought of selection exclusively in terms of organisms: one organism does better or worse than another. Although it can be said that Darwin's theory has paradigmatic status, as with Marx, it likewise does not represent a major break in Western thought but a continuation of many ideas of various predecessors, drawing heavily on results in embryology, palaeontology, anatomy, biogeography and more. Darwin is credited with having fitted already-known facts from different fields into the large picture of evolution. He was notably influenced by the economical theories of Thomas Malthus. From Malthus' essay *Principle of Population* of 1798, he took the idea of competitive

¹⁰² Cuvier and Lamarck were colleagues at the Musée National d'Histoire Naturelle, where Cuvier opposed Lamarck's evolution theory as well as Goethe and Saint-Hilaire's thought of a primordial plant with his 'catastrophe theory' postulating that the earth had undergone a series of cataclysmic events (for example, floods) that successively eliminated life from the planet. According to Foucault, it is Cuvier who introduced a radical discontinuity into the classical scale of beings, and by that gave rise to such notions as condition of existence revealing a historicity proper to life itself. Michel Foucault (1997), p. 275.

¹⁰³ Waenerberg (2005), p. 28.

¹⁰⁴ Collingwood (1966), p. 135. While the philosopher Collingwood assumes Darwin to conceive life 'as developing itself through a historic process, and orientating itself through this process not at random but in a determinate direction, towards the production of organisms better fitted to survive in a given environment,' Michael Ruse, a philosopher of biology, underscores that Darwinists 'emphasize that new variations are 'random,' in the sense of not occurring to need.' The idea here is that 'if there is always plenty of variation held in populations, then when needs arise, selection can at once swing into action.' Michael Ruse, *Philosophy of Biology Today* (New York: State University of New York Press, 1988), p. 29.

¹⁰⁵ In the fifth edition of *Origin of Species*, in 1869, Darwin introduced Herbert Spencer's expression 'survival of the fittest,' which replaced 'natural selection.' Janet Browne, 'Charles Darwin,' *Fifty Key Thinkers on the Environment*, ed. by Joy E. Palmer (London/New York: Routledge, 2001) pp. 100-106.

struggle and the thesis that populations will always increase at rates far greater than the means for supporting them as the foundation of his idea of ‘natural selection’.

Modern thought has introduced a more complex problematic of origin that is different from the ideal genesis of the classical age, which extended from fixed prototypes. Until then, it had been of little importance whether this origin was considered fictitious or real, whether it possessed the value of an explanatory hypothesis or of an historical event.¹⁰⁶ Under the influence of evolutionary theory however, the imagination of a specific origin becomes a random affair, while, at the same time, the threat of the extinction of species poses the constant possibility of loss. Besides a focus on progress, we thus find also mourning, nostalgia, and an interest in the recovery of the receding origin. Here, Foucault locates the cause of constant yearning for overcoming alienation, and the promise of return or fulfilment, peculiar to modernity, which henceforth would seek to retain the origin in the future (as, for example, in Marx’ revolution).

Nature in the natural and human sciences

In contrast to other scientific theories, in evolutionary theory there is no connection between premises and conclusions, and therefore no predictive power in evolutionary studies.¹⁰⁷ However, this ‘weakness’ of evolutionary theory that leaves the field largely open to speculations that cannot be proved might also be its ‘strength’. The philosophical implications connected to the debate about origin and change address human sciences as much as biology. It is precisely this openness and ambiguity of evolutionary theory that gave it such an imaginary power, and made it so easily adaptable for other disciplinary fields outside of biology, such as sociology, city planning, architecture, design, and others, where it would gain significance not only in respect to functional and explanatory considerations but also in an aesthetic debate.¹⁰⁸ Another peculiarity to biology among the natural sciences is that it cannot sufficiently define its object of study, which is ‘life’. Biology cannot fully explain what the organism or what life is through its methods. Attempts to define ‘life’ in terms of natural sciences are usually limited to describing qualities of the organism where empirical statements replace the definition. Georges Canguilhem has pointed out that scientific methods negate such a power as life, and they deny the values that life imputes to different objects. In this sense they cannot treat a large part of what makes life, as they are

¹⁰⁶ Foucault (1997), p. 329.

¹⁰⁷ Evolutionary theory cannot be falsified. Ruse (1988), pp. 5-17, and 75.

¹⁰⁸ Voigt (2005), p. 47. Biology was constituted as an analysis of the relations between organs and functions; as study of structures and balances; and as research into the formation and development in the history of living individuals or species. Although this field was constituted outside a science of qualitative orders, biologists are prepared to use a teleological language, unlike physicists or chemists, when they talk of functions, purposes, and ends. Currently, a teleological language is seen as appropriate only insofar as living beings are considered as goal-directed systems: they pursue ends, ultimately survival and reproduction. Teleological claims in biology depend on ‘natural values’ that can be applied to biological entities, such as what is good for an organism or species. Ruse (1988), pp. 43-44, 47.

limited to defining their objects in relation to one another in measuring them without ascribing *value*.¹⁰⁹

Evolutionary theory's unclear identity stands in contradiction with a modern scientific conception that focuses on nature as a system that functions according to causal laws of physical bodies and forces. Nature in the understanding of the modern natural sciences is that which results from a specific attitude of methodology, which searches after general and lawful relationships. From the perspective of the natural sciences, the claim of a value-free interrogation is constitutive. However, this theoretical claim challenges the practice. The philosopher and sociologist Jürgen Habermas has been influential in discussing science and technology as ideology. He points out that what natural sciences can recognize is not nature 'as it really is' independent from our interests, but rather nature appears reduced to scientifically relevant facts constituted through a previous organization of our experiences within the functional circuit of our instrumental actions.¹¹⁰ In this reading, the natural sciences produce no facts in themselves without subjective influences, but only represent facts that have been prefigured in the form of the experiments where the outcome can only be either affirmation or failure of our operations. Nevertheless, this contradiction is repressed through the control of the context in which the scientific studies take place. Although the procedures are led by our interests, they are presented as objective. Not only the scientist is supposed to stay away from making evaluations, but also the object of study itself ought to be treated as having no value of its own. Thus a scientific statement appears always detached from any reflection whether or not the object of study is useful or beautiful. Nevertheless, for a modern discourse, not only these and other separations are constitutive, but also the critique of them, as was prefigured already in Goethe's term of morphology. The conflicting relationship between the methodology of the natural and human sciences is a recurrent theme in an urban discourse, as will be shown in the second part of the thesis with the biologist and city planner Patrick Geddes in Scotland, Lewis Mumford in the U.S, and with the critique of modern city planning beginning in the 1940s within CIAM and from others.

Foucault draws the line between natural and human sciences in letting the latter begin at the point where the 'functions' stop and 'representations' are set free, presenting what man himself expresses. Foucault concludes that the human sciences are not the analysis of what man is by nature, but rather an analysis that extends from what man is in his positivity as a living, labouring, and speaking being to what enables him to know, or seek to know what life is.¹¹¹ In any case, Foucault closely connects both realms in presenting human sciences as existent

¹⁰⁹ François Canguilhem, *A Vital Rationalist. Selected Writings From Georges Canguilhem*, edited by François Dealporte (New York: Zone Books, 2000), translated by Arthur Goldhammer, pp. 70-72.

¹¹⁰ Modern empirical-analytical sciences are led by interests. There is an interest in the technical availability of materialized processes. Jürgen Habermas, 'Erkenntnis und Interesse,' *Technik und Wissenschaft als 'Ideologie'* (Frankfurt am Main: Suhrkamp, 1969), p. 157. See also *Erkenntnis und Interesse* (Frankfurt am Main: Suhrkamp, 1969). Denis Wood, *The Power of Maps*, (New York/London: The Guildford Press, 1992) pp.1-2, 70-93.

¹¹¹ Foucault (1997), pp. 350-353.

only in the space of projection of the proper sciences. As they are no proper sciences themselves, they are made possible through this constructed 'vicinity' to biology, economics, and linguistics, to which they are not related, and from which they summon and receive the transference of models borrowed from these sciences.¹¹²

More precisely, Foucault distinguishes between two different kinds of models utilized by the human sciences, whereby he gives preference to one over the other: On the one hand, there were concepts introduced from another domain of knowledge, which, losing all operational efficacy in the process, now played only the role of an *image* - such as the organic metaphors in nineteenth-century sociology. (I will return to this discussion in the second part.) Foucault calls them disparagingly 'simple means of devising methods of operation with less effort.' On the other hand, there were also constitutive models that were more than just techniques of formalization for the human sciences, and which carried the potential of turning into *categories* in the area of knowledge particular to the human sciences. These constituent models were borrowed from the three domains of biology, economics, and the study of language. For example, the category of *functions* existed not only in biology, but also in the social and cultural realm. In this way all the human sciences interlocked and could be used to interpret one another.¹¹³ Although in Foucault the human sciences appear as minor and wholly dependent on the sciences proper, they still evoke an exchange. The human sciences possess at least a critical dimension that the natural sciences lack. Foucault pictures the common categories as creating a circuit through different domains by which discursive instruments, concepts, and theories would constantly be reviewed critically from outside: 'This relationship presupposes the transposition of external models within the dimension of the unconscious and consciousness, and the flowing back of critical reflection towards the very place from which those models come.'¹¹⁴ In Foucault's critique the image and the metaphor, which borrow from other domains, can be understood as mere static expressions or illustrations of formerly operative concepts, now having lost their model character and thus the critical capacity of feeding back to the place of production. The human sciences extended from the discovery of man as a living, labouring and speaking being, and were explored in relation to his finitude, something that was expressed in an architectural discourse as her or his 'needs.' However, Foucault's critical attitude towards the human sciences as entirely positive, but not scientific at all, can be regarded in the light of his pointing to man as only an 'episode', which he sees as coming to an end itself. Man was an

¹¹² Foucault draws a picture where he distinguishes and relates three different kinds of 'real' sciences in the form of a trihedron: first, mathematical and non-mathematical sciences for which deductive and linear relationships of cause and effect are constitutive; a second dimension of empirical sciences that deal with language, life, and production (linguistics, biology, and economics) that are discontinuous but analogue so that they can erect causal relations and structural constants among each other; and third philosophical reflection. From this epistemic trihedron human sciences are excluded. However, they exist in the spaces between these different fields of knowledge, and Foucault calls them 'impure.'
Foucault (1990), pp. 416-417.

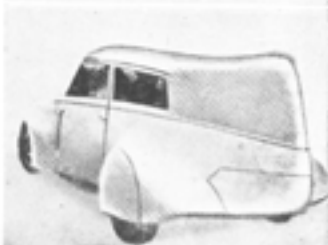
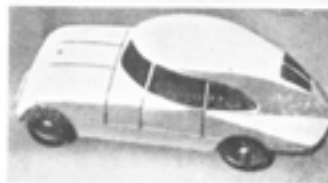
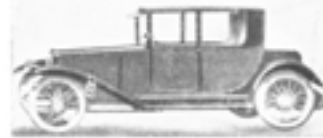
¹¹³ Foucault (1997), pp. 256-358.

¹¹⁴ *Ibid.*, p. 366.

invention, an effect of a change in the fundamental dispositions of knowledge, and not the redemption or the arrival at a certain destination.

Contemporary biology emerges as a field converging between natural and empirical sciences. In comparison architecture and planning also may not be easy to categorize, traditionally oscillating between technology (applied sciences), the arts (humanities), and the empirical sciences. In the following chapter there will be a closer examination of architecture and urbanisms' biological imaginations, and their adaptation of scientific techniques directly retrieved from an analogy with natural sciences. The *image* plays hereby a central role. It will be shown that evolutionary thought, which can be called one of the meta-narratives of the nineteenth-century, will have a distinct influence on the language and thinking of modern architectural and urban theory.

lorsqu'on quitte
une fonction pour
en accomplir une
autre...
à moins qu'on ne
crée une nouvelle
harmonie



Les Flots

2 The 'natural' development of architectural form

The origin of architecture: from static model to generic types – modern organic architecture in America – Le Corbusier's 'objèt type'

Under the pressure of formulating an architectural theory that integrated variety and choice, nature is reinstated as a system of invention. The notion of the *prototype* of the primordial hut, as in Marc Antoine Laugier, breaks with the unified aesthetic theory of baroque illusion, which it replaces with a moral value system that focused on nature's role as a model under the aspect of 'simplicity.' Similar to natural history's shift from a static taxonomy of characters to a functional understanding of hierarchies of integrated systems in modern biology, progressive ideas enter architectural theory, in parallel with a general interest in evolutionary theories, whose rhetoric they adapt. With Quatremère de Quincy, and later Gottfried Semper, a fundamentally different concept emerges with the idea of *types*, which in contrast to the ideal model or prototype, develops out of practice. In their view, types transform under the influence of outer conditions such as climate, function, and use. In contrast to an earlier concept of development that was subordinated to laws of combination and recombination, with types, form itself changes irrevocably. While a European architectural discourse gradually replaces the concept of nature's mimesis with more technical considerations that are elucidated by the types, in the aesthetic debate in America we encounter a revival of the nature figure in the idea of organic architecture. This movement is not informed by the classical mimesis concept, but instead introduces the new concept of adaptation, where architecture is developed directly out of its inherent structural properties in relation to function. This idea goes far beyond aesthetic considerations, developing also into a political argument, where the organic is equated with democracy. In the purist and functionalist tendencies of the early twentieth-century in Europe, we find a reflection on the progression towards the perfected type, which on the one hand emerges through a search for a new language of architecture, design and planning, which must adapt to new production methods that arise out of capitalist market forces, and on the other hand is in sharp contradiction to a capitalist logic, which it embraces and rejects at the same time.

The origin of architecture: from a static model to generic types

There have been several attempts to trace the origin of architecture in the model of nature. The tradition of the idea of the primitive hut was first laid out by Vitruvius in the myth of the first primitive builders in Book IV *De Architectura*, which was rediscovered during the renaissance and exerted a decisive influence on architects at that time.¹¹⁵ One of the earliest architectural texts that develops this argument is Filarete's *Trattato d'architettura (Treatise on Architecture)* from 1451-65.¹¹⁶ Filarete suggests here that the first buildings were huts built of tree trunks, which

¹¹⁵ For an account on the idea of the 'primitive hut' see Joseph Rykwert's *On Adam's House in Paradise* (New York: The Museum of Modern Art/ London: Academy Editions, 1973).

¹¹⁶ See Françoise Choay, *The Rule and the Model* (Cambridge, Mass./ London: MIT Press, 1997), pp. 173-181.

provided the original form of the column. However, it was Abbé Père Marc Antoine Laugier which his *Essai sur l'architecture* of 1753, who is most connected to this debate in architectural histories, as he brings back into the nature/architecture discussion a moral component as well as a visual concern, which had gotten lost in the earlier more mathematical and scientific reflections. Laugier's *Essai* also appears during a time of political change, where the shift of power relations are also expressed in aesthetic preferences, such as the landscape garden of the pre-revolutionary era. Laugier is credited with having set new standards for architecture.¹¹⁷ In *Essai*, Laugier traces the origin of architecture back to nature, claiming that modern architecture ought to retain natural qualities.¹¹⁸ 'It is the same for architecture as in all other arts: its principles are founded on simple nature, and nature's process clearly indicates its rules. Let us look at man in his primitive state without aid or guidance other than his natural instincts.'¹¹⁹ The qualities Laugier assigns to nature are simplicity, simple principles and primitive conditions; he further mentions rationality and purpose.¹²⁰ Laugier imagines an ideal primary *prototype* on the model of the primitive shelter:

Such is the course of simple nature; it is to the imitation of its processes that art owes its birth. . . . The small rustic hut is the model upon which all the wonders of architecture have been conceived; in drawing nearer in practice to the simplicities of this first model essential faults are avoided and true perfection is attained. The pieces of wood raised vertically give us the idea of the columns. The horizontal pieces that surmount them give us the idea of entablatures. Finally, the inclined pieces that form the roof give us the idea of the pediments. This is all the masters of art have recognized.'¹²¹

With the original architectural prototype, nature is present through underlying formal principles and through simplicity, which is expressed visually in primary geometrical formations, and which also appears as an intrinsic moral value. Along with what is 'natural' for architecture appears thus also the idea of truth. Laugier pronounces his architectural and urban aesthetics in terms of negative recommendations instead of positive rules.¹²² Architecture was striving after '1) an architecture which has nothing but that which is natural and true, wherein all is reduced to simple rules and executed according to great principles: no arcades, no pilasters, no pedestals, nothing tortured, nothing forced; 2) . . . nothing that is superfluous, nothing clumsy, nothing rude; 3) . . . [architectural elements]

¹¹⁷ De Zurko, *Origins of Functional Theory* (1957), p. 156; Tafuri (1976), and Anthony Vidler, 'The Third Typology,' (1977) *Architecture Theory since 1968*, edited by K. Michael Hays (Cambridge, Mass./ London: MIT Press, 1998), pp. 288-289.

¹¹⁸ Forty (2000), p. 221.

¹¹⁹ Marc-Antoine Laugier, *An Essay on Architecture* (Los Angeles: Hennessey & Ingalls, 1977), p. 11, translated by Wolfgang and Anni Hermann. Original: *Essai sur l'architecture*, (Geneva: Minkoff, 1972 (1755)), p. 8. See also Forty (2000), pp. 221-222.

¹²⁰ De Zurko (1957), p. 157.

¹²¹ Laugier (1972 (1755)), p. 9-10, translation by Forty (2000), p. 222. See also Vidler, (1977), pp. 288-289.

¹²² See Choay (1997), p. 216.

arranged in the most convenient and advantageous manner;¹²³ *Essai sur l'architecture* was reissued with plates two years after its first publication. The drawing that Laugier commissioned for his essay to a man named Keller shows architecture allegorically represented as a female figure pointing to the primitive hut as the true example for all architecture.¹²⁴ Architecture can be pictured here as if it was nature, and vice versa, nature can be read like architecture. The representation demonstrates their apparent similarity.

The architectural historian Manfredo Tafuri grants Laugier the position of having officially inaugurated enlightenment architecture theory with his theories on the design of the city, which occurred in 1765 in his second book on architecture, *Observations sur l'architecture*. Tafuri exposes two crucial points: On the one hand, the desire to reduce the city to a natural phenomena, and on the other, the wish to go beyond all ideas of urban organization by applying the formal dimensions of the aesthetics of the picturesque to the urban fabric. Tafuri quotes Laugier:

Anyone who knows how to design a park well will draw up a plan according to which a City must be built in relation to its area and situation. There must be squares, intersections, streets. There must be regularity and whimsy, relationships and oppositions, chance elements that lend variety to the tableau, precise order in the details and confusion, chaos, and tumult in the whole.¹²⁵

The eighteenth-century city is thereby imagined as a park.¹²⁶ The city, as well as nature, is no longer seen as a structure, but is instead regarded under the aspect of its visual appearance, and Tafuri suggests that for eighteenth-century theorists, the city belonged to the same formal domain as landscape painting. This similarity goes beyond visual issues. Urban naturalism just like landscape painting has the function of assuring to artistic activity an ideological role in rendering the city artificially objective by means of the call to the universality of nature.¹²⁷ Laugier's urban interventions and the theories of English landscape painting have in common a basic tool for critical intervention in 'natural' reality, namely selection.¹²⁸ With this, Tafuri distinguishes Laugier's attitude from Ledoux's and Boullé's *architecture parlante* by ascribing to him a *demythified* view of nature that fully grasped the *antiorganic* and artificial character of the urban language.¹²⁹

¹²³ Laugier (1972 (1755)), pp. 179-180. See also De Zurko (157), 159.

¹²⁴ Rykwert (1973), pp. 43-44.

¹²⁵ Laugier, *Observations sur l'architecture* (Geneva: Minkoff, 1972 (1765)), pp. 312-313, quoted in: Manfredo Tafuri, 'Toward a Critique of Architectural Ideology' (1969), *Architecture Theory since 1968*, edited by K. Michael Hays (Cambridge, Mass./London: MIT Press, 1998), p. 7, and in a slightly different version in Tafuri (1976), p. 4.

¹²⁶ Vidler (1977), p. 289.

¹²⁷ Tafuri (1976), p. 7.

¹²⁸ Tafuri refers here to the theories of the English landscape painter Alexander Cozen. *Ibid.*, p. 5.

¹²⁹ Tafuri (1969), p. 8, and Tafuri (1976), pp. 5-6: 'Laugier, like the English Enlightenment theorists, had an acute grasp of the artificial character of the urban language, neither

With Laugier, the new conception of the natural city is also a rational one; the natural city consisting of ‘order and a sort of confusion’ attempts to break with the baroque illusion.¹³⁰ Selectivity and criticism signified the introduction of a fragmentation into urban planning that places on the same level not only ‘Nature and Reason,’ but also natural fragment and urban fragment.¹³¹ It promises a turn against the aesthetics of the *ancien régime*, with its art for the privileged, and can be seen as a step towards the bourgeois revolution. Nature does not figure in terms of a scientific reading, as was the case with the negative attitude towards the city of the *ancien régime*, of which the treatise *Mémoires sur les objets les plus importants de l’architecture* by Pierre Patte, Louis XV’s architect published four years after Laugier’s *Observations* in 1769, gives proof. Patte’s critique bears only on the defects of urban space, particularly on disorder and the lack of hygiene. As such, he prefigures Haussmann’s critique and the later instrumental and technocratic approach to the city. Patte’s corrective principles lead him to treat the city as a virtual technical object by means of a new kind of scientific knowledge. In contrast to Laugier, he conceives of the city as a holistic object, and advocates its rectification by means of a specific instrument, the total plan.¹³²

With Laugier, Tafuri sees the formation of the architect as an ideologist of society.¹³³ In order to break down old traditions and conventions, a new theory is required,¹³⁴ which reorganizes the city and architectural values, and which can consolidate and protect its achievements from any further transformation. This happens due to the new *moral* principles of simplicity and free choice, derived from nature, and supported by the myth of the primordial hut. In Tafuri’s reading: ‘The civil value attributed to Nature – subject and object of ethical-pedagogical action – here becomes the substitute for the traditional principles of authority that rationalism and sensualism were destroying.’¹³⁵ In this, Laugier’s *prototype* represents a reduction to the simplest architectural element possible, and marks a point zero from which further experimentation can spring. In Laugier, Tafuri views the attempt to control a reality lacking organic structure by operating on this very lack, not in order to give it structure, but rather ‘to draw forth from it a whole complex of coexisting meaning.’ With this, Laugier introduces a break from integrated models such as the baroque ‘variety in unity,’ and thus provides a point of departure for following architectural and urban theories.¹³⁶

In contrast to Laugier’s ideal ‘natural’ prototype, Antoine Chrysostome Quatremère de Quincy will fifty years later reflect on a concept of architectural *types*, which takes architectures’ historical notions into account. His essay *De l’Architecture Egyptienne*, on the relationship between the origins of Greek and Egypt architecture, which he submitted to the Académie Royale des

Ledoux nor Boullée, in their works much greater innovators, ever really gave up a mythical and abstract idea of nature.’

¹³⁰ Forty (2000), p. 243.

¹³¹ Tafuri (1976), pp. 5-6.

¹³² See Choay (1997), pp. 214-221.

¹³³ Tafuri (1976), p. 3.

¹³⁴ Julius Posener, ‘Form und Theorie der Architektur im 18. Jahrhundert’ in: ‘Vorlesungen zur Geschichte der neuen Architektur V’ *Arch+*, 69/70 (August 1983), p. 24.

¹³⁵ Tafuri (1976), p. 5.

¹³⁶ *Ibid.*, p. 21.

Inscriptions et Belles-Lettres for the Prix Caylus of 1785, which he won, belongs to the tradition of the idea of the primitive hut. However, Quatremère reformulates the standard notion with his introduction of the idea that architecture had developed like language, and thus was dictated by the essential nature of primitive societies and a wide range of environmental conditions, such as climate, the availability of natural materials, and the profile of natural terrain. He argued that architecture could not be retrieved from one origin: 'The invention of architecture must be put on parallel with that of language, that is to say, neither one nor the other can be attributed to a particular man, but are attributed of mankind in general.'¹³⁷ The precise form of first structures was dependent on how different societies developed, which he discerned into three *types*, each identifiable in the way they gathered food: hunting, fishing, shepherding, or agriculture. According to Quatremère, hunters did not build at all, but fishermen settled along shores of oceans, rivers, and lakes, where they would seek out natural caves due to a laziness engendered by their lifestyle. Societies of shepherds, who emerged in flatlands, constructed tents, dwellings that were easy to transport in relation to their need to move around in constant search for new pastures, while an agricultural lifestyle required fixed and solid structures resulting in the erection of wooden huts. According to Quatremère, in these three basic structures, not only the origin of every type of construction could be found, but also their association with all people's as well as their differences.¹³⁸ Following this, Quatremère's types dissolved into abstract principles that operate in all places, and directed the development of architecture in all times.¹³⁹

¹³⁷ Quatremère de Quincy, in *De l'Architecture Egyptienne*, p. 12, quoted in Forty (2000), p. 70.

¹³⁸ Sylvia Lavin, *Quatremère de Quincy and the Invention of a Modern Language of Architecture* (Cambridge, Mass./ London: MIT Press, 1992), p. 21. In *Quatremère de Quincy and the Invention of a Modern Language of Architecture*, Lavin argues that Quatremère was using language to provide architecture with a conventional rather than a natural model. Lavin turns against the commonly held view of Quatremère as a static thinker due to his support of ideal classicism (as in Rykwert's *On Adam's House in Paradise*). Lavin, however, in focusing less on Quatremère's works on classicism, but instead on his analysis of Egyptian architecture, argues that precisely the exploration of origins led to profound changes in the understanding of history and of evolutionary process. Language and architecture appear not only as articulating reflections of social development, but also as social development themselves, active agents in the historical creation of civilization. In this course, society itself was no longer seen as naturally or supernaturally determined, but rather as an *artificial* structure that could be reshaped and transfigured.

¹³⁹ Forty credits Quatremère with the introduction of the *type* into architectural theory. In his entry for the *Encyclopédie Méthodique*, Quatremère wrote: 'The word "type" presents less the image of a thing to copy or imitate completely than the idea of an element which ought itself to serve as a rule for the model. . . . The model, as understood in the practical execution of the art, is an object that should be repeated as it is; the type, on the contrary, is an object after which one may conceive works of art with no resemblance one to another at all. All is precise and given in the model; all is more or less vague in the type.' ('type,' 1825). Forty (2000), p. 306. For a discussion on the use of the terminology of 'type' and 'typology,' see also Georges Teyssot, 'Norm and Type. Variations on a Theme,' *Architecture and the Sciences*, edited by Antoine Picon and Alessandra Ponte (New York: Princeton Architectural Press, 2003), pp. 140-173.

The analogy of language and architecture resonates also in Quatremère's notion of mimesis. In the entry for 'imitation' in the *Encyclopédie Méthodique*, for which he wrote several, he suggests: 'It is necessary to take the word nature here in its widest sense, that is, the one which includes the domain of physical beings, and the realm of moral and intellectual things.' He concludes that architecture's imitation of nature was both literal and metaphorical. Architecture was founded on the principle of a literal imitation of the timber hut in stone, but also, as human beings were similar to nature, they could express and thus imitate the principles of nature. Quatremère went as far as to maintain that the hut and the story of the transmutation process was a myth, and could be abandoned altogether without the principles they demonstrated being invalidated:

The general imitation of Nature in her principles of order, of harmony relative to the inclinations of our senses, and to the perceptions of understanding, have given [architecture] a soul, and have made an art no longer copyist, no longer imitator, but a rival of Nature herself. . . . We have seen that Nature offers only analogies [to architecture] on all sides. It [architecture] imitates its model less than it compares itself to her; . . . it does not make what it sees, but as it sees it being made; it is not the effect but the cause it studies: and from then on it is original even in its imitation.¹⁴⁰

We find here a qualitative distinction between copying an image and the imitation of *principles*. The imitation of the model receives a negative sound, while the mimesis of the principles of nature leaves space for our own inventions. Hence architecture offered a variety of choices. It led to artefacts that can be compared with nature, and therefore compete with natural products. A positive imitation of nature established connections between architecture, language, and society. The architectural historian Sylvia Lavin argues that Quatremère's view of imitation primarily as a process, not form, conflated the abstraction of architecture, and made mimesis a potentially progressive instrument.¹⁴¹

Concerning the difference between *model* or *prototype* and *types*, the notion of the *model* was based on the embodiment of a timeless ideal that referred *through nature* to principles that conferred authority to the building, as in Laugier, while a plurality of types could explain the mechanisms of architectural continuity *produced by man*, and illuminate the relationship between past and present building. In Quatremère's reading, the three types to which all architectures could be traced were still universal and thus static and a-temporal, despite that type revealed the historical dimension of architecture. For Quatremère the problem of the relationship between primitive and modern architecture was the process of the transformation of type, a conceptual metamorphosis required every time a building was designed.¹⁴²

¹⁴⁰ Quatremère de Quincy, 'Imitation,' article in Pancoucke's *Encyclopédie Méthodique*, for which he contributed several articles between 1788-1825, Forty (2000), pp. 224-6.

¹⁴¹ Lavin (1992), p. xii.

¹⁴² See Sylvia Lavin's chapter 'The Transformation of Type,' in her *Quatremère de Quincy and the Invention of a Modern Language of Architecture* (1992), pp. 86-100.

Influenced by Quatremère's essay *De l'Architecture Egyptienne*, and by the zoologist Georges Cuvier's animal and plant morphology, we find a turning away from the *model* of nature, and a development of Quatremère's *types* in the theories of Gottfried Semper. Initially extending from Laugier's imagination of a natural *primary prototype*, Semper develops an anthropological construction putting emphasis on the figure of the 'primitive builders' before a static classical model. A reflection on Quatremère's analogy of language and architecture resonates in Semper's introduction to his architectural theory *Der Stil* (1860-63):

Art has a special language of its own, consisting of formal types and symbols that have changed in a variety of ways over the course of cultural history. . . . The most recent linguistic research has tried to show how human idioms are related; it has tried to trace the changes to individual words over the centuries and to lead us back to one or more points where they meet in common primeval forms. . . . Analogous efforts can be justified in the field of art, where it is certainly proper to draw attention to the evolution of art-forms from their seeds and roots to their transformation and ramifications.¹⁴³

However, with 'common primeval forms' Semper does not refer to static prototypes, but rather emphasizes the transformation of forms through use over time, the intervention of the designer, and the relationship to a certain environment, which he pictures as an evolutionary development that leads, as he said, to an immense variety of forms.

In this would consist true art, to let the fundamental idea shine through these motivated modifications [motivated by outer circumstances such as social, political and religious climates], and to present at the same time through these a whole that is full of character, and in harmony both with itself and with the external world.¹⁴⁴

To understanding the complexity of cultural change, Semper focuses on four basic human activities, named as weaving, pottery, carpentry, and masonry, which are

¹⁴³ Gottfried Semper, *Style in the Technical and Tectonic Arts; or, Practical Aesthetics* (Los Angeles: Getty Research Institute, 2004), original *Der Stil in den technischen und tektonischen Künsten; oder, Praktische Aesthetik: Ein Handbuch für Techniker, Künstler und Kunstfreunde*, 2 Vols (Frankfurt am Main: Verlag für Kunst & Wissenschaft, 1860; Munich: F. Bruckmann, 1863) translated by Harry Francis Malgrave and Michael Robinson, with translations from Latin and Greek by Amir Baghdadchi, p. 103 (Vol. 1, 1). Semper developed a systematic general theory of architecture, which culminated in the two volumes of *Der Stil* (1860-63), which is seen as the first theory of architecture to discount entirely its origination in the classical orders. With the influence upon his thinking by recent research in linguistics, Semper most likely referred to the German philologist Franz Bopp's *Comparative Grammar* (1833-52), and to Wilhelm von Humboldt's *On Language* (1836). In Humboldt, the fixed element in language was its 'form,' which meant an underlying genetic principle from which an indefinite range of speech possibilities could be produced. See also Forty (2000), pp. 70-71.

¹⁴⁴ Gottfried Semper, *Entwurf eines Systems der vergleichenden Stillehre* (1853), quoted in van Eck (1994), p. 230.

expressed in four elements that form architecture: an earthwork, a hearth, a framework and a roof, and an enclosing membrane.¹⁴⁵ These elements/activities of the realm of the industrial arts were constituted as types, and for Semper were ‘the key to understanding architectural as well as artistic forms and rules in general.’¹⁴⁶

It is known that Semper was inspired by Cuvier’s zoological collection at the Muséum National d’Histoire Naturelle in Paris, where specimens were arranged in evolutionary order.¹⁴⁷

Just as everything there develops and is explained by the simplest prototypical form, just as in nature in her infinite variety is yet simple and sparse in basic ideas, just as she renews continually the same skeletons by modifying them a thousandfold . . . in the same way, I said to myself, the works of my art are also based on certain standard forms conditioned by primordial ideas, yet which permit an infinite variety of phenomena according to the particular needs that affect them, the exterior circumstances that modify them, or a higher conception that refines and transfigures them into symbols.¹⁴⁸

The art historian Adrian Forty claims that it was by direct analogy from his knowledge of animal and plant morphology that Semper formulated his theory of architectural types. When Semper lectured in London in 1853, he used the term ‘type,’ stating that works of industrial art ‘are like those of nature, connected together by some few fundamental ideas, which have their simplest expression in *types*.’ Types would express the previously mentioned four basic processes involved in building: terracing, roofing, the hearth, and walling.¹⁴⁹ In opposition to the classical static ‘model,’ Semper’s classificatory system of ‘types’ introduced a generic idea, with relevance to practical application.

¹⁴⁵ Semper’s formulation stemmed from seeing a model of a Carribean hut in the Great Exhibition of 1851 in London. Kenneth Frampton, ‘Rappel à l’ordre, the Case for the Tectonic,’ in: *Theorizing a New Agenda for Architecture. An Anthology of Architectural Theory 1965-1995*, edited by Kate Nesbitt (New York: Princeton Architectural Press, 1996), p. 523.

¹⁴⁶ Gottfried Semper, ‘Attributes of Formal Beauty,’ (1856-59), quoted in Forty (2000), p. 232.

¹⁴⁷ Cuvier’s system of classifying species by function rather than by form broke the static classificatory system of earlier natural history and offered biological comparisons. Cuvier’s system was transformational, it did allow a graduated evolutionary development within a species. Harry Francis Malgrave ‘Introduction’ to Gottfried Semper, *The Four Elements of Architecture and Other Writings*, (Cambridge: Cambridge University Press, 1989 (Original 1852)), translated by Harry Francis Malgrave and Wolfgang Hermann, p. 31.

¹⁴⁸ Semper, (1989), p. 170. See also Forty (2000), 232.

¹⁴⁹ It may not be a coincidence that Semper chose four basic types for architecture. Cuvier, to whom he refers frequently, arranged animals into four large groups (vertebrates, molluscs, articulates, and radiates), each of which had a special type of anatomical organization. All animals within the same group were classified together, as he believed they were all modifications of one particular anatomical type. He broke hereby with the idea that all living beings could be arranged in a continuous series from the simplest up to man. Cuvier, Georges, Baron. *Encyclopædia Britannica*. Retrieved February 8, 2006, from Encyclopædia Britannica Premium Service <http://www.britannica.com/eb/article-9028345>.

It could be important to designate some of these fundamental types of artistic forms, and to follow their gradual progress. . . . Such a method, similar to the ones followed by Baron Cuvier, when applied to art and especially to architecture, would at least help to gain clear overview of the whole field and perhaps even to gain the basis of a theory of style and a kind of *Topica* or method of invention, which could lead to some knowledge of the natural process of invention.¹⁵⁰

Despite the analogies to nature and the link Semper draws to evolution, he sees a creative process as steered by the artist, who can learn from but is not bound to nature as an external or intrinsic model. For Semper, architecture is a pure art of invention. There are no ready prototypes in nature. They are, before all, free creations of human fantasy and ratio. He recognizes the material dependency of the laws of nature and conditions that stay everywhere and at all times the same, which give the works of architecture a certain character of necessity and let them appear, to a certain degree, as works of nature themselves. However, such works are created through nature by the medium of rational beings of free will.¹⁵¹ The architectural historian Kenneth Frampton points out that Semper regarded the arts of weaving, pottery, carpentry, and masonry as paramount, not only for their symbolic content, but also for the aspect of ludic play they contained. For Frampton, it is precisely this freedom to play that marks the independence of a free creator, who is not subject to the pressure of adaptation to nature.¹⁵² However, with his concept of the type, Semper also develops the perspective of an architectural vernacular not formed by an individual, but rather as a collective work made by many people over a long period of time. In Semper, '[a] totally new architectural form without reference to an existing motive is impossible in that it would preclude meaning; old motives can be reformed or combined, sometimes infused and rejuvenated with new meaning.'¹⁵³ This tension between the unique work of art and architecture in relation to the development of typified or standard

¹⁵⁰ Gottfried Semper, *Entwurf eines Systems der vergleichenden Stillehre* (1853), quoted in van Eck (1994), p. 26.

In *The Four Elements of Architecture* Semper gives his definition of 'style' as a total concept that grasped an object in its actuality and its potential, which has to be brought out by the architect: 'Style is the accord of an art object with its genesis, and with all the preconditions and circumstances of its becoming (*Werden*). When we consider the object from a stylistic point of view, we see it not as something absolute, but as a result. Style is the stylus, the instrument with which the ancients used to write and draw [he relates here to mimesis]; therefore, it is a very suggestive word for that relation of form to the history of its origin. To the tool belongs, in the first place, the hand that leads it and a will that guides the hand. These, then, intimate the technical and personal factors in the genesis of a work of art.' Semper (1989 (Original 1852)), p. 269.

¹⁵¹ Gottfried Semper, *Wissenschaft, Industrie und Kunst. Und andere Schriften über Architektur, Kunsthandwerk und Kunstunterricht*, edited by H. M. Wingler, Mainz 1966, p. 33, quoted in Annette Geiger, "'Form Follows Function" als biozentrische Metapher,' *Spielarten des Organischen in Architektur, Design und Kunst*, eds.: Annette Geiger, Stefanie Hennecke, Christin Kempf (Berlin: Dietrich Reimer Verlag, 2005), pp. 59-60.

¹⁵² Frampton (1990), p. 523.

¹⁵³ Malgrave (1989), p. 33.

forms will occupy the architectural debate up to the post-war era. As formulated, autonomy from nature meant an important shift in the European reception of the nature/architecture figure, where mimesis had become only one among many concepts that would participate in the discourse on modern architecture.

Modern organic architecture in America

In contrast to the European debate, American architecture and design theory of the late nineteenth-century revives the nature figure. The architectural dictum 'form follows function,' attributed to the American architect Louis Henry Sullivan, springs directly from an analogy with nature. 'Function' here refers less to functional utility, a notion under which the term will be widely used later in Europe, but instead resembles Kant's 'function' as 'purposiveness,' as in his concept of organisms. However, unlike Kant's rejection of the artwork as an analogue of the processes of nature in his aesthetic theory, the attitude of American organicists was characterized by a transcendentalism with an optimistic and holistic perspective, not unlike the earlier German Romantics. As opposed to Kant, it was assumed that the ideal principles of nature could be experienced in one way or another, and that this understanding of nature contained the key to the arts.

We find sources for Sullivan's organic thought in Ralph Waldo Emerson's nature philosophy, who saw himself as a Kantian, and in the sculptor Horatio Greenough's writings on aesthetics. Like Semper, Greenough does not pose the question of an original any longer; his argument against the mimesis of antiquity is drawn from the imagination of an evolutionary development of forms: 'There is no arbitrary law of proportion, no unbending model of form. . . . The law of adaptation is the fundamental law of nature in all structure.'¹⁵⁴ With adaptation, Greenough means the 'adaptation of forms to functions,'¹⁵⁵ and to place.¹⁵⁶ This

¹⁵⁴ Horatio Greenough, *Form and Function. Remarks on Art*, edited by Harold A. Small (Berkeley/Los Angeles: University of California Press, 1958) p. 58, quoted by Geiger (2005), p. 56. Geiger sees the formula 'form follows function,' which is usually attributed to Louis Sullivan, as common knowledge at the Chicago School at the time, and traces it back to the sculptor Horatio Greenough. His essays on art were posthumously published under the title *Form and Function* (1853). Also Julius Posener sees Greenough and not Sullivan as 'the father of functionalism' who formulated his theories already in the middle of the nineteenth-century, although functionalist ideas can be found in August Welby Pugin (1812-1852), and even in the texts by the painter Sir Joshua Reynolds (1723-1792) already in the eighteenth-century. Julius Posener, 'School of Chicago,' in 'Vorlesungen zur Geschichte der neuen Architektur,' *arch+* 48 (December 1985), p. 28. Greenough is best known for his toga-clad statue of George Washington, based on the statue of Zeus at Olympia by the ancient Greek sculptor Phidias. Commissioned by Congress in 1832, it was designed to stand in the rotunda of the U.S. Capitol. Depicting a national hero in seminudity aroused such controversy, however, that the statue was removed to the Smithsonian Institution in Washington, D.C. Greenough, Horatio. *Encyclopædia Britannica*. Retrieved June 2, 2006, from Encyclopædia Britannica Premium Service: <http://www.britannica.com/eb/article-9037987>.

¹⁵⁵ Greenough (1958), p. 118. See also Forty (2000), p. 178.

¹⁵⁶ Greenough in a letter to Emerson. See R. W. Emerson, *Complete Works*, Band V (Boston, 1888), quoted after Leonardo Benevolo, *Geschichte der Architektur des 19. und 20. Jahrhunderts* (München: Georg D. W. Callwey, 1964), Bd. 1, p. 258. See Posener (1985), p. 28.

conviction springs from biological studies, as well as from the aesthetic idea that form was to develop ‘from the heart as the nucleus, and work outward in relation to function.’¹⁵⁷ Despite Greenough’s focus on a ‘scientific arrangement of the rooms’ in architecture, the justification of every design decision, and the ‘immediate and total ban of any fiction,’¹⁵⁸ his concept of function focuses primarily on questions of the making of organic form in regards to proportions, colours, and ornament, which is also expressed in his practical work, which was classicistic in style. Sullivan’s use of the category of function does not seem to engage with questions of utility either; it has rather been understood in the sense of ‘expression of its organic essence,’ or ‘inner organic purpose or destiny.’¹⁵⁹

The concept of an organic architecture in America gains significance with its separation from traditional European models as we find them in the Beaux-Arts architectures of the time. It was on the agenda to create something new, which would be better *adapted* to America, the world’s first representative democracy, where the fundamental principle of government was the sovereignty of the people. What Emerson had in mind for a cultural renewal was the experience of American nature, and a focus on simple everyday life. Emerson wrote in 1837: ‘We have listened too long to the courtly muses of Europe. . . . I ask not for the great, the remote, the romantic; what is doing in Italy or Arabia; what is Greek art, or Provençal minstrelsy; I embrace the common, I explore and sit at the feet of the familiar, the low. Give me insight into today, and you may have antique and future worlds.’¹⁶⁰ We can find the same spirit in the architectures of the early Chicago School, to which Sullivan, and later, Frank Lloyd Wright belonged.

The first examples of a new American architecture are the earliest skyscrapers in Chicago, for example the First Leiter Building by the engineer William Le Baron Jenney (1879), a sort of practical, ‘artless,’ steel skeleton building that knew no precedents in Europe.¹⁶¹ This new building type emerged in a booming Chicago, then in the process of being rebuilt after its destruction by fire in 1871. Sullivan, who worked for Jenney in the late 1870s, explains the functionalism behind the new movement in his essay *The Autobiography of an Idea* (1926): ‘The tall commercial building arose from the pressure of land prices, the land prices from the pressure of population, the pressure of population from external pressure . . .’ Engineers of mill buildings who worked with structural shapes that had been used in bridge constructions developed the idea of the steel frame, which was embraced by the Chicago architects. The fireproof steel frame, and the invention of the elevator, allowed developers to exploit downtown plots to the maximum.¹⁶² The new architecture is presented as evolved from pure

¹⁵⁷ Greenough, (1958), p. 62 . See Forty (2000), p. 178.

¹⁵⁸ Greenough in Emerson (1888), quoted after Benevolo (1978), Bd. 1, p. 258. See Posener (1985), p. 28.

¹⁵⁹ Forty (2000), pp. 178, 181.

¹⁶⁰ R. W. Emerson, *Selected Essays* (London/New York: Penguin, 1985), pp. 102-104, quoted in Forty (2000), p. 236.

¹⁶¹ Posener (1985), p. 26.

¹⁶² Louis Sullivan, *The Autobiography of an Idea* (1926), quoted in Kenneth Frampton, *Modern Architecture. A Critical History* (London: Thames & Hudson, 2000), pp. 51-52.

necessity, in a hitherto unknown collaborative effort of the engineer and the architect.

Kenneth Frampton credits Sullivan with the development of an architectural language appropriate to the high-rise frame.¹⁶³ Sullivan's disposition of decoration departed from European precedents in that it did not orientate itself on a European Beaux-Arts tradition, to which most of the Chicago School architects returned in their buildings for the World's Columbian Exhibition in Chicago in 1893.¹⁶⁴ Sullivan's Transportation Building and Wright's Winslow House, built in the same year, can be understood as a counter-movement to this retro development.¹⁶⁵ Especially Sullivan's ornaments – a strange mixture of gothic and art-nouveau elements¹⁶⁶ that alter between geometrical and organically free patterns, often contained within a geometric frame – announce a new architectural language. Frampton sees an Islamic influence here, and the attempt to reconcile the 'schism in Western culture between intellectual and emotional poles,' which Sullivan was to associate with the Greek and the Gothic.¹⁶⁷

Modern American and European attitudes concerning the interpretation of nature depart from each other. Despite the common root and common goals, such as a radical critique of historicism, the architectural discourses that employed organic analogies were based on very different ideas about the role and the model character of nature.¹⁶⁸ Sullivan extended from the idea that nature and culture not only developed in parallel, but that a building, as a natural and essential entity, actually was alive, and an individual like a human being. In this sense, it was not a man-made artefact any longer, which had consequences for the artist-architect, who was not seen as the 'creator' of the art work, but as its 'interpreter and prophet.' Sullivan's designer does not seek to recognize objective principles of nature transferred to her or his artefact in abstract form, as in European architecture. Rather, the creative individual searched for a unification with nature, in the sense of Emerson, and through subjective feeling the artist-architect would receive inspiration for her or his art in correspondence to the 'powerful impression of nature.'¹⁶⁹

Le Corbusier's 'objèt type'

A more rational European anthropocentrism can be found in Le Corbusier's writings. In purism we encounter again the thought of primary form-ideas, and of

¹⁶³ Ibid., pp. 55. See also Mark L. Pleisch, *The Chicago School of Architecture. Early Followers of Sullivan and Wright* (London: Phaidon Press, 1964), p. 4, who states that in spite of the important commercial structures by Jenney, Holabird, Roche, and others, it was Sullivan who found an aesthetically acceptable solution to the skyscraper.

¹⁶⁴ See Posener (1985), p. 31.

¹⁶⁵ Peisch (1964), p. 4.

¹⁶⁶ Posener (1985), p. 31.

¹⁶⁷ Frampton (2000), p. 54.

¹⁶⁸ Geiger (2005), p. 55.

¹⁶⁹ See Henry Louis Sullivan's 'Inspiration,' a prose poem read before the Western Association of Architects in Chicago, November 1886; published in brochure by the Inland Architect Press, Chicago 1886, reprinted as 'Essay on Inspiration' in Narcisco G. Menocal, *Architecture as Nature. The Transcendentalist Idea of Louis Sullivan* (Wisconsin: The University of Wisconsin Press, 1981). See also Geiger (2005), pp. 61-62.

evolutionary ones. The rhetoric of nature, and biological analogies in texts and images of the city as organism runs through Le Corbusier's entire work. In addition to a debate on the theme of artificial urbanity in relation to nature, there is also a formal interest in questions of nature and geometry, and a discussion about civilization and the earth.¹⁷⁰ Through the study of the historical transformation of cities and landscapes, Le Corbusier attempted to arrive at an architecture that was 'well adapted to its environment.'¹⁷¹ The envisioned synthesis of man and nature was not seen in a form of backward looking sentimentality, but in a struggle where humanity opposed nature in manifesting itself through labour.¹⁷² Urbanity becomes the culture of this transformation of nature; its prospect is *La ville radieuse* where the urban artifice would turn into a 'human condition.' The notion of the urban does not limit itself to an urban theory here, but refers to an entire anthropologic conception.

In Le Corbusier we encounter an interest in primary ideal forms what we previously called *model* and in *types*, which he discusses using the term *standards*. Le Corbusier expands this debate with the notion of *the type*, which is a perfected form emerged from an evolutionary progress of adaptation. In *Vers une architecture* (1923) he separates and connects functional objects and art, whereby art is a matter of 'higher mathematics' as expressed in ideal forms. Art unfolds only after the satisfaction of primary needs:

In architecture, the quantum of interest is achieved by the grouping and proportion of rooms and furniture; a task for the architect. And beauty? This is imponderable which cannot function except in the actual presence of its primordial bases: the reasonable satisfaction of the mind (utility, economy); after that, cubes, spheres, cylinders, cones, etc. (sensorial).¹⁷³

In the same work he also stresses the evolutionary development of form. As the art historian Stanislaus von Moos has shown, in the article 'Pédagogie' (1923) Le Corbusier proposes a Darwinian law of commercial and industrial standardization, according to which the development of a *standard* for manufactured products is a matter of a process based on competition within the system of manufacture. In this system the strongest *type* is selected, in the struggle for survival according to the

¹⁷⁰ The architect and urbanist Thilo Hilpert sees Le Corbusier's message of a proper contemporary architecture as based on a meta-theory of environment. Thilo Hilpert, 'La Maison des Hommes: leçons possible de l'anthropocentrisme de Le Corbusier,' *Le Corbusier et la nature*, edited and published by Fondation Le Corbusier (Paris: Éditions de la Villette, 2004), p. 21.

¹⁷¹ Le Corbusier, *Urbanisme*, 1925, p. 3, quoted in Hilpert (2004), p. 23.

¹⁷² In *Urbanisme*, Le Corbusier writes: 'A city! It is the grip of man upon nature. It is a human operation directed against nature, a human organism both for protection and for work. It is a creation.' Translated as *The City of To-morrow and its Planning* (1929), in *Essential Le Corbusier. L'Esprit Nouveau Articles* (Oxford: Architectural Press, 1998), p. xxi.

¹⁷³ Le Corbusier *Vers une architecture* (1924), translated by John Rodker (1927): *Towards a New Architecture* (London: Butterworth Architecture, 1989), p. 143.

dictates of natural selection, just as in nature itself.¹⁷⁴ Competition would dynamize the history of forms, understood as the survival of the best form on the way to typing. In *Vers une architecture* Le Corbusier claims the Parthenon is a product of selection, which evolved out of an established standard. When a standard is established, competition starts immediately and violently. All the temples of the time were of the same standard, but the Parthenon surpassed them all beyond measure. '[I]n order to win you must do better than your rival *in every minute point*.' This process pushed to the limits is what effects progress, he states, and '[a] standard is necessary for order in human effort.'¹⁷⁵ In the subtitle of the introducing image of his chapter on 'automobiles,' where a photograph aesthetically displays a brand-new shiny front-wheel brake, Le Corbusier points to a connection of 'our re-born mechanical sense' to antiquity in terms of an underlying sense for precision. The outer conditions may have changed, but the appreciation for perfection he declares as a universal aspiration.

In a series of photographs in *La ville radiieuse* (1933), Le Corbusier demonstrates the evolution of the car out of the horse-drawn carriage, and even to the airplane, which stands at the highest level in the development of aerodynamic form. The first cars still follow the form of the carriage, but soon they give up on mimicking the character of the former means of transportation. Under the necessity of function, use, and external factors working on the material, such as speed and resistance, cars develop their own form better adapted to the new purpose. The message is that new forms of transportation require a total reorganization: 'When we leave one function behind in order to take up another; . . . we create a new harmony wherein all the relationships are new but wherein coherence and unity of principle brings ease and proper functioning – real efficiency.'¹⁷⁶ It is obvious that the car has not yet reached its level of perfection as the Parthenon has in Le Corbusier, which he presumes in the fact that despite all motor-cars having the same essential arrangement, there is still 'unceasing competition between the innumerable firms who make them, every maker has found himself obliged to get to the top of this competition and, over and above the standard of practical realization to prosecute the search for a perfection and a harmony beyond the mere practical side, . . . '¹⁷⁷

Le Corbusier's reasoning on the progressive development of form comes largely from his involvement with purism, and here with the advancement of the concept of the *objèt-type* together with the painter Amédée Ozenfant, in the 1920s. The *objèt-type* designates a mass product of everyday life including such objects as cups, glasses, wine bottles, the guitar, the pipe, etc., objects that appear in cubist

¹⁷⁴ Stanislaus von Moos 'Le Corbusier and Loos,' in Max Risselada (ed.), *Raumplan versus Plan Libre. Adolf Loos and Le Corbusier, 1919-1930*, (Delft : Delft University Press, 1988), p. 17. Von Moos comments on Le Corbusier's article 'Pédagogie' in *L'esprit Nouveau*, No. 19, 1923.

¹⁷⁵ Le Corbusier (1989), pp. 134-135.

¹⁷⁶ Le Corbusier, *La ville radiieuse*, (Paris: Édition Vincent, Fréal, & Cie, 1964 (1933), p. 33. The English translation is taken from Philip Steadman, *The Evolution of Designs. Biological Analogy in Architecture and the Applied Arts* (London/ New York/ Melbourne: Cambridge University Press, 1979), p. 120.

¹⁷⁷ Le Corbusier (1989), pp. 137-138.

and purist paintings. They were chosen for the anonymity of their designs, their universality and stability of form, their simple geometry, and their supposedly lack of any specific associations. The type-forms were seen as having evolved through a gradual process of technical evolution, where in the end a perfect standard is found:

Purism has brought to light the *Law of Mechanical Selection*. This establishes that objects tend toward a type that is determined by the evolution of forms between the ideal of maximum utility, and the satisfaction of the necessities of economic manufacture, which conform inevitably to the laws of nature. This double play of laws has resulted in the creation of a certain number of objects that may thus be called standardised.¹⁷⁸

Le Corbusier also finds the same principle of higher development in art. Refined universal geometrical forms such as the cube, the sphere, and the cone could evoke corresponding primary sensations that would be uncoloured by culture or individual background. These forms would establish the base for a universal plastic language beyond cultural and historical limitations. These thoughts resonate throughout the issues of the purists' journal *L'esprit nouveau*.¹⁷⁹

Similar ideas were widespread in architectural and design theory at the time. In Germany, Hermann Muthesius, in essays and speeches immediately before WWI, had proposed the possibility of developing in modern architecture a number of building types of standardized design, which would be produced through collective rather than individual effort, and which would meet the requirements of a new society. In a speech to the Deutsche Werkbund in 1914 he referred to the turbine engine, the telescope, the steamship, and the camera as *types* in the sense of final products of a process of technical evolution, pointing to the process as organic as such. What Muthesius envisioned was a development of artefacts according to their specified functions as having a proper corresponding form. This type-form would develop over a period of time, and reach its level of perfection as *type*. Then, the essential form was completely resolved, from which variations could spring. Walter Gropius takes up similar thoughts in the early 1920s in his writings on art education and industrial design in respect to the Bauhaus. The argument of evolution is here replaced with the argument of knowledge and a reduction to functional considerations in a design process, which will bring out general types, and create a standard without having to pass through a longer process. In design, individual expression had to be minimized in favour of a collective effort on the basis of shared knowledge. This was necessary in order

¹⁷⁸ Le Corbusier, *La Peinture Moderne* (1925), p. 167, quoted in Reyner Banham, *Theory and Design in the First Machine Age* (London: The Architectural Press, 1960), p. 211. See also Steadman (1979), p. 145.

¹⁷⁹ The journal *L'Esprit Nouveau* was published in Paris during the 1920s by Le Corbusier, Ozenfant, and Paul Dermée. Le Corbusier's books *Vers une architecture*, 1923 (*Towards a New Architecture*, 1927, translated by John Rodker); *Urbanisme*, 1924 (*The City of Tomorrow*, 1929, translated by John Rodker); and *L'art décorative d'aujourd'hui*, 1925 (*The Decorative Art of Today*, 1987, translated by James I. Dunnette) are based on Le Corbusier's articles that originally appeared in *L'Esprit Nouveau*.

to make design suitable for mass production, and to bring production in line with the demands of function.¹⁸⁰

In contrast to this, the purists see economical and mechanical evolution as a process similar to biological evolution, which likewise conforms to the 'laws of nature.' The form of a product is not something that can be applied externally; it derives from the task of the product, as the necessary result of an evolutionary process. Le Corbusier rejected an ideal grammar of form that could be applied to utilitarian objects, which he sees being taught in the 'form courses' at the Bauhaus.¹⁸¹

The architectural historian Reyner Banham and the design theoretician Philip Steadman have pointed to the contradictions within Le Corbusier's perspective on industrial evolution by means of the *objèt type*, which was more an object evolved from a handicraft tradition that Le Corbusier transfers to industrial production, but without taking into account the drastic changes that came with the structural shifts and new modes of production. Le Corbusier is not interested in new production methods; he lays out an ideology of an 'esprit nouveau,' which addresses the transformation of form under the condition of function, adaptation, and use alone. The object in question denies its identity as a designed artefact and appears as evolved through necessity by nature. A car, for example, is seen as a machine, which gradually becomes stereotyped because the unchanging play of outer forces and their effects such as stress and penetration compel such products in certain optimum shapes. Here emerges the figure of the engineers, who are not designers because their products are predetermined; they respond to laws of nature in order to bring out, by degrees, their definite form.

*Not in pursuit of an architectural idea, but simply guided by the results of calculation (derived from the principles which govern our universe) and the conception of A LIVING ORGANISM, the ENGINEERS of to-day make use of the primary elements and, by co-ordinating them in accordance with the rules, provoke in us architectural emotions and thus make the work of man ring in unison with universal order.*¹⁸²

To return to Le Corbusier's juxtaposition of the car and the Greek temple, the design theoretician Philip Steadman argues that they demonstrate two different achievements, one is a product that evolved from functional criteria of engineering logics to resolve a mechanical and economic problem; the other demonstrates a sculptural evolution towards an ideal standard of plastic beauty, judged according to mathematical and aesthetic criteria. Both are the results of the process of development towards a perfect type, where the parts have achieved coherence and the design demonstrates unity, where, in the case of the Parthenon, no further progress is possible. The products of machine evolution are presented as

¹⁸⁰ Steadman (1979), pp. 138-139.

¹⁸¹ Von Moos (1988), p. 18.

¹⁸² Le Corbusier, *Towards a New Architecture*, in *Essential Le Corbusier. L'Esprit Nouveau Articles* (Oxford: Architectural Press, 1998), p. 31.

possessing similar plastic qualities as the products of art that appeal to our intellectual and emotional faculties.¹⁸³

In this comparison of architecture and the car, Le Corbusier points to architecture's lagging behind engineering and industrial design, and suggests the development of type-forms for buildings as an urgent task for architects. He recognizes hereby the speed of change in modern society, and the problems this creates for an evolutionary process of design, where the 'tools in the past were always *in man's hands*;' while 'to-day they have been entirely and formidably refashioned and for the time being are out of our grasp.'¹⁸⁴ He sees architecture's salvation in the application of the methods of the engineers: experiment and calculation, able to produce new types successfully because their procedures in design were based on mathematical and scientific theory. Le Corbusier poses:

If the problem of dwelling or the flat were studied in the same way that a chassis is, a speedy transformation and improvement would be seen in our houses. If houses were constructed by industrial mass-production, like chassis, unexpected but sane and defensible forms would soon appear, and a new aesthetic would be formulated with astonishing precision.¹⁸⁵

Le Corbusier manages this problem himself by giving his designs an architectural *image* of industrial production. Von Moos refers here specifically to the Planeix House (1927), which Le Corbusier built together with Pierre Jeanneret, with its 'factory-style glazing,' 'matchstick-thin supports,' and 'ribbon windows.'¹⁸⁶ Le Corbusier's writings demonstrate a desire to extend the logic of mass-produced objects to the scale of architecture and the city, as well as the attempt to conceptually reconcile the contradiction of a qualitative evolution of standard-types with the development of the capitalist market, by declaring both as natural processes that through competition would come to form better products in the future. In this way we can also understand that the advertisements in *L'Esprit Nouveau* often act as illustrations for the standard-types Le Corbusier is seeking, as is the case with the *Voisin* cars, and *Innovation* and *Ronéo* furniture, which are presented on the same level as the Parthenon.¹⁸⁷

Both nature and the organic are operative concepts that can be filled with different meanings. In this chapter reflections on the development of architectural form in relation to the model of nature or natural processes are presented. The model may be both descriptive and programmatic, and appears in both classicism and modernism. We have seen a shift away from static models and back again to a mediation between evolutionary change and the striving for universal form, which gradually emptied out the concept of nature. With the architectural analogy to language studies and biology, architectural form is now viewed as part of a larger network of changing environmental and socio-economic conditions, and thus

¹⁸³ Steadman (1979), p. 147.

¹⁸⁴ Le Corbusier (1998), p. 271.

¹⁸⁵ *Ibid.*, p. 133.

¹⁸⁶ Von Moos (1988), p. 22.

¹⁸⁷ Von Moos discusses this topic in detail. *Ibid.*, p. 17.

subject to change itself. Arguments of function, adaptation and use demanded a revision of the figure of ideal form. As part of this development, in the twentieth-century the prototype does not appear as a memory any longer but turns into a future projection.

We can observe different foci in the European and the American design discourse. While the functionalist concept of the American architects Louis Henry Sullivan and later also Frank Lloyd Wright of the Chicago School develops in relation to political issues such as questions of democracy and the individual, Le Corbusier and Walter Gropius appear absorbed in a discussion of typing and the collective. With Le Corbusier, we witness a decisive change in what is considered nature. Nature becomes a technological model for serial production where even the Parthenon appears as a serial object emerged according to the laws of nature. This is the end of the first section, which is intended to lay the foundations for the following discussion of three organic tropes. The next section concerns the invention of the organic as a body of ideas informing modern city planning at the beginning of the twentieth-century, and the reorganization of the trope for a critical review of modern city planning during the post-war period. The last section turns to the application of this trope in Japan in the early 1960s.

II Organic tropes in Western city planning

Reflections on the notion of the organism and the organic have appeared in various discourses of philosophy, aesthetics, biology, architectural theory, and the history of technology since the end of the eighteenth century, as I have shown. In this part I will discuss the reception and recycling of these conceptions in sociology, economics - and closely connected - in planning and design, from the end of the nineteenth century. In an urban debate, the organic re-emerges as a trope or an imagination that attempts to capture the dynamic interplay between a physical and a social environment. It relates hereby to organizational questions, to political and social form, to processes, and to the image of the city. In these debates, the term organic demonstrates an enormous broadness, a lack of clear boundaries, and the constant change of its notion at different times, and in various contexts. Not living up to the level of a concept, the term nevertheless has emerged and re-emerged with a certain permanence and geographical expansion in various discourses. It does not offer a coherent exercise in political, aesthetic or social theory, quite the opposite; its looseness has rather opened up for a variety of conceptions that could identify with it for various reasons. One of them could be its 'elasticity,' which makes it possible to synthesize contrasting elements and even to incorporate contradictions.¹⁸⁸ Despite its inconsistencies, as an imaginative construct it allowed for a tentative understanding of social phenomena and urban experiences to be condensed into language, images and architecture. Beyond its descriptive qualities, the organic is programmatic and suggestive. In this quality it emerges as a critique *opposing* social, political, economic, and cultural conditions. The critique is at the same time also a proposal for how to overcome the problem it is pointing at. In a social and urban context, the recourse to the organic is usually regarded as a nostalgic gesture. In fact, there are not only backward-looking and anti-urban attitudes, but also many progressivist organic strands that see, in the modern city, the potentiality for the emergence of new forms of organicity that culturally integrate society with technology and industry.

The following chapter traces the shift from a *structural* understanding of the city to an understanding of the city as a technological environment in the figure of the organism in the beginning of the twentieth century. A rapid advancement of technology was identified as disrupting traditional social configurations for better or for worse. I argue that the issue of collective experience becomes first a factor of resistance, but later even a generator of change. In order to retain an image of wholeness that had gotten lost

¹⁸⁸ The introduction of cell theory in the biology, first of plants (around 1825) and later of animals (1840), had turned attention towards the problem of integrating elementary individualities and partial life forms into the totalizing individuality of an organism in its general life form - a problem of general physiology, which would claim the attention of professor Claude Bernard. In his *Leçons sur les phénomènes de la vie communs aux animaux et aux végétaux*, he retraces the possibility of integrating a complex whole of specialized components through a liquid interstitial milieu that he dubbed the 'internal environment'. Bernard was fond of using the term 'elasticity' to convey his idea of organic life. Canguilhem (2000), pp. 84-85.

in the course of larger reorganizations through the emergence of democracy and the liberal market, the focus shifts from modern socio-economical structures to the experience of technology as a way to find a new kind of common social and political form. In an urban discussion, structural-functional considerations fuse with experiential ones in Patrick Geddes' structural-political ideas of morphology, his theories of the constitution of a geographical self through spatial practice, and the human ecology of the Chicago School of Urban Sociology. The second and final chapter of this part follows the transformation of a conception of space in the post-war discussion, with the reorganization of the market and the related emergence of new issues concerning individuality and difference as decisive factors of mass culture and consumption. The trope of the organic returns in several urban conceptions that are seeking a new urban aesthetic responding to the appearance of new spatial conditions with the goal of recreating a sense of wholeness and common place. In relation to the flood of images through a new media landscape of film, television, and advertisements, the restoration of a social equilibrium is envisioned in the control of the image of the city.

3 Labour, cities and technology

The division of labour in Marx, Spencer, and Durkheim – The shift from Gemeinschaft to Gesellschaft in Tönnies and Ruskin – Geddes visualizes the organic city – 'Social metabolism' in the Chicago School of Urban Sociology – Mumford's biotechnics and Jünger's organic construction

In this chapter, various sociological perspectives in respect to the imagination of 'organic' units such as the community, the city, and the state will be discussed. The division of labour plays a crucial role in a structural understanding of the urban organic. Against Marx's collective approach, Herbert Spencer and Emile Durkheim view an organic society as a diversified entity constituted by individuals through the division of labour that also represents the most important instrument of progressive development in a modern society. Change is part of its structure. Simultaneously, we find organic conceptions that resist this structural and progressive attitude. Place, economy and community are thought as being related not structurally, but rather through experiential, psychological and moral factors, as in Ferdinand Tönnies' critique of the dissolution of the *Gemeinschaft*, and its reorganization into a manufactured *Gesellschaft*, and in John Ruskin's suggestion for a moral economy. Both attitudes merge in the conception of an organic city for managing change under the expansion of markets and related urbanization, as with the early twentieth century Scottish biologist and town planner Patrick Geddes, and the dynamic concept of 'social metabolism' developed by the Chicago School of Urban Sociology. They give witness to a transcription of the earlier sociological reflections into city planning, which has not existed in this form in urban theories before. In the following, urban debates shift focus from an occupation with modes of production during the middle of the nineteenth century to a focus on the experience of a technological environment enabled by the metropolis at the beginning of the twentieth century. Lewis Mumford and Ernst Jünger give witness to the experience of a 'transformed world.' Mumford in his envisioning of

possibilities for a reconciliation of technology and human nature in a higher organic synthesis, and Jünger in a nihilistic projection of an ‘organic construction,’ which foresees the complete incorporation of the individual under a technological world.

The division of labour in Marx, Spencer, and Durkheim

In *Das Kapital*, Marx writes about the ‘metabolism’ between the worker and the earth.¹⁸⁹ He employs hereby an organic trope where he poses the possibility of an *immediate* relationship between the worker and all means of production in the image of a metabolic cycle, in which the body of the worker is *naturally* connected to all productive forces.¹⁹⁰ The organic then represents a goal and appears dialectically opposed to the conditions that have emerged through the division of labour, which destroys the metabolism between the worker and the earth in separating the worker from the means of production. Marx shows a world that has fallen into pieces, where the fragments are now mediated through exchange and competition. In the larger picture, city and countryside have also fallen apart and oppose each other in a competitive relationship, which means for Marx not only the rise of capitalism, but also the birth of ideology through which the economy of the city comes to dominate the countryside.

Already in *Die deutsche Ideologie (The German Ideology)*¹⁹¹ Marx discussed the division of labour as originating in the traditional roles of the family, which for him already constituted an ideological separation. This separation in female housework and male physical work is not questioned but taken for granted. Thus, it appears as *natural*, which it basically is not; only its social constructedness has escaped consciousness. This first separation into different roles is the starting point of a long and complex diversification and specialization, resulting in the division of labour, which brings with it a falling apart of societies in different classes where one of them would come to dominate all others by bringing under control all means of production. Marx sees nothing existing in the world that has not yet been transformed by humanity and thus can still be called

¹⁸⁹ *Das Kapital* Vol. I was written in London, and published in 1867. The edition used here was edited by Otto Rühle; Karl Marx, *Das Kapital* (Offenbach am Main: Bollwerk-Verlag Karl Drott, 1949), pp. 118-119. I have applied the term work when I refer to free work where the labour time still belongs to the worker. I use the term labour, when labour time has become an exchange value, in the sense of paid labour time.

¹⁹⁰ In *Das Kapital*, Marx employs several organic metaphors. He defines the term use value as the connection of two elements, natural resources and work. In work, man proceeds like nature itself; s/he changes the form of the material. In this activity of transformation s/he is constantly supported by natural forces. Thus work is not the only source of the produced use value. Work is its father, and the earth its mother, as he claims (50). Work is thus a process in which man and nature have a part, and in which the worker mediates, regulates and controls his metabolism with nature (74). Through that the capitalist buys labour power, the capitalist incorporates the living ferment of work into the dead components of the product, which he owns. Living work becomes dead labour (75-77). It is not the worker who employs the means of production, but the means of production that employ and consume the worker. The worker becomes a machine (91). Marx (1949).

¹⁹¹ *Die deutsche Ideologie* was written 1845/46, but first published in full length in 1932. Karl Marx and Friedrich Engels, *Die deutsche Ideologie* (Berlin: Dietz Verlag, 1957).

‘natural.’ He argues that what is generally motivated as natural or biological, such as the difference between women and men, is a social construction. Thus in Marx we will not find the same longing for a nature-culture synthesis as we do in the societal conceptions of the anarchist geographers Peter Kropotkin and Elisée Reclus, or in Patrick Geddes’ thought on the city, which, as we will see, is quite the opposite. In Marx nature and culture are viewed as inherently different. What is nature for Reclus and Kropotkin can only represent one historical form among many socially constructed ‘natures’ for Marx. His organic trope represents a critique. The image of metabolism itself is applied in the sense of *organic unity*. The biochemical metaphor stands for functioning social relations in connection to their modes of production that work like a circuit uninterrupted or steered by other faculties. The division of labour appears in Marx only as an ideology.¹⁹²

Unlike Marx, for the Darwinist Herbert Spencer in England, and the sociologist Emile Durkheim in France, the organic offers a description of modern societal *structures* already in transformation, and a dynamic and progressive model for change at the same time. In contrast, they see in the division of labour an instrument to achieve a greater cohesion of individuals in society. As in an organism, where we can discern different organs with different functions, the division of labour would transform a homogenous and thus static community based on collective practices into a modern diversified society with truly co-operative structures that embraces change.

Spencer’s book *The Principles of Sociology* (1876-96) appears as the fourth part of his life work, *Synthetic Philosophy*, which he started at approximately the same time as Marx started *Kapital*.¹⁹³ Spencer’s ultimate goal is not so distant from Marx. What he sees in an ‘organic society’ is primarily a society free of constraints from tradition and state power. Spencer bases his entire theory on biological principles, and the organic emerges here not as a metaphor but as a literal analogy. His focus is, unlike in Marx, not on organic unity, but on the subject of *individual differentiation*. Spencer attempts to show that there was an evolution of human societies evolving by means of an increasing division of labour from undifferentiated hordes into complex civilizations. In Spencer, the division of labour and differentiated functions and activities are a characteristic of organic evolution.¹⁹⁴ The social organism relies not simply on different activities,

¹⁹² Marx was an enthusiastic reader of scientific magazines and papers. The term ‘metabolism’ is most likely derived from the chemist Justus von Liebig. In 1842 Liebig published *Die organische Chemie in ihrer Anwendung auf Physiologie und Pathologie* (*Animal Chemistry or Organic Chemistry in Its Applications to Physiology and Pathology*). In this work, Liebig attempts to unravel the metabolic routes by which foodstuffs were transformed into flesh and blood and whereby tissues were degraded into animal heat, muscular work, and secretions and excretions. Although many details were shown to be wrong later, Liebig inspired research on metabolism under a chemical point of view.

"Liebig, Justus, Freiherr von." *Encyclopædia Britannica* from Encyclopædia Britannica Premium Service. <<http://www.britannica.com/eb/article-4203>> [Accessed April 10, 2006].

¹⁹³ *Synthetic Philosophy* encompassed *First Principles*, 1862; *Principles of Biology*, 1864-67; *Principles of Psychology*, 1870-72; *Principles of Sociology*, 1876-96; and *Principles of Ethics*, 1879-93. Spencer also wrote *The Study of Sociology*, in 1873.

¹⁹⁴ Spencer published his idea of evolution before Charles Darwin and Alfred Russel Wallace. Spencer at the time thought that evolution was caused by the inheritance of acquired characteristics, whereas Darwin and Wallace attributed it to natural selection.

but much more. The differences are so related as to make one another possible: the reciprocal aid causes mutual dependence of the parts, and the mutually dependent parts, living by and for another, form an 'aggregate' of parts that is constituted on the same general principle as cells in an individual organism. In this process societies do not only behave *like* organisms; they *are* organisms, Spencer argues, because they show the same characteristics as individual organisms.

The division of labour, first dwelt on by political economists as a social phenomenon, and thereupon recognized by biologists as a phenomenon of living bodies, which they called the 'physiological division of labour,' is that which in the society, as in the animal, makes a living whole. . . . [I]n respect of this fundamental trait, a social organism and an individual organism are entirely alike.¹⁹⁵

Spencer advances four arguments to underpin this statement. First, societies and organisms are both alive. Second, growth is a characteristic to social aggregates as well as to individual organic aggregates. Third, Spencer believed that it is a character of social bodies, as of living bodies, that when they increase in size, they also increase in structure. A simple animal has few distinguishable parts, but along with its acquirement of greater mass, its parts multiply and simultaneously differentiate. It is thus like a society. Fourth, progressive differentiation of structures is accompanied by progressive differentiation of functions.

In 1893, the French sociologist Emile Durkheim submitted his doctoral thesis *De la division de travail social* (*The Division of Labour in Society*) that takes the same point of departure. The work responds directly to many of Spencer's arguments, but is at the same time also inherently critical of them. In Durkheim as well, the division of labour is seen as a generator of society's increasing differentiation, level of complexity and flexibility. He distinguishes between two kinds of positive societal *solidarities*: *mechanical* and *organic*: 'The first binds the individual directly to society without any intermediary. In the second, he depends upon society, because he depends upon the parts of which it is composed.'¹⁹⁶ In the first, society is a more or less organized totality of common beliefs and sentiments, a *collective* type. In the second instance, it is a system of different, special functions united by definite relations of exchanges and contracts, a *co-operative*.

Unlike Spencer, Durkheim applies the terms *mechanical* and *organic* as metaphors. In a homogenous society, he points out, the 'social molecules' act together in a collective way and have no actions of their own like the molecules of

Spencer accepted this view later and even coined the term 'survival of the fittest.' Herbert Spencer, *Principles of Biology*, vol. 1, third edition – revised and enlarged (London/Edinburgh: Williams and Norgate, 1885), p. 444.

¹⁹⁵ Ibid. See the chapters II-V: 'A society is an organism,' 'Social growth,' 'Social structures,' 'Social functions,' §214-237 (London/Edinburgh: Williams and Norgate, 1885) p. 435-478.

¹⁹⁶ Emile Durkheim, *The Division of Labour in Society* (New York: The Free Press, 1964), translated by George Simpson, p. 129. Durkheim reverses the meaning of organic and mechanical as Marx applied it. For Durkheim, a communist society would be based on mechanical solidarity as this societal form absorbed the individual in the group.

inorganic bodies. Durkheim therefore suggests calling them *mechanical*. He emphasizes the analogical application of the term that in no way indicates that this type of solidarity is actually mechanically or artificially produced. In the case of the solidarity which the division of labour produces he states: 'This solidarity resembles that which we observe among the higher animals. Each organ, in effect, has its special physiognomy, its autonomy. And, moreover, the unity of the organism is as great as the individuation of the parts is more marked.'¹⁹⁷ That is why Durkheim suggests calling this solidarity, which occurs through the division of labour, *organic*. He believed that the cohesion that resulted from this solidarity became stronger the more diversified society was, as each subject depended more strictly on society the more labour was divided. Although using the same analogy as Spencer, Durkheim insisted that social facts must be studied in distinction from biological and psychological phenomena as the social capacity of human beings would go far beyond biological dispositions. He sees humanity as independent from influences of its physical environment, just like Marx. Above all he views humanity as dependent upon social causes, but stresses also the possibility of moral choices. With the formulation of human indeterminacy of environmental factors, Durkheim's societal conception differs from many others of his time that were deeply influenced by Darwinist evolutionary thought, like Herbert Spencer.

Durkheim's main critique of Spencer's utilitarian conception of an organic society concerns the complete absence of a moral dimension. Spencer believed that the organic society, which was a highly developed industrial society in his eyes, would become more and more self-organized through competition and the pressure of liberal market forces - a process that in the end would make state control redundant. Durkheim, on the contrary, argues that an organic society, which, by its character, was based on contracts, would become more and more dependent on the regulation of the state. In this respect, he sees Spencer's societal vision as a return to the past or to a mechanical solidarity. 'The ideal State of Spencer is really the primitive form of the State.'¹⁹⁸ Overall Durkheim's view on the benefit of the division of labour was not at all as enthusiastic as Spencer's. Spencer believed in societal evolution as a progression towards ultimate perfection. Durkheim, on the contrary, also recognizes the backside of the increasing division of labour, which renders the workers more alien to one another and yet more dependent upon one another, as with specialization no individual labourer would build a product on her or his own any longer. He recognizes that although the diversity of norms and values have the potential to liberate the individual from tradition and the hierarchies of family, church, and community, the diversity also creates social problems, or *anomies*¹⁹⁹ in Durkheim's vocabulary. Against Spencer's society driven only by individual interests, Durkheim concludes that even modern socio-cultural systems with a high degree of a division of labour still need a common faith or a common collective conscience in order to integrate individuals into society. Despite the problems,

¹⁹⁷ Ibid., p. 131.

¹⁹⁸ Ibid., p. 221.

¹⁹⁹ From Greek *anomie*: 'lawless.' For Durkheim, anomies express for example in a weakened sense of identification within the wider community, in social disconnectedness, a sense of rootlessness, egocentric behaviour, norm violation, and distrust of authority.

Durkheim stresses the positive consequences of the division of labour, which he sees in the consolidation of ‘the network of links which little by little have been woven and which makes something permanent of organic solidarity.’²⁰⁰ In contrast to Spencer’s liberalism, Durkheim endeavours to formulate a positive social science, which recognizes that even organic structures present constraints, and also have deficits to which the individual must respond from a position of morality. It thus is not a total theory as in Spencer, but only a partial instrument towards a more modern society.

The shift from Gemeinschaft to Gesellschaft in Tönnies and Ruskin

The scientific image drawn by Spencer with help of evolutionary theory and Durkheim’s progressive imagination of societies based on organic relationships as highly developed industrial, complex and differentiated, sharply contrasts with Ferdinand Tönnies’ work *Gemeinschaft and Gesellschaft*. In this text, Tönnies had applied the notion of the organic in the opposite sense, pointing to a community that was not yet disrupted by modernity. The book was published only five years before Durkheim’s thesis, in 1887, and although Durkheim does not mention it, we know that he was aware of it, as he had written a review about it. Thus, the reversed use of the terms organic-mechanical in Durkheim can be seen as a critique against Tönnies’ nostalgic longing for a homogenous rural society. Like Durkheim, Tönnies used the biological analogy as a metaphor, but he drew on biological expositions of the organism in order to criticize scientific practices for having to:

treat living things as dead objects in order to grasp their interconnections. . . . [while] the exorable process of organic growth and decay cannot be understood by mechanical means. In this area concepts themselves are part of reality – living, changing and developing, like the inner core of an individual being. If science comes in to play here it changes its nature, drops its analytical, rational stance for an intuitive and dialectical one – and turns into philosophy. . . . we are therefore looking at human relationships and connections either as living entities, or conversely, as artificially constructed ones.²⁰¹

‘Living entities’ related to *Gemeinschaft* as an expression of ‘organic life’, in opposition to *Gesellschaft*, which was the product of ‘mechanical’, abstract, ‘ideal’ life.²⁰² In Tönnies, *Gemeinschaft* was real - it was lived and practiced, while *Gesellschaft* was rather based upon an intellectual construct.

²⁰⁰ Durkheim (1964), p. 366.

²⁰¹ Ferdinand Tönnies, *Community and Civil Society* (Cambridge: Cambridge University Press, 2001), edited by Jose Harris, translated by Margaret Hollis and Jose Harris, p. 21. Originally published as *Gemeinschaft und Gesellschaft: Abhandlung des Communismus und des Socialismus als Empirischer Culturformen*, Leipzig, 1887.

²⁰² See also Francesco Dal Co, *Figures of Architecture and Thought. German Architecture Culture 1880-1920*, (New York: Rizzoli, 1990), p. 24.

The relationship itself, and the social bond that stems from it, may be either conceived as having real organic life, and that is the essence of Community [*Gemeinschaft*]; or else as a purely mechanical construction, existing in the mind, and that is what we think of as society [*Gesellschaft*].²⁰³

Although Tönnies' reading of the problem of modernity is certainly nostalgic, he introduces a completely new perspective. In his dichotomy of *Gemeinschaft* and *Gesellschaft*, he emphasises not structural difference, but instead the way in which these two notions are *experienced* extending from the *common experience* of the disappearance of rural life, agriculture and strong family relations, and the emergence of modern urban life, industry and the individual.²⁰⁴ With this, he has also formulated a concept for community. *Gemeinschaft* is old and *Gesellschaft* is new. The latter is a construct of the bourgeoisie and develops a specific urban culture.²⁰⁵ Tönnies' double figure relates to a culture-civilization divide, where culture is presented as genuine, real, and true, while civilization occurs as something artificial, alien, and fake - a problematic we do not find in the structural conceptions of Spencer or Durkheim.²⁰⁶

In Tönnies a *Gemeinschaft* is characterized by its *collective* handicraft-based organization. This organization is reflected in the collective modes of production, and in the form of the products, collective property, social relations, and the customs and legal orders. It establishes a unifying foundation that is not based on the formalization of divisions. The continuity of *Gemeinschafts* life is carried by intact family relations, where '[t]he village community and the town themselves can be considered as large families, the various clans and houses representing the elementary organisms of its body; guilds, corporations and offices, the tissues and organs of the town.'²⁰⁷ Tönnies' work *Gemeinschaft and Gesellschaft* is best understood in consideration of his own background. Tönnies grew up on the peninsula Eiderstedt in the North Sea. Eiderstedt was a self-governed community since the medieval period that even managed to keep its

²⁰³ Tönnies (2001), p. 17.

²⁰⁴ Johan Asplund, *Essä om Gemeinschaft och Gesellschaft* (Göteborg: Bokförlaget Korpen, 1991), p. 149.

²⁰⁵ *Ibid.*, p. 16. See also p. 12.

²⁰⁶ The culture-civilization divide formed a central issue in Germany. It targeted exactly the problem Tönnies was pointing at with his separation of *Gemeinschaft* and *Gesellschaft*, one referring to the culture that has established at a certain place in respect to agriculture and handicraft production, and intact family relationship; the other one to the modern status of citizenship, capitalist modes of production, and the individual. While the first one is represented as something that developed naturally from within, the latter is viewed as a more or less violent imposition from without. In extension, *Gesellschaft* or civilization was mostly also identified with cities and urban growth seen as a threat to the continuance of culture, if not as a symptom of its decline, a motive, which we will find again in Friedrich Nietzsche, Oswald Spengler, as well as in Martin Heidegger's writings.

²⁰⁷ Tönnies (2001), p. 227; translated by Dal Co (1990), pp. 68-69. Translation by Margaret Hollis and Jose Harris: 'By these means the community relates to individuals or to individual groups in the same way as an organism relates to its tissues and organs. This gives rise to the concepts of "offices" and "estates", which, by being permanent and even hereditary in families, increase and confirm both their dependence upon the whole and their special privileges.'

autonomy when it officially fell under the Prussian State in 1864. The background for this was the constant threat of floods that created a self-organized system for maintaining the dikes, which involved the entire community. In this, every clan took responsibility for a part of the embankment. The houses can be seen as extensions of the dike system as a typical house had a tall thatched roof containing a boat, which could be entered in case of emergency. The *Gemeinschaft* of Eiderstedt was founded on this common care for maintaining the dike system outside of any authoritative structures. This close relationship between place and community resonates in Tönnies' description of a *Gemeinschaft*, which produces and incorporates the houses as organs within an organism that processes the social life of the community.²⁰⁸

The main parameter in Tönnies concerning organic relationships is the experience of family life in connection to a place and its local economy. A *Gesellschaft*, on the other hand, is characterized by separation. Its individuals are separate identities; their common locale is only an accidental or deliberately chosen place in which to live.²⁰⁹ A *Gemeinschaft* is familiar, comfortable, and exclusive. A *Gesellschaft* means life in the public sphere. 'In *Gemeinschaft* we are united from the moment of our birth with our own folk for better or for worse. We go out into *Gesellschaft* as if into a foreign land. . . .'²¹⁰ Tönnies' statement that *Gesellschaft* is not based on a reality is mirrored in the Marxist opposition between use value and exchange value that Tönnies applies as well. In a *Gesellschaft*, all 'real' use values are transformed into abstract exchange values. In a *Gemeinschaft* work is creative and produces real values for its own sake. In a *Gesellschaft* labour produces commodities, which leads to profit; but it does not lead to fulfilment. A *Gemeinschaft* produces quality, and *Gesellschaft* quantity. *Gesellschaft* is an instrument, while *Gemeinschaft* is an end in itself.²¹¹

With his focus on experience, Tönnies has contributed an important aspect to a discussion of modernity, a perspective that recurs in some points in the English aesthetician and theoretician John Ruskin's conception of a moral economy. In 1912 Ruskin's collection of essays '*Unto this last*': *Four essays on the first principles of political economy* appeared in book form posthumously. The essays had already been published, fifty years earlier, as a series of articles in *Cornhill Magazine* in 1862. In these texts Ruskin postulates labour, the mode of production, and consumption as the basic conditions for the development of society. Although he is positive towards progressive development, he shifts focus from a materialistic perspective to a discussion of moral values in a money economy. He thus questions a conventional understanding of progress, and poses the conditions under which change takes place as the most crucial consideration. Under these premises, he treats the notion of wealth not as a capitalistic category but as a qualitative question. In Ruskin, the acquisition of wealth is only possible under certain moral conditions of society. He gives out a list of astonishingly radical suggestions how 'wealth' could be reached. The main requirement for a

²⁰⁸ See Olwig (2002) pp. 15-16 for a discussion on the relation between landscape and politics in Eiderstedt.

²⁰⁹ Dal Co (1990), p. 26.

²¹⁰ Ibid., p. 28.

²¹¹ Asplund (1991), pp. 76-77.

moral economy he sees in the reorganization of labour with fixed equal wages, and full-employment regardless of the market situation. By this he argues, and with fixed prices, there would no longer be competition for cheaper labour, but only competition for a better quality of the product itself.²¹² In Ruskin, the locus of wealth is not to be found in the amount of money earned, but in the mode of how this wealth is gathered and distributed. Real wealth can only develop in cooperation, which makes several parties rich, and real value depends on the moral attached to it as it is the outcome of an action.²¹³ Ruskin points to the power of the consumer in claiming that in a production process not only commodities are produced but also the buyers, and that it depends on their moral attitude if they buy ‘disease, ruin, and hatred, or health, and advancement.’²¹⁴ Against the ‘money economy’ of the factory, Ruskin presents an economy that is based on affection as a motive power, on the level of production and consumption. A model for a mode of production that can incorporate all of his claims is still handicraft production, as it is based on skills requiring ‘experience, intellect and passion.’²¹⁵ Labour is not only a necessity in this case, but also a luxury, he argues, which keeps body and mind healthy in contrast to factory labour that would drain the workers of their health.

Ruskin fails to solve the contradictions between his projective view on the reorganization of the market and his nostalgic attitude towards the production process itself. Even his conception of cooperation remains, in principle, a family business: as the ‘only true or practical RULE’ of political economy, he postulates: the master should treat his workmen as he would treat his son.²¹⁶ There is no real emancipatory power in Ruskin’s proposal of more affective relationships; he cannot provide an idea of how to manage the organic transition from a *Gemeinschaft* to a more humane form of society that he demands. Despite this, Ruskin’s perspective of emotional bonds in the process of production goes beyond the greater cohesion that Durkheim was seeking in an organic society through cooperation, in that he regards societal relationships not as structural, but as based on moral attitudes and thus as a subject to change through conscious *choice*. Tönnies’ emphasis on the undivided experience of a place can be viewed as nostalgic, but it represents a form of resistance as well. Like Durkheim, Tönnies also distinguishes between a community based on *status* and a society based on *contract*. But opposite to Durkheim who sees strong links developing in a democratic society through interdependency, Tönnies sees no actions or will to unity in a *Gesellschaft* at all where he regards men as basically estranged from each other.²¹⁷ Although Tönnies’ collectivism is closer to Marx’s notion of organic unity, Marx is certainly not longing back for a *Gemeinschaft* based on family bonding. Marxism rather envisages the replacement of traditional family structures with the collectivism of the working class and through this the abolition of all

²¹² John Ruskin, ‘Qui Judicatis Terram,’ *‘Unto this last’: Four essays on the first principles of political economy* (London, 1912; originally published in *Cornhill Magazine*, 1862), p. 60.

²¹³ John Ruskin, ‘The Veins of Wealth,’ *ibid.*, p. 40.

²¹⁴ John Ruskin, ‘Ad Valorem,’ *ibid.*, p. 68.

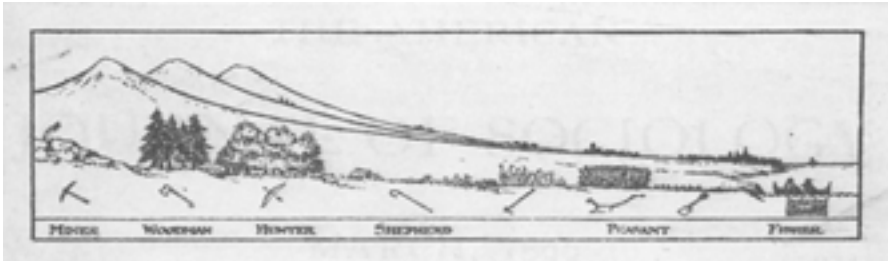
²¹⁵ John Ruskin, ‘Qui Judicatis Terram,’ *ibid.*, p. 54.

²¹⁶ John Ruskin, ‘The Roots of Honour,’ *ibid.*, p. 25.

²¹⁷ Johan Asplund (1991), p. 100.

class differences and oppositions including the oppositions between *Gemeinschaft* and *Gesellschaft*, city and countryside.

An opening in this discussion emerges through the *synthesis* of these contrasting attitudes in the imagination of an organic city as an agent of change, with the biologist and city planner Patrick Geddes. The unity of city and region - a direct democracy based on city planning that produced responsible citizens, an economy based on cooperation, and the vision of an evolution of city culture - presents not only a societal conception, but above all a program. The autonomous region-city forms a 'natural' counterpart to the nation state with its artificially imposed borders. Geddes bases its development on the idea of the constitution of a 'geographical self' of its citizens through the media of walks and visual 'techniques' in the form of surveys, town planning exhibitions, and a regional-city museum. Geddes' idealistic view of an organic city differs tremendously from a rather scientifically orientated organic city conception developed by the Chicago School of Urban Sociology in the 1920s. Nevertheless, the CSUS also bases its studies on the belief in a natural inherent *structure* of the city, paired with an interest in the *experience* of the metropolis, as inspired by the urban sociology of Georg Simmel. Both Geddes and the CSUS developed new forms of 'mappings' that would have a decisive influence on the work of post-war architects, which I will discuss in the next chapter, and in part III.



3.2 Valley section after Patrick Geddes (1909)

Geddes visualizes the organic city

The 'organic' enters urban discourse at the turn of the twentieth century in form of a social critique and inspires urban and architectural work, for example in urban renewal projects such as Patrick Geddes' neighbourhood activities in the Old Town of Edinburgh (1884), and his project Ramsay Gardens in the same area (1892-94), which comprised a student hall of residence, artists' studios and a number of flats. The social reformer Octavia Hill conducted similar projects in London, financially supported by John Ruskin, and she was also a driving force in the development of social housing in Britain. The Garden City Movements in England, Austria, and in Germany at the beginning of the twentieth century can be seen in the light of reforms as well.

In the work of Patrick Geddes we find a position in city planning outside of the mainstream, certainly through his affiliation with anarchism, and at the same time Geddes is a figure that actively participated in organizing 'town planning' as a subject at university. Geddes was strongly opposed to bringing planning on an institutional level; he promoted the field as a participatory activity

that concerned all citizens, a battle he lost, when ‘town planning’ was institutionalized in Britain, with the Housing and Town Planning Act in 1909.²¹⁸ Though educated as a biologist in London, he became engaged early in city planning issues, and his best-known work is a book with the denotive title, *Cities in Evolution*, first published in 1915 when Geddes was already over sixty. It is Geddes’ only book on city planning beside numerous articles and it comprises his most important ideas on the subject. The work takes up the issue of a social and cultural evolution through the instrument of city development in respect to its region. It utilizes and combines biological and socio-geographic models with philosophical and pedagogical reflections and anarchist thought. Geddes is often called a generalist, and despite his belief in positive sciences, he advocated popular adult education with the attitude that to go out and ‘to see with one’s own eyes’ was more rewarding than the learning of facts in a classroom. Geddes believed in the unity of the sciences and the arts, and envisioned town planning, or better urban design, as the central subject of a future world university, because he hoped it could bring together scientific planning with cultural aspirations in a process that was participatory and in which each individual would personally develop.²¹⁹

Geddes’ idea of cities in evolution was a moral one, at the same time he underpinned his urban theories with biological functional and structural models such as evolution and morphology. In this way the issue of a division of work re-emerges in the form of ‘natural occupations’ that had developed in relationship to their environments in respect to climate, morphology, soil, flora and fauna etc., and which formed certain ‘social types’ that would reappear in the city transformed. Not unlike Goethe’s primordial type and Quatremère’s types, in

²¹⁸ The Housing and Town Planning Act made town planning a compulsory task to be mantled by municipal authorities on the basis of general norms that were to be introduced through legislation.

²¹⁹ Valuable insights in Patrick Geddes’ work and personality were provided by Volker M. Welter, *Biopolis. Patrick Geddes and the City of Life*, (Cambridge, Mass./ London: MIT Press, 2002), and Helen Meller, *Patrick Geddes, Social Evolutionist and City Planner* (London/ New York: Routledge, 1990). See also Philip Boardman’s biographies, *Patrick Geddes, Maker of the Future* (Durham: University of North Carolina Press: 1944), and *The Worlds of Patrick Geddes: Biologist, Town Planner, Re-educator, Peace-Warrior* (London: Routledge & Kegan, 1978), as well as Lewis Mumford, *The Condition of Man* (London: Secker & Warburg, 1944, pp. 382-290), and Frank G. Novack, Jr. (ed.), *Lewis Mumford & Patrick Geddes, The Correspondence* (London/ New York: Routledge, 1995). M. Christine Boyer discusses Geddes’ visual techniques in detail, in her *The City of Collective Memory. Its Imagery and Architectural Entertainment* (Cambridge, Mass./ London: MIT Press, 1994), pp. 212-223. For a comparable study on Geddes’ ideas on city planning, see Lilian Andersson, *Mellan byråkrati och laissez-faire, en studie av Camillo Sittes och Patrick Geddes stadsplaneringsstrategier* (doctoral thesis, Acta Universitatis Gothenburgensis, Göteborg, 1989). Essays by various scholars in Volker Welter and James Lawson’s (eds.) *The City after Patrick Geddes* (Bern: Peter Lang, 2000) proved important entries to Geddes’ approach to the city. See also David Matless’s essay ‘The Uses of Cartographic Literacy: Mapping, Survey and Citizenship in Twentieth-Century Britain,’ in *Mappings*, edited by Denis Cosgrove (London: Reaktion Books, 1999), pp. 193-212, Alessandra Ponte, ‘The Thinking Machines from the Outlook Tower to the City of the World, *Lotus International*, no. 35 (1982), pp. 46-51, and by the same author, ‘Building the Stair Spiral of Evolution: The Index Museum of Sir Patrick Geddes,’ *Assemblage* 10 (1990), pp. 46-69.

Geddes we find the idea of local types, which relate to universal types. Just like each plant represented not only an individual but a species and its evolution as well, this classification worked also for ‘natural occupations’ and for cities. In this, Geddes establishes a relation between all cities and all people. This relation is a structural one, and can best be explained through morphology. Referring to Goethe, Geddes sees morphology as the science of form, dealing not only with the shaping of the organism in its outer appearance, but also in its inner structure.²²⁰ Beside the structural aspect, moral evolution forms the basic figure of thought in Geddes’ urban imagination. Following Lamarck (and not Darwin) who had posed the thought of ‘acquired inheritance’, Geddes recognizes evolution as the concept for a progressive cultural development of cities through the common effort of their citizens.²²¹ With this, Geddes’ intellectual construction of the city oscillates between structural determinations, and the conviction that every individual was in principle free and morally responsible for her choices.

In an evolutionary development he assumes that cities could bring out their full potential, but evolution could also explain their decline. The key was the participation of all its citizens in the social evolution of the city, for which town planning was the instrument.²²² Town planning was thus not a matter for institutions, nor for experts exclusively, but a concern of the entire city. In this light, planning became an activity that would unite all citizens under a common goal making parliamentarianism, which Geddes despised, redundant.

Evolution provides a suitable background for Geddes’ promotion of ‘cooperation’ as the best strategy for a higher development instead of ‘competition’, as this has been put forward by his former teacher at the Royal School of Mines in London, the Darwinist Thomas Henry Huxley in his epoch-making 1888 article *The Struggle for Existence: A Programme*. Geddes takes this thought from a friend and lecturer in his summer school program in Edinburgh,

²²⁰ In his entry on morphology for the ninth edition of *Encyclopaedia Britannica*, Geddes credited Goethe for having recognized ‘the fundamental idea of all morphology – the unity which underlies the multifarious varieties of organic form.’ Geddes, quoted in Welter (2002), p. 95.

²²¹ Lamarckism was rediscovered in the middle of the nineteenth-century, where his evolutionary theory became a popular alternative to Darwinian selection, especially among a socially concerned elite, which turned against the liberal social Darwinists with their beliefs of the virtues of struggle and a commitment to unrestricted capitalism. Ruse (1988), p. 73.

²²² Geddes’ conception of a social evolution, which expressed in urban cultural progression, is contained in his terms: town, school, cloister, and city. For Geddes every ‘town’ was a world of action, which had its subjective world of thinking, a collective memory, and particular potentials, which Geddes called its ‘schools.’ The schools formed the cultural life of the town, which would have an impact on its people that further developed the town, of which new schools emerged as a reflection of it, and so forth. If this constellation was reinforced but not developed, a town would sink into routine and decay. For further development it was necessary to continually and critically select among ideas derived from experience and to reformulate those as ideals. The organization of these into a larger whole of thought, a synthesis of a new kind, and the development of a new way of thinking Geddes called ‘cloister’. Here new ideals, theories and visions (ethics and polity), ideas (culture), and imagery (art) emerged that transferred into action developed the town into a proper ‘city’. See Welter (2002), pp. 33-39.

the Russian-born anarchist and geographer Peter Kropotkin. As a response to Huxley, and to Darwin's later work *The Descent of Man* of 1871, Kropotkin had published a series of articles after 1890, which were later collected in book form under the title *Mutual Aid* (1902). Here, he attempted to prove that cooperation was a natural impulse: 'Beside *the law of Mutual Struggle* there is in Nature *the law of Mutual Aid*, which for the success of the struggle of life, and especially for the progressive evolution of species, is far more important than the law of mutual contest,'²²³ and, 'those animals which acquire habits of mutual aid are undoubtedly the fittest. They have more chances to survive, and they attain, in their respective classes, the highest development of intelligence and bodily organization.'²²⁴ He related his mutual aid thesis not only to animals, but traced evidence for it also in human societies and their institutions. Mutual-aid institutions were to be discovered, for example, in the tribe, the village community, the guild, and in the 'free medieval republic'.²²⁵ It is Geddes who takes this thought further in his conception of *civics*, as the science of society's laws of development with its object, the city. It is understood that this branch, as a sort of new urban sociology, is not merely aiming at registering and analysing change, but that it is also concerned with developing tools for directing a positive evolution. In this, the social, cultural and physical environment become closely connected.

In 1903 Geddes co-founded the Sociological Society in London. At the same time, *eugenics* had become an important branch of sociology in Britain, and its promoter Francis Galton formed the Eugenic Society in 1904. Galton, a cousin of Charles Darwin, had coined the term 'eugenic' in 1886, which literally means: well-born. It describes techniques of improving human kind through selective breeding. Eugenic ideas go far back, but received systematic elucidation only after Darwin's *Origin of Species*, which located humanity in the context of the natural processes of evolution.²²⁶ Eugenic propaganda spawned popular movements and centres for eugenic studies all over Europe, Russia and the USA at this time, and can be seen as a response to social problems, as they were most visible in the cities.²²⁷ Eugenics offered a new, supposedly scientific approach for dealing with these problems through birth control, sterilization, the control of marriages, and the education of women towards a more responsible selection of their husband, as Herbert Spencer had already proposed. However, eugenics shifted the problem from the environment to organic characteristics located in the individual, and thus erased it from a sociological approach and brought it to the level of rather technical solutions. Geddes' sociology and Galton's eugenics were opposing each other as Geddes with his moral perspective in respect to progress extended from

²²³ Peter Kropotkin, *Mutual Aid* (Boston: Extending Horizon Books, 1955), p. x.

²²⁴ *Ibid.*, p. 6.

²²⁵ *Ibid.*, p. xv.

²²⁶ Galton defined the term eugenics as 'the science of improving stock, which is by no means confined to questions of judicious mating, but which, especially in the case of man, takes cognizance of all influences that tend in however remote a degree to give to the more suitable races or strains of blood a better chance of prevailing speedily over the less suitable than they otherwise would have had.' Francis Galton, *Inquiries into Human Faculty* (London: Macmillan, 1883), pp. 24-25, quoted in Welter (2002), p. 188.

²²⁷ *The Fontana Dictionary of Modern Thought*, edited by A. Bullock, O. Stallybrass, S. Trombley (London: Fontana Press, 1988), pp. 288-289.

environment and group interaction while Galton proposed the study of genetics. The most radical conclusion, as the architectural historian Volker M. Welter has pointed out, from the eugenics' line of argument would mean that the characteristics of the inhabitants have to be looked at rather than the mere physical improvement of the urban fabric. The city would not be a result of its socio-economic order but an expression of the biological character of its inhabitants.²²⁸ Nevertheless, the close connection to city planning of both strands of evolutionary theories out of which they had developed becomes obvious with the fact that within a few years, the subjects of sociology (1903), eugenics as a separate subject (1905), and town planning (1909) became inaugurated as new academic disciplines in Britain.²²⁹ In the following decades, they would form the three bases on which modernization with an utopian touch was built in many countries, focusing on both the planning of the physical body of cities and of societies alike.

Geddes, however, had a different concept of planning than an authoritarian one in mind, and he understood that the key to a grassroots democratic planning was an issue of the mediation of knowledge, and of the collection of experience. Visualization as in forms of surveys, the performance of 'masks' at his Edinburgh summer schools, and various forms of exhibitions and museum concepts became the key in Geddes' conception of urban design. It played a crucial role as a form of knowledge production that was no longer exclusive. Knowledge that could be displayed visually in the forms of maps, photographs, books, postcards, lantern slides and regional relief models was more direct and easier accessible than abstracted scientific models, as it relied on a sensual mediation rather than an intellectual one. At the time, cartography was already becoming subject to mechanical reproduction, and maps had become a mass media attainable by anyone, which spawned popular movements for walking and hiking. What Geddes emphasizes is the possibility of a process of subjectification, the development of a geographical self as the base for a new form of citizenship. Hence it was the task of a town planner to create instruments and devices for enabling the citizens to 'see' their city in order to comprehend their urban history as a base for projecting the city's future development. For that Geddes envisions a type of region-city museum, and the device of the so-called Valley Section.

Since 1892, Geddes was running a peculiar kind of region-city museum at the upper end of Edinburgh's Royal Mile, the Outlook Tower, which offered various choreographed 'views' of the city, connected to different scales and contexts. First the visitor was led up to the top and looked at the city from a terrace above. S/he would then visit the camera obscura on the roof, in which images of the movements in the adjacent streets were caught by a magnifying lens, and projected onto a tabletop that could be rotated. After this theatrical introduction, the visitor would proceed downwards, circulating through three more floors that were organized according to the themes Edinburgh, Scotland, Language, Europe,

²²⁸ Welter, (2002), p. 189.

²²⁹ The first town-planning chair was installed in Liverpool in 1909. Although reluctant towards conventional university studies, Geddes had supported the installation of town planning chairs in English universities at the beginning of the twentieth-century, together with the Garden City promoters Ebenezer Howard and Raymond Unwin.

and the World. At the end of the tour was a cell containing only a chair that would give each visitor the possibility to reflect on his or her recent experiences in solitude. Via this parcours - organized like a ritual of moving up and down, looking at the actual city, and at different forms of its representation in various scales and relationships, presented as local and universal types, and a final meditation - people could get to know their place, in all senses of the term. The spatial organization of this museum in three dimensions, and in well thought through rhythms shows the importance Geddes gave to morphology and movement as interrelated experiences. Through this, Geddes hoped more immediate connections between people, city and landscape could become established.²³⁰

Geddes was convinced that neither science nor politics had managed to develop terms for approaching the growing city. In his search for a method for understanding cities' change he looked at them in the same way as he looked at organic life. To demonstrate a reciprocal connection between 'organism', 'function', 'environment', or 'place', 'work', and 'folk', he suggested the Valley Section as a tool for city planning, first in 1909.²³¹ The Valley Section was a visual device that had been used in geography before by Elisée Reclus and Vidal la Bach, and in biology by Huxley, for example.²³² It consists of the representation of a natural space, a region, with the help of the topographical curvature from a mountain slope to the sea containing a range of different data. Mapped out and related are geological formations, qualities of soil, the signs of climatic differences, characteristics of fauna and flora, and in Geddes, also different types of 'natural' human occupations in relationship to the different environments, and their forms of settlements. The Valley Section, Geddes points out, is a model for the world that 'can readily adapt to any scale and to any proportion.'

I have here not simply my particular home-view, from our Edinburgh Outlook Tower . . . from Lowlands west to Highlands; but in principle also a section across Wales and England; across Ireland; across Norway and Sweden; even across mountainous Europe and the Siberian plain; or again, across North America or Canada with the Rockies; across South America with the Andes: Broadly speaking, this way the world is built.

²³⁰ The Outlook Tower with its camera obscura, which was built by the previous owner as a tourist attraction on the top of the building, still exists, located at castle hill in the Old Town of Edinburgh. Ironically, the adjacent former slum, which Geddes redeveloped through an initiative of neighborhood-gardening having in mind a mix of middle and working class families living there side by side, is today a gentrified area.

²³¹ The terms place, work, and folk are borrowed from Frederic Le Play's schemes of place, work, and family.

²³² Huxley had published an introduction to nature studies in 1887 where he had used the Thames River valley as a geographical unit. In French geography, the Valley Section was used as an instrumental technique for mapping natural and social environments. For a discussion of a new understanding of society and nature as related in a historical process with political and economic consequences, which marked the event of the emergence of modern geography, see also Kenneth Olwig, 'Historical geography and the society/ nature "problematic": the perspectives of J. F. Schouw, G. P. Marsh and E. Reclus,' *Journal of Historical Geography*, 6, 1 (1980), pp. 29-45.

The Valley Section was a mapping-tool for bringing together the most diverse data, and thus could overcome the separation in specialized sciences, which Geddes saw as crucial for understanding the city and its region. It even can be read as a critique of the abstraction of a conventional flat map as a representation of imperialist domination of nation states, and as such as a proposal for the abolition of state borders in favour for 'natural' spaces. He argues:

This is no longer our mere school-book with its image of a 'country' as a coloured space on a flat map, with only 'boundaries' and 'capital,' and so on. It is first of all the essential sectional outline of a geographer's 'region,' ready to be studied. Next then, it is an anthropologist's, and thence also an evolutionary economist's. In time we shall even work down to the modern urban view of the conventional economist, of the politician and more. But first of all we must proceed in natural order.²³³

In Geddes, societal differences were inscribed into the landscape as *social types*, which emerged successively and simultaneously, with corresponding types in urban occupations. Thus, on the heights the woodman stood, in general, for the development of engineering; the hunter for sports, games and war; the miner for all kinds of metal and industrial works; the shepherd on the lower slopes for the development of economics and commerce; the farmer on the plain for the law, and beer and wine production, sales, entertainment, and political activities; and the fisherman at sea level, for mercantile and combative navies.²³⁴ The various 'nature-occupations' or 'native occupations', as mapped on the Valley Section, stand at the beginning of a historical succession as well as they present types that keep their characteristics in an urban environment.

In his section on morphology for the *Encyclopaedia Britannica*, Geddes had also related to Plato's 'idea'. The Valley Section, in this respect, is orientated along the lines of a physical conception of *polis*, a city that Geddes saw as emerging from its Hinterland, as a conglomeration of villages with a political, intellectual and religious centre that would grow until some natural boundary was reached. In this conception, city and country are seen as a coherent whole.²³⁵ Geddes views all the native occupations as being successive and permanent at the same time, as 'already truly and deeply civilized and thus essentially peaceful'²³⁶ (even the hunters), in contrast to Spencer's conception of social evolution. In the city, these civilization types kept their characteristics and were manifested as urban in respective professions. The gathering of all the different characters made

²³³ Patrick Geddes 'The Valley Section,' two articles from a series of six 'Talks from the Outlook Tower,' Geddes wrote for a small New York magazine called *Survey*, in 1925, reedited by Jaquelyn Tyrwhitt, for *Architects Year Book*, London, 1944, pp. 65-71. Reprinted also in *Urban Structure*, edited by David Lewis (London: Elek Books, 1968), pp. 65-71.

²³⁴ Patrick Geddes, *Cities in Evolution* (London: Knapp, Drewett and Sons, 1949), pp. ix-xxviii.

²³⁵ Welter refers here to the historian William Fowler whose theories of polis were well-read at Geddes' time. Welter (2002), p. 68.

²³⁶ Geddes (1944), p. 66.

the cultural richness of a city, which Geddes sees as the arena where the ‘eager miner’ could meet the ‘conservative shepherd’ and the ‘adventurous fisher and hunter,’ but also as a theatre where these characters were dramatized and played their roles. Thus, in Geddes, every city behaves like a living individual that was formed by its own ‘spirit’,²³⁷ ‘civic character’, and ‘collective soul’.²³⁸

Geddes relates character to the different qualities of landscape. The intention is to show not only that human civilization grew directly from nature, but also that it takes a variety of forms. With help of surveys and Valley Sections, he argues that citizens gain a self-image, ‘people of each region and city may increasingly know their past, and clarify its heritage,’ and ‘this reconstruction of the vital past will lead to realization and interpretation of the present.’²³⁹ One will recognize that Geddes did not apply the Valley Section under strictly scientific terms or in relation to a specific region. Although the Valley Section is presented as being retrieved from observation, Geddes took up the device rather as a model for *imagining* any organic city, a general mapping of the city’s potentialities, or a sort of idealized narrative.²⁴⁰

Geddes’ organic city can be read as a dynamic entity in constant transformation. It addresses neither Tönnies nor Ruskin’s *organic community* based on tradition, nor does it mirror Durkheim or Spencer’s industrial *society* as found in the modern nation state with its artificial borders. The conception of an organic city is based on the *form* of the socio-ecological region, and the interaction of cooperative units within the city. Geddes’ city organism draws its form from the observation of, and analogies to, natural phenomena. Plant, animal, landscape, and human beings exist all on the same plane. Social behaviour and forms of organization like cooperation and the city itself are seen as directly derived from the relation to their natural environment and economies. Like other anarchists such as Kropotkin, Geddes brings together what Marx had strictly separated: nature and society. In this way, the organic city reflects the desire for a *synthesis* between nature and history, and between natural sciences, what Geddes called ‘civics’ or sociology, and the arts.

Geddes’ organic strategy is simply to deny that with industrialization and modernity a rupture has taken place. Division of work was not a matter of modern modes of production, modern markets and a capitalist logic; it had always existed in the form of social types developing in relation to their environment. He manages to erase all power relations from his image of the city, such as discussions of class struggle or territorialization in that he tells his narrative of the city ‘as if’ it was so. Despite Geddes’ odd environmental determinations, his visualization distinctively puts forward the idea that a rich urban culture can evolve only from the periphery and never from the centre. At this point Geddes differs from early German sociologists like Georg Simmel who explain urban culture as a phenomenon that emerges through external factors of urban life, such as density, anonymity, competition, etc., from within the city. With his system of different occupational types involved in the drama of the city playing their

²³⁷ Geddes (1949), pp. 134, 139.

²³⁸ *Ibid.*, p. xxx.

²³⁹ Geddes (1944), p. 70.

²⁴⁰ Geddes (1949), and (1944), pp. 65-71.

different roles, Geddes denies Marx's dialectical two-class society. He also opposes Marx's territorialization of the concentration of intellectual labour in the city and the dispersion of material labour in the countryside. Geddes roots his agents in the countryside, and, at the same time, he mobilizes them and lets them enter the city. Through this redistribution of the countryside within the city by mobile agents, Geddes achieves a reconnection of the city and the countryside. Geddes' narrative conveys the solution for the reconnection of the city and the region, and envisions the transition from what he called the paleotechnic era (industrialization) to the neotechnic age (contemporary with emphasis on sciences), a distinction that will be further developed by his protégée and close friend Lewis Mumford. The corresponding city type for this new period he sees in a form of the unrestricted garden city.²⁴¹

Although Geddes is well-known in the field of planning practice, he has remained a figure at the margins. However, on the level of academia and education, his writings have had an enormous influence in architecture schools and planning departments. His book *Cities in Evolution* (1915), and his article 'The Valley Section' (1925) have been regularly reprinted, and a discussion of Geddes' conception of the region and the city was taken up in the post-war CIAM meetings, through Team 10, to which I will return in the following chapter. At around the same time when Geddes' book was published, the Chicago School of Urban Sociology formed in the United States, which developed several lines of thinking and practices, comparable to Geddes' efforts, despite their greater interest in exploiting proper scientific methods in contrast to Geddes' rather philosophical and esoteric conceptions.

'Social metabolism' in the Chicago School of Urban Sociology

The Chicago School of Urban Sociology developed and systematized the issue of survey, which was so crucial for Geddes, in order to improve the practice of town planning. They took however a different point of departure. The research group formed around the key figures of Robert E. Park, a sociologist and journalist, and the sociologist Ernest W. Burgess in 1915. One of the intellectual foundations of the School was the work of the philosopher and sociologist Georg Simmel, whose lectures Park had followed in Berlin in 1899. He was intrigued by Simmel's sociological-observing approach in conceptualizing the city. In his key work *Philosophie des Geldes* (*Philosophy of Money*, 1900),²⁴² Simmel dealt with psychological aspects of human social existence, and explored modernity in its various cultural aspects, such as fashion, lifestyle, everyday life, and feminine culture. For Simmel and others, the modern metropolis was the site of money economy. The predominance of this economy caused the loss of the substantiality

²⁴¹ Opposite to the Garden City promoters, who foresaw the limitation of the growth of cities as the most crucial factor for guaranteeing a healthy, and a socially and economically sustainable milieu, Geddes and Reclus believed that cities should grow. Geddes envisioned, for example, the growing together of Edinburgh and Glasgow in one big Garden City as a positive development. For a discussion on this topic, see Welter (2002), pp. 55-60.

²⁴² See also 'Die Grosstädte und das Geistesleben,' (1903) originally conceived as a lecture, published in *Das Individuum und die Freiheit*, Frankfurt am Main: Fischer Taschenbuch Verlag, 1993, pp. 192-204, whose arguments were already developed in *Philosophie des Geldes*.

of things, which was relocated by functionality and fluid relationships. The money economy, in Simmel, led towards a predominance of formalized rationality, which became a kind of psychological ‘protecting organ’. Simmel spoke about a particular metropolitan personality that developed to adapt to urban life.²⁴³

Several of these issues raised by Simmel reoccur in the texts of the Chicago School of Urban Sociology. Beside their theoretical base provided by biology and ecology,²⁴⁴ urban phenomena such as the new media of a certain urban journalism that had developed during the middle of the nineteenth century, directly influences a practical approach towards sociological fieldwork. This sort of cheap yellow press appeared as morning, evening, Sunday, and extra papers, and was distributed in the streets. The news did not inform exclusively about political events any longer, but more importantly spread gossip, and told ‘stories’ of the city and the neighbourhood. It thus required a new sort of journalistic research, in which the reportage revealed urban conditions and urban lifestyles, and turned the reporter into an urban messenger.²⁴⁵ The CSUS became known for a new kind of social survey that would form a tradition of detailed case studies, and a fieldwork approach that sees the city as a living ‘laboratory’.²⁴⁶

The City was published in 1925 by Robert E. Park and Ernest W. Burgess.²⁴⁷ It is a compendium of the research of the group, a collection of essays, most of them written by Park. It also includes Burgess’ well-known text, ‘The Growth of the City’, and articles by the members of the younger generation of the CSUS, such as an essay by Roderick D. McKenzie on human ecology and an annotated bibliography of the city by Louis Wirth.²⁴⁸ In the beginning of the first chapter, Parks states:

²⁴³ Influential for the development of a new sociology of the city was also the series *Grosstadtdokumente* that was published around the turn of the last century, in Berlin. The series consists of fifty issues by various writers, and gives an account on personal experiences, and investigations in local communities. Hans O. A. Oswald, *Grosstadtdokumente*, Berlin, 1905.

²⁴⁴ The term ecology was first used by Ernst Haeckel in 1866 for describing ‘the entire set of relationships of an organism to all other organisms,’ in plant and animal ecology.

²⁴⁵ See Robert E. Parks Article ‘The Natural History of the Newspaper,’ in *The City* (Chicago/ London: The University of Chicago Press, 1967), pp. 80-98. Robert Park had worked himself as a journalist for twelve years, before he started his sociological research at the University of Chicago.

²⁴⁶ ‘The city, in short, shows the good and evil in human nature in excess. It is this fact, perhaps, more than any other, which justifies the view that would make of the city a laboratory or clinic in which human nature and social processes may be conveniently and profitably studied.’ *Ibid.*, p. 46.

²⁴⁷ *Introduction to the Science of Sociology* by the same authors was published four years earlier, in 1921. It contains more theoretical texts than *The City*, and became one of the most important text books for sociological studies at the time. However, *The City* gives a better overview of the investigations in urban cultures conducted by the CSUS. See also Robert E. Park and Ernest W. Burgess, *Introduction to the Science of Sociology*, (Chicago/ London: The University of Chicago Press, reprinted 1969).

²⁴⁸ Wirth refers to Patrick Geddes’ *Cities in Evolution* in his bibliography where he addresses him as ‘the foremost authority in England.’ Louis Wirth, ‘A Bibliography of the Urban Community,’ *The City* (Chicago/ London: The University of Chicago Press, 1967), p. 194.

The city is something more than a congeries of individual men and social conveniences something more, also than a mere constellation of institutions and administrative devices The city is, rather, a state of mind, a body of customs and traditions The city is not, in other words, merely a physical mechanism and an artificial construction. It is involved in the vital processes of the people who compose it; it is a product of nature, and particular of human nature.²⁴⁹

Park insists that there are forces at work within an urban community that structure, group, cluster, and produce institutions according to their 'wants', and a science that describes these typical constellations of persons and institutions, which he calls human ecology. He presents the urban neighbourhood as a spontaneous social unit that exists without formal organisation, but which is defined by its 'clear definition of outline', and 'its inner completeness', functioning like a 'social mind'.²⁵⁰ In Park, the city acquires a 'natural' organisation and a distribution of population, which he imagines as neither designed nor controlled.

The two themes of 'mobility' and 'urban metabolism' are the most crucial in the CSUS's theories. However, the group does not attempt to overcome urban conflicts and contradictions in the same sense of Geddes. Quite the opposite, those contradictions rather formed the vitality on which a living city was built, and were imagined as the necessary driving force behind city growth and transformation. Thus it can be said that the CSUS at least accepted capitalist market forces and competition as 'normal'. With this, the city is not conceptualized under bio-idealistic terms as in Geddes, but is viewed first and foremost 'as it is' through the frame of ecology. The issue of social and cultural progress as a great project has disappeared. Nevertheless, in an ecological approach to the city, the CSUS introduces a radically new view on technology as not opposed to the natural world any longer, but as an integral part of it.

Park sees the reason for social change in the increased 'mobilisation of the individual man', in the growing cities. According to him, transportation and communication have effected far-reaching transformations. On the one hand, they have multiplied the opportunities of the individual for contact and for association, but on the other hand, they have made these contacts and associations more transitory and less stable. This shift has had an impact on habits, sentiments, and character of the urban population. Transportation, communication, media, telephones, newspapers, advertising, as well as skyscrapers and elevators – all things which tend to increase mobility and concentrate urban populations – are all also primary factors in the ecological organisation of the city. Everything that had formed, including social, economical and political orders, becomes 'natural' and

²⁴⁹ Robert E. Park, 'The City: Suggestions for the Investigation of Human Behavior in the Urban Environment,' *The City*, (Chicago/ London: The University of Chicago Press, 1967), p. 1.

²⁵⁰ Park quotes from Robert A. Woods, 'The Neighborhood in Social Reconstruction,' *Papers and Proceedings of the Eighth Annual Meeting of the American Sociological Society*, 1913. *Ibid.*, p. 7.

imposes itself now on the inhabitants as an external fact, which would form them in return.

Besides seeing the city as a geographical and ecological unit, Park recognizes it also as an economical unit depending on specialization and the division of labour, which triggers competition. Competition evokes the spatial distribution of different groups within the city causing segregation. Besides the economic situation of the different groups, Park mentions personal tastes, convenience, and vocational interests as formative for different behaviours that tend to segregate the populations of great cities even further. However, segregation is not a negative term in Park; the processes of segregation between the different neighbourhoods turn the city into a mosaic of little worlds that might touch but not interpenetrate, which made it possible for individuals to pass quickly and easily from one milieu to another, encouraged by 'the fascinating but dangerous experiment of living at the same time in several different contiguous, but otherwise widely separated, worlds.'²⁵¹ All this would tend to complicate social relationships and produce new and divergent individual *types*. It is these processes that would separate the city from the countryside.

The example of mobility and segregation shows that the Chicago sociologists did not consider the city in terms of 'good' or 'evil'. All urban phenomena were registered as 'normal'. Park recognises that on the one hand the city offers excitement, and on the other hand that the effected increase of mobility disrupts and destroys the permanency and intimacy of neighbourhoods as a reciprocal process, an issue that is further developed by his colleague Burgess. Through the incorporation of all kinds of urban factors - first as facts, without submitting them to a moral judgement immediately - the CSUS takes on urban questions such as juvenile delinquency, gang life, racial questions, and homelessness, which have never occurred in Geddes' positive outlook on the city. For Geddes on the other hand, who knew the work of the CSUS (he had written a review of *The City*), their attitude must contradict all his convictions. The CSUS extended from competition and segregation as the driving forces of urban life, while Geddes believed in cooperation and organic unity with a highly spiritual component as the basis for a positive social evolution. In Geddes, the city is an instrument for a higher cultural and moral development. For the CSUS, it is an object of study that can be explored, but which basically possesses a life of its own that one may predict but not direct.

Burgess' research in 'The Growth of the City',²⁵² goes into more technical details. He endeavours to explore processes of *disorganisation* and

²⁵¹ Park gives the example of East London, a workers community that was in itself segregated again and again by racial, cultural and vocational interests. He insists that the effect of vocations and the division of labour is to produce, in the first instance, not social groups but vocational types: the actor, the plumber, etc. beside organisations like trade unions that rely on a common interest, different from neighbourhoods that are based on contiguity and personal association. 'Cities have always been the melting-pots of races and of cultures. Out of the vivid and subtle interactions of which they have been the centres, there have come the newer breeds and the newer social types.' *Ibid.*, pp. 40-41.

²⁵² Ernest W. Burgess, 'The Growth of the City,' *The City*, (Chicago/ London: The University of Chicago Press, 1967), pp. 47-62.

reorganisation of city growth as 'normal' phenomena.²⁵³ In this, cities are recognized as complex, and in their apparent confusion patterns of regularity are thought to be found. Burgess states that no study of expansion as a process has yet been made, and suggests his famous diagram of concentric circles where urban extension can be recorded in *successive* zones and types of areas differentiated.²⁵⁴

His chart of concentric circles was modelled on Chicago, but meant to work also as a general model for conceptualizing analysis and interpretation of urban zones in change. Burgess called it 'a cognitive map of the unplanned growth pattern of the city.' The chart extends from the central business district, in Chicago the so-called 'Loop' - the only area, where people frequently pass through. This area with the highest land value was encircled by a zone of transition, occupied by business and light manufacture, but also by slums, and a third area that was inhabited by workers in close proximity to their working places, followed by residential areas with 'high-class apartments buildings', or of 'exclusive restricted districts of single family dwellings.' Farther out, beyond the city limits, followed suburban areas and satellite towns, the commuter's zone with a thirty to sixty minute ride to the central business district. These areas were divided by land values, general appearance, and functions.²⁵⁵

Besides research into the growth of the city regarding the transformation of social structure and issues of aggregation and expansion,²⁵⁶ Burgess stresses the significance of also looking into the increase in density of urban populations as correlated with the tendency to overflow from one ring (of his diagram) into the next, and to incorporate wider areas in succession. He emphasises the necessity to study what he calls the processes of urban 'metabolism' and mobility closely related to questions of the expansion of the city. For Burgess the term metabolism represents a functional model for how he saw urban growth as a process and result of social organisation and disorganisation, analogous to anabolic and catabolic

²⁵³ 'So far as disorganisation points to reorganisation and makes for more efficient adjustment, disorganisation must be conceived not as pathological, but as normal.' *Ibid.*, p. 54.

²⁵⁴ This model was taken up, polemically, by Mike Davis in his book, *Ecologies of Fear*, on Los Angeles. Here he claims '... Burgess dartboard represents the spatial hierarchy into which the struggle for the survival of the urban fittest supposedly sorts social classes and their respective housing types. As imagined by academic social Darwinism, it portrays a "human ecology" organized by the "biological" forces of concentration, centralization, segregation, invasion, and succession. My remapping takes Burgess back to the future. It preserves such "ecological" determinants as income, land value, class, and race but adds a decisive new factor: fear.' Mike Davis, *Ecologies of Fear. Los Angeles and the Imagination of Disaster* (London: Picador, 2000), pp. 363-364.

²⁵⁵ Expansion by succession: 'If this chart would be applied to Chicago, all four of these zones were in its earlier history included in the circumference of the inner zone. The present boundary of the area of deterioration were not many years ago inhabited by independent wage-earners, etc., a picture that can record how the city milieu changes.' Burgess (1967), p. 50.

²⁵⁶ So made, for example, the Bell Telephone Company a survey that attempted to forecast the direction and the rate of growth of the city in order to anticipate the future demands of their services. *Ibid.*, p. 61.

processes of metabolism in a living body.²⁵⁷ Beside extension and succession, the general process of expansion in urban growth involved the antagonistic and yet complementary processes of concentration and decentralization. By that Burgess meant that a city in growth tended to create sub-centres, which were decentralised concentrations. An expression for this development he finds in the emerging phenomenon of the chain store. In this Burgess suggests to see urbanization in the light of a structure of larger networks. Hereby he does not stress the individuality of different points of concentration, as in Geddes who also sees universal elements emerging in all towns such as the market, but sees them as being adapted to the local place and economy. Burgess however speaks of the repetition of certain identical elements regardless of regional morphologies.

The increase of movements per se were not seen as a factor of change or of growth automatically, if they did not happen in response to a new stimulus or situation, which would trigger an increase of contacts. Only the change of movement of this type Burgess called *mobility*. He argued for mobility as an index for the state of social metabolism of the city. Metabolism meant first a process of disorganisation before reorganisation. In this way Burgess indicates that areas of mobility were also the places where juvenile delinquency, boys' gangs, crime, and poverty could be found. Also land values, since they reflected movement, afforded one of the most sensitive indexes of mobility. The highest land values in Chicago were at the point of greatest mobility in the city: the Loop. Burgess suggested that mobility might therefore be thought of as the 'pulse of the community', as it was a process that reflected and was indicative of all the changes that were taking place in the community.²⁵⁸ Mobility can thus be seen as a critical index measuring change.

This interpretation of mobility as being connected to areas of highest competition and social problems contrasts with Geddes' idealized story of peaceful occupational types migrating to the city following a higher call. Opposite to Geddes' place-concept, where urban culture is generated from rural occupations entering the city and establishing a close link between the city and its region, the city in the work of the CSUS is not considered in relationship to countryside or region. Rather it forms an entity with its own logic connected to a highly technological and medialised environment. While Geddes recognised the city as a civilising agent, the CSUS has no ambition to engage citizens in a certain program. Extending from the experience of the American city with its immigrant

²⁵⁷ Ibid., p. 53. Geddes had already referred to cell theory and metabolism in a paper of 1886. Here he sees the two main branches of biology, morphology and physiology fused on the level of protoplasm. He points to metabolism as the intake of nutritious substances by a cell and the excretion of waste products. The early period of a cell's life is the anabolic phase, characterized by growth and nutrition; the latter phase is catabolic, because the waste and excretion products take over. In Geddes, the ability of the cell to interact with its environment according to its needs controls the succession of the two phases: either a temporary balance between anabolism and catabolism with no further growth, or the death of the cell due to increasing waste products, or, the usual case, a division of the cell. Geddes, 'Theory of Growth, Reproduction, Sex, and Heredity,' *Proceedings of the Royal Society of Edinburgh* 13 (1884-1886), pp. 927, 911, discussed in Welter (2002), pp. 189-190.

²⁵⁸ Ibid., p. 58.

communities, the city is seen as centre and sub-centres of different cultures and studied in terms of points of attraction and areas of local representation, as a site of conflicts, competition, and of social differences. The notion of urban change, or metabolism, is not connected to a positive future outlook in the sense of improvement, but is purely viewed in its quality of transformation as a positive value in itself. In contrast to Geddes who considered the city in its historical unfolding, which he calls an evolution, the CSUS looks at the city of their time as a natural entity with scientific viewpoints without enquiring into its formation, or questioning its development under historical or political terms.

Looking back to the urban debates at the end of the nineteenth century that took place predominantly under the impetus of social reform, it becomes obvious how the focus has changed from relations of production or dominating technological structures as in Marx, Durkheim, Tönnies, Ruskin, and others to the issue of the experience of a transformed world through the new dynamics and aesthetics of a technological environment such as the city itself. The question shifts from how to adapt to this ever faster changing world to how to assimilate technology for the satisfaction of individual desires. In this, the integration of the organic and the mechanical is discussed not only on the level of society any longer, but becomes a concern for the individual body as well.

Mumford's biotechnics and Jünger's organic construction

For the Futurists at the beginning of the twentieth century, technology had represented a liberating force from history and tradition. Their aesthetics addressed aspects of everyday culture and the masses. A central point was precisely the experiences that new technologies enabled - such as flying an airplane, the driving of a car, and the riding of a motorbike - triggering completely new sensations and desires. The futurist writer Tommaso Marinetti spoke hereby of 'mechanics' sensibility'. This romantic notion of a new sensibility developed in parallel with the expansion of the metropolis. The techno dreams of the avant-garde were not concerned with organizational issues in respect to production any longer; futurism was rather inspired by the aesthetics of the machine, and a cult of speed signifying a radical break with the past.²⁵⁹ What the architectural historian Reyner Banham sees as new is that 'with the advent of the motor-car the poet, painter, intellectual, was no longer a passive recipient of technological experience,

²⁵⁹ The Foundation Manifesto of the Futurists was published in *Le Figaro* on February 20, 1909 by the founder of the movement, Filippo Tomaso Marinetti. Reyner Banham, *Theory and Design in the First Machine Age* (London: Architectural Press, 1960), p. 99. Other prominent figures were the sculptor Umberto Boccioni, and the architect Antonio Sant'Elia who joined the group in 1914. With the publication of his manifesto 'L'Architettura futurista,' (which was signed by Sant'Elia, but written by the author Ugo Nebbia, and revised by Marinetti) published in the magazine *Lacerba*, on August 1, 1914, the architectonic strand of futurism was officially established. Vittorio Magnago Lampugnani, 'Antonio Sant'Elia (1888-1916), "Die futuristische Architektur",' *Architekturtheorie 20. Jahrhundert. Positionen, Programme, Manifeste*, edited by Lampugnani, Hanisch, Schumann, and Sonne (Ostfildern-Ruit: Hatje Cantz Verlag, 2004), p. 69. See also Sanford Kwinter, *Architectures of Time. Toward a Theory of the Event in Modernist Culture* (Cambridge, Mass. / London: MIT Press, 2001), pp. 54-100.

but could create it for himself.²⁶⁰ The architectural historian and theorist Helena Mattsson points to the combination of technology and the personal satisfaction of desires in the Futurists' imaginations: Marinetti had spoken of how the car mirrored the new technological society in blurring the boundaries between the body and the machine.²⁶¹ This could also be understood, in the sense of Walter Benjamin, as a new sensibility through the melting of techniques where the user would become one with the apparatus. It is not technology itself that is important any longer, but instead a new view of reality, which it enables, beyond technology.²⁶²

In the beginning of the 1930s we find a growing interest in an assimilation of the mechanical under the organic, which prefigures Norbert Wiener's theory of cybernetics.²⁶³ In America, Lewis Mumford publishes his influential work *Technics and Civilization* (1934). Here he develops an operative history of technology with a Geddesian inspired organic imagination of the benefit of controlled technological progress and the mass media for a democratic society. Two years earlier, Ernst Jünger's book *Der Arbeiter (The Worker, 1932)* had appeared in Germany developing from comparable reflections, but taking a very different attitude. Jünger is only a marginal figure, but his expression of 'organic construction', with which he describes a common 'Gestalt' of the worker as a new urban type, demonstrates how an organic rhetoric re-emerges in perverted form in a right-wing context. Jünger's notion of the organic refers to an image similar to the 'mass ornament' by Siegfried Kracauer, and to a new kind of collective experience.²⁶⁴ Jünger's Gestalt contradicts the utopia of the humanitarian society of Mumford, and embraces technology as a 'new language' of a transformed world that via the new 'type' would trigger new sensations.

In *Technics and Civilization*, the American architectural critic Lewis Mumford discusses the impact of mechanization on society. Mumford was Patrick Geddes' protégée and friend, and has introduced and developed Geddes' ideas in

²⁶⁰ Banham (1960), pp. 102. See also Helena Mattsson, *Arkitektur och Konsumtion. Reyner Banham och utbyrbarhetens estetik* (Stockholm: Symposion, 2004), p. 198.

²⁶¹ Mattsson (2004), p. 55.

²⁶² Walter Benjamin, 'Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit,' *Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit* (Frankfurt: Suhrkamp Verlag, 2003), pp. 7-44. The essay 'Das Kunstwerk' was first published in French translation in *Zeitschrift für Sozialforschung*, 1936. The German version appeared in 1955 in Benjamin's *Schriften*. See also Mattsson (2004), p. 199.

²⁶³ Norbert Wiener published *Cybernetics, or Control and Communication in the Animal and the Machine* (New York: The Technology Press, 1948). Two years later a more popular version of the book appears, *The Human Use of Human Beings. Cybernetic and Society* (Boston: Houghton Mifflin, 1950). The work stated that human boundaries were not given but constructed, and was seen as radically new at the time. Among literature that precedes Wiener's scientific investigation in this field, Samuel Butler must be mentioned, who wrote the science fiction novel *Erewhon* (1872, an anagram of 'nowhere'), in which he breaks with the instrumental vision of technology, envisioning changes that a mechanized world would have on people's subjectivity in ways of thinking and feeling. Butler was widely read, and appears also in Le Corbusier's literature list.

²⁶⁴ For an account on Siegfried Kracauer's works on urban modernity, see Henrik Reeh, *Ornaments of the Metropolis. Siegfried Kracauer and Modern Urban Culture* (Cambridge, Mass./ London: MIT Press, 2004).

the United States.²⁶⁵ Mumford bases the history of technology on Geddes' distinctions of eotechnic (Middle Ages), paleotechnic (industrialization), and neotechnic (the contemporary with emphasis on sciences and an organic model of technology, which he called biotechnics) phases.²⁶⁶ Like Geddes, he rejects the idea of a so-called 'machine age' and argues that a culture of the machine, or better, the development of 'The Machine', emerged already with the invention of the clock, seven centuries before industrialization. He states that during the last thousand years the material basis and the cultural forms of western civilization have been profoundly modified by the development of the machine, which did not only concern the artefact itself, but social patterns and the entire culture of thinking. Mumford sees the mechanical clock as one of the 'key-machines' for an industrial age, not the steam engine, and he suggests that the clock, with its organizing capacities ensuring even flow of energy throughout, has made regular production and standardized products possible, calling these the aspects that characterize a capitalist society. After the homogenization of time, Mumford saw a levelling of space happening. Space as a hierarchy of values, as represented in medieval painting, was replaced by a system of coordinates through the development of the laws of perspective.²⁶⁷ It was henceforth possible to construct, measure, and quantify the relationship between objects in space. This new ideal network of space and time (whereby space and time appeared as empty) made it possible to locate objects at any moment in a particular place. Distances could be calculated and hitherto unknown places could be located and explored. Mumford sees the cultural superstructure, which ideologically prepares for a shift such as industrialisation, developing before change happens.

He discerns the following principles of the mechanical as fundamental to the method of modern natural sciences: first, the elimination of qualities, and the reduction of the complex to the simple by paying attention only to those aspects of events which can be weighed, measured, and counted, and to particular kinds of space-time sequences that can be controlled and repeated; second, the concentration on the outer world, and the elimination or neutralization of the observer with respect to the 'objective' data that is retrieved; and third, the limitation and isolation of specific fields of investigations, and consequently, the specialization of interests and the subdivision of labour. In short, only those aspects are considered that lead to accurate factual observation and generalized statements. This had consequences for the image of man, as the concentration on the analysis of primary qualities (size, shape, quantity, and motion as distinguished

²⁶⁵ Mumford's choice of the word 'Technics' is deliberate. For Mumford, technology is only one part of a larger complex of technics. Technics refers to the interplay of a social milieu and technological innovation, the 'wishes, habits, ideas, goals' as well as 'industrial processes.' Mumford's best known works encompass *Technics and Civilization* (1934), *The Culture of Cities* (1938), *The Condition of Man* (1944), *The Conduct of Life* (1955), *Art and Technics* (1952), and *The City in History* (1961.) As urban and architectural critic he published his column 'Sky Line' in the New Yorker magazine from 1931 for over thirty years.

²⁶⁶ Geddes distinguished only a paleotechnic and a neotechnic phase, after Auguste Comte. The eotechnic era was an addition by Mumford.

²⁶⁷ Lewis Mumford, *Technics and Civilization* (New York: Harcourt, Brace and Company, 1934), pp. 12-22.

from secondary qualities such as smell, sound, etc. spurned as subjective, because they were sensually felt) neutralized, in experiment, the sensory and emotional reactions of the observer. Apart from the process of thinking, man was reduced to an instrument of record, which corresponded to the economic and social system of the division of labour. S/he became a machine. Contrary to the mechanical, Mumford describes organisms as differing from mere mechanisms or aggregates with respect to their dependence on an environment and the existence of their parts in relation to the whole. The organic analogy implies not only that internal relations unify the parts of the whole but also that the whole has a characteristic lifecycle or course of development as organisms typically do.

Mumford positions the complexity of the organic over the abstraction of the mechanical, but at the same time he also stresses the human factor that is involved in the mechanical when considering the machine as an extension of the human body. He states, '[t]he automaton is the last step in a process that began with the use of one part or another of the human body as a tool.'²⁶⁸ Mumford finds it increasingly difficult to draw a line between human and machine interaction, and reflects on the flexibility of the tool-user who becomes more automatic when his skilled movements turn into reflexes, in comparison to the specialized machine that requires no skills, but needs human intervention at the start and end of the process. He resolves this ambiguity in distinguishing human-machine interaction into a less challenging, and a more interesting, mechanization.

In *Technics and Civilization*, a differentiation is made between 'monotechnic' and 'polytechnic' mechanization. 'Monotechnic' mechanization consisting of a counter-movement to life included the *substitution* of mechanically measured time for duration, of mechanical prime movers for the human body, and of drill and regimentation for spontaneous impulses. On the other hand, a positive 'polytechnic' mechanization triggered more cooperative modes of association, and came from fields where the invention of a machine itself was carried by 'ancient human wishes', such as flying, which had opened up for new experiences. In Mumford, positive technology that enabled flight, telephonic communication, the phonograph and the motion picture all had been developed *mimetically* out of the scientific study of living organisms.²⁶⁹ Opposite to an earlier mechanical view of technology that had disregarded shape, Mumford stresses the morphological aspect as the crucial point in the distinction between mono and polytechnics, which was orientated on the structure of organisms that naturally were bound to a certain form. The immediate goal of modern 'technics' might still be effective work and their means standardization - the emphasis of the generic and the typical, or in short, an efficient economy - but as their ultimate aim, Mumford envisions leisure as the release of other organic capacities.²⁷⁰

The striving towards a *synthesis* of mechanical and organic cultures forms the objective of the third historical phase, the neotechnic era, which is carried by a direct democracy, something Mumford calls 'basic communism'.²⁷¹ The new state

²⁶⁸ Ibid., p. 10.

²⁶⁹ Like from studies of how birds fly, etc. Ibid., p. 250-255.

²⁷⁰ Ibid., p. 356.

²⁷¹ Mumford's notion of communism should not be confused with Marx's; Mumford envisions the appropriation of existing institutions, such as schools, libraries, hospitals,

system is constituted by a responsible society that has radio and access to electronic communication devices. Overall Mumford is optimistic about the advantages of technology - which could lead to improvements in the environmental, social, and economical sphere - *when* society was able to socially and culturally integrate technology in a responsible way.²⁷² Mumford's organic model of technology, or *biotechnics*, relied on organic systems that directed themselves to qualitative richness, amplitude, spaciousness, and freedom. Biotechnics modelled life in seeking balance, wholeness, and completeness. Thus Mumford stresses that in order to re-conquer the machine and subdue it to human purpose, one must first understand and assimilate it. So far, we have embraced the machine without fully understanding it, or, like the weaker romantics, we have rejected the machine without first seeing how much of it we could intelligently assimilate.²⁷³

In his positive attitude, Mumford claims an integration of the principles of the economic, the objective and the collective in a new conception of the organic, in order to reach 'the point at which we utilize the completest (sic) developments in science and technics to approach once more the organic.' However, he claims, '*our capacity to go beyond the machine rests upon our power to assimilate the machine. Until we have absorbed the lessons of objectivity, impersonality, neutrality, the lessons of the mechanical realm, we cannot go further in our development toward the more richly organic, the more profoundly human.*'²⁷⁴ Supported by the analytical methods and the skills developed in creating the machine, Mumford suggests, we can now approach the larger tasks of synthesis. As things get more complex, he basically envisions the slowing down of the speed of one-sided material progress, which will have consequences in social change as well:

[T]he organic image takes the place of the mechanical one, one may confidently predict a slowing down of the tempo of research, the tempo of mechanical intervention, and the tempo of social change, since a coherent and integrated advance must take place more slowly than a one-sided unrelated advance We can see plainly that power, work, regularity, are adequate principles of action only when they cooperate with a humane scheme of living: that any mechanical order we can project must fit into the larger order of life itself.²⁷⁵

A rhetoric of the organic was not exclusively employed by the left; it inspired right-wing thinking and propaganda as well. Two years before the appearance of Mumford's *Technics and Civilization*, the conservative revolutionary author Ernst Jünger published *Der Arbeiter, Herrschaft und Gestalt (The Worker: Dominion*

universities, museums, the police, i.e. and their renewal from inside out. Mumford (1934), pp. 400-406.

²⁷² In his later work, *The Myth of the Machine: The Pentagon of Power* of 1964, Mumford would give a much more sinister outlook on the development of technology.

²⁷³ With 'the weaker romantics', Mumford refers to Ruskin and Morris.

²⁷⁴ *Ibid.*, p. 363.

²⁷⁵ *Ibid.*, p. 372.

and *Gestalt*) in Germany in 1932. The book celebrates a sort of acceleration and dynamization of the world through technology, very similar as in the Futurist manifesto.²⁷⁶ In *Der Arbeiter*, Jünger projects the beginning of a new era in the ‘Gestalt’ of the worker. He reacts to the then present phenomena of the masses, such as streams of workers at factory gates, crowds in the streets of big cities, and corps of marching soldiers visible not only in the city itself, but also exposed in the mass media.²⁷⁷ ‘Worker’, for Jünger, is a generic term. It includes those who are part of a larger unit, corps, or community, and it explicitly excludes the individual, the educated bourgeoisie and what they stood for: the political system of the Weimar Republic, which Jünger calls ‘the weak liberal democracy.’ The difference between the workers and the bourgeoisie is expressed via an organic Gestalt that is based on a militarized organization as opposed to a society that is based on a negotiated contract (*Staatsvertrag*). The worker stands hereby for a wilder, more innocent, and more elementary nature.

Like Geddes, Jünger had a background in the natural sciences. He was educated as a marine biologist and thus it is not surprising to encounter again a biological language of terms such as ‘type’ and ‘Gestalt’. In order to overcome the problem of individual-mass, Jünger applies the concept of the type and explains: The type within a community is neither part of a mass, nor can a single type become denoted as an individual. The transformation of the individual as well as the community finds its expression in the replacement of a world where general terms dominate, by a world of the Gestalt. This signifies a totality, which is more than the sum of its parts. In respect to the Gestalt and the type, Jünger introduces the term of ‘organic construction’, which he denotes as a close fusion of man and his tools. He suggests that one could speak of organic construction when technology had reached its highest degree of self-evidence as inherent in animal and plant extremities.²⁷⁸

²⁷⁶ Ernst Jünger was a leading intellectual spokesman of the ‘new nationalism’ in Germany in the 1920s. He was part of a small extreme-right circle that proclaimed a hybrid doctrine called National Bolshevism looking to the Soviet Union as an example of anti-capitalist and anti-Western national renewal. The Soviet five-year plans were especially lauded as demonstrations of what could be accomplished through what was called ‘total mobilization’. Jünger actually never joined the German National Socialist Party. After the rejection of an offer of a seat in the parliament in 1933, Jünger is blacklisted and withdraws from cultural life. Despite his ultra right-wing political opinions, there is no racist or anti-Semitic propaganda in his texts.

²⁷⁷ Jünger responds not only to the new realities, but also to new media images in photography and film. For a discussion on Jünger’s use of photography, see Brigitte Werneburg, ‘Ernst Jünger and the Transformed World,’ *October* 62, Fall 1992, p. 43-64. Werneburg notes that Jünger worked not only with highly stylized, imagistic language in writings like *Der Arbeiter*, he also worked with actual images. Jünger compiled anonymously two photographic books, *Der gefährliche Augenblick*, 1931 (*The Dangerous Moment*) and *Die veränderte Welt*, 1933 (*The Transformed World*) that can in particular, be seen as visual companion pieces to *Der Arbeiter*. (Ibid., p. 45-46)

²⁷⁸ The type of the worker, from whom everything extended in this new era, is distinguished from the proletarian who denoted an economical-humanitarian term, but not an organic construction. In Jünger the proletarian is still a suffering individual, and not yet a type.

The *organic state*, what Jünger also calls a work-democracy (*Arbeitsdemokratie*), is not based on an abstract utopia of reason, but on the principle of work.²⁷⁹ The focal point shifts from the individual character of labour to the total character of work. Like Marx's term 'production', Jünger's term of 'work' points beyond the economic. Work is not an activity, but a way of being, and technology is the way in which the Gestalt of the worker mobilizes the world. It is a sort of language. Technology, in this context, is not a means of progress (a bourgeois concept), but of appropriation. Jünger points out that with technology comes a particular style of life, whereby one accepts that one is not only subject, but also object at the same time. He sees work-principles, which he assigns to the organic, already realized in the composition of the Jesuit's order, as well as the Prussian army, contrary to Mumford who spoke of the dehumanizing effects of these organizational formations and denoted them as part of what he called 'The Machine'. In Jünger, technology itself has no value and no moral; it simply stays in service.

The image of the mask becomes an instrument for Jünger to grasp the changes that were connected to the emergence of the phenomena of the masses, and represents a vehicle to bring across his idea of organic construction.²⁸⁰ He refers here to various situations where he sees a specific working character realized: when gas masks were distributed to entire populations, in facial masks for sport and for drivers, as a protection against radiation, explosion, and for narcotic processes. The mask breaks down all differences, also those of gender, and becomes an image that concerned not only the face, but the entire body. Jünger observes a tendency of perfecting bodies through training, and simultaneously an increase of events where these bodies became exposed. The last consequence of a de-gendering and idealization of the body was the wearing of uniforms. Here he envisions a special 'working costume' that equalled neither a proletarian outfit nor the individual costume of the bourgeoisie.²⁸¹

The worker as Gestalt is not a representative of a new class, a new society, or a new economy. The question is no longer how to engage the worker in political power, the economy, and the sciences, but rather what these 'power spaces' (*Machträume*) should look like, and what their meaning was. The new type did not have to take power; it *represented* power through sheer mass. This power of Gestalt was meant as the opposite of an abstract power,²⁸² which to possess, or not to possess, as he poses it, was as unessential as the question of an

²⁷⁹ Under Geddesian terms, an organic state would be a paradox; there are only organic cities founded on the social form of a community. As a state is based on individuals, connected through contract, he would see it as mechanical and not organic.

²⁸⁰ Ernst Jünger, *Der Arbeiter: Herrschaft und Gestalt* (Hamburg: Hanseatische Verlagsanstalt, 1932), p. 117, translated by Christopher Phillips, quoted in Werneburg (1992), p. 54.

²⁸¹ Werneburg points out that Jünger, in the image of the Gestalt, condenses a chain of factors that are bound up with the process of social crisis: the uniformization of social life, the technologization of the everyday world, the growing dominance of warlike values, etc. Brigitte Werneburg, (1992), p. 49.

²⁸² Jünger points to the bourgeois concept of the state as a paradox, because it is factually based on its *hierarchical* organization of representation, while pointing to *equality* as one of its basic principles. Jünger (1932), p. 48.

abstract freedom. He postulates a new kind of freedom, which manifested itself in the consciousness to stand on an important place, be it in the sphere of thinking, behind running machines, or in the bustle of ‘mechanical cities’.

Unlike Mumford, Jünger develops no humanistic or moral alternative to the development of a technological civilization, which expresses also in their inherently different view of the city. For Jünger the city is an instrument for nationalistic revolution. Instead of suffering, he argues, forces must be grasped, assimilated, and even hastened, boasting sufficient energy ‘to do without any dogma whatever and to overcome any dogma’. One such dogma, which was virtually unquestioned in reactionary circles during the Weimar period, was the repudiation of the big city - the metropolis with its liberal technology-bound lifestyle - as sick, deprived and unnatural. Jünger on the contrary, argued that the big city provided a favourable ground for a nationalist revolution. In his essay ‘Big City and Countryside’ of 1926 he wrote: ‘We must penetrate the forces of the metropolis, which are the real powers of our time: the machine, the masses, the worker.’ He proceeds by relating the big city to the battlefield of World War I in stating: ‘[J]ust as the landscape of this battlefield proved to be no natural landscape but a technological landscape, so was the spirit that animated it an urban spirit. Urban too, was the “battle of materials” and still more the mechanized “battle of movement” that developed from it.’²⁸³

In Jünger the city itself delivers the script for a spatial transformation from a formless chaotic mass to an aesthetically pleasing structured organism, in fact, from the former ‘naturalness’ of the traditional city into the technological landscape of the metropolis. For him, a city is a phenomenon that constantly creates new forms without possessing a form itself. He states: ‘These cities with their wires and steam, their noise and dust, their crawling, antlike jumble, confusing architectures and innovations which give them a new face every ten years, are gigantic workshops of forms – but they themselves possess no form. They are lacking style. . . . However, the twentieth century does indeed already represent, at least in certain respects, a greater purity and determinateness of lines and contours, which reveals the beginnings of a process of increasing clarity of technological design sense. A retreat from the moderate line can be noticed, from the concessions that only a short time ago were still held to be essential. One starts to appreciate the high temperatures, the icy geometries of light and the white glow of overheated metal. The landscape becomes more constructive and more dangerous, colder and more ardent; the last bits of cosiness vanish from it. There are already parts one can pass through like volcanic regions or dead moon landscapes, which are dominated by a vigilance as invisible as it is present. One avoids intentions that are secondary, for example those involving taste; one elevates technological inquiries to the decisive level, which is important because behind those questions lie issues other than those which simply concern technology.’²⁸⁴ In the cities Jünger rediscovers the battlefield and the activity of

²⁸³ Jünger quoted in Brigitte Werneburg (1992), p. 47.

²⁸⁴ Diese Städte mit ihren Drähten und Dämpfen, mit ihrem Lärm und Staub, mit ihrem ameisenhaften Durcheinander, mit ihrem Gewirr von Architekturen und ihren Neuerungen, die ihnen alle zehn Jahre ein neues Gesicht verleihen, sind gigantische Werkstätten der Formen, – sie selbst aber besitzen keine Form. Es fehlt ihnen an Stil, . . . Es ist indessen

war. What the war and the city disclosed was precisely the possibility of blending a strict order and a wild anarchy: the mixture of precision and explosion found in both the great battles and the daily life of modern cities.

In Mumford and Jünger technology is discussed as a powerful means for restructuring society. Both retrieve this function from historical examples and draw different conclusions. Technology is recognized as a force that penetrates everyday life from which no one can withdraw. Consequently for Mumford technology is a moral issue. He warns of its misuse for its capacity to dissolve and reorganize individualities into a totality. For Jünger it is precisely technology's organizing capacity that turns it into a message able to mobilize the masses, something the Nazis will make use of. Mumford on the other hand sees a development towards a neotechnic and biotechnic era that integrates the mechanical and the organic in the course of a positive social evolution. Through modern communication techniques it will be possible to create a non-hierarchical state form of 'basic communism'. In Jünger the question of individual empowerment is subordinated under the collective experience conveyed by what he calls Gestalt. The media image takes an important role in this process of de-individualization, which it enables and to which it gives expression. For both it is not so much the issue of the organization of production that plays a decisive role, but the experiences that new technology enable in the context of the everyday, which goes beyond structure, that become crucial. At this point, nature and machine do not confront each other any longer as opposing categories; they are much more related in a form of inflection. At times their boundaries have become pervious. The following chapter continues the discussion of the incorporation of the image and the factor of personal and collective experience as prepared already by the rise of the mass media creating urban cultures for urban design during the post-war era. As an instrument, urban design discovers the structural properties of the image and the possibilities of manipulating its information in order to achieve a new societal 'equilibrium' that would reconcile humanity and technology.

festzustellen, dass das 20. Jahrhundert wenigstens in Teilblicken bereits eine grössere Sauberkeit und Bestimmtheit der Linienführung darbietet, die eine beginnende Klärung des technischen Gestaltungswillens verrät. So ist ein Abrücken von der mittleren Linie zu bemerken, von den Konzessionen, die man noch vor kurzem für unumgänglich hielt. Man beginnt Sinn für die hohen Temperaturen zu bekommen, für die eisige Geometrie des Lichtes und für die Weissglut des überhitzten Metalls. Die Landschaft wird konstruktiver und gefährlicher, kälter und glühender; es schwinden aus ihr die letzten Reste der Gemütlichkeit dahin. Es gibt bereits Ausschnitte, die man wie vulkanische Gebiete oder ausgestorbene Mondlandschaften durchqueren kann, die eine ebenso unsichtbare wie präsenste Wachsamkeit beherrscht. Man vermeidet die Nebenabsichten, etwa die des Geschmacks, man erhebt die technischen Fragestellungen in den entscheidenden Rang, und man tut gut daran, da sich hinter diesen Fragestellungen mehr als Technisches verbirgt. Jünger (1932) p. 166. Translated by Brian Manning Delaney.

4 'Emotional needs' of the 'common man' in the post-war years

Design and Democracy – Organic critique from within and without CIAM – Team 10 and the recycling of the Valley Section – New vision and the art of environment

In this chapter I follow a shift in the debate on urban space since the early 1940s. The discussions differ from the discourse before the war in that they are no longer aiming at formulating generalizations such as the 'Functionalist City,' or 'The Existential Minimum,'²⁸⁵ their main subject has become the exploration of the desires of a hitherto unknown figure, the 'common man.' At the post-war CIAM congresses, there is an agreement that cities, beyond fulfilling basic needs, must also correspond to aspirations for symbolic representation. To consider emotional response to city space and to provide for the possibility of 'spiritual growth' is seen as the new tasks for the planner, the architect, and the artist, preferably in collaboration. Patrick Geddes' idealistic image of the city as an instrument for social and cultural development, which was discussed in the previous chapter, was rediscovered by Team 10 and utilized for criticizing the functionalist city concept of CIAM as formulated in the Charter of Athens (1933, first published in 1943). This critique inspired an entire generation of architects in the 1950s that turned against the systematization of functionalist city planning, pursuing instead a more differentiated view of various scales of communities. Architecture and urban planning that can incorporate issues of 'flexibility,' 'mobility,' and the variation of 'atmospheres,' occurs here as the more organic model.

A range of unifying urban theories such as 'new monumentality,' 'new empiricism,' 'new humanism,' and 'Neues Bauen' prefigure an interest in the visual properties of the city as a measurement of reorganizing urban space. In this, the organic becomes an image of the organic. A number of text-picture books appear as handbooks for urban design, which see the key for evoking the much-sought-after new sense of *common* place in a visual structure of the urban setting. Their underlying idea is that through the creation of images it is possible to reconstruct city spaces individually via our perceptions, while simultaneously being connected through a collective experience of cityscape. The act of seeing, since it can be manipulated, becomes an issue for design education itself. We witness the emergence of a broad interest in theories of perception in aesthetics, which at the time are mirrored in architectural handbooks for application in design practice. The attempt to formulate an education of vision goes as far back as John Ruskin's concept of the 'innocent eye,' and is also prefigured in the work that László Moholy-Nagy started at the Bauhaus, and continued together with Gyorgy Kepes after his resignation in the early 1930s in Berlin, and after 1937 in Chicago. Especially Kepes' later work at MIT will have an impact on the general rethinking of the structure of urban space in respect to the vision of a moving subject. I will discuss the genre of 'picture books' for city planning that have emerged from Kepes' work, in Gordon Cullen, Steen Eiler Rasmussen, and a Japanese research group with affiliation to the metabolists, around Kenzo Tange. The preoccupation

²⁸⁵ 'The Existential Minimum,' (CIAM 2, 1929 in Frankfurt), and The 'Functionalist City' (CIAM 4, 1933 on a cruise ship in the Mediterranean) were the themes of two CIAM congresses before the war.

with the image of the city coincides with the formulation of the new discipline of 'urban design.' This chapter will show that this shift from the socio-economic to the visual city is an expression of a larger reorganization that goes far beyond actual city space by addressing also the transformation of the market, and the arrival of democracy in several European countries and Japan. In this emerging complex net of relationships, the organic becomes a *sign* for a new form of organization that encompasses and binds together various scales, from the individual, the community, and the city to the state and the global market. Design and consumption of urban space will occupy a decisive role in this development.

Design and Democracy

'A design can be called organic when in respect to structure, material and function, there existed a harmonic order of the individual parts in relationship to the whole.'²⁸⁶ This was the description of the criteria for a competition for home furniture design, launched by the Museum of Modern Art in New York in 1941, in connection with the exhibition 'Organic Design in Home Furnishings.' The winners were Eero Saarinen together with Charles Eames in two categories: 'seating for a living room' and 'other furniture for a living room.' Their entries included a side chair, a conversation chair, a relaxation chair, a lounge sofa unit, a dining table, a coffee table, and modular cases. The different pieces were designed to be fabricated in wood or plywood shell, and finished with either upholstery, fabric, rubber, or a veneer of Honduras mahogany. The design is significant because of its systematic organization. The Organic Design collection was above all a series. Each piece was designed on an eighteen-inch module; bases of differing lengths were used to combine two, three, or more units. The integral design approach endowed each piece with a distinct identity while ensuring its harmonic convergence with all the other pieces of the collection. Saarinen reflects on the concept as following: 'Perhaps the most important thing I learned from my father was that in any design problem one should seek the solution in terms of the next largest thing. If the problem is an ashtray, then the way it relates to the table will influence its design. If the problem is a chair, then its solution must be found in the way it relates to the room cube: If it is a building, the townscape will affect the solution.'²⁸⁷ Organic design meant here above all a holistic concept and a 'natural simplicity' of form and in the choice of materials. All parts are envisioned as corresponding to a larger whole. The whole refers to the concept of a complete modular structure, which, as an idea, offers a complete and technically resolved solution. Although the parts are exchangeable and the whole is expandable, together they form a complete set of possibilities within a determined aesthetic, economic, and material frame. As such, a series is thought as an all-encompassing system with a distinct aesthetic expression.

²⁸⁶ Eliot F. Noyes, *Organic Design in Home Furnishings* (New York, 1941), p. 1.

²⁸⁷ Eero Saarinen, quoted in Antonio Román, *Eero Saarinen, An Architect of Multiplicity* (New York: Princeton Architectural Press, 2003), p. 93.



4.3 Hans Wegner's Round Chair (1949)

In 1950 Hans Wegner's *Round Chair* (*Den runde stol*) of 1949 appears on the title page of the American magazine *Interiors*, labelled as 'the most beautiful chair in the world.' Eventually the chair is nicknamed 'The Chair.' It receives even more attention when CBS buys several of the chairs and uses them for the staging of the TV-debate between John F. Kennedy and Richard Nixon before the presidential election in 1960. After the broadcast, the small furniture workshop of Johannes Hansen in Denmark hardly managed to satisfy the increased demand. Arne Jacobson's organically shaped chairs also become a specific item for this time, appearing in all kind of contexts, though mostly in advertisements, where it stands for a whole range of projected good qualities. During the 1950s, *Scandinavian Design* became a known brand, which was brought to the public through a number of large exhibitions, publications, and commercial events. The most important launching was the successful exhibition 'Design in Scandinavia' that travelled to 24 different places in the United States and Canada between 1954 and 1957, with record high numbers of visitors accompanied by an enormous mass medial publicity. The European North was represented as a regional and cultural union of socially responsible and democratic model countries with a common aesthetic: An elegant, low-key and unobtrusive form without any decorative excesses, produced in natural materials.²⁸⁸

Leaf Dish, a sculptural platter of laminated birch mimicking and abstracting a leaf, by the appreciated designer Tapio Wirkkala from Finland, won the prize 'The Most Beautiful Object of 1951,' awarded by Elisabeth Gordon, editor of *House Beautiful*.²⁸⁹ At the time, Gordon was not only the editor-in-chief for the magazine *House Beautiful*, but also a trend guru for an American upper middle-class. Gordon promoted Scandinavian Design not simply for aesthetic reasons, but as an expression for political standpoints at the dawn of the cold war. She attacked the modernist form language of steel tube furniture and angular forms rooted in Germany as totalitarian and dictatorial, and celebrated Nordic products in wood as warm and soft, humanistic and democratic, 'with a modern formal language but not too radical, social but not socialistic.'²⁹⁰ The home of the upper middle-class exhibits an interest in integrative but now flexible concepts

²⁸⁸ Sara Kristoffersson, 'Skandinaviska stolar mot kommunismen,' *Svenska Dagbladet*, Saturday December 3 2005, p. 15.

²⁸⁹ Although Finland is not a part of Scandinavia, it found itself incorporated under the brand of Scandinavian design.

²⁹⁰ Kristoffersson (2005), p. 15.

that encompass the smallest objects of daily life, furniture, and even houses. Scandinavian Design and the case study houses in the United States are examples of this. During the reconstruction period of the post-war, organic design reaches a new organicist systematic that resolves itself in a complete but flexible image (as in modules for example). It is an optimistic image associated with soft shapes, warm colours, and natural materials, which opposes fragmentation and incompleteness. Its positive political connotation goes far back to Louis Henry Sullivan's and Frank Lloyd Wright's association of their organic architecture with democracy and a truly American architecture, popularized also through Lewis Mumford's influential newspaper columns and books. During the cold-war period, however, organic design receives its positive democratic image through the conflict between the two world powers at the time: The United States, Western Europe, and Japan on the one side, the USSR with the Eastern block on the other.

Organic critique from within and without CIAM

After WWII, an urban discourse of organic strategies emerges even within CIAM that deviates from the former rhetoric of functionalism, the functional city, and the existential minimum.²⁹¹ The language of organic terms was not new, and could be found throughout Le Corbusier's and Siegfried Giedion's work. What is different is its critical tone towards what one could see as CIAM's own pre-war premises. In connection to an overall expression of deep regret for the demise of the social and cultural spaces of large cities, in CIAM we frequently find now a new concern focusing on 'human scale,' the emotional and spiritual needs of the community, symbolic values, and the need for a new aesthetic, more expressive and more appreciated by 'the common man.' Eric Mumford's history of the CIAM discourses (2000) gives a good account of CIAM's shift from their most hard-lined concepts, such as the 'existential minimum' and the 'functional city,' which had focused on issues of standardization and rationalization, toward a debate on urban culture and the figure of the 'community.'²⁹² The post-war discourse no longer corresponds to Le Corbusier's claim that 'all men have the same organism, the same functions. All men have the same needs,' which he had put forward in *Vers une architecture* (1923).²⁹³ The interest of the CIAM congresses shifts from a focus on technology and organization concerning the *masses*, to more differentiated and complex *techniques* that deal with questions of human experience and expression, and that address, beside material needs, above all the often-mentioned emotional and spiritual needs of the *community*.

Much of CIAM's change of concern was not only triggered by the critique from their younger generation, the Team 10 architects, but emerged already much earlier through a critical revision by a group around the Swiss architectural historian Siegfried Giedion, the Spanish architect and planner José Luis Sert, and

²⁹¹ CIAM, *Congrès Internationaux d'Architecture Moderne* was originally formed around a group of European architects in Switzerland with the goal of furthering modern architecture. The group existed between 1928, with La déclaration de La Sarraz, and its decline in 1959 at the 11th CIAM Congress in Otterlo.

²⁹² Eric Mumford, *The CIAM Discourse on Urbanism, 1928-1960* (Cambridge, Mass./ London: The MIT Press, 2000).

²⁹³ Le Corbusier (1989), p. 136.

the French painter Fernand Léger. Their critique led to a discussion that would become known under the term of ‘new monumentality.’ The emergence of new concerns in the urban debate was certainly related to the experience of the war. Another factor was the emigration of a large part of the cultural elite to the United States during the war, where a new centre for urban questions would emerge, which in turn would have an impact on the content of the CIAM congresses.

Siegfried Giedion was a member of the inner circle of CIAM, who dominated and largely directed the content of the CIAM congresses first together with Le Corbusier, and after the war also with José Luis Sert, who had by 1939 immigrated to the United States. By then, CIAM was mostly known for its concept of separating the ‘Functional City’ into four main zones of housing, recreation, transportation, and industry, which had also formed the theme of CIAM 4, in 1933. In 1939, Sert had approached Lewis Mumford to write a foreword to his book *Should Our Cities Survive?*. The book was meant to help Sert establish himself as an architect and city planner in the United States, and to promote CIAM ideas there, where its activities had had little repercussion. Mumford declined with reference to the ‘lack of attention to a potential “fifth function,” the cultural and civic role of cities’²⁹⁴ in the CIAM concept of the Functional City, writing to Sert:

. . . . The four functions of the city do not seem to me to adequately to cover the ground of city planning: dwelling, work, recreation, and transportation are all important. But what of the political, educational, and cultural functions of the city: what of the part played by the disposition and plan of the buildings concerned with these functions in the whole evolution of the city design. The leisure given us by the machine does not merely free modern man for sports and weekend excursions: it also frees him for a fuller participation in political and cultural activities, provided these are adequately planned and related to the rest of his existence. The organs of political and cultural association are, from my standpoint, the distinguishing marks of the city: without them, there is only an urban mass.²⁹⁵

The theme of the 5th function, and the community centre, would occupy CIAM for most of its post-war congresses. This new concern is prefigured in the debate on human scale in relation to a new monumental aesthetic of urbanism, prepared in a collaborative effort by Giedion, Sert, and Léger in 1943, which would echo up until the late 1950s. The occasion for the discussion on monumentality was an invitation by the American Abstract Artists to write individual articles for a planned volume on the collaboration between artists. ‘[T]he painter, the architect and the historian’²⁹⁶ decided to assemble joint views on the subject under ‘Nine Points on Monumentality.’ The issue never materialized, but Giedion’s individual

²⁹⁴ Eric Mumford (2000), p. 142.

²⁹⁵ Lewis Mumford to Sert, December 28, 1940, quoted in Eric Mumford, (2000), p. 133. Sert’s book appeared in a revised form under the title *Can Our Cities Survive?* published by the Harvard University Press, in 1942, with help of Walter Gropius, then teaching at Harvard, and with a foreword by its dean Joseph Hudnut.

²⁹⁶ Siegfried Giedion, *Architecture, You and Me, The diary of a development* (Cambridge, Massachusetts: Harvard University Press, 1958), p. 22.

contribution 'The Need for a New Monumentality,' was printed in *New Architecture and City Planning* in 1944.²⁹⁷

The common manifesto, 'Nine Points on Monumentality,' written already in 1943, was first published in English many years later in 1958, in Giedion's *Architecture, You and me. The diary of development*.²⁹⁸ In the same book, in an article with the programmatic title 'Art as the Key to Reality' (1937), Giedion had pointed to the current era as difficult, and shifted the responsibility for that away from issues of production and technology to the individual's emotions. He posed the rhetorical question: 'Why is our age so sick?' and answered 'Everyone knows the reason why our period cannot find its equilibrium. . . . It can neither control nor organize the possibilities that it has itself produced.' The problem lies not in technological progress, the machine, which 'produces as much as man desires it should,' or in the process of industrialization itself, with its capitalist modes of production, but much more in the inability to handle 'its products' adequately. Giedion regrets that industrialization had failed to create a 'new reality to encompass our life cycle. . . . We do not know how to adapt ourselves to civilization, for our culture lacks an adequate balance between physical and mental tension. . . . In short, we have not found the key to reality, which lies hidden in our emotion.'²⁹⁹ In looking back, Giedion pinpoints Cubism and Constructivism as movements that had offered what he felt was now lacking: 'symbols of the contemporary reality.'³⁰⁰ Here he saw art approaching life, which created a unity between feeling and reality. What is at stake now is to find links 'between the machine and the organism and the machine,' he claims.³⁰¹

Paradoxically, the term 'new monumentality' was most likely picked up as a reaction to Lewis Mumford, who, in *Circle*, a collection of essays published in 1937, had proclaimed the death of the monument. Mumford had stated that 'the classic civilizations of the world, up to our own have been orientated towards death and towards fixity,' and thus, 'The city, with its dead buildings, its lifeless masses of stone, becomes a burial ground.' Instead of static immortality of stones, continuity would lie in the social heritage, and 'civilization today . . . must follow the example of the nomad.'³⁰² A year later, in his book *The Culture of Cities*, he

²⁹⁷ Paul Zucker (ed.), *New Architecture and City Planning* (New York, 1944), pp. 549-568. The article was reprinted in Siegfried Giedion, *Architecture, You and Me* (1958), pp. 25-39.

²⁹⁸ *Architecture, You and Me* was first published in German under the title *Architektur und Gemeinschaft* (Hamburg: Rowohlt's Deutsche Enzyklopaedie, 1956). It was revised and translated into English by Jacqueline Tyrwhitt. The book comprises a collection of articles written between 1937 and 1944. With 'Gemeinschaft' Giedion does not refer to Tönnies' book *Gemeinschaft und Gesellschaft*, however some of the texts similarly express a deep regret for loss of unity and a common place for the community. Giedion sees the reasons for this in an uneven development between technological progress and the evolution of society, where the first had left the latter behind.

²⁹⁹ Giedion (1958), pp. 6-7.

³⁰⁰ *Ibid.*, p. 8. In *Space, Time and Architecture*, Giedion spoke of the Rockefeller Center and New York's Triborough Bridge as 'symbols of modern times.' See Eric Mumford (2000), p. 142.

³⁰¹ Giedion (1958), p. 9.

³⁰² Lewis Mumford, 'The Death of the Monument,' *Circle. International Survey of Constructive Art*, edited by J. L. Martin, Ben Nicholson, Naum Gabo (London: Faber and Faber, 1971 (1937), pp. 263-270. See also Lewis Mumford, *The Culture of Cities. The new*

took up this argument again: ‘the notion of material survival by means of the monument no longer represents the impulses of our civilization, and in fact defies our closest convictions. . . . The notion of a modern monument is veritably a contradiction in terms: if it is a monument it is not modern, and if it is modern, it cannot be a monument.’³⁰³ He shifts the monumental impact to the realm of the visual, and suggests that a modern civilization must renounce monumental structures:

The true symbol of the modern age in architecture is the absence of visible symbols: we no longer seek on the surface that which can obtain effectively only through penetration and participation in the function of a structure. As our sense of the invisible forces at work in the actual environment increases – not merely our sense of physical processes below the threshold of common observation, but psychological and social processes too – as this sense increases we will tend to ask architecture itself to assume a lower degree of visibility: spectator’s architecture, show architecture, will give way to a more thoroughgoing sense of form, not so conspicuous perhaps on the surface, but capable of giving intellectual and emotional stimulus at every step in its revelation.³⁰⁴

In ‘Nine Points on Monumentality,’ Giedion, Léger, and Sert, in contrast to Mumford, view the concept of monumentality as not linked to the classical tradition, and present it as a positive term. What appeals to them are precisely the visual qualities of the monument. Monuments go beyond the momentary; they create continuity between past, present and future, and thus give collective human experience and aspiration an expression in symbolic form by inscribing it into the city fabric. As cultural artefacts they stand not for power any longer, but for human ideals, aims, and actions, and they are necessary because they address feelings and the spiritual needs of people. Every period that developed a real cultural life had the power to create these symbols. The authors admit that traditional monuments had been on the decline, but predict the return of the monument with the return of the community to the city through the reorganization of economies. They pose the emergence of monuments as an evolutionary process within modernism itself. Architecture had first to tackle more basic problems such as housing and infrastructure before turning to the reorganization of vaster urban schemes. To give expression to building is no easy task and requires ‘the integration of the work of the planner, architect, sculptor, and landscapist.’ The failure of this collaboration had been the reason for the failure of monuments recently. This cross-disciplinary approach by the collaborative of planner, sculptor and painter was to bring out more popular results again. The authors even suggest that monuments will synthesise the gap between architecture and town planning,

role of Cities and Regions in modern Civilization, (New York: Harcourt, Brace and Company, 1938), p. 434.

³⁰³ Lewis Mumford, (1938), p. 438.

³⁰⁴ *Ibid.*, p. 421.

and between the city and the region.³⁰⁵ However, the future city they hereby invoke is basically not a new idea, except for a new imagery that is expressed through flexible, light materials and colour; otherwise it strongly recalls the thought behind Le Corbusier's urban schemes such as *Plan Voisin* (1925). Sites for monuments, the authors claim, have to be planned on a large scale; the 'replanning' of the now decaying areas of cities will create vast open spaces, which will make it possible to conceive and stage monumental architecture in an appropriate way. 'Monumental buildings will then be able to stand in space, for, trees or plants, monumental buildings cannot be crowded in upon any odd lot in any district. Only when this space is achieved can the new urban centres come to life.'³⁰⁶ In a double sense, the cities will be revived through new community life and through the return of the landscape into the city.³⁰⁷ In more detail, the new integration will be achieved through a new mobility and flexibility. The new monumentality stages new materials and techniques such 'as light metal structures; curved laminated wooden arches: panels of different textures, colours and sizes; light elements,' etc. These elements can change positions, and they are 'a source of new architectural effects,'³⁰⁸ such as animated surfaces with light, and other more ephemeral effects. Architectural ensembles in a new spirit will evolve now from the interplay between traditional building materials such as stone, new 'light' and flexible materials, and the rediscovery of colour as a constitutive architectural element.³⁰⁹ However, in the last paragraph of the article the discussion shifts focus again to a more traditional notion of monumentality as in Le Corbusier's *Plan Obus* (1931-1942): 'Manmade landscapes would be correlated with nature's landscapes and all elements combined in terms of the new and vast facade, sometimes extending for miles' These new landscapes do not contradict the use of technology, quite the opposite, technology extends our horizon of experience, for we can 'contemplate' these new monumental structures best from the air as well 'during a rapid flight but also from a helicopter stopping in mid-air.' A monumental architecture would seek to go beyond functionality and 'regain its lyrical value.'³¹⁰ In this way, architecture would rise again to the level of the arts, to painting, sculpture, music and poetry.

³⁰⁵ J. L. Sert, F. Léger, S. Giedion, 'Nine Points on Monumentality,' in Giedion (1958) p. 49.

³⁰⁶ *Ibid.*, p. 50

³⁰⁷ For an account on Le Corbusier's *Plan Voisin*, see Thordis Arrhenius' *The Fragile Monument. On Conservation and Modernity* (Doctoral Thesis, School of Architecture KTH, Stockholm, 2003). In contrast to the general description of *Plan Voisin* as a rational erasure of the historical past, a *tabula rasa* that installed nature as the new foundation of the modern city, Arrhenius points to the aspect that Le Corbusier preserved a group of historical buildings within this scheme. These monuments, which for Le Corbusier signified the essence of Paris, were to be conserved in a park created through the erasure of the urban fabric. In her thesis, Arrhenius argues that spatial operation participated not just in constituting the monument but also in changing its significance from an instrument of power into an object of knowledge and finally into a site of sentiment.

³⁰⁸ Sert, Léger, Giedion (1943), p. 50.

³⁰⁹ Fernand Léger's article 'On Monumentality and Colour' (1943) addresses the psychological influences of colour and light, and makes a point for the use of it in architecture; published in: Giedion (1958), pp. 40-47.

³¹⁰ Sert, Léger, Giedion (1943), p. 51.

In 'The Need for a New Monumentality,' Giedion presents monumentality even as 'an eternal need' of people, and states that this demand for monumentality cannot be repressed but had to flow from the 'community's emotional life, much more, it should be channelled in order to build a positive community life. 'The demand for shaping the emotional life of the masses is still unrecognized. Regarded as inessential this is left mostly in the hand of speculators.' Seeing the creation of urban space and emotional life inextricably connected, he suggests: 'The problem ahead of us forces on the question: Can the emotional apparatus of the average man be reached? Is he susceptible only to football games and horse races? We do not believe it. There are forces inherent in man, which come to the surface when one evokes them. The average man with a century of falsified emotional education behind him, may not be won over suddenly by the contemporary symbol in painting and sculpture. But his inherent, though unconscious, feeling may slowly be awakened by the original expression of a new community life. This can be done within a framework of urban centers and in great spectacles capable of fascinating the people.' He ends with the proposal that '[N]ewly created urban centers should be the site for collective emotional events, where the people play as important a role as the spectacle itself, and where a unity of the architectural background, the people, and the symbols conveyed by the spectacles, will be achieved.'³¹¹

In Switzerland, discussions on a 'new monumentality' were already underway when Giedion developed his ideas of a modern synthesis of the arts towards more popular expressions for urban environments. 'Neues Bauen,' which accommodated a style between traditional building techniques and new details, usually in wood, began to be widely accepted in the later 1930s, as the Swiss National Exposition of 1939 in Zürich demonstrated. A more popular modernism in Switzerland was paralleled with similar developments in the Nordic countries, especially in Sweden. After the success of Sven Markelius' Swedish Pavilion and Alvar Aalto's Finnish Pavilion at the 1939 New York World's Fair, 'Scandinavian modern' was much appreciated also in the United States. City planning emphasized planned village-like communities in a picturesque look, using materials such as brick and wood. Instead of parallel slabs, the new housing estates usually consisted of a mixture of low-rise and high-rise buildings, often with pitched roofs and facades in warm colours. The 'point block,' a free-standing higher building, was extensively used in park-like surroundings, as suggested by CIAM. One example is Sven Backström's and Leif Reinius' Danviks klippan apartments in Stockholm from 1943, published in Siegfried Giedion's *A Decade of New Architecture* (1951), p. 104.³¹² J. M. Richards, the editor of *Architectural*

³¹¹ Giedion (1958), pp. 32-39. In his book, Giedion points to the activities that the new term has generated: The *Architectural Review* in London publishes an issue in September 1948 with contributions by international architects on 'monumentality in the twentieth-century.' Writers include Gregor Paulsson (Uppsala, Sweden), Henry-Russell Hitchcock (Smith College, United States), Sir William Holford (London), Walter Gropius (then at Harvard), Lucio Costa (Rio de Janeiro), Alfred Roth (Zürich), and Siegfried Giedion. Mumford contributes to the debate of new monumentality with the article 'Monumentalism, Symbolism and Style' in a later issue of the *Architectural Review* (April, 1949). Giedion (1958), p. 23.

³¹² *Ibid.*, pp. 166-167.

Review, gave the Swedish trend a name in 1947, in an article called ‘The New Empiricism: Sweden’s Latest Style,’ where he hailed Sweden as a place where functionalism was being humanized ‘on the aesthetic side’ without becoming irrational. Swedish architects like Sven Backström and Sven Markelius, in Richard’s words, were ‘more objective than functionalists’ and were attempting ‘to bring back another science, that of psychology, into the picture.’³¹³ Giedion however, was more sceptical towards Neues Bauen and new empiricism, which in his words, both bear the danger of sentimentality and ‘coziness,’ and ‘under cover of “humanizing” architecture leads it only into another cul-de-sac.’³¹⁴

In line with these issues, CIAM 6, the first post-war congress, which took place in Bridgewater, Somerset, England in September 1947, was above all occupied with aesthetic problems. It had no specific theme, but was dominated by Giedion’s concept of new monumentality, by Sert’s concern about civic centres and ‘the human scale in city planning,’ and by J. M. Richards’ aesthetic appeal for a modern architecture for the ‘Common Man.’ The congress primarily defined the new direction of CIAM as ‘to work for the creation of a physical environment that will satisfy man’s emotional and material needs and stimulate his spiritual growth.’³¹⁵

The discovery of the importance of communal centres, and the rediscovery of neighbourhood units (from the Garden City language), and later even the street, is foreshadowed in Sert’s article ‘The Human Scale in City Planning.’³¹⁶ Here, the ‘civic and cultural centre’ is addressed as ‘the most important element [of the city]. . . its brain and governing machine.’³¹⁷ A similar stance was taken by Walter Gropius at the congress, where he insisted that the building of community centres connected to schools was more important than reconstructing housing, ‘for these centres represented cultural breeding ground which enables the individual to attain his full stature within the community.’³¹⁸ Although it was understood that the rational CIAM line for the creation of a mass architecture had to adapt to more popular taste, the production of the new images was thought to stay in the hands of the experts, the collaboration of the planner,

³¹³ Richards quoted in Eric Mumford (2000), p. 167. J. M. Richards was editor of *The Architectural Review* from 1937 to 1971, one of the most influential architectural magazines in Britain. AD has been published monthly since 1896. The corresponding style to ‘new empiricism’ was called ‘new humanism’ in Britain. There was however a strong opposition against both strands there especially among the younger architects in MARS (Modern Architectural Research Group), a local subsection of CIAM. For them it meant ‘a blank betrayal of everything Modern Architecture was supposed to stand for.’ See Reyner Banham, *The New Brutalism* (Stuttgart/ Bern: Karl Krämer Verlag, 1966), p. 13, Eric Mumford (2000), p. 217, and Mattsson (2004), p. 72.

³¹⁴ Siegfried Giedion (ed.), *A Decade of New Architecture* (Zürich: Editions Girsberger, 1951), p. 2.

³¹⁵ *Ibid.*, p. 6.

³¹⁶ José Luis Sert, ‘The Human Scale in City Planning,’ published in Zucker (1944), pp. 392-413.

³¹⁷ . . . containing university buildings, museums, concerts halls and theatres, a stadium, the central public library, administration buildings, and areas especially planned for public gatherings, the main monuments constituting landmarks in the region, and symbols of popular aspirations. Sert (1944), pp. 403-404.

³¹⁸ Eric Mumford (2000), pp. 175-177.

architect, landscapist, and artist. Richards expressed it by stating that the ‘man in the street’ should not assist in the actual designing of buildings, but his appreciation can be based on what already means something to him emotionally. Through a more humanized architecture, with the help of using familiar materials, and the reuse of old buildings in a scenic composition on a larger scale, ‘emphasizing thereby historical continuity of a town’s growth’ he believed it was possible ‘to give the ordinary man on whose behalf the work is done a renewed sense that architectural art is something in which he can participate.’³¹⁹

The attempt to popularize modern architecture after the war by this group was as controlled, exclusive, and partly elitist as was the idealization of a technocratic utopia of the pre-war years. In fact, the focus moved from the emphasis on functionalist rational and technical architectural solutions to more artistic interpretations, which were no less purist. For Giedion, the city was turned into a piece of art with civic centres ‘protected by the cities or the state from advertising, swayed only by the questions of profit or propaganda.’³²⁰

At CIAM 7, in Bergamo, Italy (1949), the debate on ‘human scale,’ the civic centre as a ‘Fifth Function,’ and more popular expressions was continued. An emblematic project at this congress became the plan for Chimbote, a small industrial port on Peru’s northern desert coast, by Sert and his partner Paul Lester Wiener. The proposal attempted a synthesis between what was seen as universal typologies and regional types. The plan envisioned a new town for twelve thousand people, mostly expected to arrive from the rural areas of the mountains. It was subdivided into neighbourhood units connected through extensive circulation systems for car traffic. Beside the civic centre, which was reminiscent of Le Corbusier’s plan for St.-Dié (1945), a central semi-enclosed square featured an ensemble of buildings that housed civic libraries, museums, and other public functions. The plan staged two Unités à la Le Corbusier, and introduced a new form of low-cost housing, ‘le tapis urbain,’ or ‘carpet housing,’ one-or-two-story courtyard houses based on the patio houses of the local vernacular where animals could be kept within the dwellings. A committee that reviewed the work of CIAM found two overall approaches: the idea of new typologies such as Le Corbusier’s Unités, which could be applied anywhere, and second, a tendency that was aiming at differentiating living quarters in accordance with demographic circumstances and specific local conditions.³²¹

The new concern with community life reached its climax with the topic of ‘The Heart of the City’ at the next congress, CIAM 8, in Hoddesdon, England (1951). The theme, first decided as the core of the city, later renamed as the heart of the city, addressed the civic centre, and was mainly orientated towards cultural and social issues. This followed an interest in the building of new pedestrian centres by the Dutch and British group, a focus on the reconstruction of historical centres by the Italian group, as well as a general concern with the reconstruction of bombed city centres. Any association with systematization and quantifiable data

³¹⁹ J. M. Richards ‘Contemporary Architecture and the Common Man,’ in Giedion (1951), p. 34.

³²⁰ ‘Architects and Politics: An East-West Discussion (CIAM 8, Bergamo, 1949)’ in Siegfried Giedion (1958), p. 80-84.

³²¹ Eric Mumford (2000), p. 191.

collection was avoided; instead the core/ heart should be viewed as the image of built space, a place where the ‘sense of community’ was physically expressed, and not as a place that could be scientifically analyzed in the manner of pre-war CIAM congresses.³²² Kenzo Tange from Japan was invited to present his winning competition entry for the Hiroshima Peace Centre and Memorial in the first city destroyed by an atomic bomb. Tange’s scheme consisted of an Atomic Memorial Museum and flanking buildings sited in a Peace Park on a peninsula in the centre of Hiroshima.³²³ It was the first time that non-Western architects contributed to the congresses,³²⁴ although overall there were very few designs from outside of Europe.³²⁵

Much of the preparation for CIAM 8 was undertaken by Jacqueline Tyrwhitt and the English MARS group.³²⁶ To study the pedestrian core, the MARS group suggested identifying five different ‘scale levels’ of community: ‘the village or primary housing group,’ ‘the neighbourhood, the town or city sector, the city,’ and ‘the metropolis or multiple city.’ It was assumed that each of these scales called for a ‘special physical environment’ in order to express a sense of community. In general, a sense of community meant an awareness of the interdependence of these different scales. These categories strongly recall Patrick Geddes’ *Evolution of Cities*, which had just been republished (1949) with a foreword by Tyrwhitt.³²⁷

At that congress it became clear that CIAM was less international than it wanted to be as it focused above all on European issues. There was little discussion of projects that came from another cultural background than the European one (Tange’s Hiroshima Peace Centre was an exception), a fact that was

³²² Eric Mumford (2000), pp. 202-203.

³²³ Tange was a member of the government agency for reconstruction and begun the design of the memorial in 1946, though it was not until 1949 that the funds were allocated. The project was completed only in 1955. David B. Stewart, *The Making of a Modern Japanese Architecture* (Tokyo/ New York/ London: Kodansha, 2002), pp. 172-75.

³²⁴ Beside Tange, the official Japanese representatives Kunio Maekawa and Junzo Sakakura were present. Also for the first time, Balkrishna Doshi from India took part in the congress. Eric Mumford (2000), p. 204.

³²⁵ Beside Kenzo Tange’s Hiroshima Peace Centre, a project by the new French Moroccan GAMMA group (Groupe d’architectes modern marocains) was presented, of which Georges Candilis and Shadrach Woods were a part, and a Cuban project by Batista and Beale was also presented, which was not included in the later publication.

³²⁶ MARS was founded in 1933 as a national section of CIAM. It included Walter Gropius, Marcel Breuer, Serge Chemayeff, Ove Arup, Hugh Casson, László Moholy-Nagy, Herbert Read, J. M. Richards, John Betjeman, and after the war also Jaqueline Tyrwhitt among others.

³²⁷ Tyrwhitt was a member of MARS since 1941, and had been appointed assistant director in 1949. She had met Giedion at CIAM 6, the first congress she attended, and by 1948 was his assistant in preparing *Mechanization takes Command* and other books. She was director of the London University School of Planning 1941-48, and a visiting lecturer at the New School for Social Research in New York after 1948. She also became a planning consultant, eventually forming a partnership with Wells Coates in 1950 to prepare the Town Planning Exhibition for the Festival of Britain. It was Tyrwhitt who first reintroduced Patrick Geddes’ ideas in Britain in republishing Geddes’ article ‘The Valley Section’ in the *Architects Year Book*, London, 1944, pp. 65-71.

also criticized by some of the delegates.³²⁸ Further, it should be noted that although claiming to reach out for the common man, there was no thought of giving up on authoritative planning and the control of urban design, in actually getting participation from the man from the street (a problem that still persists in planning). Despite the rhetoric of the concern for the common man, CIAM insisted on an elite position that ought to provide planning solutions for a democratic public through more popular aesthetics, a position that primarily focused on the urban in visual terms. This shift of concern marks a general change in the perception of the masses as an unpleasant image towards that of community life as a more organic outlook. A trend that will be continued with Team 10, the younger CIAM generation during the following congresses, but under different premises, which not only accepted but fully embraced what Giedion had rejected: mass culture. Although, retrospectively, the post-war CIAM congresses can be read as a failed attempt for a renewal in terms of an avant-garde, and the readjustment of its attitudes, aims, and organizational structure to new requirements, the ‘Heart of the City’ congress is seen as the most significant of the post-war CIAM congresses. It was one of the earliest debates on public space in cities completely transformed after the destructions of the war.³²⁹



4.4 Alison Smithson, Sketch, Team 10 Primer (1968)

Team 10 and the Recycling of the Valley Section

In CIAM, it was agreed to hand over to the younger generation in 1953, on its twenty-fifth anniversary, which would result in the formation of Team 10, after CIAM 9. The CIAM 9 congress at Aix-en-Provence in July 1953, with the theme ‘The Charter of Habitat,’ was the largest CIAM meeting, attended by an estimated five hundred members from thirty-one countries, and by observers numbering in the thousands. It was here that the young British architects Alison and Peter Smithson, recently elected members of CIAM as part of the English MARS group, openly challenged the CIAM discourse on the ‘Functional City.’ The Smithsons questioned the continuing validity of the Athens Charter and proposed a new ‘hierarchy of human associations’ to replace it.³³⁰ This was also the last meeting attended by Le Corbusier and Gropius. The Smithsons presented their ‘Urban Reidentification’ grid,³³¹ identifying the task of their generation as ‘the

³²⁸ See Eric Mumford (2000), p. 213.

³²⁹ *Ibid.*, p. 215.

³³⁰ The Athens Charter was first published in 1943 by Le Corbusier. It was based on the ideas of the ‘Functional City’ with its zoning pattern of living, working, circulation, and recreation, which had developed during the CIAM meetings.

³³¹ The CIAM Grille or grid was conceived in 1947 by Le Corbusier and the French local group of CIAM, ASCORAL (Assemblée de constructeurs pour une rénovation

reidentification of man with his house, his community, his city.’ Much of the material the Smithsons showed had been developed in a competition project for the London Golden Lane site in 1952. The Golden Lane idea was described as ‘a multileveled city with residential streets-in-the-air, as an attempt at another house grouping. From the multileveled street, people are in direct contact with the larger range of activities which give identity to their community. . . .’³³² The Golden Lane-type housing weaved between existing buildings interlaced with main roads, and thus escaped from the typology of point blocks and isolated buildings, suggesting dwellings that were organized in twig-like forms meant to express connection and choice. The presentation of the work was obviously influenced by the Smithson’s association with the Independent Group.³³³ The panel grid was half filled with photographs by Nigel Henderson of children playing in the street, and a colourfully painted human figure covered the middle section.³³⁴ The text in ‘Urban Reidentification’ stressed the hierarchy of associational elements of identification on different scales, like the house, the street, the district, the city. It was pointed out that these elements were not to be taken as the reality but to be treated as an idea. It was the architect’s task to find new equivalents for these forms of association. A ‘freer, more complex yet quite comprehensible idea of “order” might be developed,’ wrote Peter Smithson.³³⁵

Beside the unusual representation, the Smithsons presented ideas for a quite different urbanism, already a sort of open scheme as the twigs were expandable. Their concepts and imagery prefigure much of the attempts by architects in the 1960s to find new urban forms that were based on the structural and symbolic figure of the network, as an organic configuration that would harmoniously unite architecture and urbanism in a larger system. We will find similar thoughts in the theoretical concepts of mega-structures by the Japanese metabolists, and the reflections on ‘stem’ by Candilis, Schadrach, Woods. The

architecturale), in 1947 and was a device for ordering analyse and proposals in project presentations, and for making the different projects comparable. The grid was structured along the vertical axis around CIAM’s four functions of modern urbanism whereas the horizontal axis listed twelve themes. The grid underpinned the quest for universal principles.

³³² From the text on the CIAM Grille, printed in Alison and Peter Smithson, *The Charged Void: Urbanism*, edited by Judy Chung (New York: Monacelli Press, 2005), p. 26.

³³³ The Independent Group was a loose association of artists, musicians, architects and writers. They formed in 1952, and became well-known above all with their exhibitions they organized in the ICA in London. The group consisted of the architects Alison and Peter Smithson, James Stirling, the artists Richard Hamilton, and Eduardo Paolozzi, the photographer Nigel Henderson, the architectural critic Reyner Banham, and the writers Lawrence Alloway, John McHale, and Toni del Renzio. For an account on the IG, see Anne Massey, *The Independent Group: Modernism and Mass Culture in Britain, 1945-59* (Manchester: Manchester University Press, 1995); and Mattsson (2004).

³³⁴ Beside Henderson, Erik Mumford mentions also his wife, anthropologist Judith Stephen, as part of the Independent Group. Stephen conducted studies of working-class neighbourhoods in the spirit of the Chicago School of Urban Sociology, which also seemed to have informed the rhetoric of this project presentation. Eric Mumford (2000), p. 234.

³³⁵ Peter Smithson, ‘The Idea of Architecture in the ‘50s,’ *Architects’ Journal* 131, January 1960, p. 124. Smithson points to the importance of his encounter with the work of the artist Jackson Pollock, in this respect.

Smithsons were also among the first who gave attention to street life again. This trend was visible as well in the analysis of the French-Algerian GAMMA-group with Vladimir Bodiansky, Georges Candilis, Pierre-André Emery, and their associates, which showed photographs of the conditions in North African squatter settlements and described the demographic forces that gave rise to them.³³⁶

A nascent modernism critique by the younger CIAM generation, which would become known as Team 10, discovered a theoretical foundation in Patrick Geddes' thoughts.³³⁷ Most likely they were inspired by his reflections on the importance for citizens of establishing a geographical self, and by his emphasis on morphology and mobility in this respect. The 'Urban Identification' work by the Smithsons can definitely be read in this light. In addition, Geddes' belief in the experience of a sensual world for gathering knowledge, and the importance that visualization takes in his thinking, could be another aspect that made his ideas so suitable to recycling during the 1950s.³³⁸ In December 1953, the architects John Voelcker, Bill and Gill Howell, and the Smithsons met in London for a concluding paper on the CIAM 9 meeting that had been held at Aix-en-Provence, called 'Reflections on CIAM 9 and Proposals for Immediate Work.' In this paper, the group acknowledged that the Athens Charter was of great historical importance, but also that the contents of the Charter were no longer instruments for creative development. Rather than the 'analytical' categories of the Charter that divided the city into four urban 'zones' of dwelling, working, transportation and recreation, the group proposed new 'synthetic' categories, based on the terminology that Patrick Geddes had developed in his Valley Section. At another meeting in Doorn, the Netherlands in January, 1954, Peter Smithson along with John Voelcker, Jaap Bakema, Aldo van Eyck, Daniel van Ginkel, and Hans Hovens Greve took up Geddes' thought concerning the larger region again, which would evolve into the well-known Doorn Manifesto. This pamphlet bases its premises on Geddes' view of the physical environment of a natural region and a city as mutually dependent, conceptually in terms of space, and structurally in its socio-economic relations.

In Team 10, CIAM's former 'analytical categories' were generally viewed to concern quantitative aspects, which were measurable and abstract, and evolved from 'political, technical, and mechanical expediency,' thus they failed to 'reflect any reality of social organization.'³³⁹ In contrast, 'synthetic categories' were connected to qualitative aspects that related to experiential factors and to

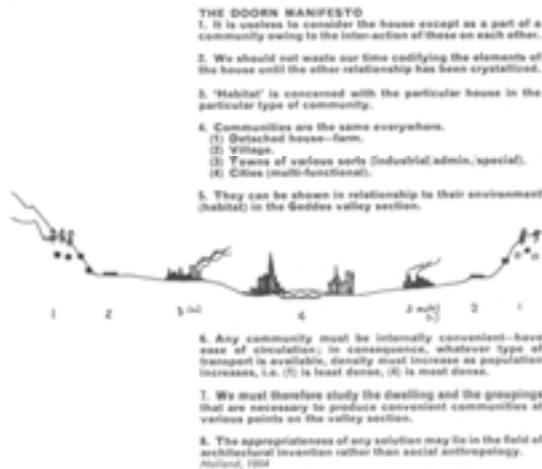
³³⁶ Their work was one of the first major efforts of CIAM architects to call attention to the problem of rapid urbanization in developing countries, to which Bodiansky had answered with 'Housing for the Greater Number,' a report he had delivered to the UN Economic and Social Council in 1952. Eric Mumford (2000), p. 236.

³³⁷ Alison Smithson's *Team 10 Primer* listed as members: Jaap Bakema, Aldo van Eyck, Georges Candilis, Schadrach Woods, the Smithsons, John Voelcker, Jerzy Soltan, Geir Grung, Ralph Erskine, and José Antonio Coderch. Other later participating members included also Kisho Kurokawa. Team 10 met every year until 1977.

³³⁸ Peter Smithson recalls a Geddes revival in Britain after the war during the 1940s and 1950s. He was introduced to Geddes through his teachers at the University of Newcastle/Durham. *Peter Smithson, Conversation with Students. A Space for Our Generation*, edited by Catherine Spellman and Karl Unglaub (New York: Princeton Architectural Press, 2005), p. 38.

³³⁹ Alison Smithson, *The Emergence of Team 10 out of C.I.A.M.* (London, 1982), 8.

‘human aspirations.’³⁴⁰ The statement was illustrated with a sketch version of a Valley Section in the Smithsons’s interpretation, where they defined different ‘fields’ of what they called ‘scale of association.’ Particular functions would now be studied within ‘their appropriate ecological field’, as aspects of each ‘total problem’ of human association.³⁴¹ Instead of the *permanent* commissions of the functional city, the Smithsons suggested a *flexible* ‘commission of atmospheres.’³⁴² Their interpretation of the Valley Section focused on the issue of recognizing and consequently building in different scales for various environments and communities, such as detached houses, hamlets, villages, towns, and cities. The relationship between the house and the setting, the architectural and urban space, was crucial.



4.5 Doorn Manifesto (1954)

The most decisive factor that had come out of the method of working in section, after Geddes, was in fact the issue of morphology. It would lead away from CIAM’s endless discussions of the relationship of ‘the common man’ to his community to a *spatial* concept that was unifying yet it could also differentiate. At CIAM 10 in Dubrovnik (1956), the Smithsons exhibited proposals for new housing types appropriate to their different locations along the lines of the Valley Section. It moved from isolated dwellings, rural villages, town and city, to the metropolis. The proposition for ‘hamlets,’ for example, turned against standardized suburbs, and put forward a new hierarchy of dwellings-gardens-roads. This idea was also expressed in the suggestions for towns, where varying building types were individually arranged in respect to groves, lanes, and streets, in a way that no ‘cluster’ would ever look the same. Specific type houses for villages were supposed to create an ‘identity of coherence – like red apples on a

³⁴⁰ Alison Smithson (ed.), ‘The Doorn Manifesto,’ *Team 10 Primer* (London: Studio Vista, 1968), p. 75. See the Valley Section in the subsequent Doorn Manifesto, printed in: *Team 10 Primer*, edited by Alison Smithson (1968), p. 75.

³⁴¹ Eric Mumford, (2000), p. 241.

³⁴² *Ibid.*, p. 239.

tree,³⁴³ whereby the ‘active’ pattern of the land formed ‘the living factor in the plastic manipulation.’³⁴⁴ This meant a shift away from a fixed spatial system of composition to conceptions of non-hierarchical elements adaptable to an existing topography.

With the introduction of Geddes’ organic categories, the modernist notion of landscape, as in Le Corbusier, changes from its hygienic character of light, air, and green but flat terrain, into a three-dimensional morphological space. In this, morphology not only stands for new spatial qualities, but also gives a picture of different social conglomerations connected within a network of differences. With the emphasis on the section in an urban discussion, the Smithsons oppose the literally and metaphorically flattened master plan, stripped bare of all atmospheric qualities. Expressed in the representation of an inverted relationship of city–landscape, the topological considerations of these architects prepared the ground for contemporary architectural practices, whose designs take their point of departure in dynamic processes rather than in the object itself.

For the Smithsons the Valley Section was a conceptual tool for a depiction of different social structures in space, and a model for architectural intervention that went beyond universal planning assumptions by focusing on more specific urban situations. The various types of settlements signify both social organizations and their different material expressions in urban and rural space. The treatment of the type-house in relation to the cluster shows a reflection on the relationship of the individual to the group, which also seemed to have come out from an interpretation of the Valley Section. The intensity of ‘human associations’ appears to rise when approaching the city in the valley, and to gradually diminish in the countryside towards the more hilly areas, as indicated in the sketch. This hierarchy recurs in the association of house–street–district–city indicating the different scales of human associations. The purpose is to review social reality in the context of the existing, but also to create new architectural forms and urban spaces in order to live up to a changed social reality.³⁴⁵

Another parallel, which can be drawn from Geddes to the Smithsons is the use of photography, as the architectural historian Volker M. Welter has also pointed out. With the Outlook Tower in Edinburgh, Geddes had created a visual laboratory including a panorama platform, a camera obscura, a museum, and an image and map archive. Geddes was further engaged in a photographic survey of Edinburgh since the 1890s.³⁴⁶ The Smithson’s use of photography was influenced by their concept for the exhibition *Parallel of Life and Art* (1953), which they conceived together with the Independent Group. Photography becomes significant

³⁴³ ‘Village,’ panel 1, Dirk van den Heuvel and Max Risselada (eds.), *Alison and Peter Smithson – from the House of the Future to a house of today* (Rotterdam: 010 Publishers, 2004), p. 72.

³⁴⁴ ‘Town,’ panel 2, *ibid.*, p. 74.

³⁴⁵ Volker M. Welter, ‘In-Between Space and Society. On Some British Roots of Team 10’s Urban Thought in the 1950s,’ *Team 10 1953-81. In Search of a Utopia of the Present* (Rotterdam: Nai Publishers, 2005), edited by Max Risselada and Dirk van den Heuvel, p. 260.

³⁴⁶ *Ibid.*, p. 261.

even for a spatial organization here.³⁴⁷ Informed by an interest in the act of processing a world of images, how we link them, and an associative use of them as flexible and expendable, their application can be seen as a turning against Le Corbusier's iconic representations of the Parthenon and the car as fundamental types or end products of an evolution. What they were after was much more the immediate experience rather than the representation of change. Instead of beauty, or perfection, in Le Corbusier's terms, images should evoke emotions.³⁴⁸ The pictures by Nigel Henderson, which were presented on the Urban Reidentification Grille in relation to the Golden Lane Project conceived for the City of London, were originally taken in Bethnal Green, a working class neighbourhood. This demonstrates that images were not used in a literal sense, but in free associations, for expressing more ephemeral qualities such as atmospheres, and general spatial qualities that could not easily be expressed in words. The image thus becomes a circulating reference, not unlike its use in mass media and advertisement; an independent object of its own, and transferable to different situations, where it would become part of another wholeness, or as the Team 10 member John Voelcker formulated it: 'The significance of images of today are random ideas which add up to a coherent sense of space . . . space continuously discovered.'³⁴⁹ In the exhibition *The Parallel of Life and Art*, it was not only the relation of the images to each other but also to the visitor, who through her/his movement would create the 'art work.' This is similar to Geddes' emphasis on movement and experience; although in the IG's exhibition there was no ready-made choreographed path the visitor was supposed to follow. S/he did not contemplate an art piece, but an environment was created by the activity of strolling through it and registering a space in passing by.³⁵⁰

Image quality was transferable to buildings, as Reyner Banham, the theoretical voice of the IG, shows in *The New Brutalism*.³⁵¹ A 'new brutalism' turned above all against the picturesque in new empiricism, and the artistic claims of a new monumentality. Banham suggests a visual organization, which he calls a-formal in contrast to an academic tradition of composition, where nothing could be added or taken away; with a-formal he means the quality of flexibility and expendability, clearly in relation to the emergence of popular and consumer culture.

³⁴⁷ For a discussion of the exhibition *The Parallel of Life and Art* (1953) by the Independent Group for the ICA (Institute of Contemporary Art) in London, see Mattsson (2004), pp. 89-115.

³⁴⁸ Reyner Banham (1966), p. 41; see also Mattsson (2004), p. 77.

³⁴⁹ See John Voelcker, 'CIAM 10 Dubrovnik, 1956,' *Architects Year Book 8* (1956), p. 45, quoted in Welter (2005), p. 262. Welter points to this use of Henderson's pictures from Bethnal Green for the Urban Reidentification Grid, which means for him that 'visual records of identifiable urban life situations are transformed into symbolic images illustrating human beings in space that is devoid of references to specific locations.'

³⁵⁰ Mattsson stresses the point that the emerging experiences of the visitors was individual, and created, at the same time, a system of differences. She relates this to the complex of consumption where all objects and experiences are related in a system of differences. Mattsson (2004), p. 111.

³⁵¹ Banham used the term first in the article 'The New Brutalism,' in the *Architectural Review*, December 1955, pp. 354-361. See also Banham (1966), and Mattsson (2004), pp. 71-76.

New monumentality can be seen as a symptom of a general process of reorganization, which diversifies in various visual concepts, and where space is no longer separable into distinct territorial units. A modern concept of space corresponds to its commodity character, which is constituted through differences, as Mattsson has already shown. With political and economic change during the post-war era, new space patterns emerge that go beyond former territorializations and concepts of spatial homogeneity, but which also differentiate according to macro and micro landscapes of functional, structural, social, or even atmospheric contexts. The issue of movement and mobility in the experience of space, constantly re-created through the activity of the viewer, becomes a central issue in the constitution of the urban image. The next section will further explore the significance of the design of spatial imagery for urban environments during the 1950s and 1960s, and will distinguish between different theoretical approaches, aimed at the reconstitution of coherent environments. These include: a return of the symbolic paradigm, a framed vision of the picturesque, an approach based on the emergence of embodied experience, and a fusion of all approaches in the typing of structural, formal, and ecological conditions.



4.6 *Parallel of Life and Art* exhibition (1953)

New vision and the art of environment

The urban debate of the post-war period is characterized by a search for a new theory for urban design, in contrast to the former discipline of urban planning. In this light we can see the entire discourse concentrating on new aesthetic values, which is evident in the concerns of the late CIAM congresses, in Giedion's, Sert's, and Léger's manifesto for a 'new monumentality,' in Richards' advocating of a 'new empiricism' or 'new humanism,' in Lewis Mumford's articles and books, in Team 10's response to the Charter of Athens, as well as in the Smithsons' architectural work and their exhibitions together with the Independent Group. Urban design was not only about the visual reorganization of the city, but also about the constitution of a new self as well, as we have seen in Patrick Geddes' conception of morphology, and his visualization techniques. Thus, the central part of this agenda was carried by the idea of a 'new vision' and an interest in theories of perception, in information theory, and cybernetics. A new language of vision had earlier been put forward by László Mogoly-Nagy, first at the Bauhaus, and after the war, together with Gyorgy Kepes at The Institute of Design in Chicago, and later by Kepes at MIT (1947-1974). Through the techniques of a new visual

language, not only the planner and the architect but also laypersons could learn to see and appreciate urban space afresh. The planner, architect, and designer had to be guided through an education of the senses in order to take better care of the formal expression of objects, architectures, and environments. For urban design this meant the creation of either symbolic or visually more integrated spaces for achieving a better emotional response by the ‘common man.’³⁵²

The modernist proposition to learn to see afresh as it was put forward at the Bauhaus with László Moholy-Nagy, Josef Albers, Johannes Itten, and later by Gyorgy Kepes, friend and collaborator of Moholy-Nagy since 1930, goes back at least to John Ruskin’s ideal of ‘the innocent eye.’ Ruskin had coined the phrase in his *Elements of Drawing*, insisting that in order to learn how to draw, a student must attain ‘*the innocence of the eye*, that is to say, a sort of childish perception of flat stains of colour, merely as such, without consciousness of what they signify.’ According to Ruskin, the innocent *transparency* of vision was obscured by conventions learned from society. His concern was: We see only what we know, but we have no consciousness of ‘the real aspects of the signs we have learned to interpret.’³⁵³ With a natural, childlike attitude, it was possible to get rid of the luggage of everyday misconceptions, and the burden of conventions and history. In purifying one’s view, one could disconnect from one’s own milieu. This method gains special significance when considering that Ruskin originally developed it for the training of working class students with the purpose of teaching them artistic skills with which they could make a living. He soon came to think of ‘the innocent eye’ as a model for teaching students, in fine arts, in general.³⁵⁴ If culture was distorting nature then it was the role of the artist to show us ‘nature’ again.³⁵⁵ The method was based on drawing not from direct

³⁵² Theories of perception, such as the Gestalt theory by Rudolf Arnheim, who wrote about film and art since the late 1940s, *Psychoanalysis of Vision and Hearing* by Anton Ehrenzweig (1953), on iconography, such as Erwin Panofsky’s books, and philosophical work that was dealing with the creation of symbols, such as *Feeling and Form. A Theory of Art Developed from Philosophy in a New Key* (1953) by Susanne Langer, were widely read by architects during the 1950s.

³⁵³ John Ruskin, *The Elements of Drawing in Three Lessons to Beginners* (New York: John Wiley and Sons, 1885), p. 22, quoted in Kazys Varnelis, ‘The Education of the Innocent Eye,’ *Journal of Architectural Education*, May 1998, 51/4, p. 212. With ‘transparency’ Ruskin prefigures what would become a favourite theme specifically at the Bauhaus and in the modernist jargon in general. For an impact of the innocent eye on Surrealists and Romantics, see Martin Jay, *Downcast Eye* (Berkeley/ Los Angeles/ London: University of California, 1994), pp. 243, 393.

³⁵⁴ Ruskin became appointed Slade professor of Art at Oxford University in 1869, where he developed the innocent eye into a new pedagogical imperative for art education.

³⁵⁵ Pierre Bourdieu points out that the belief in pure aesthetic perception, of which the innocent eye is a manifestation, is founded on class distinction and not on the erasure of class distinction. It requires not the unlearning, but the learning of a code. The cultural competence needed to perform the act of deciphering this code is mostly the result of upbringing and functions as a marker of class. Those who are able to make the transition to the innocent eye put themselves above the vulgarity of the mass. Pierre Bourdieu, *The Field of Cultural Production: Essays on Art and Literature* (New York: Columbia University Press, 1992), p. 2., and *Distinction: A Social Critique of the Judgement of Taste* (New York: Routledge and Kegan Paul, 1984), pp. 485-500. See Varnelis (1998), pp. 219-220.

observation but through formal lessons. The goal was to get at the world as it really is through the path of abstraction. Ruskin's mode of vision contained within itself the possibility of developing non-representational means for producing designs.³⁵⁶

Ruskin's innocent eye, as well as the idea of teaching a visual language of simple objects, which was formerly developed by child educators such as Johann Heinrich Pestalozzi and Friedrich Froebel,³⁵⁷ came together in the first year of the art education program at the Bauhaus, the so-called *Vorkurs*, first under Johannes Itten and later under Albers and Moholy-Nagy. Itten believed that 'every pupil is burdened with a mass of learned material which he must throw off in order to arrive at experience and his own awareness.'³⁵⁸ The intention was, with the help of method, to erase students' preconceptions and habits of seeing, and radically alter their perception. Moholy-Nagy believed that everybody could be trained in this, and that there was no need for a special talent. At the Bauhaus, a new visual language was articulated in a series of visual tropes found in works of modern art, mostly from cubists that described relationships such as distortion, twisting of objects, sections, superimpositions, positive-negative forms and lines, penetrations, crossing lines, many-faces-in-one, explosion, stroboscopic view, transparency, etc. Through the double process of moving the eye and then reconstructing the image, vision transformed from a passive consumption to a more active production of images. In *The New Vision*, Moholy-Nagy wrote: 'cubism replaced perspective and mimetic representation by the simultaneous representation of space and time; in its second synthetic phase, cubism rid itself of the object being represented altogether, shifting from representation to generative production in focusing on the conditions of pictorial arrangement and the picture-

³⁵⁶ Ruskin's 'innocent eye' was already then an ideological construction, which did not correspond to the actual scientific findings in physiology and optics at the time. Scientific experiments proved that nerves could be stimulated via electricity, which would lead to a sensation without an actual connection to the outer world. Scientists were well aware that the process of seeing was connected to a subject that was not working as a 'tabula rasa,' but as a composite structure on which a wide range of techniques and forces could produce manifold experiences that are all equally seen as 'reality.' The body of the observer was recognized as the site for stimulation and experience simultaneously (that what Ruskin wanted to separate in order to get to 'the real world'). The art historian Jonathan Crary suggests that this separation is the precondition of a modernist move that culminates in abstraction. Another theoretical viewpoint sees this modernist move in terms of a disembodiment of vision (where everything extends from the object). For a discussion on the paradigm shift into discourses and practices of vision in the nineteenth-century, see Jonathan Crary, 'Modernizing Vision,' *Vision and Visuality*, Hal Foster (ed.), (Dia Art Foundation, Discussions in Contemporary Culture, Number 2; Seattle: Bay Press, 1988), pp. 29-44.

³⁵⁷ Johann Heinrich Pestalozzi, Swiss child educator (1746-1827), and Friedrich Froebel, German child educator (1782-1852).

³⁵⁸ Itten in a leaflet, 1922, in Hans Maria Wingler (ed.), *The Bauhaus: Weimar Dessau Berlin Chicago* (Cambridge, Mass.: MIT Press, 1969), p. 64, quoted in Varnelis (1989), p. 221.

plane itself. In synthetic cubism, ‘the picture plane is activated by cutting and penetrating it, by turning it about and pulling off its skin.’³⁵⁹

The pedagogy of a visual language based on the innocent eye was refined in the United States where Moholy-Nagy, Albers and Kepes emigrated during the 1930s after the National Socialists took power in Germany, and closed the Bauhaus. The Chicago’s Association of Arts and Industry invited Moholy-Nagy to found a New Bauhaus in Chicago in 1937. Here the new visual language formed the basis after the war for the formation of a new commercial arts, which included visual communication, industrial design, and typography. The study of this method was largely modelled on the structure of the Bauhaus when Moholy-Nagy was teaching there (1923-28), but with a few extensions. However, the New Bauhaus was closed again in 1938 due to conflicts between the board of directors, representing the interests of industry, and Moholy-Nagy, and reopened independently again a year later under Moholy-Nagy at another Chicago location as the School of Design, which would become the Institute of Design in 1944.³⁶⁰

Moholy-Nagy’s second book *Vision in Motion* (1946), which he wrote in America while teaching at the Institute of Design in Chicago, developed the theme further. The necessity for a new vision not only addressed the artist, designer, architect and planner, but in fact everyone, and was a societal issue. In the introduction to *Vision in Motion* he claimed:

The industrial revolution opened up a new dimension – the dimension of a new science and a new technology which could be used for the realization of all-embracing relationships. Contemporary man threw himself into the experience of these new relationships. But saturated with old ideologies, he approached the new dimension with obsolete practices and failed to translate his newly gained experience into emotional language and cultural reality. The result has been and still is misery and conflict, brutality and anguish, unemployment and war. . . . We have to free the elements of existence from historic accretions, from the turgid symbolism of past association, so that their function and effectiveness will be unimpaired.³⁶¹

³⁵⁹ László Moholy-Nagy, *The New Vision* (New York: Wittenborn, Schultz, 1947), pp. 34-37. The book was first published in German under the title *Von Material zu Architektur*, in 1928. A revised version was published in English in 1930. An enlarged and revised version appeared in 1935.

³⁶⁰ Reinhold Martin, *The Organizational Complex. Architecture, Media, and Corporate Space* (Cambridge, Mass./ London, MIT Press, 2003), pp. 52-55.

³⁶¹ László Moholy-Nagy, *Vision in Motion* (Chicago: Paul Theobald and Company, 1965), pp. 10-11; first published in 1946. ‘Vision in Motion,’ which he also calls ‘vision in relationships’ (114) still refers to the multiple viewpoints in Cubist artworks that present an object in motion as if revolving and rotating before the spectator (121). Essentially what Moholy-Nagy has in mind is a ‘sociobiological synthesis’ of art and science where the artist, whose research is not as systematic as the scientists’, complements the scientist with ‘a total vision’ that scientists rarely have (31), as he claims. Reinhold Martin argues that this was Moholy-Nagy’s attempt to ‘redirect human evolution by inscribing a technologically mediated new vision.’ (54) He shows that Moholy-Nagy was closely collaborating with the biologist Julius Huxley, who eventually became an advisor at the Institute of Design. In the first chapter of *Vision in Motion* Moholy-Nagy quotes Huxley: ‘There are many obvious ways in which the brain’s level of performance could be genetically raised – in acuteness of perception, memory, synthetic grasp and intuition,

Recalling Giedion's earlier demand for an education of the emotions, what also Moholy-Nagy sees as indispensable as well is 'a synthesis of the intellectual and the emotional,' which could be reached through appropriate education: 'At present the nonintellectual development of the individual is entirely his private affair, confined to a hit-or-miss approach. The consequence is emotional illiteracy, which means to be without compass, without assurance of feeling, in a complex, immensely extended world.'³⁶² Moholy-Nagy believed that through the learning of a new visual language, a humanistic visual faculty would evolve, and through this a balance could be recreated through an 'organic approach' that he felt had been lost in the chaos of accelerated modern experiences.

Similar to Moholy-Nagy and Giedion, in *The Language of Vision* (1944), Gyorgy Kepes, then Moholy-Nagy's teaching partner at the Institute of Design, shifts the responsibility for the problem to the eye of the viewer when opening his book with the lines: 'Today we experience chaos. . . . In the focus of this eclipse of a healthy human existence is the individual, torn by the shattered fragments of his formless world, incapable of organizing his physical and psychological needs.' Kepes continues in pointing to the 'failure in the organization of that new equipment with which we must function if we were to maintain our equilibrium in a dynamic world.' Influenced by Norbert Wiener's theory of cybernetics, Kepes describes a visual language as one of the most powerful vehicles of communications, and suggests 'man must restore the unity of his experiences so that he can register sensory, emotional, and intellectual dimensions of the present in an indivisible whole.'³⁶³

For Kepes, visual communication comes from an understanding of the basic properties and operations of vision itself. The organization of vision was basically shaped by physiological and psychological restraints. This meant not only limitations but much more possibilities. In understanding them, these dynamic processes could be exploited for an effective design. The observer was no longer simply focused at an object, but emphasis was given to the forces within the eye. The eye could be led around a canvas by means of ambiguous juxtapositions and overlaps of shapes. It was the space-time latent in the image that formed a plastic image through the eye moving around. 'The ultimate aim of plastic organization is a structure of movement that dictates the direction and the

analytic capacity, mental energy, creative power, balance, and judgement.' From Julian Huxley, *Evolution: The Modern Synthesis* (London: George Allen and Unwin, 1942), p. 574, in Moholy-Nagy (1965), p. 14, cited in Martin (2003), p. 57.

³⁶² Moholy-Nagy (1965), p. 11.

³⁶³ Gyorgy Kepes, *The Language of Vision* (Chicago: Paul Theobald, 1951, originally published 1944), p. 52. See Varnelis (1989), pp. 12-13, and Martin (2003), p. 61. Cybernetics comes from the Greek term *kybernētēs*, which means 'steersman.' Cybernetic research focuses on parallels between communications networks and the human nervous system. Wiener, in extending concepts originating in nineteenth-century thermodynamics into systems of information measurement and management, defines information in relation to its opposite: entropy. The degree of antientropic, informational organization in cybernetic systems is regulated through feedback, a continuous cycling of information obtained by artificial 'sense organs' back into a system to correct its course, consolidate its form, or modify its output. Martin (2003), p. 21.

progression toward ever new spatial relationships until the experience achieves its fullest spatial saturation.³⁶⁴ The act of perception was thereby split into two, what Moholy-Nagy had called ‘vision in motion,’ and finally, the moment of illumination, the understanding of the image.³⁶⁵

Kepes moved to the Massachusetts Institute of Technology in 1946 to teach visual design. The urban historian M. Christine Boyer describes MIT as a ‘hotbed of investigation into cognitive processes’ during the 1950s. Norbert Wiener worked on his thesis of control systems based on a theory of how bodies in motion achieved equilibrium through feedback loops that exchange information between the environment and the object.³⁶⁶ Wiener’s work had a decisive influence on Kepes. In *The New Landscape in Art and Science*, Kepes stresses how decisive the impression of our environment is for our well-being while he draws a picture of the modern metropolis as the centre of ‘visual disorder,’ successively expanding into suburbs and a former countryside:

At its core, bludgeoning us with their vulgar images, massive structures blot out open space; industrial areas beyond are dumped with factory buildings and the dingy barracks where we house our poor; the residential fringes are dotted with characterless cottages repeated endlessly. Everywhere smoke and dirt screen out the sun; and our containers, advertisements, commercial entertainments, films, our home furnishings and clothes, our gestures and facial expression mount up to grotesque, formless aggregates lacking sincerity, scale and cleanliness.³⁶⁷

He continues in laying out the vicious circle: ‘For the face of our environment has always influenced us profoundly, inspiring our imagination and renewing or destroying our self-confidence. . . . Our distorted surroundings, by distorting us, have robbed us of the power to make our experience coherent.’ One should note that Kepes makes distinct references to social realities as a problem of visual disintegration. However, considering the theory of feed-back loops, this process could possibly be reversed, and Kepes projects: ‘When visual responses are warped, visual creativeness is impaired.’ He sees the key agents in this process as the architects, painters, sculptors, and designers who ‘[a]bstaining from source material taken from their disordered visual world, they returned to the one source which retained the sanity of nature: the creative tendency of the human eye.’ Kepes speaks of a process of abstraction in order to attain what he calls ‘a unified vision.’ In this way ‘forms became symbols for natural order. Abandoning nature in its subject matter, their art became nature again by its organic quality. Artists use this way of integrated vision to re-enter their environment, in order to reshape

³⁶⁴ Kepes (1951), p. 52.

³⁶⁵ Varnelis (1989), p. 215.

³⁶⁶ M. Christine Boyer, ‘Cognitive Landscapes,’ *Re-Envisioning Landscape/ Architecture*, edited by Catherine Spellman (Barcelona: Actar, 2003), p. 26.

³⁶⁷ Gyorgy Kepes, *The New Landscape in Art and Science* (Cambridge, Mass.: MIT-Press, 1956), p. 69, quoted in Boyer (2003), 28.

our surroundings and to restore them to nature – a higher nature informed by human understanding.³⁶⁸ Already in the opening pages, Kepes had stressed:

It is not with tools only that we domesticate our world. Sensed forms, images and symbols are as essential to us as palpable reality in exploring nature for human ends. Distilled from our experience and made our permanent possession, they provide a nexus between man and man and between man and nature. We make a map of experience patterns, an inner model of the outer world, and we use this to organize our lives. Our natural ‘environment’ – whatever impinges on us from outside – becomes our human ‘landscape’ – a segment of nature fathomed by us and made our home.³⁶⁹

Symbol-making appears as an activity of ‘the transformation of the ceaseless flow of sense data into clearly defined pictures, words, and concepts.’ In Kepes, there is no distinction between the scientific, as in ideas of organization, and the aesthetic, as in symbolic representation. Both, the organizational ‘message’ of abstract visual patterns and the semantic instrumentality accorded to visual signs, are present.³⁷⁰ The key to creative work (artistic and scientific) lies in ‘the translation of direct experience into symbols which sum up experience in communicable form.’ This means that ‘the traditional concept of an image as a mirror held in front of nature is now obsolete.’ Kepes suggests a new vocabulary of visual thinking, focusing our attention on process and change. The new *patterns* are pictures of processes, which we do not regard as *things*, but as aspects of hidden movements ‘within us and beyond us’ as revealed in sciences. Images and pattern were seen as the generator of an integration of thinking and feeling, and as ordering devices in an environment constantly undergoing change, ultimately for overcoming the alienation between observer and object. In Kepes, the image was the correlate and the catalyst of an organized and thus organic society, which gained special significance in the perception of the city.³⁷¹

Several architects and planners continued the exploration into visual relationships in respect to urban space. Kepes book *The New Landscape in Art and Science*, a picture book, where text and images were juxtaposed, had become an inspiration for a genre of books produced predominantly for educational purposes. The intention was to teach architectural students to grasp form in the urban landscape. A direct line leads from Kepes to Kevin Lynch, who had started to teach at MIT in 1947.³⁷² Lynch also saw the visual field as a ‘space’ that can be redesigned to

³⁶⁸ Kepes (1956), pp. 69-70.

³⁶⁹ Ibid., p. 18, quoted in Boyer (2003), p. 27.

³⁷⁰ Martin (2003), p. 63. Boyer points to an effect of computers on cognition involving new forms of visual knowledge, which she calls a ‘landscape of connections.’ In this new landscape, where dataspace becomes the form of encounter, representational forms and navigational structures are inseparable. Form therefore entails both the visual information and the organizational structure by which information can be accessed. Boyer (2003), p. 30.

³⁷¹ Kepes (1956), pp. 229-231. See also Boyer (2003), p. 29, and Martin (2003), p. 65.

³⁷² Mark Wigley points to Cullen’s articles as an inspiration for Kevin Lynch’s book *The Image of the City* (1960). Lynch had studied at MIT, and started to teach there in 1947,

modify the viewer's sense of 'confinement' within it. The visual image has its own architecture, which even gives an architecture to the city, a spatial order within which people position themselves. The urban planner becomes an artist who produces a mobile visual field rather than fixed objects. Another inspiration for Lynch were the articles by the English author Gordon Cullen. During the 1950s, in numerous articles in *The Architectural Review*, of which he was the art director at the time, Cullen introduces a new vocabulary for the differentiation and naming of different qualities in urban space, culminating in his book *The Concise Townscape* of 1961. Cullen's approach is understood as part of the Townscape School, and with its morphological and picturesque agenda, it strongly recalls Patrick Geddes' urban and visual conceptions. In contrast to Kepes, who had worked with a list of carefully chosen categories, Cullen expands this catalogue to a potentially unlimited 'atlas of visual words'.³⁷³ Cullen is looking for an urban environment that functions like a stage, an *art of relationships*, which encompasses all sorts of urban elements such as buildings, trees, nature, water, traffic, advertisements, lights, etc., in order 'to weave them together in such a way that drama is released.'³⁷⁴ Under the notion of 'netting' we see two images of populated colonnades on a seaside front, and we read, 'Like truncation, this serves to link the near with the remote. Just as the carefully handled net held in the hand captures the remote butterfly, so the device of framing brings the distant scene forward into the ambience of our own environment by particularizing, by making us see in detail brought to our attention through the act of netting. . . . Behind this and similar cases lies the central fact that the environment is one whole into a significant pattern rather than allowing it to remain a disjointed and petty chaos.'³⁷⁵



4.7 Gordon Cullen, *The Concise Townscape* (1961)

when he was encouraged by Gyorgy Kepes to do research in *The Image of the City*. Subsequently, Lynch and Kepes carried out the initial studies together that formed the basis of the book. Mark Wigley, 'Lost in Space,' *The Critical Landscape*, edited by Michael Speaks (Rotterdam: 010 publishers, 1996), pp. 36-37. For a discussion on the topic of vision, the viewer and urban space, see Maria Hellström, *Steel This Place. The Aesthetics of Tactical Formlessness and "Free Town of Chritiania"* (Doctoral Thesis No. 2006:27, Faculty of Landscape Planning, Horticulture and Agricultural Science), pp. 157-161.

³⁷³ In *The Language of Vision*, Kepes' terms were: nearness, similarity or equality, continuance, closure, rhythm, overlapping, transparency, interpenetration, compression, simplicity and intensity, and reintegration.

³⁷⁴ Gordon Cullen, *The Concise Townscape* (Oxford, Auckland, Boston, Johannesburg, Melbourne, New Delhi: Architectural Press, 1996, first printed 1961), p. 8.

³⁷⁵ *Ibid.*, p. 39.

Cullen recognizes that drama and excitement is not automatically released by scientific research and technical solutions to urban questions. These could only create an average, or a technical frame. However, there was a certain ‘pliability’ to scientific solutions, which could be manipulated within their own limits in order to make the art of relationship happen.³⁷⁶ Cullen starts from the selection and collection of framed views, which he brings together in a referential system. The frames are data-structures.³⁷⁷ They form a set of stored and retrieved conventions, a toolbox with which the designer is able to react to different tasks. ‘Our first move in creating a system must surely be to organize the field so that phenomena can be filed logically in an Atlas of the environment. . . . Having arrived at the concept of an Atlas we now consider the fourth affirmation, that concerned with organization or manipulation. If we consider the Atlas as a reference library of [visual] words then organization is the art of putting this word with that to make a lucid statement which is inherent in the particular design problem.’³⁷⁸

Cullen declares the faculty of sight as the technically most important sense for orientation, and he points to the surplus quality of sight that was able to also evoke memories, experiences, and responsive emotions at the same time. Like Moholy-Nagy and Kepes, Cullen was also interested in serial vision and the drama of juxtaposition, and Cullen also splits vision into two events: the existing and the emerging view, from which ‘human imagination can begin to mould the city into a coherent drama.’ But Cullen stresses the importance of the position of the entire body in relationship to the setting for the emotional experience of a cityscape. A vivid morphology seems to lead to a rich experience; ‘it is easy to see how the whole city becomes a plastic experience, a journey through pressures and vacuums, a sequence of exposures and enclosures, of constraint and relief.’ He believes that a rational scheme, as provided by scientific city planning, could give way to a city that emerged more spontaneously through the *performance* of more ephemeral qualities: ‘Within a commonly accepted framework – one that produces lucidity and not anarchy – we can manipulate the nuances of scape and style, of texture and colour and individuality, juxtaposing them in order to create collective benefits. In fact the environment thus resolves itself into not conformity but the interplay of This and That.’³⁷⁹

Cullen’s visual examples are collected views from all over the world. They depict scenes of certain atmospheric qualities of rhythm and tensions through situations where things and phenomena meet, such as a shadow cast on a wall, different textures of surfaces, a spatial situation of openness contrasted with another that is closed, etc. Strikingly, not a single setting depicts a modern ensemble in Cullen’s book. Did modern architecture fail to create the drama that Cullen was looking for? Cullen misses the picturesque qualities of Victorian architecture that lie in its theatricality, which he puts over ‘truth, honesty, and self-expression.’ But quite differently from the symbolic paradigm of Victorian architecture, which ‘treated a town as a museum with different exhibits,’ Cullen

³⁷⁶ Ibid., p. 8.

³⁷⁷ See Boyer’s discussion of frame-like modes of perception. Boyer (2003), pp. 20-23.

³⁷⁸ Cullen (1961), pp. 195-196.

³⁷⁹ Ibid., pp. 9-12.

stresses frames of entirety that were loaded with impressions that evoke emotions and memories, creating experience and triggering imaginations, claiming that items of ‘the environment cannot be dissociated the one from the other, this is how a modern townscape is distinguished from a Victorian one.’³⁸⁰

For Cullen, most modern architectures seem to offer ‘ill-digested’ environments. As with Lewis Mumford, time for Cullen is also a factor in design. He suggests reducing the disruptive speed of development and to return to a city planning based on continuity in order to restore a proper ‘communication between the planner and the plan.’ However, Cullen’s propositions are as restrictive as Kepes’ cognitive models are elitist. His frames did not invite any public participation in the creation of their own scene: ‘the main endeavour is for the environment makers to reach their public, not democratically but emotionally.’³⁸¹

Cullen’s texts, which called for a new vision of the urban environment by replacing the symbol with the frame, enjoyed international popularity, and was widely read. We find a similar attempt to open up Kepes’ formalized language in Steen Eiler Rasmussen’s *Experiencing Architecture*. Rasmussen, a Danish architect, was guest professor at MIT in 1959. During this time he likewise developed cognitive alternatives, which were reflected in his book published in the same year by the MIT Press. Like Cullen, Rasmussen also addresses a wider audience by choosing a rather non-theoretical language, and emphasizes the holistic experience of moving through urban space by engaging all the senses. He likewise refers to vernacular architecture, which has managed ‘naturally’ to find ‘the right expression,’ but also insists that to look back to tradition was reactionary, and that informing the public on the work of the architect was the task of today:

In old days the entire community took part in forming the dwellings and implements they used. The individual was in fruitful contact with these things; the anonymous houses were built with a natural feeling for place, materials and use and the result was remarkably suitable comeliness. Today, in our highly civilized society the houses which ordinary people are doomed to live in and gaze upon are on the whole without quality. We cannot, however, go back to the old method of personally supervised handicrafts. We must strive to advance by arousing interest in and understanding of the work the architect does.

Rasmussen, taking a rather anti-intellectual stance in the problem of cognition, presents architecture as ‘something indivisible, something you cannot separate into a number of elements. Architecture is not produced simply by adding plans and sections to elevations. It is something else and something more. It is impossible to explain precisely what it is – its limits are by no means well-defined. On the whole, art should not be explained; it must be experienced.’ He points out that ‘the architect’s work is intended to live on into a distant future. He sets a stage for a slow-moving performance which must be adaptable enough to accommodate

³⁸⁰ Ibid., pp. 189-196.

³⁸¹ Ibid., pp. 13-16.

unforeseen improvisations. His building should preferably be ahead of its time when planned so that it will be in keeping with the times as long as it stands.’ Through its complexities of tasks, Rasmussen recognizes that ‘architecture might well be called an art of organization.’³⁸²

Extending from Gestalt psychology, Rasmussen explains that our environment is meaningful to us through its expressions, which we understand by actually feeling forms through transference.³⁸³ By this, we can call certain forms hard and others soft, regardless whether the materials they are made of are actually hard or soft. When seeing a soft-shaped cup, we can feel the pleasure of the potter who has touched the object and enjoyed the curving and bending of the material. ‘The sight of a tennis racquet provokes a feeling of vitality.’ We do not notice the individual letters in a word but receive a total impression of the idea the words convey, we generally are not aware of what it is that we perceive but only of the conception created in our minds when we perceive it. It is this sort of animation of the building that engages all senses, which makes it possible to experience architecture as a whole rather than as the addition of many separate technological details.³⁸⁴

However, although there are universal and symbolic forms in Rasmussen’s city too, they are not univocal: ‘The activity of a spectator is creative; he *recreates* the phenomena he observes in his effort to form a complete image of what he has seen.’ And: ‘There is no objectively correct idea of a thing’s appearance, only an infinite number of subjective impressions of it. . . . Whether [something] makes an impression on the observer, and what impression it makes, depends not only on the work of art but to a great extent on the observer’s susceptibility, his mentality, his education, his entire environment. But it also depends on the mood he is in at the moment. The same painting can affect us very differently at different times.’³⁸⁵ With this, Rasmussen complicates the process of reciprocity of expression and impression, which in Kepes is concentrated to the eye and the brain as an image-processing machine for whatever ‘impinges on us from outside.’ In Rasmussen the preconditions for cognition play a much stronger role, and they are almost impossible to pinpoint. The process of response as such is of interest here, in respect to the creation of organic environments. Rasmussen does not attempt to draw general conclusions. Excluding scientific considerations, he gives attention to the process of aesthetic experience itself, which emerges as a slow process, and is also the only key to the making of good design. Similar to Kepes and Cullen, we recreate the city for ourselves, through our perception, but different from their systematic approach, the factors that are responsible for forming experience are much more diverse and too elusive to be mapped in any systematic way.

³⁸² Steen Eiler Rasmussen, *Experiencing Architecture* (Cambridge, Mass.: MIT Press, 1959), pp. 11-14.

³⁸³ Rasmussen’s book contains no bibliography, but one can sense not only an influence of Kepes, his colleague at MIT, but also of Rudolf Arnheim’s Gestalt psychological approach.

³⁸⁴ Rasmussen (1959), pp. 20-39.

³⁸⁵ *Ibid.*, pp. 35-36.

A former colleague of Rasmussen at MIT, the Japanese architect Kenzo Tange had been guest professor there during the same year. In 1968, a Japanese research group around Tange, including Arata Isozaki and the designer Kenji Ekuan, produces the research publication *Nihon no Toshi Kūkan* [Japanese Urban Space] that forms a departure from a western canon of cognition in relation to the reorganization of urban design.³⁸⁶ The work seems to compile research of many years, and utilizes Rasmussen's, Cullen's, Kepes's and Lynch's theories, as well as many other mainly western sources on aesthetics and urban theory, such as Patrick Geddes' writings, the research of the Chicago School of Urban Sociology, and numerous articles by Alice and Peter Smithson. The point of departure is formed not in the abstraction of visual tropes found in artworks, frames, or Gestalt, but by case studies focused on the analysis of Japanese villages as types in a classification that distinguished between their organizational structure, correspondences of mental and spatial concepts (such as village plans based on the form of Mandalas), and the bodily metaphor of force lines as in the representation of meridians in Chinese medicine.

Found physical, mental, functional, formal, and organizational elements form the base for a new pattern language that appears to grown out of Japanese indigenous forms, but as abstractions could perfectly be applied to the west as well. As in Kepes, this language extends from the insight that organizational patterns coincide with symbolic values. Observing that a village seems either to be organized by a symbolic object such as a castle ('castle type'), or a temple, with its stairs, paths-, and doorways ('esoteric type'), or by its own organizational pattern, which is also expressed in distinct images such as 'linear type,' 'ripple type,' 'branch type,' and 'grid type,' these forms in return can create a base for the design of settlements.

In their spatial conception, the researchers extend from what they call the 'principle of space order,' which included such concerns as orientation, visible hierarchies, pragmatic design decisions, aesthetic compositions, juxtapositions, processes, imaginary space, and activity space (street space). They further suggest a method of space composition through different operations expressed as: by-chance systems, cluster systems, alternating turns, deflecting lines, recessed space, indented space, unparallel systems, symbolic eye-stops, marrying details, borrowing space,³⁸⁷ male slope and female slope, seen and hidden, and street-space activities. In contrast to Kepes, these categories do not relate to abstract principles as derived from cubist paintings, but are extracted from the observation of spaces 'as found,' as in Banham's launch of an aesthetics of a new brutalism. An art of environment emerges finally through the layering of a multitude of 'effectors in urban space,' which evoke an emotional response in the viewer. For the Japanese group these are expressed in permanent and ephemeral factors as diverse as different qualities of light; elements that dominate, divide, enclose, connect, support, cover, and surface; moving elements such as cars, people, animals, processions, boats; and phenomenal elements like snow, light, rain, sun,

³⁸⁶ *Nihon no Toshi Kūkan* [Japanese Urban Space], (Tokyo: Shōkokusha, 1968).

³⁸⁷ 'Borrowing space' is a known Japanese compositional concept in garden design. In including elements from the background like hills, trees, etc. that lie outside of the garden in the design, the garden appears visually, and conceptually expanded.

shadow, wind, and fountain. Founded on a basic urban structure, it is the interaction of these effectors that enrich an urban experience. The proposition puts the analysis of existing settlements, spatial and organizational principles, and a catalogue of operations side by side. With this picture book the Japanese group takes up a western genre, which has formed a point of departure for urban design. They respond to the western approach, which extracts symbols and frames for the reorganization of space and the communication of urban experience with a specifically Japanese product that isolates basic forms from their own aesthetic background, thus constituting an alternative for the practice of design. Although informed by western sources of aesthetics, urban theory and urban design, this publication should be seen in the light of a desire to break away from an architectural and urban discourse that was dominated by western concepts and ideas.

By the end of the 1960s a more differentiated landscape of urban theory has evolved. With concerns for the image of the city experienced in motion, theories of perception, and of various visual techniques, focus has shifted from discussions of the city in terms of its socio-economic structure to an understanding of its visual properties. Thus, a range of new possibilities have opened up. We find the thought that through the visual control of the environment it was possible to 'educate' the 'common man's emotions, which in turn would create a new 'equilibrium' that integrated thinking and feeling. We encounter not only a rejection of but also a lively interest in the media image, in mass culture and in mass consumption, which was seen as a means to break down elitist conceptions of taste. The exhibition *The Parallel of Life and Art* by Alison and Peter Smithson, together with the Independent Group, explores new visual techniques. In juxtaposing images taken from various contexts, and recombining them in an associative way, an environment is prepared that opens up the possibility for the visitor to create the show for her or himself. The exhibition can be seen as a laboratory for their architectural and urban ideas. The work of the Smithsons in Britain had a decisive influence on a Japanese group around Kenzo Tange that would become known as the metabolists. In return, Japan had been an inspiration for the Smithsons in the conception of new brutalism, as Alison Smithson has stated. The forum of CIAM and the formation of Team 10 within CIAM, of which the Smithsons were a driving force, played an important part for enabling this exchange. The third and last section continues to follow a notion of the organic in the exchange between east and west, particularly in the work of the metabolists at the end of the 1950s and the 1960s. This study will be introduced with an exploration of western models in Japan and the conception of Japan in the west, and discuss the impact of these on the discourse in modern architecture.

III Organic images

The third section of this dissertation shall show a reproduction of the trope of the organic in relation to Japan, and finally in Japan itself. The first chapter takes its point of departure in the conflict between Japanese culture and western or modern civilization, which can be traced back to the forced opening of Japan for western markets, and the so-called Meiji restoration in 1868. As a consequence of these events, Japan was compelled to move up to the same technological level as the west as quickly as possible. The incorporation of western technology in Japan was also connected to the adaptation of western designs for new products. The reorganization of the industrial sector was hereby supported by newly founded institutions, whose architectures, which would house the new functions, 'imitated' western typologies. All these attempted to repeat western organizational forms and material artefacts, while rejecting any concern with the western cultural background that produced them. The discussions that accompanied the search for a proper national architectural expression never silenced, but continued during the nationalist reaction under the militarist government before and during WWII, and again under American occupation during the post-war years. The thesis will show that the search for national identity focuses in large part on the right 'image.' Through Frank Lloyd Wright and Bruno Taut, an account is given of the western view on Japan, and how this reception was reproduced in Japan. In Wright, Japan becomes an object of desire, and constitutive in the generation of his term of 'organic architecture.' Also Bruno Taut discovers in the Japanese house the organic *Urtype* for modern architecture, and paradoxically, in Japan he sees an organic society without hierarchies. As a consequence, Taut is concerned with protecting Japan's authenticity, and his own projection of Japan, from the imitation of the west.

The question of identity will again occupy the debates during the post-war years. The avant-garde movement of metabolism was formed in relation to the World Design Conference held in Tokyo in 1960, directly after the official breaking up of CIAM in Otterlo (1959). It can be read as an attempt to continue the international debate on urbanism that CIAM had started, but also as a correction of CIAM's eurocentric focus. New themes that had recently evolved out of an emerging discourse on decolonization now came into focus, including issues of rapid urbanization, over-population, limits of resources, and ecological concerns relating to questions of power and territoriality. The metabolists' work consisted in large scale urban projects on a theoretical and discursive level. Their language was utopian, and they referred to a transformed world after WWII and the atomic blasts, and as a consequence of these events, they emphasized the necessity of an all-encompassing reorganization of space and society. The metabolists embraced technology and modern sciences for the prospect of 'reinventing nature' after the immense destructions of most of their cities. These events made a new theory necessary, which could enable a reorganization of the planning sector. The group introduced a biological language in order to legitimize their urban and architectural proposals through a source separate from any canon of architectural history. Metabolisms' organic imaginations looked for more

holistic concepts. The search for a modern Japanese identity took place within the triangulation of technology-tradition-modernity, and aimed to integrate progress with ‘Japan-ness;’ instead of a mechanical appropriation of the modern as something foreign, it was supposed to rediscover the modern as something Japanese.

5 ‘Westernization’

‘Japanese spirit and western knowledge’ – Japanese national identity and the problem of style – Reforming the domestic – Planning the nation

This chapter gives a short historical overview of Japan’s opening to ‘westernization,’ from the early incorporation of new institutional forms to an attempt at housing reform during the 1920s and the formation of a modern planning system. Directly after the opening of Japan to the west, various delegations of Japanese officials studied institutional buildings and techniques in the west. With the adoption of new systems came also the adaptation of architectural styles attached to them. This practice, at first not questioned, would eventually lead to an official debate on style, and several efforts to develop a native Japanese style. These endeavours would continue to occupy the Japanese architectural and urban discourse during the post-war years. In the beginning of the twentieth century, changes in laws that reorganized family relations from patriarchal to non-hierarchic, and granted women the same rights as men, had, along with a growing consumer culture, triggered an interest in modern forms of housing. The implementation of a European-inspired *Siedlungen* for a broader mass fails however; functionalist housing becomes more a matter of lifestyle for the few, while the larger housing market withdraws from any systematization and control. Experimentation in housing and planning is to a large degree transferred to the colonies Manchuria in particular becomes a major test-site, but with little repercussion for the homeland. Here, no comprehensive long-term plans have a chance to become implemented; planning stays an issue for bureaucrats and is a matter of techniques rather than design. This is largely the background for the rise of the avant-garde metabolist movement after the war, as well as the reinvention of the architect-planner in Japan, which will be the scope of the last chapter.

‘Japanese spirit and western knowledge’

The forced opening of several of Japan’s harbours to America in 1853, through Commodore Perry’s ‘black ships,’ is often seen as Japan’s trauma that lead to its ambivalent relationship to the west. After this event, during the rule of the young emperor Matsuhito, also known as the ‘Meiji-tenno,’ the modernization of Japan according to western example was pursued as a response to western technological and militarist superiority.³⁸⁸ The Japanese cultural critic Ken’ichi Mishima calls the Meiji period a phase of ‘Occidentalization,’ complementing Edward Said’s

³⁸⁸ The governmental era Meiji (‘enlightened’) lasted between 1868-1912. The so-called Meiji Restoration ended the Tokugawa era, when actual political power was transferred from the shogunate, a small group of nobles, to the emperor, and the emperor was moved from Kyoto to Tokyo, which became the new capital.

term of 'Orientalism.'³⁸⁹ With 'Occidentalization' he pinpoints the fact that modern technology, the political system of constitutional monarchy, and the European education system according to Occidental parameters were taken over in an attempt to adapt Japan to the Occident.³⁹⁰

In several arguments regarding Japan's 'Occidentalization,' the general standpoint is that Japan was opening up towards new technological developments, but that this infected in no way Japanese culture and traditional beliefs. The historian Tetsuo Najita speaks of a 'self-colonialization,' which was conducted only in the field of sciences and technology. The Japanese culture, in contrast to this, was seen as an autonomous refuge, which was maintained unchanged, and which was characterized by an anti-modern resistance.³⁹¹ The sociologist Johan P. Arnason also claims that the East took over a technological rationality while preserving the cultural traditions at the core.³⁹² The literary scholar Toshiko Ellis points out that the western model was only imitated out of purpose-rational reasons, to enter the competition with the centre of western power, and for not being frozen out as a marginalized other.³⁹³ Western architecture and planning, in this respect, were seen as technologies and not as cultural expressions. The first contacts with western architecture consequently focused on the technological side.³⁹⁴

³⁸⁹ The expression 'Orientalist' was formed during the time of the British colonial dominion in India between 1780-1830, and described a Brit who was interested in Indian culture. It was later also applied to Frenchmen in the Arabic world, and after Japan's opening to the west in the middle of the nineteenth-century, also to Americans and Europeans in Japan. The discipline of Orientalism, which dealt with the study of the Orient, was established in parallel with the European expansion of 1815-1914. The term 'Orientalism' refers to a geographically and culturally utterly heterogeneous area that reaches from the Near East to the Far East, which renders the term quite obscure. See Edward Said, *Orientalism* (London: Penguin, 1978), p. 10; B. Moore-Gilbert, 'Edward Said, Orientalism and Beyond,' *Postcolonial Theory. Context, Pragmatics, Politics* (London/ New York: Verso, 1997), p. 38; Bill Ashcroft, Pal Ahluwalia, *Edward Said. The Paradox of Identity* (London/ New York: Routledge, 1999), p. 63; Antje Landmann, *Zeichenleere. Roland Barthes' interkultureller Dialog in Japan* (München: Iudicium Verlag, 2003), p. 18.

³⁹⁰ Ken'ichi Mishima, 'Die Schmerzen der Modernisierung als Auslöser kultureller Selbstbehauptung. Zur geistigen Auseinandersetzung Japans mit dem "Westen,"' Irmela Hijiya-Kirschnereit (ed.), *Überwindung der Moderne? Japan am Ende des zwanzigsten Jahrhunderts* (Frankfurt am Main: Suhrkamp, 1996), pp. 86-122.

³⁹¹ Tetsuo Najita, 'On Culture and Technology in Postmodern Japan,' Miyoshi, Harootunian (eds.), *Postmodernism in Japan* (Durham/ London: University Press, 1989), pp. 3-20.

³⁹² Johann P. Arnason, 'Modernity, Postmodernity and the Japanese Experience,' Arnason, Sugimoto (eds.), *Japanese Encounters with Postmodernity* (London/ New York: Columbia University Press, 1995), pp. 12-31.

³⁹³ Toshiko Ellis, 'Questioning Modernism and Postmodernism in Japanese Literature,' Arnason, Sugimoto (eds.), *Japanese Encounters with Postmodernity* (London/ New York: Columbia University Press, 1995), pp. 133-153.

³⁹⁴ Teijiro Muramatsu, 'The Course of Modern Japanese Architecture,' *The Japan Architect*, June 1965, p. 38.

In June 1965, the architectural magazine *The Japan Architect*³⁹⁵ commissions the three renowned architectural historians Teijiro Muramatsu, Hiro Sasaki, and Hiroki Onobayashi to write parallel and complementary histories of Japanese modern architecture covering the period from the Meiji Restoration to the end of World War II. In all three texts the discussion of the so-called ‘double-layer structure’ or *wakonyosai*,³⁹⁶ which is translated as ‘Japanese spirit and western knowledge,’ takes a central position. Teijiro Muramatsu points to the attitude of the Japanese government, which, during the first period of westernization was aiming to import western technology, into architecture but ‘not the spirit of western civilization,’ only ‘its material “power”’.³⁹⁷ While Muramatsu evaluates Japanese architecture as the mirror and marker for the fusion of two cultures,³⁹⁸ which crystallized around its technological achievements, Hiro Sasaki states that western style (*yofu*) and Japanese style architecture (*wafu*) were related in a double-layered structure, but that they did not fuse.³⁹⁹ He sees the reason for it in that modern Japanese architecture, in contrast to western modern architecture, did not set out to deny traditional styles. The westernization of architecture in Japan was not a revolution or reversal in styles. It was only an importation of some architectural types and of things endowed with those types. ‘Some of the types that were imported included factories, banks, hotels, schools, museums, office buildings, and train stations, and with them came styles that accompanied them in the west Except for the homes of a segment of the upper class, general residencies, temples, shrines, and other classical Japanese traditional styles were little affected, and examples of changes in them are extraordinarily rare.’ In Sasaki’s words, Japan’s modern architecture was not the product of a confrontation of ancient tradition and an internal revision of its content. Rather, he sees it as the result of the dissolution of Japan’s isolation policy, ‘the opening of the doors of the nation to foreign contacts from a number of countries,’ and as ‘the resulting importation of western civilization’ (but not western culture).⁴⁰⁰ Consequently, he regards the terms ‘westernization’ and ‘modernization,’ in the case of Japan, as interchangeable. This meant also that when it came to adopting any particular western feature, Japan was largely able to pick and choose from different western countries, and that these new features did not replace traditional notions, but were simply added.⁴⁰¹ Also the third writer Hiroki Onobayashi distinguishes between ‘Japanese spirit’ and ‘western learning,’ while speaking of a ‘multi-layer cultural structure.’ According to Onobayashi, ‘Japanese modernization began with the attitude of adopting only systems, techniques, and styles from the west,’ detached from the spiritual and social concepts that have

³⁹⁵ *The Japan Architect* is the international edition of the Japanese architectural magazine *Shinken-chiku*, published in English, which has existed since 1924.

³⁹⁶ Teijiro Muramatsu (1965), p. 45.

³⁹⁷ *Ibid.*, p. 43.

³⁹⁸ *Ibid.*, p. 38.

³⁹⁹ Hiro Sasaki, ‘The Development of Modern Japanese Architecture in Japan,’ *The Japan Architect*, June 1965, p. 59.

⁴⁰⁰ See the debate of a culture-civilization divide in Germany at the turn of last century.

⁴⁰¹ This practice probably contributed to the myth that Japan has always been post-modern.

produced them.⁴⁰² However, he sees the home as the sphere that did not change as rapidly as the public arena, and where traditions could be found preserved. In this discussion, only Teijiro Muramatsu deviates from the general distinction between culture and civilization, and sees more profound inter-cultural communications actually taking place.⁴⁰³

Japanese national identity and the problem of style

The first ‘western buildings’ were factories and shipyards such as the Nagasaki Steel Mill and shipyard, whose building was supervised by Dutch technicians in 1869. When in 1858 the shogunate concluded trade treaties with America, Russia, Holland, England, and France, several areas were opened to foreigners, and residential districts for foreigners were constructed in Nagasaki, Yokohama, Hakodate (opened in 1859), and Kobe (opened in 1867).⁴⁰⁴ Although the foreign quarters were inaccessible for the Japanese population, most of the construction work was done by Japanese carpenters, plasterers and other workmen, and supervised by foreign technicians. Architects in the western sense were unknown at that time. According to the architectural historian David B. Stewart: ‘[i]n this way, the gradual setting-up of a simplified industrial infrastructure – together with the growth of a class of foreign advisers, traders, diplomats, and missionaries – brought into being buildings and townscapes that anticipated in visual terms the consequences of an official turnabout in politics.’⁴⁰⁵



5.8 Kaichi Primary School, in David B. Stewart (2002).

The first ‘western-style’ buildings were produced in wood, often mimicking ‘western-style’ stone architecture. Those buildings combined traditional Japanese wood constructions with traditional Japanese roof-shapes derived from temple and shrine architecture, and the imitation of ‘western-style’

⁴⁰² Hiroki Onobayashi, ‘The History of Modern Japanese Houses,’ *The Japan Architect*, June 1965, p. 71.

⁴⁰³ *Ibid.*, p. 58.

⁴⁰⁴ Teijiro Muramatsu (1965), p. 40. Yokohama, today the second largest city of Japan, and Kobe were created as cities from scratch. Stewart (2002) p. 16.

⁴⁰⁵ David B. Stewart, *The Making of a Modern Japanese Architecture* (Tokyo/ New York/ London: Kodansha International, 2002), p. 15.

arches and cornerstones made of plaster and paint, for which materials like Portland cement, glass, paint, doors, and metal fittings had to be imported. According to Muramatsu, this assemblage of Japanese construction methods and ‘western’ surfacing and finish created the so-called ‘pseudo-western style,’ (*giyofu*) which was common until the 1890s.⁴⁰⁶ The most celebrated early surviving example of this vernacular style is the Kaichi Primary School of 1876 at Matsumoto, Nagano Prefecture, in the mountains of central Honshu, built by the carpenter Seiju Tateishi. The Kaichi School has lanterned towers of a characteristic type that derives from the English or Dutch baroque, which usually signified customs houses, exchanges and markets, or variously some type of collegiate building.⁴⁰⁷ The carved putti in the ornamentation of the porch which exhibit a banderol with the name of the elementary school inscribed in Chinese characters, are most likely borrowed from the masthead of a woodblock broadsheet, the forerunner of today’s popular Mainichi daily newspaper.⁴⁰⁸



5.9 Tsukiji Hotel for foreigners, woodblockprint by Kunitero II

To the most well-known examples of *giyofu* belong the exclusive Tsukiji Hotel for foreigners, which was completed in 1868; the First National Bank, also known by the name First Mitsui Bank (1872); and the Second Mitsui Bank (1874), all by the master carpenter Kiosuke Shimizu II in the heart of Tokyo.⁴⁰⁹ These buildings were so significant that they were later depicted in woodblock prints. Shimizu probably designed the facades from elevational representations of western buildings, possibly engravings or woodcuts; the plans however did not correspond to western examples. Meiji-era constructions were overwhelmingly executed by carpenters using methods and materials not unlike those used in the late Edo period (1600-1868), and traditionally trained master carpenters acted not only as craftsmen, but also as design professionals and the equivalent of structural

⁴⁰⁶ Muramatsu (1965), p. 41. More recently the new word *kaikashiki* (Restoration mode) has been coined as a descriptive term for this vernacular style.

⁴⁰⁷ Stewart, (2002), p. 23.

⁴⁰⁸ *Ibid.*, p. 28-29.

⁴⁰⁹ Kiosuke Shimizu II (1615-1881). I use the spelling of *The Japan Architect* here. David Stewart spells the name Kiusuke Shimizu II, while the architectural historian Jonathan R. Reynolds uses the Japanese way of mentioning the family name first, Shimizu Kiusuke II.

engineers. There was no abrupt break with the building practices of pre-modern Japan,⁴¹⁰ but a clear shift in the image of the architecture had taken place.

The Imperial College of Engineering opened at the end of 1872 after Scottish models, which offered training in the fields of mechanical and civil engineering, as well as telegraphy, shipbuilding, chemistry, metallurgy, mining, and architecture. By the middle of the 1880s the Architectural Institute of Japan was established, according to the English example of the RIBA, which institutionalized functions that surveyors and architect-surveyors had previously exercised unofficially. Most ministries and governmental departments also opened their own design departments. The expertise of traditional Japanese builders was decisively bypassed after the *giyofu* episode on account of a shift in building material from wood to reinforced brick construction by the middle of the Meiji reign. As a consequence, architects were able to control the field of public building.⁴¹¹

The debate on style in the course of the search for a modern Japanese national identity is best portrayed in the planning of the Parliament and Exhibition grounds, and in the discussions concerning the future Diet building starting in the 1880s. No consensus was ever reached on that topic, and the protracted debates over the Diet building's design testify to the complex cultural contradictions generated by the process of appropriation of western styles in Japan as part of the ambitious project of modernization.⁴¹² In 1881 the Meiji emperor had promised to provide a constitution and establish a parliament within ten years.⁴¹³ Subsequently with the emperor's gift of the new parliament building, the governmental Department of Works was established in 1886 to systematize the area west of Tokyo Bay in the neighbourhood south of the former castle moats and ramparts that today constitutes Hibiya Park. In 1886, the Berlin architectural firm of Hermann Ende and Wilhelm Böckmann was invited to Japan to design the central governmental office district.⁴¹⁴ The choice of a German firm is not surprising

⁴¹⁰ Cherie Wendelken, 'The Tectonics of Japanese Style. Architect and Carpenter in the late Meiji Period' in 'Japan 1868-1945: Art, Architecture, and National Identity,' guest-edited by Christine M. E. Guth, *Art Journal*, Vol. No. 3, Fall 1996, p. 28

⁴¹¹ See David B. Stewart (2002), p. 33. Hiroki Sasaki describes the situation as following: 'The basic ideological policy of the government was to bring Japan behind other countries; because of long isolation, up to date by means of rapid Westernization, the upbringing of the architects was treated as something of a national need Naturally, architects attached to official government branches with a development background had a sense of mission. . . . This sense of purpose is deeply rooted in Japanese architects even today.' Hiroki Sasaki (1965), p. 66.

⁴¹² Jonathan R. Reynolds, 'Japan's Imperial Diet Building. Debate over Construction of a National Identity in 'Japan 1868-1945: Art, Architecture, and National Identity,' guest-edited by Christine M. E. Guth, *Art Journal*, Vol. No. 3, Fall 1996, p. 38.

⁴¹³ After careful study of several European models, especially that of France and Germany, the constitution was promulgated by the emperor in 1889.

⁴¹⁴ Appointed as the firm's agent and representative was the young architect Herman Muthesius, who stayed in Japan from 1887 till 1891, while the firm returned to Germany with several Japanese trainees. Andres Lepik and Iride Rosa 'Berliner Architekten im Tokyo des späten 19. Jahrhunderts,' *Berlin-Tokyo. Die Kunst zweier Städte*, exhibition catalogue, Neue Nationalgalerie Berlin, edited by A. Schneider, G. Knapstein, D. Elliott, M. Kataoka, A. L. Arnold (Ostfildern: Hatje Cantz, 2004), p. 76.

given the pro-German sentiments in the foreign minister Inoue Kaoru's circle at this time. Under this leadership, official architecture in Tokyo came to reflect a strong Prussian bias in individual public buildings, in a city that otherwise showed a mosaic-like quality.⁴¹⁵ Wilhelm Böckmann spent several months in Japan in 1886, and his partner Hermann Ende visited in 1887. In the end Ende and Böckmann submitted two proposals. The first proposed design, developed by Böckmann, stayed within the framework of contemporary European practice. In fact, many specific characteristics of the design can be traced to the architects' entries to the architectural competitions for the German Reichstag in Berlin, in 1872 and 1882, where they won second prize. There was no effort to accommodate the architectural style, in this case a neo-baroque scheme, to its Japanese context. This proposal was accompanied by a reorganization scheme for the area south of the palace, designated as the seat of the government. It included a monumental dispersion of ministerial buildings along a 'triumphal way,' as well as plans for the construction of a new railway spur to a new central station. Within six months a second set of elevation drawings for the parliament was forwarded from Berlin, this time with a fantastic pagodalike centrepiece, an orientalized version of Kisuke Shimizu's design for the First Mitsui Bank, produced by Ende as an alternate version of Böckmann's design.⁴¹⁶ While the overall disposition of this second proposal was similar to the first, the architectural features were intended to allude to Japan's past. The designers had used something like the Japanese temple style and produced a strongly traditional or Japanese eclectic design. The Japanese government rejected the proposal as not modern enough. It did not settle for a scheme in western style either.⁴¹⁷ In a time of political change, and a generally mounting resistance against everything western, the mirroring of a western institution in a Japanese fashion might have been received as more alienating than a western scheme. Perhaps it was seen as a proposal that would fuel a smouldering conflict rather than contributing to its reconciliation.



⁴¹⁵ In Edo-Tokyo, up to and including the beginning of the Meiji period, land distribution was extremely uneven. Between 60 percent and 70 percent of the urban area of Edo had been occupied by extensive gardens and grounds belonging to estates of the provincial aristocracy. The remaining land was shared between the highly regulated and dense commoners' district, and the scattered grounds of numerous religious establishments. Stewart (2002), p. 41.

⁴¹⁶ Stewart (2002), p. 39. Reynolds (1996), p. 39.

⁴¹⁷ In the following years, the Ministry of Justice (1895) and the Tokyo Court (1896) were realized after plans by the firm Ende & Böckmann, in neo-renaissance style. Sasaki (1965), p. 65.



5.10 Böckmann and Ende proposals for the Imperial Diet Building in Tokyo, 1887

By the early 1880s Japanese architects still had been trained by foreign teachers, and were commissioned by the Meiji government to design versions of the eclectic revival styles popular in Europe. These, employing stone or brick masonry technology, represented a fundamental departure from the timber-based building practices of pre-Meiji Japan. In the late 1880s a newly reorganized central government called for an ideological return to Japanese antiquity as a guide to remaking Japan's institutions and strengthening its national identity.⁴¹⁸ The American architectural historian Cherie Wendelken sees this time, from the 1890s into the twentieth-century, as an important transitional period, when architects started to acquire some of the traditional builder's technical expertise in the use of wood. This shift of focus began as part of a curriculum change in the late 1880s when the Imperial University hired master carpenters as teachers in the course of a new interest in issues concerning the restoration of Japan's ancient monuments, such as temples and shrines. Until that time, architectural education had focused on courses in modern construction technology and western-style design.⁴¹⁹ The outcome of this curriculum change became known as the Shrine and Temple style (*shajiyo*), a native revival style. As *shajiyo* suggests, their buildings took their formal inspiration from pre-modern shrines and temples. The upturned eaves, cusped gables, and tiled roofs that characterized the Shrine and Temple style were

⁴¹⁸ Approximately at the same time when the process of the Diet Building was started, the government established The Imperial Household Building Department (1882), to rebuild the Imperial palace, which had burned down in 1873. The construction of a permanent Imperial Palace became the subject of heated debate between state architects and carpenters associated with the Imperial Household into the late 1880s, whether to build it in a traditional Japanese style or in a Western style (Muramatsu Teijiro (1965), p. 47). In 1887 it was decided to give the master carpenter Kigo Kiyoyoshi responsibility for the entire palace, which was to be built of wood in the familiar palace style. The date suggests a connection between Kigo's commission and a political change, since this was the year of Inoue Kaoru's resignation as foreign minister and the end of an era of westernization. Wendelken (1996), p. 30.

⁴¹⁹ Kigo Kiyoyoshi, who was employed by the Imperial Household taught the first courses in the new subject of Japanese architecture at the Imperial University, beginning in 1889. The architectural historian Cherie Wendelken puts emphasis on the point that Kigo did not teach a historical style, but a living tradition, and thus the new generation of architects educated by Kigo were the first who had not only the desire but the skill to manipulate the traditional building vocabulary to create a new Japanese architecture that was both national and modern.

intended to resemble those of ancient religious monuments. What was new about it was that this architecture was understood not simply as Japanese buildings, but as a self-consciously Japanese style of architecture in an increasingly eclectic age. The few extant Shrine and Temple-style buildings constitute early examples, which mirror the quest for national identity in modern Japanese architecture, a central issue in critical debate and in architectural design for generations to come.⁴²⁰

The university graduated as many active practising architects specialized in Oriental and Japanese architecture as they did architectural historians and theoreticians. In 1892, Chuta Ito wrote a treatment of architectural philosophy in which he touched on the distinction between building and architecture, and drawing from the works of James Fergusson in the history of Indian and Eastern architecture (1876) and Viollet-le-Duc, discussed basic causes in the growth of architectural styles.⁴²¹ In 1894, he insisted on changing the terminology from building engineering (*zoka*) to architecture (*kenchiku*) and thus taking architecture out of its technical context and assigning it a place among the fine arts.⁴²²

In the early twentieth-century, especially after news of the 1906 San Francisco earthquake and fire reached Japan, the use of timber for institutional buildings waned among Japanese architects. Interest in a Japanese-style architecture did not fade, but efforts shifted to the replication of the forms and details of wood construction in reinforced concrete. Architects took up the use of ferroconcrete in Japanese-style design, which by the 1930s was called the *teikan yoshiki* – the Imperial Crown Style associated with the pre-World War II years.⁴²³

There was an intense debate within the architectural community over the issue of style. In May 1910 the Architectural Institute (*Kenchiku Gakkai*) sponsored a panel debate on an appropriate future architectural style for the nation with the title ‘What shall our future architecture be?’ The opinions varied dramatically, from the advocacy of a purely Western style to more traditionalist positions. Several panellists proposed forging a new style that would draw on both Western and earlier Japanese architectural forms. Speakers agreed that the choice of style mattered, since Japan’s future public architecture would communicate something

⁴²⁰ Wendelken (1996), p. 28.

⁴²¹ Ito, one of the most important figures in Meiji architecture, made significant contributions as a designer, historian, preservationist, and theoretician. He graduated on the topic of Horyuji, the first Buddhist temple in Japan, located at Nara, which was built by Koreans at the invitation of the Japanese rulers in the sixth century (according to the Christian calendar). Ito proposed that the entasis (the tapering of the upper ends of the columns) of the main hall at Horyuji, as well as the proportions of the hall, were evidence of a trans-Asian connection between the temples of Japan and those of ancient Greece. Ito’s theory long remained a standard part of the architectural curriculum, and has only recently been reconsidered. In general, this was obviously a time of much theoretical writing on the links between east and west, as the works *History of Indian and Eastern Architecture* from 1891 by James Fergusson and *Impressions of Japanese Architecture* of 1905 by Ralph Adams Cram, demonstrate. Wendelken (1996), p. 30.

⁴²² Hiro Sasaki (1965), pp. 66-69, Teijiro Muramatsu (1965), p. 43.

⁴²³ The ferro-concrete Kyoto Takashimaya Department Store of 1911 was designed and built by a prominent carpenter within Takenaka Komuten, a carpentry workshop that was fast transforming into a modern construction firm.

about its national ideals. However, the panellists could not agree on a distinct vision of Japan's identity.⁴²⁴

Reforming the domestic

In most cases, architects as well as master carpenters worked for the State. Private commissions were for a long period extraordinarily rare. As architectural style had become such an important marker for the representation of Japan as a nation, decisions in this matter were made at the top. This situation seems to have gradually changed with Japan's expansion politics into Korea and Manchuria, and through its victories in the first Sino-Japanese war (1884-1885), and the Russo-Japanese war (1904-1905), which boosted Japan's economy and created a private clientele for architectural projects. A further movement, which supported the emergence of an alternative strand to the State architecture of new governmental, for educational, and cultural institutions, was the rise of the modern movement in Europe. There was a strong focus on domestic architecture and social issues, as this found expression in the *Siedlungs*-projects in Germany, for example. The modern movement resonated in Japan also, not least through an intense travel activity of young Japanese architects who went to study and practice abroad, like Bunzo Yamaguchi who worked for Walter Gropius, or Kunio Maekawa and Junzo Sakakura who worked with Le Corbusier in Paris in the late 1920s and early 1930s.⁴²⁵ Several Japanese architects studied at the Bauhaus, including Iwao Yamakawi, Bunzo Yamaguchi, and Takehiko Mizutani.⁴²⁶

In contrast to an earlier generation of architects, who pursued a dualistic policy of importing western civilization, architecture, and technologies separated from spirit and culture, Hiroki Onobayashi notices a new attitude among the architects of taking in and assimilating not merely aesthetics and styles but also concepts and theories of modern architecture. Onobayashi states that from 1915 on residential design was a focal point, and with it the concept and image of the modern house, replete with new images of humanity and the family, new living styles, new spaces, and new aesthetics.⁴²⁷ He sees a desire to get away from the plane-space volume determined by the traditional Japanese *shaku-ken* module, and to create plans that would give each room a certain personality by separating them into clearly defined functions, and with ample spatial volume allotted to each of them.⁴²⁸ Arthur Drexler gives an account on the new modern lifestyle that 'found increasing favour for home life, and many private homes were designed in European styles. While the exteriors of such houses suggested English and Dutch villas, the number of Western style rooms they actually contained depended on financial resources and on the amount of discomfort the family was prepared to endure. At the back of the house there was likely to be a Japanese garden and clean, airy rooms of traditional Japanese design, ostensibly for less adaptable

⁴²⁴ Arthur Drexler, *The Architecture of Japan* (New York: The Museum of Modern Art, 1955), 240.

⁴²⁵ Kunio Maekawa worked for Le Corbusier 1928-1930, Junzo Sakakura 1931-1936.

⁴²⁶ Onobayashi (1965), p. 81.

⁴²⁷ *Ibid.*, p. 79.

⁴²⁸ *Ibid.*, p. 79. *Shaku-ken* is a structure whereby *shaku* describes a unit of measurement, equivalent to around 30,3 cm.

parents and grandparents but often a refuge for the whole family. At most cases a man in a western business suit, returning from a day at the office, donned a kimono the moment he entered his English cottage. His office probably had central heating, which made a light business suit appropriate, but central heating or gas heaters set in fireplaces may have been too costly for home use, thus making a warm kilted kimono desirable.⁴²⁹

Theories insisting on the functionality of architecture were widely discussed in Japan. The noted Tokyo Imperial University teacher and structural expert Toshikata Sano, educated in Germany, stated that modern architecture's main topic should not concern religious or monumental elements, but actual function, and that stylistic beauty was inessential.⁴³⁰ For Sano, the Japanese architect was a technician with a basis in the sciences. Sano's book on the investigation of earthquake-proof structures, *The Theory of Anti-earthquake Building Structures (Kaoku Taishin Kozoron)* of 1916, gained worldwide attention.⁴³¹ In 1915 Toshihiko Noda advanced his famous theory of the non-aesthetic nature of architecture, in which he insists on the structural, logical and functional elements in architecture as non-aesthetic qualities, in 1915. Turning away from the representational to seek other expressions, one spoke of a non-aesthetic instead of a new aesthetic. As a result, the debate about style included, on the one hand, the discussion about the position of technology in modern architecture, and the role of technology as a liberator, and as a means to a more democratic society; and on the other hand, a discussion about social issues, which developed from the shift in focus from State architecture to the reformation of the domestic for the new nuclear family. The myth of the non-aesthetic nature of functionalist architecture made this strand immediately adaptable to Japan, as with anywhere else, without any significant ideological concerns.

Japanese architects turned to the study and design of residential buildings for the masses.⁴³² In the twenties, thirties, and forties, residential design and housing projects developed rapidly while pursuing the vocabulary and concepts of modern art and architecture under the influence and impetus of the current modern architecture movement in Europe. Architects were engaged in architectural design, interior decorating, furniture, wallpaper, and lighting fixtures,⁴³³ which reflects the new interest in lifestyle and consumption. But it was not until after the catastrophic earthquake that struck the Kanto region in September 1923, destroying much of Tokyo and Yokohama,⁴³⁴ that a housing programme was established in Japan according to European example.

In the city of Tokyo 465,000 homes were lost in the earthquake. Countries from all over the world sent financial contributions to help. The city government and autonomous neighbourhood bodies adopted a rehabilitation policy according to which self-governing groups should supply housing for their

⁴²⁹ Drexler (1955), p. 240. Drexler was the curator of the department of architecture and design at MoMA, and organized a Japanese Exhibition House that was built in the garden of MoMA. It was open to the public during the summers of 1954 and 1955.

⁴³⁰ Sasaki (1965), p. 70.

⁴³¹ Muramatsu (1965), p. 49. Muramatsu mentions Sano as a representative of *wakonyosai*.

⁴³² Onobayashi (1965), p. 71.

⁴³³ *Ibid.*, p. 78.

⁴³⁴ W. G. Beasley, *The Rise of Modern Japan* (London: Phoenix, 2000), p. 115.

citizens with help of the donations. The Mutual Profits Corporation (*Dojunkai*) was founded in 1924, whose immediate task was to provide temporary homes for the homeless and to embark on a vast residential program. One of its accomplishments was the construction of the first reinforced-concrete apartment buildings in Japan, in the Tokyo areas of Aoyama (1926) and Daikanyama (1927), the same year that Mies van der Rohe organized his Weissenhofsiedlung housing exhibition in Stuttgart.⁴³⁵ The so-called Harajuku Apartments in Omotesando, Aoyama, which still exist, form the most prominent example. The Daikanyama apartment community in Shibuya was best documented photographically at the time. It consisted of 289 apartments in semi-detached two-storey houses with communal facilities in the centre, including a meeting room as well as a residents' restaurant.⁴³⁶ The type of flat, which can be described as an apartment, has no history in Japan before the Great Kanto Earthquake of 1923. The Edogawa apartment community, which was erected in 1934 by the *Dojunkai*, mirrored both the new family image, or better, the dissolution of the traditional extended family, and the interest in the production of collective schemes, which were completely new in Japan at that time.⁴³⁷ It consisted of six- and four-storey high buildings around a central garden. The most common unit was a three-room flat, but there were also two- and four-room flats. The fifth- and sixth-floors of the taller buildings contained apartments for bachelors, responding to the influx of single young men, who came to the capital for work. They were without balconies, which were considered essential in the family-flats for daytime use by children and housewives, a reminder of the *engawa*, or terrace of the traditional dwelling. A landscaped garden was laid out between the blocks of the *Siedlung*, according to the example of European communal gardens. Edogawa was also exceptional in that it was equipped with central heating, and possessed flush toilets, a rarity in Tokyo in these days.⁴³⁸



5.11 Harajuku Apartments (1926)

⁴³⁵ Since the earthquake, both steel-frame and reinforced concrete structures came to be valued as the most outstanding structural methods in modern Japanese architecture. Muramatsu (1965), p. 49.

⁴³⁶ Onobayashi (1965), p. 83.

⁴³⁷ David B. Stewart (2002), p. 146-147.

⁴³⁸ *Ibid.*, p. 150.



5.12 Daikanyama Apartments (1927)



4.74. Dojunkai: Daikanyama Apartments, Shibuya, Tokyo, 1927. Room interior.



4.75. Dojunkai: Edogawa Apartments, Edogawabashi, Tokyo, 1934. View from the central court.



4.76. Dojunkai: Edogawa Apartments, Edogawabashi, Tokyo, 1934. Model.

The *Dojunkai* gained a reputation for its exemplary new housing projects, and paved a path, which was followed by the private sector, which addressed a more wealthy and younger upper-middle-class rather than families. The Osaka Pantheon by Togo Murano of 1933 was termed an ‘apartment house’ by the architectural magazine *Shinkenchiku*, but appears organized more like a residential hotel in its arrangement and provision of services. Compact individual sleeping rooms were spread over four floors, which also included several larger units with their own kitchenettes. Beside the private rooms, the complex contained public spaces, such as the ‘salon,’ which combined a dining room, a bar and a billiard room. There were no bathing facilities, and it was assumed that the residents would bathe in public bath-houses. The type of public spaces that were provided clearly indicates that this apartment house was mainly addressed to single young male tenants, or young couples without children, and not thought to house families. The Rakuto Apartments in Kyoto, built for students by Kameki Tsuchiura in the same year, contained 100 rooms distributed over five floors in a T-shaped plan. The students’ rooms were small (the equivalent of six tatami) but not minimal, and there was a dining room, a tea room, and a hair-dresser’s shop in

the house.⁴³⁹ The Bancho Siedlung in Tokyo, which was started by Takeo Arishima, and after his death completed by Bunzo Yamaguchi in 1933/34, who had just returned from Germany the year before, recalls the Weissenhof Siedlung in Stuttgart of 1927. The Bancho Siedlung was a private housing compound and consisted of a cul-de-sac road with terrace houses based on two differing modules of two, respectively three bedroom houses. Each unit possessed its own garden. The greatest novelty was the kitchen, which was equipped according to German standards (probably a type of Frankfurter Küche). The exterior of the Bancho Siedlung was finished in white mosaic tiles, and also the street lighting was designed by the architects, which corresponds to Walter Gropius and the Bauhaus' ideas of the *Gesamtkunstwerk*. The Nonomiya Apartments of 1936/37, by Kameki Tsuchiura, was one of the last visible manifestations of modernism in Tokyo. It was a seven-storeys building clad with tiles in bands of alternating white and blue stripes, and had horizontally aligned windows. The ground floor contained a photographer's studio complete with an imitation zebra rug in the waiting room. For the flats above, there was a fully glazed ground-floor lobby furnished with chrome-tube chairs. There were both one- and two-room living units available, with beds and wardrobes built in. In contrast to the *Dojunkai* accommodations, the floors were made of hardwood, without the intention to accommodate tatami mats, which was still the case in the publicly financed projects.⁴⁴⁰ These examples show that the initial idea to install a social housing programme, and to build for the masses in Japan following European examples, as well as the attempt to adapt a Japanese lifestyle to the modern apartment, had failed. The modern housing blocks instead attracted a more wealthy and bohemian clientele, who appreciated the imagery of western modern architecture, thus turning those projects soon into more luxurious enterprises.

⁴³⁹ Ibid., p. 148-149.

⁴⁴⁰ Other examples include the Seiunso Apartments (Bunzo Yamaguchi, 1936), the Keio Private University Lodgings, which resemble Walter Gropius's 1929 Siemensstadt Siedlung (Yoshiro Taniguchi, 1938), the Byakuranso Apartments in Dairen, Manchuria (Seiichi Washizuka, 1938), and the Communist Performers' Apartments (Yoshihiko Hiramatsu, 1940). Onobayashi (1965), p. 83. The influence of the *Dojunkai* waned after 1934, and the institution was closed down in 1941, with the start of the Pacific War.



5.14. Yanagisaku Bancho Siedlung, Bancho, Tokyo, 1933. View from street.



5.15. Yanagisaku Bancho Siedlung, Bancho, Tokyo, 1933. Street level and plan of one block.

5.13 Osaka Pantheon (1933), and 5.14 Bancho Siedlung, Tokyo (1933)

While transplanting European housing, Japanese architects also embarked on investigations in residential design, rationalization, standardization, and industrialization. Both the main theme of CIAM 2, held in 1929 in Frankfurt on the topic of ‘Existenzminimum,’ and the low-cost housing report ‘Die Wohnung für das Existenzminimum,’ was greeted with great interest in Japan. Japanese architects started to do research, and to design experimental minimum-expense houses, according to European and American precedents. Buckminster Fuller’s Dymaxion House project, an earthquake-proof structure (1927-1944), was well-known in Japan. Examples of this activity include Takeshi Ichiura’s Abe House (1935), Chikatada Kurata’s series of houses, a work by Seigo Motono (1936), and Seiichi Washizuka’s minimum house (1938). However, as in Europe, mass-produced houses never really entered the market, for in Japan industrial housing still turned out to be more expensive in comparison with houses that were built in the traditional way by local craftsmen.

Planning the nation

The colonies offered architects a new field of activity, comprehensive planning after western example, which was hitherto unknown in the home country. After Japan’s occupation of Manchuria (Manchuko) in 1931 and the following colonization, planning became a necessity and Manchuria served as an experimental field for a generation of young modern Japanese architects. The Manchurian work offered them, as Onobayashi expressed it, an ‘unequaled opportunity’ to create ‘a new paradise in Manchuria’s vast expanses, building new cities, towns and villages,’ from scratch.⁴⁴¹ The Manchurian experiment posed the

⁴⁴¹ Onobayashi (1965), p. 84. See also David B. Stewart (2000), p. 111.

unique possibility to embark on designing utopian schemes, following here a western tradition, in contrast to the piecemeal strategies of city planning hitherto in the home country, where for the most part unplanned, high-density settlement prevailed.⁴⁴²

To explain the development in planning in the process of modernization, the urban historian Carola Hein distinguishes two periods. During a first period there was a 'selective borrowing' of foreign examples, when foreign planners and architects were invited to build, plan, and teach in Japan. Governmental delegations travelled abroad to study foreign examples, which were applied them at home often in the form of adaptations of foreign building types, as we have seen in the first governmental and institutional buildings.⁴⁴³ In addition, the government sent members of the ministries and young individuals to study abroad. A second phase she characterizes as 'synthetic innovation,' where foreign models are not only submitted to an adaptation to Japanese conditions, but also become transformed into something different as with most of the imported building laws and planning techniques.⁴⁴⁴

Many problems with directly implementing Western examples in Japan had not only to do with different conditions relating to climate and geology, but also with different architectural and urban traditions. The European tradition of classical forms as a reflection of political and economic power had no parallel in Japan, nor were there public places comparable to the monumental squares of European cities. In Japan, public buildings were often secluded from public space by high walls, and meeting places were established rather informally around bridge heads. In contrast to radial-concentric street layouts in many European cities based on former fortification patterns, and dominated by several-storeys apartment buildings, Japanese cities can be described instead as patchworks of neighbourhoods, where large-scale developments for the military aristocracy coexisted with small-scale neighbourhoods of tiny low-rise houses for commoners.⁴⁴⁵ The most crucial difference is that in Japan there existed no

⁴⁴² Japan invaded Manchuria, the Northeast Provinces of China, between 1931-1932, and created the Japanese-controlled puppet state of Manchukuo. It was argued that the rapid growth of Japan's population, which stood at close to 65 millions in 1930 necessitated large food imports. During 1932-35, Japan seized even more territory bordering on Manchuria. A League of Nations committee recommended in October 1932 that Japanese troops be withdrawn and Chinese sovereignty restored. Japan's response was to resign from the League of Nations in 1933. Japan proceeded to transform Manchuria into an industrial and military base for Japanese expansion to undergird its 'new order' in East Asia. Manchuria was under Japanese colonial rule 1932-1945. To this day it is the industrial heartland of China. 'Manchuria.' Encyclopaedia Britannica. Retrieved August 7, 2006:

<http://www.britannica.com/eb/article-9050465> and 'Japan.' Encyclopaedia Britannica. Retrieved August 7, 2006: <http://www.britannica.com/eb/article-23200>.

⁴⁴³ Carola Hein, 'The Transformation of Planning in Japan and its Colonies,' by Carola Hein, in *Urbanism Imported or Exported? Native Aspirations and Foreign Plans*, edited by Joe Nasr and Mercedes Volait (Chichester: Wiley & Sons, 2003), p. 60.

⁴⁴⁴ Hein takes this distinction from the planning historian Stephen Ward. See also Stephen Ward, 'Re-examining the international diffusion of planning,' *Urban Planning in a Changing World, The Twentieth Century Experience*, edited by Robert Freestone (London: Spon, 2000), pp. 40-60.

⁴⁴⁵ Hein (2003), pp. 55-56.

tradition of comprehensive planning that focused on long-term implementations and urban permanence, as it was known in the west. Although several comprehensive urban design projects were proposed for Tokyo after the opening of the country, none of them was constructed. According to Hein, newly emerged planning specialists within the government administration realized that it was not so much western urban design solutions that were needed for the transformation of the traditional Japanese city, but rather modern urban planning *techniques*.⁴⁴⁶ As the most important tool of Japanese urban planning then and still now, Hein mentions land readjustment, a technique of unifying and redistributing land.⁴⁴⁷ As a consequence, land readjustment was mostly used to widen streets. The tool allowed interventions in specific sites and concentrated on the creation of major public infrastructures without interfering with design issues.⁴⁴⁸

In the first period, from the Meiji restoration until the enactment of the Town Planning Act of 1919, planning as a practice was established in Japan. As Hein describes the situation, it was individual planners who interpreted foreign planning models and created a planning system that was adapted to the country's particular conditions. They generally promoted pragmatic planning techniques that could be rapidly applied on a case-to-case basis without the need for a comprehensive long-term plan.

In the second period, from 1919 until the end of WWII, Japan exported planning methods to the Asian neighbours it colonized, where western imports, Japanese practices, and local models were combined. During this era foreign specialists were now seldom invited Japan primarily experimented with newly acquired and western-inspired urban planning ideas and techniques in its colonies in Taiwan, Korea, China, and Manchuria.⁴⁴⁹ Models were provided by the Garden City and Toni Garnier's *Cité industrielle*. European and Russian concepts and techniques had reached China before the Japanese colonization, and the Japanese planners learned from them when they colonized Manchuria and other parts of China.⁴⁵⁰ Thus, the colonial experience was not limited to the export of planning

⁴⁴⁶ Ibid., p. 60.

⁴⁴⁷ The most important tool for land readjustment, especially for suburban sites, is the traditional Japanese arable land readjustment, which was modelled on the German arable Land Readjustment Acts, and put in place in 1899.

⁴⁴⁸ Hein (2003), pp. 64-65. The Japanese Land Readjustment Act was revised in 1909, and became part of the urban land readjustment system of the Town Planning Act of 1919.

⁴⁴⁹ Hein states that western critique was generally rejected, though individual planners seem to have had professional exchange with foreign colleagues. For example, Ishikawa Hideaki, a major figure in the urban planning of Nagoya and later Tokyo, consulted Raymond Unwin on his Nagoya plan on a trip to Europe in 1923, and Fukuda Shigeyoshi, author of the visionary New Tokyo Plan of 1918, met Fritz Schuhmacher on a trip to Hamburg and discussed, among other topics, the rebuilding of Tokyo after the Kanto Earthquake (1923). Ibid., p. 64.

⁴⁵⁰ For example, when the Japanese took over Dairen (built as Dalny by Russia between 1899 and 1904), they inherited a plan for a monumental city and decided to continue and to improve on this design. The ambitious scale and design of the project was to set a precedent for later visionary urban planning. Qingdao, organized as Tsingtau under German control since 1897, is another instance of this importing of planning ideas via the colonies. When the Japanese took over the city in 1914, they examined and maintained the building laws, thereby gaining first-hand knowledge of applied German planning legislation Ibid., p. 54.

ideas, but also provided a way to re-import those ideas, after testing them, back to Japan. However, they were not directly applicable as the example of the Great Kanto earthquake in 1923 showed, which destroyed large parts of Tokyo and Yokohama. The hopes for a comprehensive reconstruction and a complete transformation of the city dissolved due to the urgent need of rebuilding the cities as quickly as possible. This and the resistance of the landowners made it almost impossible to implement comprehensive plans.⁴⁵¹ This situation would repeat itself in the reconstruction period after WWII.

In the colonies the Japanese approach to planning differed from place to place. Apart from a Shinto shrine that was erected in all occupied cities, there was no particular national form that expressed the Japanese position as colonizer. In the oldest Japanese colonies, Taiwan (1895-1945) and Korea (1910-45), Japan demonstrated its achievements and its capacity as a colonial power by leaving their mark, like other western colonizers on the urban landscape of the occupied cities. Similar to the German intervention in Qingdao, the Japanese created a monumental Government General building on the axis of a large boulevard in Seoul. The building was erected on the former site of the main palace gates, and thus stood in front of the traditional seat of power. Its architectural form was western; however it was torn down in 1997 as a sign against the Japanese occupation.⁴⁵²

Manchuria became an example for testing large-scale, long-term planned projects that integrated three-dimensional architectural design and two-dimensional urban layout in comprehensible plans, as was typical of western planning practice. The most famous example was the plans for Manchuria's capital Shinkyo (now Changchun), which in large part were carried out. The urban plan featured boulevards and monumental circular spaces, including new sanitary techniques as well as telephones and electricity, all of them symbols of China's 'modernization,' as intended by the Japanese.⁴⁵³

These are early examples of an attitude we will find again after WWII, where the war destruction in Japan seemed to offer a field of experimentation, just as Japanese colonialism had. Here however we also find the urge for rapid reconstruction and the constraints of land ownership, which suggested a reconstruction based on pragmatic land readjustment plans instead of large-scale visions; the Hiroshima competition that was won by Kenzo Tange offered one of the few exceptions.⁴⁵⁴

The importation of western comprehensive planning models failed, as there was no tradition of an integration of architectural and urban design, as Hein expresses it, and no place in politics for planning professionals to impose comprehensive design ideas on the cities. Much more, modern Japanese planning developed as a field for specialists inside the central administration, and has focused on tools and projects rather than on large-scale plans, urban design or an integration of urban and architectural design. These experts were technocrats rather than designers. They had an organizational role, and were interested in

⁴⁵¹ Ibid., p. 54.

⁴⁵² Ibid., pp. 68-69.

⁴⁵³ Ibid., p. 69.

⁴⁵⁴ Ibid., p. 72.

planning techniques rather than in creating urban monuments as political manifestos, as did many of their western counterparts.⁴⁵⁵ One could say, in the attempt to divorce foreign models from an image connected to western ideology and the transmission of culture, pragmatic planning in contrast to urban design hence becomes a technical means to be imported and exported without hesitation. This statement mirrors the operative attitude of *wakonosay*.

In this chapter, Japan's attempt to integrate western architectural and urban models in order to adapt to western technical standards as quickly as possible was discussed. While a reorganization of the state and the formation of institutions seem to have taken place without significant opposition in Japan, the home and the sector of urban design emerge as areas of resistance against modernization. The westernization of Japan also generated an enormous interest for the 'exotic' country in the west. The next chapter explores how western conceptions of Japan have influenced architectural practice and design theory in the west, in particular through Frank Lloyd Wright's and Bruno Taut's accounts of Japan in relation to the organic. Japan emerges hereby as an ideal, which fires the imagination of the protagonists in two personal fictions.

⁴⁵⁵ Ibid., p. 77.

6 Western images of Japan

Wright's Organic Architecture in the Imperial Hotel in Tokyo – Modern architecture and the traditional Japanese house in Taut – Imitation

The scope of this chapter is the western projection on Japan and traditional Japanese architecture in the making of a myth of modern architecture. Two cases are presented, Frank Lloyd Wright's notion of organic architecture as evolved from his intense and obsessive occupation with Japanese woodprints, later nurtured by his Japanese experiences and interpreted in his famous Imperial Hotel in Tokyo, built 1912-1923. While working on the Imperial, Wright spent four years in Japan altogether, going back and forth. In this work, which he called a 'transitional building,' Wright attempted a hybrid architecture between east and west.⁴⁵⁶ The design was largely inspired by traditional temple forms. Ten years later, the architect Bruno Taut emigrated from Germany and lived in Japan from 1933-36, where he was engaged mainly in writing on modern and Japanese architecture, and in designing furniture. As this was a time of mounting nationalism in Japan, as well as in large parts of Europe, it was impossible for Taut to receive architectural commissions as a foreigner in Japan. Taut is usually seen as the one who discovered the Katsura Villa in Kyoto for a western audience, which would become an icon and place of pilgrimage for architects on the search for the roots of modern architecture. The architect Arata Isozaki would recently argue that Taut unearthed the villa also to a Japanese gaze, and that his extensive articles that appeared in Japan contributed to the acceptance and the making of a style that was seen as national and modern at the same time. With his reading of Katsura, Taut has created a piece of organic architecture for Japan.

Wright's Organic Architecture in the Imperial Hotel in Tokyo

The first building designed by a renowned international architect in Japan is the Imperial Hotel in Tokyo by Frank Lloyd Wright. Wright's invitation for conducting this project is significant as he stands for a different attitude than the European Beaux-Arts tradition, which was practiced in Japan during its 'western' period. It is also important because it occurs at a time when Japan was searching for a national style that envisioned a form of hybrid expression. Wright's notion of an 'organic architecture' turned specifically against European historical precedents. He viewed an organic architecture he viewed as emerging almost naturally from its material-structural properties, which were also mirrored in its ornamentation.⁴⁵⁷ With that, Wright's architecture took on an almost moral status, where he argued with notions of 'truth' and 'honesty.' In this sense, 'honest' architecture offered new possibilities in the search for a native national expression, more 'true' than the previous adaptations of European architectural styles, as here an architectural form could become generated from a sort of inherent structural

⁴⁵⁶ Frank Lloyd Wright, quoted in Kevin Nute, *Frank Lloyd Wright and Japan. The role of traditional Japanese art and architecture in the work of Frank Lloyd Wright* (London: Chapman & Hall, 1993), p. 155.

⁴⁵⁷ For Frank Lloyd Wright's concept of organic architecture, see also Bruno Zevi, *Towards an Organic Architecture* (London: Faber & Faber, 1950).

truth.⁴⁵⁸ In the search for an organic architecture Wright instrumentalizes Japan as a model case for the generation of an honest organic architecture where the artist-architect ought not import and imitate foreign styles, but look instead into her or his own culture for the seeds of an indigenous art. In the case of America, the essence of this culture he saw in democracy.

The architectural historian and theorist Kevin Nute argues that Wright's notion of 'organic architecture' developed in relationship to his admiration for Japanese artefacts. Wright was in fact familiar and fascinated by Japanese culture long before he set foot into Japan for the first time, which may explain the Japanese touch even to some of Wright's earlier work.⁴⁵⁹ Nute traces this to Wright's connections to the Boston Orientalists and their art theories based on formalism and abstraction comparable to Ruskin's exercises for regaining an 'innocent eye.'⁴⁶⁰ In *Japanese Prints*, Wright explains the essence of organic architecture through his interpretation of the Japanese prints: 'Japanese art is a thoroughly structural Art; fundamentally so in any and every medium. . . . The word structure is used here to designate an organic form, an organization in a very definite manner of parts or elements into a larger unity – a vital whole.' And: 'Using the word Nature in the Japanese sense I do not of course mean that outward aspect which strikes the eye as a visual image of a scene strikes the ground glass of a camera, but that inner harmony which penetrates the outward form or letter, and is its determining character; . . . – what Plato called . . . the 'eternal idea of the thing.'⁴⁶¹ In the analysis of the prints, Wright reflects above all his own aesthetic beliefs and design methods, which is expressed in an emphasis

⁴⁵⁸ Wright's attempt to formulate a native American architecture, for which he studied all kinds of ancient and existing forms of vernacular architectures, can be seen in this light. For an account on this, see Anthony Alofsin, *Frank Lloyd Wright. The Lost Years, 1910-1922* (Chicago: University of Chicago Press, 1993).

⁴⁵⁹ Wright had visited the Ho-o-den, the Japanese pavilion at the World's Columbian Exposition in Chicago in 1893, which Kevin Nute describes as a turning point in Wright's work. The Ho-o-den was a copy of a temple but smaller in size and adapted to secular use. It exhibited designs of three different periods. Thus it did not represent a complete palace but small parts of existing palace buildings in versions three-fifth of their original size. Nute (1993), pp. 53, 71, 196-97.

⁴⁶⁰ The Boston Orientalists included the philosopher Ernest Fenollosa, who had taught philosophy and political economy at the Tokyo Imperial University before taking a position as curator for oriental art at the Museum of Fine Arts, Boston, in 1890; and the painter Arthur Dow, who translated Fenollosa's ideas into *Composition*, a standard book for art education based upon the aesthetic composition of line, tone, and colour. *Composition* used mainly Japanese examples to demonstrate what Fenollosa and Dow considered as universal aesthetic principles. Further, the Boston Orientalists included Edward Morse who had written a well-known book on the traditional Japanese house, and Kakuzo Okakura, a former student of Fenollosa in Japan, known for his *The Book of Tea* (1906), and other works on Japanese culture for an American audience. Also Fenollosa believed that the 'universal principals' he found in Japanese art could form the basis of a new genuinely American art, independent from established European styles.

⁴⁶¹ Frank Lloyd Wright, in *Japanese Prints*, quoted in Nute (1993), pp. 103, 106. Wright's description of aesthetic ideals directly relates to his political idea of democracy. Wright drew hereby a parallel between the 'organic' and the 'democratic' form on the basis that each expressed the individual parts consistent with the uniformity of the whole. pp. 103, 106.

on abstraction from nature: 'As Nature is never right for a picture so she is never right for the architect – that is, not ready-made. Nevertheless, she has a practical school beneath her more obvious forms in which a sense of proportion may be cultivated.'⁴⁶² For Wright the abstraction from nature led to geometrical pattern imbued with symbolic value. This use of geometry comes across especially in the ornamentations of the Imperial Hotel.

The project of the Imperial Hotel derived from a decision to replace the old Imperial Hotel, a hotel for foreign guests, which had become too small. The first structure was German-designed, three-storeies high, and built in the French Second Empire style. It was completed in 1890 under the supervision of the Japanese architect Yuzuru Watanabe, and offered over sixty rooms. With the increasing flow of foreign visitors after Japan's astonishing victory in the Russo-Japanese War (1904-05), and the following economical boost, the hotel was extended. In 1910 it was finally decided that a completely new hotel building was desired. The context of the new Imperial Hotel, close to Hibiya Park and facing the Imperial Palace, was characterized by a mix of western and eastern architectures, which was characteristic for the Taisho era (1912-1926).

Wright was apparently chosen for the commission on the grounds that he was one of the few western architects who would bring the necessary understanding and sensitivity to Japanese aesthetic ideals. Wright had started to collect Japanese woodblock prints during his first visit to Japan. On his return he organized talks on Japan and an exhibition of Hiroshige prints at the Art Institute of Chicago in 1906, and a further exhibition of woodblock prints at the same place in 1908 together with his friend Frederick Gookin, a businessman and like Wright a lover and collector of Japanese prints. It was also Gookin who would introduce Wright to the Imperial Hotel commission that was looking for a western architect for the new building in Tokyo. Wright received the commission and worked on the structure for eleven years, of which he spent four years in Japan, going back and forth between Tokyo and the United States.⁴⁶³ The new hotel building opened on September 1, 1923, the day of the Great Kanto Earthquake, which it miraculously survived. Prior to this event, Wright's direction of the project had been strongly criticized in both Japan and the United States, mostly due to Wright's failure to respect the costs, but also due to the enormous size and idiosyncratic interpretation of an architecture that attempted a synthesis between east and west. The attack seems to have been silenced by the survival of the hotel in the earthquake.

The architectural historian David B. Stewart called the Imperial Hotel one of the most controversial undertakings by Wright. It was an enormous H-shaped

⁴⁶² Frank Lloyd Wright, 'In the Cause of Architecture,' *Architectural Record*, 1908, quoted in Nute (1993), p. 79.

⁴⁶³ Wright visited Japan twice before he received the commission for the Imperial Hotel. His first visit, together with his first wife Catherine, and his clients Mr. Ward W. Willits and his wife, took place from February to April 1905, in the midst of the Russo-Japanese War, and the purpose was obviously to buy art objects, especially Japanese prints. On his second visit from January to May 1913, Wright was accompanied by Mamah Borthwick Cheney, former wife of a client, who was killed in 1914 by a servant who set fire to Wright's home at Taliesin. The third visit, in 1917, where he brought the sculptress Miriam Noel, was only connected to the Imperial Hotel.

structure of 34,000 square meters. Wright had envisaged a type of construction that was adapted to earthquakes, to which Tokyo was prone, and also to the fires that usually were their aftermath. The large pools in the court of the hotel were primarily conceived for providing water supply in case of fire. The construction was compared to the balance of a tray on a waiter's fingers with a paired central concrete support and cantilevered floors. The outer walls were self-supporting shells of specially made bricks filled with concrete, which leaned in against the cantilevered floors. The side wings provided the private accommodations. Every feature, from the special arrangement of the plumbing to protect it against earthquake strains, to the built-in cupboards and the new heating units, was the result of detailed technical and artistic study. Wright designed not only the building but also the furniture, the carpets, and even the china for the restaurant, attempting a sort of *Gesamtkunstwerk* in organic wholeness. The central block between the long side wings contained the public rooms. Lobby, dining room, ballroom and many other facilities were on the most lavish scale. Around this block were the gardens with their pools and terraces with carefully chosen Japanese plants and richly sculptured decoration cut from lava stone. The architectural historian Russel-Henry Hitchcock describes the impression as following: 'The most curious spotted greenish lava . . . was turned into fantastic shapes of almost geological abstraction among the Japanese evergreens. The reflections in the pools, the contrast of the lava colour with the dark green foliage and the brick walls behind composed a picture sufficiently Japanese in character, yet wholly original and personal.'⁴⁶⁴

This personal interpretation of 'Japan-ness' was much criticized during the construction period as too subjective, for example by Wright's assistant, Czech-American architect Antonin Raymond, who initially had followed Wright to Japan for completing the project. Raymond stayed only one year on the project and left in 1919. What Wright called 'grammar' concerning the unity of structure and ornament, Raymond regarded as 'mannerisms' that were 'devoid of content.' For him, 'the design had nothing in common with Japan, its climate, its traditions, its people and its culture.'⁴⁶⁵ For others, the Imperial Hotel was appreciated for displaying a structural unity between plan and ornament, which communicated a sense of the finished building as a whole. Although Stewart also evaluates the Imperial as divorced from any context, he credits the ornamentation with 'a decoration so highly articulated as to appear virtually scenic. The effect was charming and unusual.'⁴⁶⁶ He sees the relationship between structure and ornament as the most obvious characteristic of the hotel. 'Pairing the two features established the "truth" of the design . . . ' The ornamental system was 'created by chiselling tufa-like stone into crystalline, gossamer, lobed, or frondlike forms of a kaleidoscopic geometry,' which coupled 'a structurally expression, heroically symbolized everywhere by open-ended cantilevers with rythmed tracery fashioned of "living rock" and deftly interwoven from the interior to the exterior of the

⁴⁶⁴ Henry-Russell Hitchcock, *In the Nature of Materials. The Buildings of Frank Lloyd Wright* (New York: Duell, Sloan and Pearce, 1942), pp. 68-69.

⁴⁶⁵ Antonin Raymond, *An Autobiography*, Tokyo and Tutland, VT (Charles E. Tuttle), 1973, p. 71, quoted in Stewart (2002), p. 86.

⁴⁶⁶ Stewart (2002), p. 82.

building's concrete-and-brick shell.⁴⁶⁷ Stewart was less positive concerning the structural 'honesty'⁴⁶⁸ of the building, the purportedly anti-seismic structural principle, which for Wright served as a real and also a metaphorical core device for the Imperial Hotel, as not particularly original.

The Imperial Hotel could be called a personal fantasy on the theme of Japan without much connection to a traditional Japanese architecture culture. Wright was trying to fulfil a vision he had about Japan, and about Japanese culture, and in this sense, the building was supposed to represent something new and unique. It was however not completely out of context, as associations can be drawn to a hybrid temple style that was popular in Japan at the time, attempting a synthesis between traditional temple forms and modern materials such as concrete and stone.⁴⁶⁹ Also Nute suggests that Wright seems to have derived his concept for the Imperial Hotel from what he saw as the underlying form in classical Japanese temple buildings. He would re-apply these abstracted forms in a quite open way in his design, in order to arrive at a plan and a structural and ornamental form, all integrating so as to arrive at what he called an organic building. Wright himself regards his building in the context of Japan:

. . . something came to Japan's ground – something not Japanese, certainly, but sympathetic, embodying modern scientific building ideas by old methods not strange to Japan. No single form was really Japanese but the whole was informed by unity. The growing proportions were suitable to the best Japanese tradition.⁴⁷⁰

The Imperial Hotel can also be seen as a comment on the city of Tokyo, which Wright experienced as exotic and fascinating. Stewart points to the maze-like structure of the hotel, created by the continuous pattern, as a microcosm of some sort, which in a metaphorical sense seemed to mirror the city as Wright saw it, suggesting that: 'In rhetorical terms, the hotel operated in some measure as a synecdoche, standing for the city and its mysterious, captivating street life, which it purified and rendered up as art.'⁴⁷¹ While Wright was fiercely critical of the American city, he drew a romantic image of Tokyo, which appeared to him not like a city at all. In his autobiography he recalls: 'Teeming, enormous area is fascinating Yedo. A vast city channelled with wide bare-earth streets swarming with humanity. . . . A great city that is a gigantic village.' Against the noisy signs of the capitalist city Wright appreciates the 'rows of red paper lanterns. . . here, the glowing "advertising" did not repel the eye. The characters so beautiful in themselves were ideographs as appropriate to the mind as the lantern was to the eye. . . . Softly brilliant globes or cylinders . . . begin to glow in the street-vistas

⁴⁶⁷ *Ibid.*, p. 79.

⁴⁶⁸ 'The truth is the Japanese dwelling is in every bone and fiber of its structure honest and our dwellings are not honest,' claims Wright in his autobiography. Frank Lloyd Wright, *An Autobiography* (New York: Horizon Press, 1977), p. 223.

⁴⁶⁹ The Imperial Crown style was popular during the Taisho era (1912-1926), and is today associated with nationalism and a military government.

⁴⁷⁰ Frank Lloyd Wright, *The Future of Architecture* (Ljubljana: Mladinska Knjiga, 1969), p. 308.

⁴⁷¹ Stewart (2002), p. 87.

of this decorated twilight . . . Light, here is something soft to beguile the eyes. Evidently here we see the ancient advertising-medium of a limitless city. The illuminated sign is not only ancient, it is beautiful.⁴⁷² Comparing the legacy of Wright and his former assistant Antonin Raymond, who actually stayed in Japan and opened an office here, it is noteworthy that although Raymond's body of work shows an intense engagement with Japanese culture, climate, and tradition, he never achieved the popularity of Wright's imagery, which was exercised with his personal, and rather fantastic interpretation of what for him was the essence of 'Japan-ness.'



6.15 Wright, Imperial Hotel (1923)

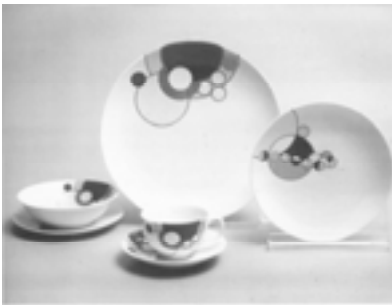
⁴⁷² Wright (1977), pp. 228-29, quoted in Nute (1993), p. 144.



6.16 Ballroom



6.17 Ornament



6.18 China of the Imperial Hotel

Modern architecture and the traditional Japanese house in Taut

Though equally fascinated by Japan as Wright, Bruno Taut developed another fantasy on the theme of Japan. Unlike Wright, Taut did not receive any building commissions in Japan. He came as a refugee and spent most of his time writing and lecturing. Taut would come to develop a theory of the Japanese origin of modern architecture. Taut arrives in Japan on May 3, 1933, by ship from Vladivostok. He comes on invitation by the Japanese Architectural Association for International Architecture through Isaburo Ueno. Taut does not plan to stay in Japan for three and a half years; it is his intention to travel through Japan for some months giving lectures until he hears about the outcome of his project proposals in Moscow, where he has been working on competitions, or to continue on to the United States. As a socialist, Taut is not welcome in Germany any longer, where the Nazis have just taken power.

In Japan, Bruno Taut rediscovers the essence of modern architecture in the traditional Japanese house. Here he sees qualities already realized that he is seeking for a new architecture, such as plainness, harmony of proportions, wholeness, purity of material and construction, originality, anti-monumentality, truthfulness, functionality, and not least naturalness. According to the art historian Manfred Speidel, Taut is not looking for an exotic architecture in Japan, but for a proof of the validity of his own conception of a new architecture.⁴⁷³ For Taut, the mentioned characteristics, or better ideals, distinguish standard forms of a high-quality *universal* design. They are exceptional in that they can be understood across all cultural spheres, although they may originate from different continents. In Taut's language these universal designs all belong to one family. He sees universal design at work in the Japanese influence that he detects in modern architecture, even if, as he points out, this influence cannot be a matter of direct adaptation.

Universal design involves a time aspect. Taut's ideas of the development of standard forms are not unlike Le Corbusier's concept of the *objet type*, an object that does not suddenly appear, but which has gone through an evolution of adaptations until it finally has found its most perfect form, without being designed by anyone in particular, e. g. an object that has been shaped 'naturally.'⁴⁷⁴ When Le Corbusier presents the Parthenon as an example, so is the seventeenth-century Katsura Palace in Kyoto for Taut is also an ideal type, which exhibits modern qualities he still finds in the contemporary residential houses in Japan. The Japanese house unites traditional features with new impulses. Ancient knowledge is passed on through the architects' training, which encompasses both the art of traditional building and the handling of new materials and structures.⁴⁷⁵ Although good architecture develops out of a tradition, it stays dynamic as it is able to take in new impulses as well, he states. It is this connection of the common and the new that makes for Taut a 'living tradition.' He even claims that only when all parts of

⁴⁷³ Manfred Speidel, 'Bruno Taut: "My Point of View on Japanese Architecture"', *Casabella* 676 (March 2000), pp. 90-91.

⁴⁷⁴ See *objets types* such as bottles and music instruments in Le Corbusier's paintings.

⁴⁷⁵ Bruno Taut, *Nippon mit Europäischen Augen gesehen* (July 1933) was published in the Japanese language, Tokyo: Meiji-Shobo, 1934. German copy, Baukunstarchiv at Akademie der Künste, Berlin: BTA-01-297, p. 123.

life, the customary and the new, are related in a harmonic wholeness can one speak of culture at all.

Japan offers the émigré Taut not only a home during the troubled years of 1933-36; it is also a dreamland, an ideal place, which distinguishes itself through a fine culture that has created exquisite architectures and crafts. Japan forms for Taut a positive counter-image to the west in which Japan appears as natural, aesthetic and unspoiled. Where Japan is 'living harmony,' Europe and America is uncultured. While Japanese culture carries a lasting tendency towards the simple in art and life for all people, Taut claims, the feature called modern in a good sense is only understood within educated circles in Europe and America. Taut finds a class distinction in the west, where modernity is a matter for intellectuals; he seems to not register very distinct social differences in Japan, at least not in respect to taste and material culture.

In 1934, Taut's book about Japan, with the title *Japan seen with European Eyes (Nippon mit europäischen Augen gesehen)* was published exclusively in the Japanese language. It received a prize from the Japanese ministry of education, and even got recommended as a regular textbook in schools.⁴⁷⁶ This text brings together most of Taut's thoughts on the relationship of Japanese culture and modern architecture. In the introduction, Taut points out, 'for Europe and the part of the world under the influence of European civilization, Japan is the land of the rising sun, dreams, thoughts of wonder, and the representation of a refinement of the artistic culture of Europe and America. Through machines, old forms became meaningless. The young and influential forces of Europe searched for a way out, looked around the world, and found, in Japan, a country that, with its thousands of years of cultivation of pure forms, gave them encouragement. There, such forms were still thriving from time immemorial in a state of astonishing refinement, which presented architecture and the arts in a condition that seemed to correspond to modern trends completely.'⁴⁷⁷ Taut brings across that Europe envisioned drastic changes, and that it was in need of new models, which as a student he personally had found in eagerly studying Japanese pattern books of fabrics and Japanese woodcuts, as well as in observing nature. He tells us about the reflections of leaves and trees in forest lakes, the ripples of the water surface made by the wind, the carpet of the forest of colourful autumn leaves, the growth of different trees, the attempt to understand the laws of their branching, the spatiality of the forest, etc., explorations in getting to know the laws of nature out of which the proportions for

⁴⁷⁶ The book was translated from German, and only published in Japanese by Meiji-Shobu publishers in Tokyo.

⁴⁷⁷ 'Japan ist für Europa und den von der europäischen Zivilisation ergriffenen Teil der Welt das Land der aufgehenden Sonne, Träume, Gedanken an Wunder und die Vorstellung von einer Verfeinerung der künstlerischen Kultur Europas und Amerikas. Die alten Formen wurden durch die Maschinen inhaltslos. Die jungen und entscheidenden Kräfte Europas suchten nach einem Ausweg, blickten sich in der Welt um und fanden in Japan das Land, das ihnen in seiner Jahrtausende alten Pflege reiner und sauberer Formen Mut gab. Dort waren seit alters her in erstaunlicher Verfeinerung noch solche Formen lebendig, die die Architektur und alle Künste in einer Fassung zeigten, die den modernen Tendenzen durchaus zu entsprechen schien.' Taut (July 1933), p. 1. All German quotes by Taut taken from the unpublished manuscripts were translated by Brian Manning Delaney.

a new architecture was to develop. ‘As the costumes of the old styles did not fit the new technical era, there was no other support for the laws of proportion than nature. . . .’⁴⁷⁸ With Japan, Taut gives modern architecture a root and a tradition, which is both old and new. For Europe and America it is pure and unspoiled as it formed outside of a western architectural historical context, and nevertheless, it has ancient roots, where architectural forms seem to have developed directly from nature. In a culture of perfect harmony, nature and culture are not strictly distinguished realms, they touch naturally. Culture does not seek to subdue nature, and what humankind forms out of nature does not contradict the living force of nature, quite the opposite, human art completes and brings out natural beauty, and it is this quality, and this dealing with nature, which Taut finds cultivated in Japan. Here, the unity nature-culture, which also modern architecture is striving for, according to Taut, is achieved to its perfection.

For Taut, the highlight of Japan’s magnificent culture of two and a half thousand years is the Japanese residential house.⁴⁷⁹ When contemporary modern architecture was born, around 1920, it was the simple and open Japanese living space with its large windows, built-in wardrobes, and a complete purity of construction, which gave the strongest impulse for the simplification of the European living space.⁴⁸⁰ This plainness is to be found in all houses, even in noble palaces, he notes. Taut finds the *Urtyp* for the Japanese house in the seventeenth-century Katsura Imperial Villa.

The architecture and garden of the palace were constructed in three main stages over a period of fifty years (1615-1663). They were commissioned by two princes from two generations of the Hachijo Imperial family.⁴⁸¹ The particularity of the Katsura Villa and gardens lies basically in their assemblage of different styles, *shoin* style and *sukiya* style. As the architect Arata Isozaki points out, these layers of methods and languages have made Katsura into an object of endless new operative readings. Modern architects in particular have sought to decode the architecture of Katsura in association with their own design ideas.⁴⁸² Taut writes: ‘The modern architect will notice with astonishment that this building is absolutely

⁴⁷⁸ Ibid., pp. 1-2.

⁴⁷⁹ Ibid., p. 78.

⁴⁸⁰ Ibid., p. 2.

⁴⁸¹ Arata Isozaki, ‘The diagonal strategy: Katsura as envisioned by “Enshu’s taste”,’ *Katsura imperial villa*, edited by Virginia Ponciroli (Milan: Electa, 2005), p. 9. The villa was commissioned by the princes Toshihito (1579-1629) and Toshitada (1619-1662).

⁴⁸² Isozaki (2005), p. 10. Isozaki refers in this text particularly to two other readings of Katsura, that of Sutemi Horiguchi, in his book *Japan-ness in Architecture* (1932), and of Kenzo Tange, *Tradition and Creation in Japanese Architecture* (1960). While Taut discovers universal modernist truth in Katsura, Horiguchi read Katsura as a space where contradictory elements that cannot be assimilated cohabitate; and Tange considered Katsura as an example of destruction by the collision of contradictory elements causing creation, which will form a base for metabolist rhetoric. Isozaki’s own operative reading focuses on the textual richness of Katsura itself, and the term *konomi* (style or taste), a non-western concept that turns against authorship. Katsura was not built by an identifiable author but rather ‘in the taste of’ Kobori Enshu, a garden designer and tea master. Isozaki hints hereby at the imitation of style or taste as a non-western design method, which ‘involves the mechanism of quotation as well as the reproduction of the same, which is destined to become cliché or kitsch eventually,’ as positive. Ibid. p. 39.

modern, in that it fulfils its requirements in the shortest and simplest way.⁴⁸³ Its modernity is expressed in its functionality; it is not limited to one formal scheme. He notes that each element of the house and the garden has its own life: ‘Why does none of the lines of the edifice extend into the garden? Because each element – the house, the water, the jetty, the tree, the stone lives a life of its own. It only seeks good relations . . . something similar to good company.’⁴⁸⁴ Speidel has pointed to Taut’s principles for a new architecture as developed already in 1929, in *Die neue Baukunst*. Here Taut had written that ‘after the breakdown of an authoritarian social system, all that is possible is the liberation of architecture from the formal constructions that originate in history. . . . The focus is no longer on the form of a roof or an axis of symmetry, but on the “health of the organism,” of the independent spatial cells.’ And recalling Frank Lloyd Wright’s political claims of an organic architecture: ‘[I]berty of the single parts means that their use takes place in a full equal collaboration, so that there is no longer an inferior or a superior order, because the necessity of each single part becomes evident.’⁴⁸⁵ In the dialogue between the different buildings and the gardens at Katsura, Taut sees precisely this image of a free society: ‘The building at Katsura is, therefore, in the entire civilized world, an utterly isolated miracle;’ it demonstrates ‘the free art of the free spirit.’⁴⁸⁶ Katsura does not look like a palace in a European sense, where every sign of humanity is hidden behind courtly ceremony and representation.⁴⁸⁷ Human proportions are given in the modularity of the wooden construction.⁴⁸⁸ Katsura responds formally to Taut’s imagination of the modern house, but it does so also in a social sense, in not exposing social differences obviously; all representational codes seem abandoned, which fits Taut’s idealization of the Japanese society as non-hierarchical.

In Taut’s reading Katsura is directly developed from the same spirit as the Ise shrine, which he sees as the ultimate prototype of Japanese culture. No one knows exactly how old the Ise shrine really is. It is estimated that it had been built for the first time in the seventh-century, and since then it has been regularly rebuilt every twenty years, over sixty times. By that Ise fulfils all the requirements of an architectural mythology. It is ancient architecture that re-evolves according to old traditional craftsmanship again and again in new materials. In this sense, it is always modern and ancient at the same time. However, it is a cultural object that, with its inherent rules, has transcended finitude. It cannot age. The surprising

⁴⁸³ ‘Der moderne Architekt wird mit Erstaunen feststellen, dass dieses Gebäude absolut modern ist, insofern nämlich, als es seine Anforderungen auf kürzestem und einfachstem Wege erfüllt.’ Bruno Taut, *Nippon mit Europäischen Augen gesehen*, June-July 1933, was published in Japanese language, Tokyo: Meiji-Shobo, 1934. German copy, Baukunstarchiv at Akademie der Künste, Berlin: BTA-01-295, p. 21.

⁴⁸⁴ Taut, quoted in Speidel (2000), p. 91.

⁴⁸⁵ Taut (June-July 1933), p. 53, quoted in Speidel (2000), p. 92.

⁴⁸⁶ Taut, quoted Speidel (2000), p. 92.

⁴⁸⁷ Taut (June-July 1933), p. 19.

⁴⁸⁸ Taut had the opportunity to visit the Katsura Palace in Kyoto already on his second day in Japan, May 3 1933, his 53rd birthday. Katsura was for Taut a revelation, and this first visit the beginning of a lasting fascination with the seventeenth-century palace, expressed in many texts and a set of 28 brush drawings, entitled *Gedanken über Katsura* made at the occasion of his second visit in May 1934.

aspect of the temples of Ise lies in the fact that they are not ruins, because they are incessantly reconstructed. In an article for the French magazine *L'Architecture d'Aujourd'hui* Taut defines them as 'ancient edifices, classic, austere, without the aura of age of the ancient . . . eternally living manifestations of a completely original national spirit. I often call them "sanctuaries of architecture," because the purity of the materials and the construction, the frankness of the structure, the candour of the combination of the precious *hinoki* (cypress) wood, the thatched roof and the gilded beams, everything, in short, appears to me as a classical materialization of the principles of our modernity.'⁴⁸⁹ Taut sees Ise as a "type" reduced to the maximum simplicity . . . uncertain origins, unknown architect – . . . But is this not just new and nevertheless ancient, not just the key to Japanese thought, forms and taste – . . . Here the "nation" is so original, so pure in a primordial way, that it has become a universal creation. At least, in this sanctuary all architects ought to admire the spirit of the architecture.'⁴⁹⁰ And: 'The Japanese worship them as their national sanctuary, and the Japanese architects can worship them specifically as the sanctuary of architecture. One cannot render this beauty in a picture of the world, and there the architects of the world should pilgrim, as this absolutely genuine achievement of the country Japan is a work that belongs to the entire world. The *Gegku* is the shrine of architecture.'⁴⁹¹ Taut emphasizes particularly that with the Ise shrine, Japan possesses a truly classical architecture without connection to an architect's name, which he calls a present of the gods.⁴⁹²

After Ise, Katsura means for Taut a 'second' Japan where the nation has undergone a purification process and cleansed itself from foreign influences such as the Chinese. Taut's book may have experienced such a warm reception not only for its praise of Japanese architecture to Japanese pupils by a foreign architect, but also because it in fact also supports nationalistic aspirations, unconsciously I assume, with its emphasis on true Japan-ness, in a country that was turning into a right-wing military state at the time. Japanese culture is presented as not only in danger due to mimicry, or a misunderstood imitation of Western cultural objects,⁴⁹³ it is also threatened by foreign forces in effect inside the country, which turn against the original spirit of Japanese culture that Taut has detected in the Shintoist worship of nature. '[Katsura] this does not exist in the world. It is pure Japan, and it is all the more admirable because this little Japan was built at the same time as the Buddhist temple Nikko. It is an achievement of global significance because Japan, at that time, found the [strength], after the overpowering Chinese and Korean influences (and to some degree Indian influences), to remember itself and thereby to introduce a new cultural epoch.'⁴⁹⁴

⁴⁸⁹ Taut, quoted in Speidel (2000), p. 92.

⁴⁹⁰ Ibid, p. 92.

⁴⁹¹ The *gegku* is the outer shrine of Ise.

⁴⁹² Taut (July 1933), p. 120.

⁴⁹³ Mimikry means here imitation of outer appearance without understanding or attempting to understand the cultural background.

⁴⁹⁴ Katsura 'Das gibt es auf der Welt nicht. Es ist reines Japan und es ist auch noch deshalb bewundernswert, weil dieses kleine Japan zur gleichen Zeit mit Nikko gebaut wurde. Es ist eine weltbedeutende Leistung, weil Japan damals die [Kraft] fand, sich nach den überwältigenden chinesischen und koreanischen Einflüssen (teilweise auch indischen) sich

Taut finds an enemy to Katsura's modernity in the 'Shogun-taste' that enjoyed overloaded decorations, which Taut perceives as ugly, and which he calls 'rough barbarianism.'⁴⁹⁵ In Taut, Shintoism is a positive religion, since unlike Buddhism, which was brought into the country from the outside, it is genuinely Japanese. Shintoism organically connects all people with each other and within the unity of their country, with the *tenno* at the top.⁴⁹⁶ 'The *tenno* is therewith less a ruler (the shoguns were the rulers); he is much more the embodiment of the land of Japan, its inhabitants, its constitution, its customs and its culture.'⁴⁹⁷

This is how we should view Taut's criticism of Wright, for having given a bad example when he chose the wrong model, the Buddhist temple over the Shinto shrine. He states: 'I admire Frank Lloyd Wright as the great pioneer of modern architecture. But I almost wish I had never seen and lived in his Imperial Hotel in Tokyo; that is just how embarrassing the temple-like atmosphere in a globetrotter hotel is to me, how dangerous for young architects this example is, in its abandonment of all the Japanese clarity and purity of surfaces, in its thoroughgoing subjectivity of forms, the price of which is economy and lucidity, which suffer alarmingly. If this is a modernization of certain temples, as it is so to speak exculpatorily claimed to be by some Japanese, why haven't modernized Buddhas also been erected! This "Jewel of the Orient" as it is announced in the hotel leaflet, gave rise to an entire school of followers and imitators, who were inferior to Wright's artistic power, even when this power took the wrong path.'⁴⁹⁸

Isozaki points to the political situation in Japan. Under a rising nationalism, the only 'government-licensed style' became the *teikan*, a style orientated towards ancient temple architecture. Taut's overwriting of Katsura and Ise as a concretization of *tenno*'s aesthetic as *honmono* (the real thing), and Toshogu in Nikko, of the Tokugawa shogunate, as *ikamono* (kitsch) made an understanding of Katsura accessible to the Japanese public. Isozaki suggests that the invitation by Ueno, Taut's host to visit Katsura, can subsequently be read as an action staged after a scenario written by the Japanese modernists with Taut effectively performing his role. Taut's appreciation of Katsura's architecture made

auf sich selbst zu besinnen und eine neue Kulturperiode damit einzuleiten.' Taut (July 1933), p. 118.

⁴⁹⁵ Taut (June-July 1933), p. 43.

⁴⁹⁶ The *tenno* had to officially give up on his spiritual position under pressure of the American occupation after WWII.

⁴⁹⁷ 'Der Tenno ist hierbei weniger Machthaber (das waren die Shogune), er ist vielmehr die Verkörperung des Landes Japan, seiner Bewohner, ihrer Verfassung, ihrer Sitten und ihrer Kultur.' Taut (June-July 1933), p. 58.

⁴⁹⁸ 'Ich verehere Frank Lloyd Wright als den grossen Pionier moderner Architektur. Aber ich wünschte fast, ich hätte sein Imperial Hotel in Tokyo nicht gesehen und nicht darin gewohnt; so peinlich ist mir die tempelartige Stimmung in einem Globetrotterhotel, so gefährlich ist dieses Vorbild für junge Architekten in dem Aufgeben aller japanischer Klarheit und Reinheit der Flächen, in dem ganzen Subjektivismus der Formen, auf deren Kosten Ökonomie und Übersichtlichkeit bedenklich leiden muss. Ist dies eine Modernisierung gewisser Tempel, wie es sozusagen entschuldigend von manchen Japanern erklärt wird, warum hat man dann nicht auch modernisierte Buddhas aufgestellt! Dieses "Jewel of the Orient," wie es im Hotelprospekt verheisst, hat eine ganze Schule von Nachfolgern und Nachahmern zur Folge gehabt, die seiner künstlerischen Kraft, wenn sie auch unrichtige Bahnen ging, unterlegen sind.' Taut (July 1933), p. 111.

the villa and its gardens a focus of public attention. It functioned for the creation of an alternative style to the nationalist *teikan*. Thus Katsura surfaced as a new model. Being both *tenno*-esque and *honmono* and offering sufficient principles of modernism, Katsura came to be praised by modernist and conservative *tenno* worshipers alike, regardless of social or political position. Taut's discourse helped to create the binary opposites of Ise and Katsura versus Nikko. Isozaki argues that the valorization of Ise and the Katsura villa as 'architecture' rendered a lasting cultural impact on the nations's mind.⁴⁹⁹

Taut's at times uncritical attitude towards Japanese power structures, as it comes across in his unreserved admiration for the *tenno*-cult for underwriting his aesthetic preferences is also expressed in his view on Japan's building activities in its colonies. Taut, who regrets the lack of city planning in Japan, looks at Manchuria with great expectations. In general, he sees the *Siedlungen* based on co-operatives as a conceptual base for city planning, since they were able to organize the social environment as well as space. Good living quarters have an educative effect on their inhabitants, he claims, and thus, they are not only spaces to dwell and unfold in, but also as a sort of controlling environment.⁵⁰⁰ In terms of the *Siedlungs* development, Taut speaks of a holistic *system*, a task that can only be fulfilled by architects who recognize the spiritual side of function, and not by technocrats or bureaucrats by whom planning was usually conducted in Japan. In his book, Taut is still astonishingly positive towards Japan's colonization of Manchuria (He will later change his mind). 'All these *Siedlungs*-questions take up so much space in Japan at this time because of the development work in Manchukuo,' he claims. 'There, an enormous task has to be solved, the new systematic organization of an entire country, under continental conditions, without earthquakes, in a climate that is completely different from that of Japan. In the process of erecting buildings of all kinds – not only for the *Siedlungen* and as part of city planning in particular – everything that has been achieved on the European continent will have a greatly increased significance. There, Japan will show how it will realize its subtle cosmopolitan *tenno*-spirit with a great organizational work of the most modern sort.'⁵⁰¹ In nowhere does he mention colonization as a problem here, which he had stressed several times in respect to Japan. Most of Japan's cultural integrity, he claims, can be traced to the fact that it was spared from colonization.⁵⁰² It survived precisely because it was so singular. This chauvinistic evaluation, which puts one culture above the other, contains not

⁴⁹⁹ Isozaki (2005), pp. 11, 13, 33.

⁵⁰⁰ Taut (July 1933), p. 130.

⁵⁰¹ 'Alle diese Siedlungsfragen erhalten für Japan im Augenblick ihren grossen Horizont durch das Aufbauwerk in Manchuko. Dort muss eine gewaltige Aufgabe gelöst werden, der neue systematische Aufbau eines ganzen Landes, und zwar unter kontinentalen Verhältnissen, bei Wegfall des Erdbebens in einem Klima, das ganz anders als das Japans ist. Dabei wird bei den Bauten aller Art, nicht nur bei Siedlungen und besonders beim Städtebau alles, was auf dem europäischen Kontinent geleistet worden ist, erhöhte Bedeutung haben. Japan wird dort zeigen, wie es seine feinsinnige kosmopolitische Kultur des *tenno*-Geistes bei einem grossen organisatorischen Werk modernster Art verwirklichen wird.' Taut (July 1933), p. 132.

⁵⁰² *Ibid.*, pp. 52-53.

a glimpse of political criticism by a left-wing intellectual who had just fled a fascist government.

Taut recognizes Japan as a model, even as a projection plane for the west trying to compensate its own lack. Japanese culture is modern but it goes beyond rational strands, it has this extra, a surplus. Culture comes from the east. In the west it starts to fill a vacuum, which evolved through rationalization. 'Thus Japan is still the object of longing for many modern artists, especially to the extent that they hope for a liberation, via the differentiation of Japanese culture, from mere purism and rationalism, which appears to be the new enemy of modern architecture.'⁵⁰³ In Taut's eyes, Japan is still pure, as it could develop its own genuine culture independently over a long time with almost no disturbances from outside. Japan took in and assimilated foreign influences a few times, and transformed them so that the result was again something specifically Japanese. He believes that Japan will also translate 'the levelling influences of technology, which threaten to make the whole world gradually more boring, into Japanese; e. g. transform them into a Japanese culture as well. Hence it will give the world again a new great gift.'⁵⁰⁴

In a, according to Taut, misunderstood reception of Japanese culture, such as in Wright's Imperial Hotel, Taut recognizes that the kitsch the foreigner is confronted with is not Japan, it is not the Japanese, but it is her or his own imagination about Japan that s/he sees, and which attracts her or him. The Japanese laughs about this.⁵⁰⁵ Nevertheless, such products of distorted images of Japanese culture present a crucial factor in Japan's self-reflection and thus a danger. Although these images are distorted, they have an influence even in Japan, and thus they are harming Japan's aesthetic sense, he worries. Not least, Taut sees here an approximation of Japan and the west, which would make Japan only more boring and prosaic.⁵⁰⁶ For Taut, Japan fulfils its role for the west best when both realms stay distanced so that Japan could save its mystery, as Taut expresses it. As a way out of this dilemma, Taut proposes a second cultural exchange, in the way western modern architecture is orientated towards Japan: '[Japan] has lent a comparable amount of capital, and would be like a bad businessman if it did not care about the interest on this capital, or to put it differently, if it were to ignore foreign achievements and not draw any benefit from them.' Modern Japanese designers he suggests should allow themselves to learn from the west now, in the same way the west had learned from them before. As many of the western modern architectures tend to come close to the basic Japanese character, it needs only an adaptation to the climate and the habits of the country to turn them into pure Japanese buildings, he claims.⁵⁰⁷

⁵⁰³ 'Auf diese Weise bleibt auch heute noch Japan das Ziel der Sehnsucht für viele moderne Künstler, und zwar um so mehr, als sie aus der Differenzierung der japansichen Kultur die Befreiung vom blossen Purismus und Rationalismus erhoffen, der als neuer Feind in der modernen Architektur auftritt.' Taut refers here to Le Corbusier and the CIAM architects. *Ibid.*, p. 2-3.

⁵⁰⁴ *Ibid.*, pp. 144-45.

⁵⁰⁵ *Ibid.*, p. 115.

⁵⁰⁶ *Ibid.*, p. 4.

⁵⁰⁷ 'Es [Japan] hat vergleichsweise Kapital ausgeliehen und würde nur wie ein schlechter Kaufmann handeln, wenn es sich um die Zinsen dieses Kapitals nicht kümmern würde, oder

Taut shares the opinion of Japanese historians when he says that a ‘double-layered culture’ has evolved in Japan since the Meiji restoration, where the influence of Europe had manifested basically only in the forms of machines, specifically war machinery and techniques, while foreign cultural influences themselves had touched Japan only on the surface. Conversely, Europe had assimilated only the cultural influences of Japan, especially from the fields of art and architecture, which it had taken in to a certain depth. There was nothing civilizing that had come from Japan to Europe, and next to nothing cultural had come from Europe-America to Japan, according to Taut.⁵⁰⁸ Modern architecture goes back to Japanese influences indirectly but strongly, as he argues, and although Japanese culture has influenced European Art enormously, Europe’s artists have never directly imitated the Japanese. Rather, the very best of them have used the Japanese influence for clarifying their own agenda.⁵⁰⁹ This is not a matter of imitating outer forms, but most artists (as Taut himself) have studied the foreign very intensely ‘in order to expand their own high art.’⁵¹⁰

This agreement on a culture-civilization divide is astonishing as it virtually enables categorizations in, on the one hand, genuine forms developed and tested over time and understood across all cultures, and, on the other hand, mere imitations, which reveal only the misunderstanding of foreign cultures. Japan is generally presented as having more difficulties understanding western culture than the other way around. And although, according to Taut, misunderstood imitation happens in Europe as well as in Japan, he sees only Japan’s integrity threatened. In 1936, the year of his departure, he writes: ‘It is the modern “culture” of a Japan that is so proud of its global power. No trace of a culture is left. The country has turned itself into a nation of imitators, and it will take hundreds of years to overcome this deep plunge into a total lack of culture.’⁵¹¹ Taut sees Japan’s praised ‘living tradition’ as being in danger, and puts emphasis on the fact that tradition that lives cannot be imitated by any artist. He demands that Japan has to turn onto itself and develop everything according to its own conditions. Nothing ought to be an imitation, neither in relation to the old, nor to the Western new!⁵¹²

Imitation

The warning of the threat posed by imitation and the insistence on the preservation of cultural authenticity by western architects, like Taut directed to Japan, survives

mit anderen Worten, wenn es jetzt diese ausländischen Leistungen nicht beachten und von ihnen Nutzen ziehen würde.’ *Ibid.*, p. 122.

⁵⁰⁸ Bruno Taut, Hayama (August 1933). *Baukunstarchiv*, AdK, Berlin: BTA-01-194, p. 2.

⁵⁰⁹ *Ibid.*, p. 18.

⁵¹⁰ This is also the advice Taut gives to the Japanese architects. Bruno Taut, ‘Zwei Welten lachen übereinander,’ Tokyo (March 22 1934), *Baukunstarchiv*, AdK, Berlin: BTA-01-306, p. 2.

⁵¹¹ ‘Es ist die moderne “Kultur“ des auf seine Weltmacht so stolzen Japan. Da ist nicht mehr die Spur einer Kultur. Das Land hat sich zu einem Nachahmervolk gemacht, und es wird noch Jahrhunderte dauern, bis es diesen tiefen Sturz in die völlige Kulturlosigkeit überwunden hat.’ Bruno Taut, ‘Getemono oder Hikara?’ (29.01.1936), *Baukunstarchiv*, AdK, Berlin: BTS-01-88, p. 15.

⁵¹² ‘Juli-August im japanischen Haus. Eine kleine biologische Betrachtung,’ Hamya (September 5 1933) *Baukunstarchiv*, AdK, Berlin: BTA-01-279 (4), p. 6.

up until the post-war years, and enters a debate in the magazine *The Japan Architect*, the English version of the Japanese architectural magazine *Shinkenchiku*. In a discussion in 1961, a Japanese, a European, and an American critic take a stance on the newly evolved interest in Japanese culture in the west, criticizing the western tendency of essentializing Japan in an image of ancient tradition. Yuichiro Kojiro regrets that an international cultural exchange between Japan and the west makes a firm distinction between the Japanese culture of the past and that of the present. ‘The opinion abroad is that Japanese culture of a thousand or several hundred years ago has “organic simplicity producing richness,” but that the culture of the present could not break through the confines of imitation.’⁵¹³ Japanese culture instead of being looked upon as an entity, is broken into two, one is considered as good and one as bad. He sees a general western criticism of modern Japan summarized in the statement by Nicolas Nabokov, who had recently been in charge of the Tokyo Music Festival: ‘We have great respect for the ancient culture of Japan, and we are sad to find that the Japanese artists themselves have completely discarded this great tradition, particularly since they have done so not to open new ways for themselves, but merely to copy us.’⁵¹⁴ However, Kojiro rejects the western view of Japanese culture as fragmented and often based on a misunderstanding of Japanese traditions, indulging in a form of exoticism.

The Italian architect and architectural historian Bruno Zevi presents the case of a special issue on Japan produced by the American magazine *House Beautiful*, entitled ‘Shibui’ (August 1960). *House Beautiful* had picked up on the Japanese term. Zevi refers to it as a non-translatable adjective, which ‘summarizes ideals and the most intimate essence of the Japanese culture, even in the figurative field. It means tranquil, but not lifeless; beautiful, but not graceful and superficial; sober, interesting, and vital at the same time; simple without ostentation; intimately new but with patina reminding of human use; original, but familiar and recognizable.’⁵¹⁵ For demonstrating the meaning of *shibui*, different traditional Japanese items such as mansions, gardens, furniture, materials and objects were depicted, but not a single one of them was contemporary. The *shibui* project of *House Beautiful* is for Zevi an example of sheer reaction, and an attempt to Americanize a concept that, in Japan, had died a long time ago, ‘an invitation to an exotic fashion.’ The editor, Elizabeth Gordon, responded to Zevi’s criticism in pointing to the apparent lack of depth of everything modern, and especially of the ‘machine-made look’ of the modern movement: *Shibusa* is humanistic and naturalistic, and the opposite of mechanistic. It has nothing whatsoever to do with the ‘less is more’ thinking of Bauhaus and ‘The International Style.’

The American art historian, Charles S. Terry, in line with Kojiro and Zevi, questions the doubtful interpretation of the Japanese term by the editors of *House Beautiful*, and concludes ‘there are many modern creations which would equally well fit the description [of *shibui*] . . . I cannot accept that the concept

⁵¹³ Yuichiro Kojiro, ‘View of Japanese Architecture,’ *The Japan Architect*, September 1961, p. 67.

⁵¹⁴ Nicolas Nabokov quoted in Kojiro (September 1961), p. 68.

⁵¹⁵ Bruno Zevi, ‘Concerning “Shibui”,’ *The Japan Architect*, September 1961, p. 69.

applies only . . . to the past.’⁵¹⁶ Zevi however discards the term altogether, and poses the necessity of finding contemporary terms in pointing to Kenzo Tange as the protagonist in the creation of a new style: ‘the Japanese proceed on research of a new architectural expression very different, if not opposed to that of the past – constructivist in its character, brutalist in its finishing. I am pleased with the virtuoso way they are building out of concrete – absolutely new to Japan till recently.’⁵¹⁷

The organic conception of the metabolists, a group of young architects around Tange, can be called clearly anti-*shibui*. With the introduction of the biological metaphor, metabolism targets the stereotyped images of Japanese architecture in the west, and distances itself from pre-conceived categorizations, while at the same time taking up an accepted western imagination which brings together nature and Japanese aesthetics. It is obvious that the reception of contemporary Japanese architecture in western media has completely changed. Today, the general opinion is dominated by a quite distinct idea of what Japanese architecture is about. This positive image presents Japanese architecture mostly as original, experimental, technically advanced, materially sophisticated, unusual in its solutions, expressive in its forms, etc. In the next and last chapter, it is argued that the metabolist movement contributed to this change of perception in that it delivered new urban and architectural models and ideas that found imitators in the West.

⁵¹⁶ Charles S. Terry, ‘Taking Exception,’ *The Japan Architect*, September 1961, pp. 70-71.

⁵¹⁷ Zevi (September 1961), p. 70.

7 Metabolism

Architectural culture of reconstruction – The death of CIAM and the World Design Conference – ‘Metabolism’ – Structural and symbolic reorganization – International Models – Megastructure and Group Form – Space, place, and image – Reception

The focus of this chapter is the emergence of organic and nature inspired terminologies with the urban movement of metabolism in Japan at the end of the 1950s and during the 1960s. The formation of this avant-garde group is discussed through its presentation in the Japanese magazine *The Japan Architect* - produced in English for a western audience - and in relation to parallel strands in the west. Beside its influence on the Japanese architectural community, metabolism had before all a decisive impact on the western architectural and urban discourse. Conceived for the World Design Conference in Tokyo, the first international event Japan ever staged, it introduced new urban issues turning the Design Conference into a forum where cultural differences became discussed for the first time in relation to the western debate.

Metabolism went beyond a search for Japanese cultural identity distinct from western models; it was striving for new models, terms and images in general, and its appearance mirrors a broader shift, not limited to Japan, which was also marked by the end of CIAM. With a biological language the metabolists cut off from traditional models and turned towards ahistoric, universally applicable, and structuralist spatial conceptions. They thus created a base for international communication. At the same time, it should be noted that their rhetoric of nature and the organic fulfils an accepted western stereotype of Japan that we saw in Frank Lloyd Wright and Bruno Taut's organic projections. With metabolism the specifically Japanese re-emerges under modern terms. The network becomes the most central urban issue - an organizational form, but also a symbolic image presenting the city simultaneously as structure, organization, and flow in constant change and as a coherent whole. This chapter explores what images the nature figure and the notion of the organic produced in Japan, and how they were received and transformed in design practices in the west. Metabolism is studied in relation to its international context, its theory, and its 'products', such as specific terms, models, and buildings.

Architectural culture of reconstruction

This section will briefly sketch the situation of reconstruction and the accompanying debates during the post-war years. In a special issue on the history of modern Japanese architecture, '20 Years After the War,' the editor of *The Japan Architect*, Yasugoro Yoshioka, states that after the violent changes that occurred through the war, people of all nations struggled 'to build their own self.'⁵¹⁸ He notices that in terms of culture and living patterns, although the Japanese way of thinking underwent a serious westernisation and internationalisation during the early post-war period, there was also a return to a pre-occupation with national traditional conditions and, naturally, environmental

⁵¹⁸ Yasugoro Yoshioka, 'Editorial' *The Japan Architect*, June 1966, p. 18.

concerns. He sees this as a larger tendency in world architecture, which was mirrored in major changes between the twenty years from 1945 to 1965, such as the dissolution of CIAM, the rise of regionalism, and the death of Frank Lloyd Wright and Le Corbusier, which marked for him the end of an age of great masters, and the emergence of what Siegfried Giedion had termed the ‘Third Generation’, meaning the generation of Team 10.⁵¹⁹

The architectural historian Ryuichi Hamaguchi divides post-war modernism in Japan into two separate decades. After the war, all the main cities were in ruins, particularly Hiroshima and Nagasaki, ‘where the atomic bomb had barely left a blade of grass.’ Not much was constructed during these years, which were instead characterized by discussions and theoretical exchange. Early rationalism and functionalism as guiding theories were taken up again, and only when the economy started to flourish in 1950/51, largely due to the beginning of the Korean War, did private building activities develop. Around the middle of the 1950s an architectural discourse shifted from functionalism to what Hamaguchi calls ‘aesthetic consciousness’. This new strand, enabled by the progress in architectural material technologies and building techniques, he sees as a transitional period, characterized by a search for a variety of creative languages, which can be related to the debates within CIAM at the time.

Around 1960, architects started to take part in a broader discussion on cities and urbanities in Japan, which formerly had been only an undercurrent of the architectural discourse. Proposals for urban redevelopment ‘from a plastic approach’ began to appear, though there was no possibility for them to be actually realized at the time. Kenzo Tange’s metabolist proposal for Tokyo Bay, which will be discussed in detail, represents one of the first examples of this both theoretical and utopian approach to urbanism in Japan.⁵²⁰

Although Japan was experiencing an economic boom after its entry in the Korean War on the side of the United States, which turned Japan from an occupied country into an allied partner, and despite its enormous economical growth, by the end of the 1950s Japan was still struggling with the task of housing millions of people left homeless in its cities.⁵²¹ The consciousness of having lost the war, plus the experience of the devastation of two atomic blasts over Hiroshima and Nagasaki on August 6 and 9 in 1945, brought with it a deep concern with losing touch with one’s own culture and the desire for the reconstruction of a national identity.⁵²² Due to dynamic population growth, there

⁵¹⁹ Giedion distinguished CIAM in three generations: pre-war, post-war, and ‘the younger members’ (Team 10). Eric Mumford (2000), p. 206.

⁵²⁰ Ryuichi Hamaguchi, ‘A View of Modern Japanese Architecture – 20 Years After the War,’ *The Japan Architect*, June 1966, p. 19.

⁵²¹ The average growth of the brut social product in Japan between 1951-1959 was 13.1% in comparison with 11% in Germany, and 6.1% in the USA. The numbers are taken from the Oriental Economist (ed.), *Japan Economic Yearbook*, 1957 and 1961. The growth rate of industrial production between 1950-1960 was in Japan 15.5%, Germany 9.6%, and the USA 3.8% according to the *Statistisches Jahrbuch für die BRD 1961*. See Mechthild Schumpp, *Stadtbau-Utopien und Gesellschaft. Der Bedeutungswandel utopischer Stadtmodelle unter sozialem Aspekt* (Gütersloh: Bertelsmann Fachverlag, 1972), p. 101.

⁵²² The first atomic bomb over Hiroshima, a city with 350,000 inhabitants killed 71,000 people instantly. 129,000 died within the next five years. 150,000 survived. A larger

was great pressure on land connected with Japan's specific topographical situation, which allows only a fraction of its area to be used for agriculture and building.⁵²³ The metabolism movement can be understood in the context of this background.

The most pressing problem after the war was the provision of some 4.3 million homes in Japan. Consequently, much research went into housing under sociological and technological viewpoints. During this time the theorist and architect Uzo Nishiyama publishes his influential book, *Houses from Now On*, in which he envisions a new image of the home according to principles of socialist housing.⁵²⁴ In terms of technological possibilities, Japanese architects looked into precedents of mass production techniques, such as the Dymaxion Prefabricated House by Buckminster Fuller (1927-1944). Several attempts were made to industrialize the housing industry, which failed. It was more expensive at the time to mass-produce steel or wooden frames for housing than to build houses by employing traditional carpenter techniques in Japan. One of the first examples is Kunio Maekawa's prefabricated PREMOS house of 1947. Obviously, early CIAM concepts like the 'existential minimum' (1929) were taken up in this discussion, resulting in projects such as the 1950 'Minimum Volume House', by Kiyoshi Ikebe. Although at the time these proposals received much criticism asking that priority be given to humanistic values in architecture before functionalism, these small-house designs were given a lot of attention in architectural magazines in Japan. Even when very little was constructed, the publications reflect the formation of a new post-war modern family image. Hiroki Onobayashi, in the same issue, points out that with the establishment of democracy, women had just received legal and political equality with men and so there was also an interest in exploring the implications of the new non-hierarchical family for design.⁵²⁵ In this sense, the main features of the house designs of this period were the central

international peace movement was established only ten years later, by the end of the 1950s, which grew stronger during the 1960s. Thomas Macho, 'Still ruht die Bombe,' *Die Zeit*, Nr. 32, 4. August 2005, p. 43, and Erik Gustafsson, 'Det jag varit med om kan inte uttryckas i ord,' *Dagens Nyheter*, Lördag 6 Augusti 2005. Joan Ockman has pointed out that in Japan a certain myth of victimhood coalesced after the loss of the war around the notion that Hiroshima was the first city on which an atomic bomb was dropped. The indelible image of the mushroom cloud made Hiroshima a well-known city whose ground zero became a universal symbol of this horrific and unprecedented form of modern warfare and the focus of an important project of reconstruction and memorialization. Joan Ockman, *Out of Gound Zero. Case Studies in Urban Reinvention* (Munich/ Berlin/ London/ New York: Prestel, 2002), p. 16.

⁵²³ Only one sixth of the area of Japan can be used agriculturally and the population density of this area was 1,540 per km² in relation to 392 in Germany in 1961, for example. Numbers are taken from *Statistisches Jahrbuch für die BRD 1961*. According to Günter Nitschke, the relationship of unbuilt and buildable area is 7:3. Schumpp (1972), 102.

⁵²⁴ Uzo Nishiyama became known as a Marxist and promoter of a so-called non-aesthetic architecture. He was also the teacher of Kisho Kurokawa.

⁵²⁵ Although the situation in Japan differed from Europe and the United States, the CIAM meetings at the time, for example in Sigtuna in 1952, also reflect on the question of a new family image after the war and its effect on housing designs. See: Eric Mumford, (2000), p. 215-225.

placement of the kitchen (meant to be the wife's area) and the family area (living and dining room) with clearly independent rooms in the style of a nuclear family residence. Although these dwellings were originally developed in the spirit of the existential minimum, they soon came to represent a more luxurious middle class lifestyle orientated towards Walter Gropius and Marcel Breuer's Six Moon Hill House (1948) and other TAC (The Architects Collaborative) houses, glass and steel houses, such as the 1950 Farnsworth House by Mies van der Rohe, and Philip Johnson's glass house, California style houses by Richard Neutra, and the Eames Case Study House in California of 1947.⁵²⁶ In 1948, the Tokyo City architecture department completed the first post-war Japanese ferroconcrete buildings, the Takanawa Apartments, which also marked the beginning for the construction of public housing after the war.

The break-through for industrialised building techniques in Japan was marked by the Nippon Sogo Bank in Tokyo, designed by Kunio Maekawa in 1953. The bank was the first Japanese building with a welded steel-frame and a facade made of aluminium, glass and pre-cast concrete panels. In comparison, at the same time in the United States, the building for the United Nations and the Lever House by Mies van der Rohe went up in New York, as well as Alison and Peter Smithson's school in Hunstanton, which the architectural historian Reyner Banham calls the first Brutalist building.⁵²⁷ In relation to these buildings, Hamaguchi suggests one could speak of a period of 'industrialism', rather than 'functionalism', due to the way industrial materials were used for 'plastic expression'. This term carries symbolic connotations as it addressed not basic needs but psychological and emotional qualities.

In 1955, the Japan Housing Corporation was founded and began constructing a series of standardized apartment buildings in Tokyo, Osaka, Nagoya, and other cities. Housing designed according to functionalist principles earned a good deal of criticism at the time, as the amount of space allotted to each family and the individual flats were experienced as being too small.⁵²⁸ Kenzo Tange sees the failure of post-war modern architecture as a consequence of the limitations the architects had to face such as the general lack of area, which left them with very few options in respect to the design. While some still stressed functionalist principles according to a socialist-realist concept - as for example Uzo Nishiyama, who insisted on the division of living into eating and sleeping areas - there was a return to the design of more traditional residential organizations with flexible spaces, only divided by sliding doors. These offered more possibilities than the functionalist plans orientated towards the existential minimum of a western nuclear family. In this debate, Tange criticizes the uncritical adaptation and imposition of western models upon Japanese conditions.

⁵²⁶ Hiroki Onobayashi, 'Chronological Table of Modern Japanese Architecture,' *The Japan Architect*, June 1966, p. 47.

⁵²⁷ Reyner Banham (1966), p. 10.

⁵²⁸ One should add that in the Japanese public housing the average space per person was calculated with only 10 m², in comparison to England where the average space per person was 30 qm², in Italy 20-25 qm², and in the rest of Europe not less than 20 qm², at the time.

He sees the task of the architects as being to formulate new ‘values’ for residential spaces out of the existing situation.⁵²⁹

Hamaguchi marks an international turning point in modern architecture, away from functionalism and rationalism towards an architecture that was searching for new values in an era of new technologies and flourishing economies. This shift was expressed in works such as Ronchamp by Le Corbusier (1955), Eero Saarinen’s MIT Chapel (1950-55) and Jørn Utzon’s plans for the Sidney Opera House (1957), all projects which were characterized by a departure from geometric plans and glass and steel compositions, and an increased use of concrete main structures and plastic surfaces.

In general, the new construction methods, such as folded plates, shell-structures, large-span frames, and pre-cast concrete, offered greater variety for the development of different design languages and were seen as new possibilities in the formulation of regional styles. Kenzo Tange’s Kagawa Prefectural Office of 1958 is an example for the attempt to fuse the traditional and the modern. Hamaguchi praises the new construction methods for their ‘great positive significance as form expression factors,’ and their ‘lively intuitive impulsive plastic approach,’ while he also remarks that ‘it seemed to be a period in which architects had completely lost control.’⁵³⁰

Onobayashi emphasizes the powerful influence of Le Corbusier’s 1953 *Unité d’Habitation* in Marseilles for the development of ‘brutal forms in exposed concrete’ in Japan.⁵³¹ Le Corbusier himself had described the concrete-work as ‘béton brut’, as Banham points out in his book *The New Brutalism*, which appeared in the same year as this special number on post-war modern architecture in Japan. Banham shifts the importance of the *Unité* to its surface:

the ‘Unité’ was unmistakably a building of the fifties; it was not conceived in some re-worked version of a pre-war style. . . . The crucial innovation of the ‘unité’ was not its heroic scale, nor its originalities – it was, more than anything else, the fact that Le Corbusier had abandoned the pre-war fiction that reinforced concrete was a precise, ‘machine-age’ material. . . . Le Corbusier conjured concrete almost as a new material, exploiting its crudities, and those of the wooden formwork, to produce an architectural surface of a rugged grandeur that seems to echo that of the well-weathered Doric columns of temples in Magna Graecia.⁵³²

It was Kunio Maekawa’s Harumi Apartments’ facades of 1958, recalling both Le Corbusier’s *Unité* at Marseilles and traditional Japanese houses, which would lead Reyner Banham to the statement that Harumi marked the point where a

⁵²⁹ Kenzo Tange in an interview with Kazue Shinohara ‘Kenzo Tange on Residential Design,’ *The Japan Architect*, March 1966, pp. 17-22.

⁵³⁰ Hamaguchi (1966), p. 26.

⁵³¹ Onobayashi (1966), p. 63.

⁵³² Banham (1966), p. 16.

Japanization of western architecture began.⁵³³ He compares the apartments with individual Japanese houses fitted into a giant skeleton, a concept borrowed from Le Corbusier, which would later become the key concept of the metabolists. He praises the powerful plastic appearance and the radically simple concept. In Banham, not the traditional Japanese building techniques and craftsmanship were at stake, but a Japanese version of western architecture that would introduce a completely new topic into world architecture.

The Death of CIAM and The World Design Conference in Tokyo

The 'official suicide of CIAM' is usually dated to the congress in Dubrovnik in 1956 when Team 10 took over and attempted to reorganise CIAM according to new lines of thought.⁵³⁴ But it was not before the last CIAM congress in Otterlo in September 1959 that it was finally decided not to continue, and 'the death of CIAM' was consequently announced and discussed in several international architecture magazines. Frequently quoted was Kunio Maekawa's comment that 'the young English architects (Peter and Alison Smithson) are mad to kill off CIAM when we need it so badly.' This view was shared by Kenzo Tange, who in *The Japan Architect* criticized the 'utopian view of Team 10, and the escapist fatalism of the Italian groups . . . as being only a partial grasp of reality.' He further feared a widening of 'the rift between humanity and technology,' and believed that despite his own reservations towards what he pinpointed as the CIAM ideology, it should be preserved as an organization, but reformed and adapted to contemporary concerns, 'centred not around Europe, but around other areas.'⁵³⁵ In an article twenty-five years later, Tange resumes: 'The functionalists believed that the city consisted of four basic functions; and attempting to unify them into an organic entity – that is, a city unified by means of a core – was an idea different from theirs. Equally serious, since the middle of the 1950s, as building investments grew dramatically and the environment changed with great speed, we realised that the time had come for a new dynamic approach to replace the formerly prevailing attitude that the city is static.' Although stressing an Asian perspective, Kenzo Tange and the Metabolists related directly to late CIAM and Team 10 directions. At the congress in Otterlo, Tange was among those who promoted the continuation of CIAM and 'proposed that it should be preserved as a place in which to debate optimum courses for the second half of the century, after 1960.' Retrospectively, he said, 'I realized that, since 1960, big changes were taking place. In my own case, changes were related to my plan for the city of Tokyo, as a consequence of which I came to see the possibility of a new movement transcending CIAM.'⁵³⁶

The World Design Conference in Tokyo in 1960, one year after the official dissolution of CIAM, can be seen as an attempt to continue the culture of urban debate on Asian grounds. It was the first international event Japan ever

⁵³³ Reyner Banham and Hiroyuki Suzuki, *Modernes Bauen in Japan* (Stuttgart: Deutsche Verlagsanstalt, 1987), p. 18.

⁵³⁴ 'CIAM Resurrection Move Fails at Otterlo,' *Architectural Review*, February 1960. pp. 78-79.

⁵³⁵ Eric Mumford (2000), p. 263-264.

⁵³⁶ Kenzo Tange, 'Recollections (5),' *The Japan Architect*, August 1985, pp. 6-13.

staged.⁵³⁷ The conference was significant for the young nation of Japan in respect to the immobility of most Japanese under the American occupation – until 1969 restrictions limited overseas travel to only very few privileged people.⁵³⁸ The conference thus represented a rare opportunity for many architects and designers to communicate directly with their foreign colleagues.

Tange was a member of the committee for the World Design Conference, together with the graphic designer Yasuka Kamekura, the industrial designer Sori Yanagi, the painter Taro Okamoto, the architectural critic Ryuichi Hamaguchi, and the architect Kiyosi Seike. Junzo Sakakura was the chairman of the World Design Conference and Takashi Asada the general secretary, both were architects. The group formulated their agenda in examining the nature of design, art and architecture in a continuously rapidly changing society.

Tange, who was well connected internationally through CIAM, had just returned from a guest professorship at MIT in Boston, and he invited architects from Europe, USA, and Asia. The event was attended by several members of Team 10, while no one from the core of the former CIAM group took part. We can take this event as both a marker for a generation shift in general and for a growing self-consciousness of a non-western architecture and design community in an Asian context. For the occasion of the conference, Tange presented a group of young architects who came together under the name of the metabolists. The key figures of this group were the architects Kiyonori Kikutake, Noriaki (now Kisho) Kurokawa, Fumihiko Maki, together with Masato Ohtaka, and the architectural critic Noboru Kawazoe.⁵³⁹ The movement was especially formed for the event. The scope of metabolism was the encounter between urbanism and architectural design, extending from an understanding of the individual cell towards the organization of a larger cluster and network communities.

The World Design Conference was more or less the only public occasion where the protagonists came together as a group under the label of metabolism. The manifesto *Metabolism 1960: Proposals for a New Urbanism*, prepared for the conference, contained essays and visionary projects by the architects Kiyonori Kikutake, Masato Ohtaka, Fumihiko Maki, Noriaki (now Kisho) Kurokawa, and the architectural critic Noboru Kawazoe, but it was the drawings of Kikutake,

⁵³⁷ In the same year, Japan received a good deal of international attention in the media: more than 5 million people went to the streets to demonstrate against the renewal of the United States-Japan Security Treaty, which left Japan virtually powerless.

⁵³⁸ The American occupation ended officially in 1953 with the exception of a few military bases, and the island of Okinawa, where the occupation lasted until 1972.

⁵³⁹ Kisho Kurokawa mentions also the industrial designer Kenji Ekuo, the graphic designer Kiyoshi Awazu and the photographer Shomei Tomatsu. The architect Arata Isozaki, who was a former student of Tange, and worked in his office like Kurokawa, can be regarded as close to the metabolists, at the time. Kisho Kurokawa, *The Philosophy of Symbiosis* (Tokyo/ New York/ London: Kodansha International, 1996), p. 478. According to Hajime Yatsuka, the metabolists were young architects, critics and designer who worked as a preparatory committee on the occasion of the Design Conference, and it was through Takashi Asada, former chief-assistant of Kenzo Tange, who chaired the committee that the metabolists found each other. Tange was staying in the US during the fall of 1959 teaching at MIT. Hajime Yatsuka, 'The 1960 Tokyo Bay Project of Kenzo Tange,' *Cities in Transition*, edited by Arie Graafland (Rotterdam: 010 Publishers, 2001), p. 187.

which were most visible, filling 35 of the 87 pages.⁵⁴⁰ Kikutake's project *Marine City* (1959) was the only one that was selected for the exhibition *Visionary Architecture* at the Museum of Modern Art in New York the same year.⁵⁴¹

The projects shown were theoretical designs dealing with the issue of accommodating a population growing into the millions, exploring sites that had not been considered before like the ocean or the sky. The publication also included an essay by Noboru Kawazoe, the theoretical head of the group, where he refers to the nuclear catastrophe and promotes 'the unity of man and nature and the evolution of human society into a peaceful state of unity, like a single living organism.' He closes with: 'Our constructive age . . . will be the age of high metabolism. Order is born from chaos, and chaos from order. Extinction is the same as creation . . . We hope to create something which, even in destruction will cause subsequent new creation. This something must be found in the form of the cities we were going to make – cities constantly undergoing the process of metabolism.'⁵⁴²

Retrospectively, The World Design Conference became known for its discussions on urbanism, which continued the late CIAM debates but with an emphasis on Japanese topics, such as rapid population growth and the development of megacities. The launching of the metabolist manifesto at the World Design Conference is widely seen as the presentation of the concept megastructure 'as a unique Japanese contribution to modern architecture, marking the maturity of Japanese architecture and its independence of other cultures,' and of "neo-colonialist" views of what it ought to be,' according to Reyner Banham.⁵⁴³ The word 'megastructure' itself appeared for the first time in print in Fumihiko Maki's *Collective Form*.

The metabolists developed their organic schemes of network cities as a response to actual issues. One of the main problems was discerned as the lack of comprehensive infrastructure in Japan, which was an obstacle to urban physical and economic growth. Increased mobility was propounded as a matter of individual freedom. The urban design proposals by the different members of the metabolist circle that included Tange dealt with topological questions.⁵⁴⁴ They did

⁵⁴⁰ Cherie Wendelken, 'Putting Metabolism Back in Place: The Making of a Radically Decontextualized Architecture in Japan,' *Anxious Modernisms. Experimentation in Postwar Architectural Culture*, edited by Sarah Williams Goldhagen and Réjean Legault (Cambridge, Massachusetts/ London: MIT Press, 2000), pp. 279, 285.

⁵⁴¹ The exhibition *Visionary Architecture* was curated by Arthur Drexler, the curator for architecture at the MoMA in New York. Beside Kikutake, the exhibition included projects by Louis Kahn with Ann Tyng, Paolo Soleri, Frank Lloyd Wright, Le Corbusier, Friedrich Kiesler's 'Endless House,' and the Archigram member Michael Webb. Kikutake and Webb were presented as individual designers; there was no mentioning of the metabolists or Archigram.

⁵⁴² Noboru Kawazoe (ed.) *Metabolism 1960: Proposals for a New Urbanism* (Tokyo: Bijutsu shuppansha, 1960), p. 48-49; quoted in Wendelken (2000), p. 287.

⁵⁴³ Reyner Banham, *Megastructure. Urban Futures of the Recent Past* (London: Thames and Hudson, 1976), p. 45.

⁵⁴⁴ The following years are characterized by the preparations for the Olympic games in 1964. Beside building for the games and the hotel building boom, infrastructural

not envision infill of streets and new public transportation systems to solve this task, but they worked out entirely new forms of total organizations that went beyond the existing city. The focus was set on unifying all urban aspects into one big organism: all sorts of flows were enabled by a basic three-dimensional skeleton of long-term service structures, which held containers for various functional units of different life-cycles. These megastructures branched in a hierarchy from large traffic arteries and transportation lanes down to streets on the pedestrian level. They connected public and commercial facilities with housing, which was being organized on terraces of artificial land where the inhabitants could build their houses according to their taste. In this total scheme, everything was regarded as part of a flow, in a constant process of becoming and declining. Through the reorganization of space the entire landscape of planning would change.

The metabolist proposals were greeted with great interest. At a time when the profession of town planning (in the Western sense) didn't yet exist in Japan, they responded to an urban situation characterized by a 'lack of infrastructure' and an 'absence of city planning',⁵⁴⁵ with the 'the will to plan,' as the editor of the *Architectural Review* J. M. Richards pointed out. The metabolists' 'researches challenge the whole conservative concept of city life on which the recent *laisser-faire* urbanization has been based. They try to face realistically the problems this process is throwing up and see the opportunity that lies in them. . . . [S]ome of the best architects openly and actively accept their profession's wide social responsibilities.'⁵⁴⁶ In this statement, Richards addressed not only the seeming absence of planning, but also the lack of public area in the city. The city of Tokyo was pulverized into millions of small private plots, which made comprehensive planning a difficult task. As an example, in the case of the planning of twenty-three new city highways in Tokyo for the 1964 Olympics, only some of them were half built in 1962, some not yet begun; the chief cause of the delay being the number of property owners who were reluctant to move. Six thousand houses or shops stood in the way of the new roads, and in 1961 only the owners of 1.6 thousand had signed evacuation contracts. In this light, the political goal of metabolist urban planning could only have meant the erasure of private land ownership and its total re-organization. The issue of 'freedom' however was frequently addressed in their projects, now focusing on the element of the individual cell, or the capsule, and on the new possibilities for mobility and change.

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constructions peaked, the famous Tokaido Line between Tokyo and Osaka opened, and new highways and highway service buildings went up.

⁵⁴⁵ 'In spite of the area over which the city [of Tokyo] spreads, the space occupied by roads is relatively small (9,2 per cent of the total, which can be compared with 23 per cent in London, 25 in Paris, 35 in New York, and 43 in Washington). . . . [N]o street has a parallel one a practicable distance away. The underground railway is equally congested. A special body of men called "pushers" is employed on the platforms to cram the last passenger into the carriages so that the doors can close and the trains move off.' J.M.Richards,

Architectural Review, October 1962, p. 162.

⁵⁴⁶ *Ibid.*, p. 203-204.

Metabolism is a biological term, which describes the anabolic and katabolic processes of a living body. The expression was derived from the urban sociologist Ernest Burgess' article 'The Growth of Cities', first published in 1925 in the book, *The City*. Burgess uses the term 'social metabolism' to elucidate the process of growth and transformation of cities. Revolutionary in Burgess' concept at this time was the view of cities' growth as 'normal' and not as the reason for social demise, as in the rhetoric of the Garden City promoters.⁵⁴⁷ Because a city behaved like an organism it grew and changed, and thus underwent naturally periods of disintegration and reintegration.

Beside its biological connotation, the term was often brought up in the context of Buddhist values, especially by western commentators, stressing the pattern of death and rebirth, as for example in a special Japan number of *AD* in 1964, edited by Günter Nitschke. 'Metabolism' can be translated to the Japanese expression *Shinchintaisha*, meaning renewal or regeneration, closely related to the Buddhist concepts of transmogrification and reincarnation, as Cherie Wendelken has pointed out.⁵⁴⁸ In this way, the Japanese adaptation of the metaphor 'metabolism' carries both a universal scientific connotation as well as a Japanese spiritual one.

At the heart of metabolist thinking is the reorganizations of the relationship between society and the individual. The dissolution of the city into 'cells' corresponds to the breaking away from patriarchal family structures and the strengthening of the position of the individual in Japanese society. In their visionary proposals, Tange and the metabolists take the specificity of the Japanese social context as their point of departure, but they also stress that the emerging models are of universal validity and applicability.

Finally, metabolism was also an expression of critique. The socio-political area is accused of failing to adapt to the rapid techno-economic development. Tange and the metabolists criticize the entire Japanese planning system for its non-transparent forms of power. A new language was sought that would be powerful enough to establish 'urbanism', a field that hardly existed in Japan at the time in the western sense. Until then, post-war city planning in Japan had been difficult, Tange said, because 'cities did not redevelop as a result of urban plans.' Instead, the redevelopment process was 'a product of the power of relationships' reflected in 'layer upon layer of political, economic and social realities behind these burned cities.'⁵⁴⁹ Tange criticizes the pragmatic spirit of the early years of reconstruction. Even before WWII, most attempts to implement comprehensible planning strategies in Japan seem to have failed.

Metabolism created an organic concept for imagining the regeneration of Japanese culture after the destructions and severe environmental devastations of fire bombings and two atomic blasts. They proposed the acceptance of Japan as

⁵⁴⁷ The foremost goal of the Garden City Movement was to limit the size of cities and to disperse and to decentralize them.

⁵⁴⁸ Cherie Wendelken, 'Putting Metabolism Back in Place. The Making of a Radically Decontextualized Architecture in Japan' *Anxious Modernism*, edited by Sarah Goldhagen (Cambridge, Massachusetts/ London: MIT Press, 2000), p. 287.

⁵⁴⁹ Tange, 'My Experiences,' *Space Design* 8001, special issue: Kenzo Tange and Urtec, p. 185; quoted in Stewart (2002), p. 172.

ground zero - a site of rebirth where culture would be regenerated from an underlying spirit of 'Japan-ness.' With this they suggested an organic link between the individual and a fundamental cultural pattern.⁵⁵⁰

Structural and symbolic reorganisation

Kiyonori Kikutake's own house - the *Sky House* of 1958 - served as the prototype for the 'cell', staging Metabolist principles. The *Sky House* consists of only one open square room, floating above ground on piers containing plumbing compartments appended on two sides of the building indicating expandability. It suggests possible expansions extending from the main cell by what Kikutake called 'movenets', which would be plugged in beneath the floor to provide bathrooms, storage space, and removable children's rooms for an expanding and contracting family. The design is extraordinary in that it follows the logic of a structuralist or system thinking, while adapting the organisational principles of the traditional Japanese house with its open plan, as well as its symbolic imagery expressed in the form of the roof.⁵⁵¹ The *Sky House* can be seen as a first built prototype for the following mostly more or less utopian or visionary metabolist proposals that stayed on a discursive level.



7.19



7.20

Kikutake's metabolist project, *Ideas for the Reorganization of Tokyo City*, had already been presented at the last CIAM meeting in Otterlo in 1959 through Kenzo Tange. In consideration of the lack of space and the high land prices in Tokyo, Kikutake proposes here an infill of towers on the edge of Tokyo Bay, carrying exchangeable capsules of domestic units. Kikutake's high-rise

⁵⁵⁰ Wendelken (2000), p. 287.

⁵⁵¹ Arthur Drexler, in his book *The Architecture of Japan* (New York: The Museum of Modern Art, 1955) had referred to the roof as the most significant part of the traditional Japanese house. 'But for the Japanese the most expressive architectural element has always been the roof. A Japanese building *is* a roof.' Drexler (1955), p. 44.

projects for a Tower City and a Marine City (literally ‘City on the Sea’), previously published in the journal *Kokusai Kenchiku* (*International Architecture*), were presented again as parts of a comprehensive project entitled *Ocean City* at the World Design Conference in 1960, and were included in the publication *Metabolism 1960: A Proposal for a New Urbanism*. It was the only Metabolist project that had been chosen for the *Visionary Architecture* exhibition in the MoMA in New York in the same year. Nevertheless, the most famous Japanese project presented at the Design Conference was the proposal for *Tokyo Bay* by Kenzo Tange. Kisho Kurokawa and Arata Isozaki collaborated on the project, among others who were not part of the inner metabolist circle.⁵⁵² This scheme basically rejected as dysfunctional the plan proposed for Tokyo in 1956 on the model of Abercrombie and Forshaw’s plan for Greater London, which foresaw a central core and the city expanding according to radial-concentric pattern.

Tange’s organization consisted of a linear spine-like element made of layered systems of intersecting infrastructural cycles on different scales, which extended from Tokyo centre, eighteen kilometres across Tokyo Bay, in the form of a ‘civic axis’ as he called it. Tange had conducted several city plans over the post-war years in the spirit of reconstruction. However, the background to this plan was that through rapid industrialisation, Tokyo was at the time already on the verge of having ten million inhabitants, experiencing an immense physical investment, and expecting a tremendous alteration of the cityscape. This meant the organisation of new communications systems was a significant challenge. They in fact would become the most central element in a growing metropolis where mobility was one of the basic individual necessities. Tange would discuss communication henceforth in terms of a characteristic of an open society and as a means for change. As a consequence, Tange thought, it was essential to reflect on the nature of urban structures that would permit growth and change. Biological processes became the overall metaphor for managing the new development. In Tange’s words:

In terms of the growth process of organic bodies, at an early stage, an egg has a central core. Ultimately, however, this core develops into a spine, which breaks the shell making possible a shift to a new growth phase. In vertebrates, a spine is essential for the transmission of information through the nervous system from the brain to the spine. When applying this line of thought to Tokyo, it becomes obvious that the clinging to the concept of a civic centre makes further development hopeless. As a model we were exploring what happened when we extended a spine from the civic centre across Tokyo Bay. I called this a civic axis. In addition, rising land prices in Tokyo made new developments over the sea feasible.⁵⁵³

⁵⁵² Other collaborators were Sadao Watanabe, Koji Kamiya, and Heiki Koh. Ryuichi Hamaguchi, ‘Conductors of City Planning?’, *The Japan Architect*, August 1961, p. 39. The Tokyo Plan of 1960 by Kenzo Tange in collaboration with Kisho Kurokawa, Arata Isozaki and others is here discussed for its exemplary significance for the movement of metabolism. Although Tange was the mentor and not a member of the metabolist circle, this is the most extensive, detailed, worked through, and the most reviewed metabolist project, which contains even ideas developed by other metabolist members.

⁵⁵³ Tange (1985), p. 12.

In its visionary intention, the Tokyo plan is comparable to Le Corbusier's 1922 *Ville Contemporaine* for Paris, a city of three million inhabitants, in terms of its symbolic forms, and to Hilberseimer's *Groszstadt Architektur* of 1927 in its organizational focus.⁵⁵⁴ Hilberseimer had already put forward an urban scheme that envisioned communication in three dimensions. He had reduced urban space to a grid structure that would house the 'cells', an organizational system that he called organic. Worth mentioning is also Le Corbusier's plan for Algiers of 1931, which Banham calls the first proposal of an urban architecture based on megastructural principles. Its massive curved linear structure, 'a super-highway,' serves as the container, 'like a giant bookcase of reinforced concrete,' for all housing, commercial and public facilities, including infrastructures such as a highway on its roof. Banham recognizes the project 'as a true ancestor of megastructure because of its seemingly unlimited length and the clear distinction between the main permanent structure and the infill housing adapted to individual needs,' cultural expressions and individual tastes.⁵⁵⁵

7.21 Le Corbusier's Plan Voisin, as reproduced in Hilberseimer's *Groszstadt* (1927)



Abb. 17. Le Corbusier: Großstadtsschema, Ansicht. Nach „Urbanisme“

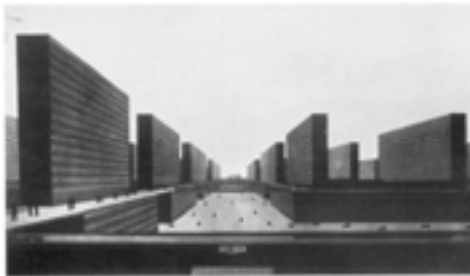
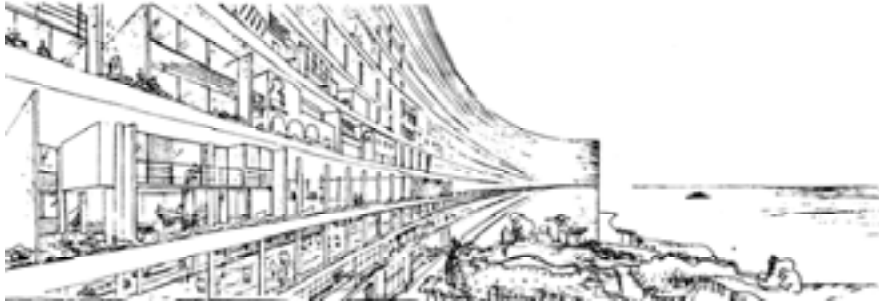


Abb. 19.
Ludwig
Hilberseimer:
Schema einer
Hochhausstadt,
Nord-Südansicht

7.22 Hilberseimer in *Groszstadt*

⁵⁵⁴ Ludwig Hilberseimer, *Groszstadt Architektur* (Stuttgart: Verlag Julius Hoffmann, 1927)

⁵⁵⁵ Banham (1976), p. 8.



7.23 Le Corbusier, Plan Obus (1931)

Tange's plan addressed a cyclic transportation system on which cars could run without intersections. The system would support a flow of traffic for between two and seven million people every day. On each unit (two square kilometres) would stand a high-rise building complex (symbolizing entrance and exit, or interchange) with a three-dimensional communication network and underground parking. Flanking these axes would be housing for five million people on man-made islands, each megastructure a little city or community of its own. Megastructure meant here a superstructure, consisting of terraces on which the inhabitants could erect private houses according to their own tastes while the artificial land stayed in public hand. 'Private space where man lives and works in the air, and common space on the ground level where modern society unfolds freely its own interactions are separated.'⁵⁵⁶ The entire looping infrastructural system was hierarchically arranged from highways down to the speed of the pedestrian. Hereby Tange saw a natural order emerging, which connected an urban system with an architectural system. The figure of the cycle occurred not only as an infrastructural solution, but was also present as an underlying economic principle as well as symbolic form. The plan rejected the traditional form of the static master plan and envisioned an 'organic', more dynamic system that was able to absorb programmatic changes and to respond to economic and social ones - a scheme that could grow and change. The main form, the spine, accommodated different elements with various metabolic life cycles. The scheme was based on the same principles as Kiyonori Kikutake's *Ocean City* project, which Tange had presented in Otterlo as follows:

The structural elements are thought of as a tree – a permanent element, with the dwelling units as leaves – temporary elements, which fall down or are renewed according to the needs of the movement. The building can grow within this structure and die and grow again – but the structure remains.⁵⁵⁷

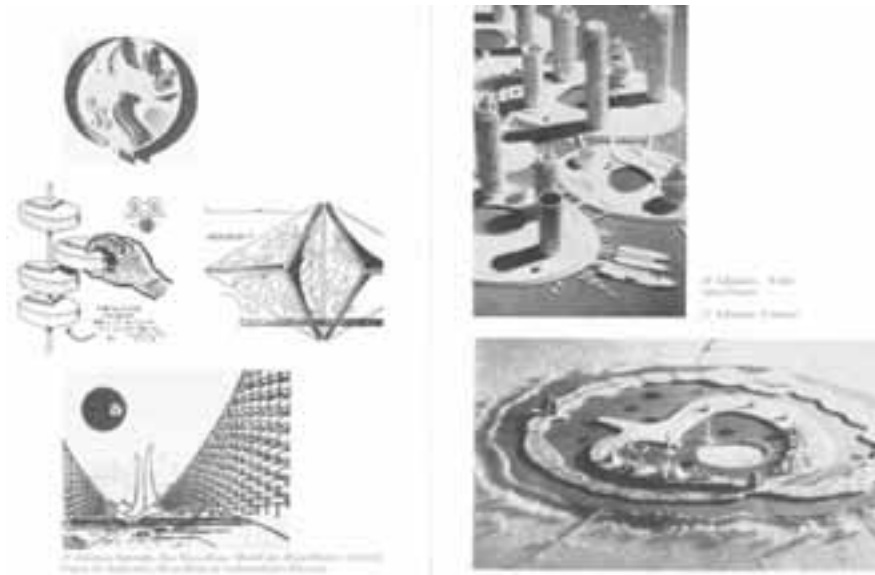
And again, the tree seems to represent not only a hierarchical and temporal organizational structure, but can also be read as a symbolic figure referring to life itself as a living entity spanning many generations, as a historical and social

⁵⁵⁶ Günter Nitschke, 'Die Metabolisten Japans,' *Bauwelt* 18/19, 1964, p. 512.

⁵⁵⁷ Tange quoted in Banham (1976), p. 47.

marker, as a habitat for other life forms, and finally the tree represents Japan as a whole as a figure of a huge organism.

According to Nitschke's analysis in *AD*, the plan mirrored a process that was already on its way: 'the awareness that our large-scale constructions, like a communications infrastructure, increase in scale (in respect to space and time); while our small-scale structures, like our individual dwelling houses and consumer goods (that is to say our element structures) decrease in scale in respect of a growing "throw-away culture".' He continues, '[t]hese extremes of durations in parts of an urban cluster, the long-term large-scale structures, which curtail individual freedom more and more, and the short-term element structures, which are expression of freer individual choice and of contemporary susceptibility to novelty, are brought in harmony in the triangle-shaped dwelling structures. The terraced concrete levels of these structures form an artificial ground and floor provided by communal investment upon which individual investment takes place in form of private constructions and consequently reflects rapid changes in taste.'⁵⁵⁸



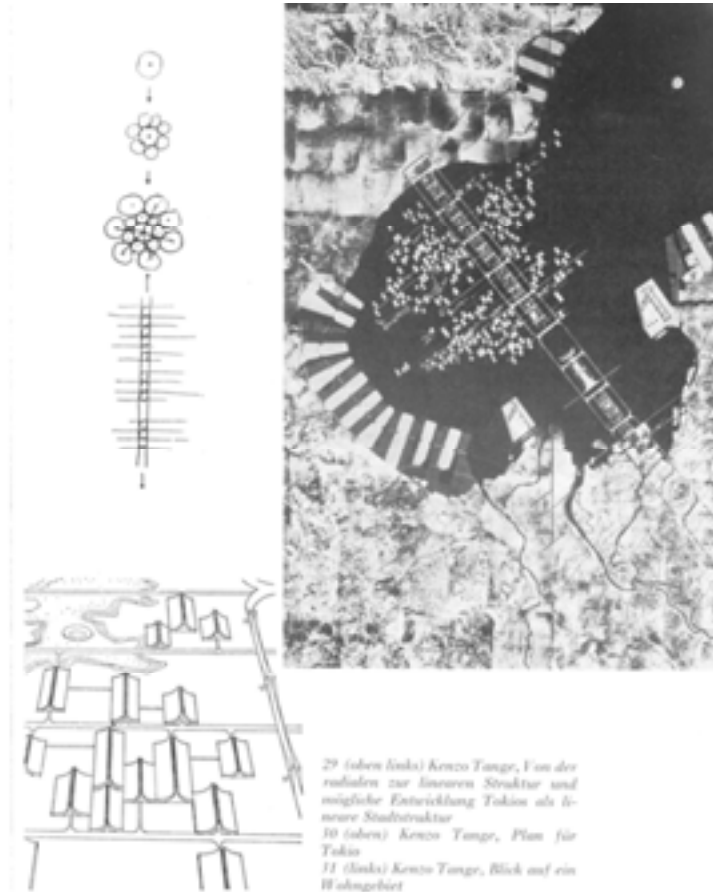
7.24 Kiyonori Kikutake's Ocean and Marina projects

Tange stated that he had been giving thought to this plan since the MIT studio work where he had assigned his fifth-year students to design a community for 25,000 on Boston Bay. He claims:

Until then . . . Modernist Architecture had been controlled by the philosophy of supporting the industrial society, including concepts of

⁵⁵⁸ Günter Nitschke, 'The Approach of the Kenzo Tange Team in Their Plan for Tokyo 1960,' *Architectural Design*, October 1964, special issue on Japan, edited by Nitschke, p. 505.

standardization and mass production, and assumed that spaces and forms conform to function. But I predicted that, in the coming years, space would have to be a realm for the communication of information and that communications space networks would create both architecture and spatial structures. I felt that a movement from functionalism to structuralism was necessary. While at MIT, I pondered this problem while walking about and looking at aerial photographs of Tokyo.⁵⁵⁹



7.25 Kenzo Tange, Tokyo Bay (1960), with Kisho Kurokawa and Arata Isozaki

Various ideas including megastructures were thus already under development at MIT. After his return to Japan, Tange carried out some research work on this issue together with members of his studio including Koji Kamiya, Arata Isozaki and Kisho Kurokawa. The result was presented in an hour-long television broadcast by the Japan Broadcasting Corporation (NHK) in late 1960. The same material

⁵⁵⁹ Tange (1985), p. 7.

appeared in magazines and architectural journals in 1961 and evoked considerable response.

The scheme gained much international attention and triggered discussions on city planning at large. However, it was also widely criticised for its technological determinism and its monumentality. The danger of the main infrastructure becoming obsolete itself, although allowing infill and change, was even debated by the metabolists themselves. Fumihiko Maki had reflected on Group Form, already in an article in the metabolist manifesto, as the solution for a 'system that permits greatest efficiency and flexibility, with the smallest organisational structure.'⁵⁶⁰ Members of Team 10, namely Peter Smithson objected to the plan in pointing to the 'tertiary' activities: communications that became overtly determining for the inhabitants of the megalopolis, which he thought were doomed to fail, economically as well as politically. He saw the 'interlocking' of all functions as a totalitarian concept, an organization that tended to crawl into and determine people's individual lives. He called the plan centralized, absolutist and authoritarian on all levels - in its basic thinking, its organization, and its imagery - and instead promoted a non-interlocking of activities and a politics of decentralization for the deliberate dispersal of 'value-creating' centres. 'With regard of the general planning concepts which are brought forward, I have little to criticize - which is hardly surprising considering the closeness of the theoretical position of Tange and myself,' Smithson stated. He criticized, however, the extreme focus on infrastructures suggesting the continuing 'heaping up' of the population as a natural thing. In more detail he states: 'a linear transportation system . . . leads to a terrific number of lanes being necessary, each filled to capacity, with a probable redundancy of lane capacity in the feeders. . . . One asks oneself whether they have been deliberately designed to produce a feeling of urban pressure by a sort of symbolic use of over-trafficking.' Smithson advocated the adoption of an 'all-over full-capacity system' (e.g. a net) instead, as the cyclic system did not produce a reduction of lanes, although he admits that it was ingenious because it produced a traffic flow that never stops, even though it necessitated going around right-angles and also created longer journeys. Smithson judged: 'The pyramidal housing units over-the-water are formally the finest things in the scheme, but unhappily as in thousand student projects (from the time of Le Corbusier's Algier project onwards), the romance of the idea of 'each man building his own house on man-made platforms, stands unsupported by a demonstration of how it is to be done.' He concluded: 'The project as architecture is at its strongest when it is closest to the traditional Japanese vocabulary,' which is articulated for Smithson in the 'straight lines and a soft curve defining the major forms.' He praised however the formal brilliance of the scheme and its graphic representation, as well as 'the boldness of the attack,' which had 'expanded the frontiers of search for the form of the metropolis more than would have believed possible in a single study.'⁵⁶¹

Not only western commentaries, but also the Japanese architectural press reacted for the most part sceptically to Tange's project. Ryuichi Hamaguchi was

⁵⁶⁰ Fumihiko Maki (1964), p. 12.

⁵⁶¹ Peter Smithson, 'Reflections on Kenzo Tange's Tokyo Bay plan,' *Architectural Design*, October 1964, pp. 479-480.

concerned about the lack of professional expertise in terms of technology, construction, economy, and politics, in favour of 'form'. Above all, he questioned the role of the architect in city planning when he claimed:

In my opinion, when the architect functions as an architect, he should be not the conductor of the orchestra, but one of the first violinists. . . . He should take his place among the other players – the construction engineer, the road expert, and others whose work is necessary to the construction of a city. The difficulty with the Tange Team is that it is an orchestra of first violinists.⁵⁶²

Yuichiro Kojiro compared Tange's plan for Tokyo Bay with Antonio Sant'Elia's visionary plan of a future city of 1914, which he views as a considerably different approach from the Bauhaus, Le Corbusier, or de Stijl. 'Whereas Oud, Gropius, and Le Corbusier discovered a new plastic order in the machine, Sant'Elia centred his plan around the dynamism of the machine, employing a vertical solution for roads and allowing shaft-like towers to spring forth from buildings.' He sees the same principles translated into a concrete plan by Tange, who had 'expressed the opinion in the Asahi Newspaper that the principle structural element of the city should be its moving parts.' Kojiro is most critical of 'the lack of minor human scale,'⁵⁶³ an issue, however, he thinks could be solved. Kenzaburo Takeyama sees above all 'a technical problem.' Although he welcomes 'a large-scale plan for the future' as a necessary step towards dealing with 'the inevitability of Tokyo's growth.' He criticizes the proposals for actual construction as 'somewhat unconvincing.' He points to the problem that there existed no surveys over the bay at the time, and that indications concerning construction methods were lacking in Tange's plan, but admits that '[w]hatever [the plan's] failings, it will doubtless serve as an impetus toward technical advancement and this is greatly to be desired. . . . Still, however excellent the plan for the city, it must have technical backing, or it will never be realized. If the plan were advanced by a person with no technical training or if it were presented frankly as a pure dream, it would be a different matter.'⁵⁶⁴

International models

Many of the ideas of the metabolists and Team 10 were prefigured in the work of Louis Kahn. The most emblematic of his projects for the younger architects was 'Tomorrow's City Hall', together with Anne Tyng,⁵⁶⁵ and his Philadelphia plan of 1952 for reformed traffic circulation. In an illustrated essay 'Toward a Plan of

⁵⁶² Ryuichi Hamaguchi, 'Conductors of City Planning?' *The Japan Architect*, August 1961, p. 40. Hamaguchi's article demonstrates the general attitude in Japan that planners are technocrats and not designers, and shows that urban design was a young approach at the time.

⁵⁶³ Yuichiro Kojiro, 'Movement in the Principle Structure,' *The Japan Architect*, August 1961, p. 40-41.

⁵⁶⁴ Kenzaburo Takeyama, 'Comments on Kenzo Tange's "Planning for Tokyo 1960." A Technical Problem,' *The Japan Architect*, August 1961, p. 41-42.

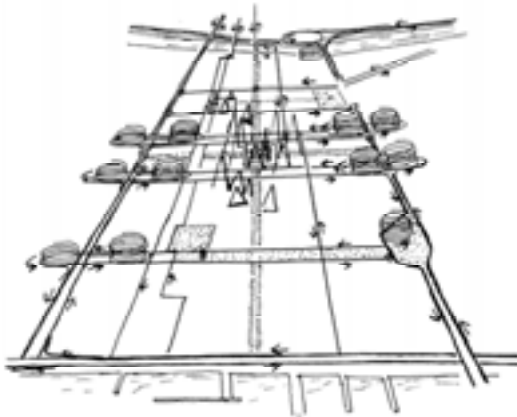
⁵⁶⁵ The best known version of this project is the model of 1958, but published versions go back as far as 1952. Banham (1976), p. 38.

Midtown Philadelphia' (1953),⁵⁶⁶ Kahn had put forward a new movement-based model, composed of a hierarchy of flows and nodes in an 'aquatic' analogy. Embedded in this model were the concepts of vehicular 'serving' and social 'served' spaces applied to urban areas and buildings. The representations suggested also a new notational system to signify the different flows and nodes, which were identified as 'rivers' (expressways), 'harbours' (parking towers), 'canals' (streets), and 'docks' (entrance halls of buildings)

The revolutionary novelty in Kahn's movement spaces was the idea that movement could produce form. Banham calls this drawing 'an ideal diagram which became a "key image,"' giving visual form to a widespread feeling that the energies of traffic movement, suitably directed, could give large-scale form to the modern city.⁵⁶⁷

**** towers → go parking > garage + interaction

The tower entrances and interchanges, wound-up parking terminals, suggest a new stimulus to unity in urban architecture, one which would find expression from the order of movement. The location and design of these entrances are an integral part of the design of the expressway financed and constructed as a unit. It is not an isolated real estate venture which could lead to compromise and the distortion of the system. At night we know these towers by their illumination in color. These yellow, red, green, blue, and white towers tell us the sector we are entering, and along the approach, light is used to see by and give us direction in ideas of lighting in rhythm with our speed. From these entrances a system of canals or interior streets feed the various activities of center city life.



7.26 Louis Kahn, Plan of Philadelphia (1953)

⁵⁶⁶ Louis Kahn, 'Toward a Plan for Midtown Philadelphia,' *Perspecta* 2, 1953, pp. 10-27, reprinted in Louis Kahn, *Writings, Lectures, Interviews*, introduced and edited by Alessandra Latour (New York: Rizzoli, 1991), pp. 28-52.

⁵⁶⁷ Banham sees also in Wright's *Broadacre City* of 1935 a precedent, despite its dissolution of all urban form in the countryside because of its traffic scheme. 'In spite of the city's ultra-low and seemingly more rural than urban densities, the plan was traversed by a monumental, multi traffic facility – the "great arterial way," in Wright's period prose – which concentrates all express through traffic by rail and road, together with warehousing and other subsidiaries, and rejoices in some extremely complex overpasses and connectors.' Reyner Banham (1976), p. 41.

Kahn's hierarchical flow space paralleled the Smithsons' formulation of 'the idea of the street,' stressing the social aspects of similar configurations, and inspired Schadrach Woods' concept of the 'stem.' In 1953 the Smithsons formulated the idea of the street as that what makes 'the creation of effective group-spaces fulfilling the vital functions of identification and enclosure making the socially vital life ... possible.'⁵⁶⁸ Their architectural designs focused on a hierarchy of 'human associations' on different scales - such as the street, the district, etc. - manifested in urban proposals that suggest traffic separation and a more organic layout, like in their plan for Berlin of 1958. The topological aspects of the tree-figure were taken up by Shadrach Woods in a concept he called 'stem.'⁵⁶⁹ Woods also criticized the plan *en masse* of the modernists, as *representing* movement in a plastic way that would not overcome its static confines. As an alternative to formalistic design thinking, the stem went beyond the plastic architectural composition of the *plan masse*. The stem described a topological order, a way of linking locations that accommodated human activity and interaction. It was a support system, very similar to the network of streets of a traditional town. In an article from 1962, a year later, Woods extended the concept of stem to the concept of 'web', which was not just a circulation system, but an 'environmental system,' 'a way to establish a large-scale order' with minimal means, which made possible 'an individual expression on a smaller scale.'⁵⁷⁰

Megastructure and Group Form

The same intention lies behind Fumihiko Maki's 'group form'.⁵⁷¹ This spatial concept differs from the concept megastructure, as laid out in the research publication *Investigations in Collective Form*, which contains an article written together with Masato Othaka and originally published in the metabolist manifesto, and an investigation on 'Linkage' written in collaboration with Jerry Goldberg.⁵⁷² In short, Maki distinguished three different 'collective forms', the compositional (the modernist space), the megastructure (Tange's Tokyo Bay project, for example), and the group form. The group form differed from the compositional in its way of relating the elements to the totality. Elements can be added and taken away from the cluster without destroying the balance of the whole composition as in a modernist ensemble. This consisted of a fixed number of certain elements according to the master plan principle, where the design process was clearly divided into a functional planning phase followed by the phase of erecting individual buildings. The megastructure, on the other hand, was an open structure without a fixed concept of composition denominating the infrastructure, a man-

⁵⁶⁸ Alison and Peter Smithson, 'An Urban Project,' in: *Architects Year Book 5*, 1953.

⁵⁶⁹ Schadrach Woods, *Le carré bleu 2*, 1961.

⁵⁷⁰ Schadrach Woods, *Le carré bleu 3*, 1962. The stem and the web were guiding design principles for the building design of the Freie Universität in Berlin, 1968.

⁵⁷¹ See the research publication: Fumihiko Maki, *Some thoughts on collective form. With an introduction on group-form*, Washington University, 1961.

⁵⁷² The research was published in 1964 by the School of Architecture of Washington University, where Maki had been Associate Professor between 1956 and 1963, after having received master degrees from Cranbrook (1953) and Harvard (1954). By the time of the publication he was teaching as Associate Professor of Architecture at the Harvard Graduate School of Design.

made landscape, upon which all functions and elements of society grew and thrived. Here a 'master system' replaced the master plan. Maki saw the task of the master system in its adaptability to change to swing into place 'in ever new stages of formal and structural equilibrium,' preserving at the same time 'visual integrity'. Group form was rather based on a 'group program' than on a determined plan, resulting in non-hierarchical collective forms, in contrast to the master plan and the master system. The layout of a group form always stayed dynamic and open-ended. Maki described its cluster-like arrangements with the words 'it is not necessary to limit composition to inorganic, geometrical, structural, or mechanical patterns. Rather group form is an intuitive, visual expression of the energy and sweat of millions of people in our cities, of the breath of live and the poetry of living.'⁵⁷³

Twelve years later, Reyner Banham looked back on the megastructure era in his *Megastructure: Urban Futures of the Recent Past*. The main issue he recognizes in the metabolist proposals is the attempt to find a relationship of the 'massive, even monumental, supporting frame,' and 'various arrangements of habitable containers beyond the control of the architect.'⁵⁷⁴ The conceptual approach and basic contradiction he sees in the marriage of a technocratic attitude, as in Walter Gropius' *total architecture*,⁵⁷⁵ and modernism's fascination with indigenous cultural artefacts and built forms, whose designs appear self-generated and 'natural.' The artificial landscape is 'made possible by present day technology,' but its giant (infra)structure is supposed to serve as 'the great hill on which Italian towns were built,' and thus to connect modern with vernacular aspects, as Fumihiko Maki had pointed it out.⁵⁷⁶ To legitimate the megastructure, its concept is often derived from existing 'accidental structures,' as Banham calls them. 'A-formal' and extensible, such as Maki's 'Italian hill town,' they differ from architect-designed historical precedents. What brings them within the canon of megastructures is 'their visible extensibility and adaptability, their lack of obvious regular geometry in spite of the fact that their overall form is usually easy to grasp and their small parts extremely regular.'⁵⁷⁷

For Banham the megastructure - although having been the dominant progressive concept for architecture and urbanism at the beginning of the 1960s, promising 'to resolve the conflicts between design and spontaneity, the large and the small, the permanent and the transient'⁵⁷⁸ - has failed. In Banham it presents the culmination and the end of the modern movement, which continues to be expressed in the modern claim to control 'the design of the whole human environment,' while now admitting individual desires for self-expression, a contradiction that the megastructures were finally unable to resolve. Spontaneous processes of self-building could happen but 'within a framework created by

⁵⁷³ Fumihiko Maki, 'Toward Group Form' in Joan Ockman, *Architecture Culture 1943-1968. A Documentary Anthology* (New York: Rizzoli, 2005), p. 324.

⁵⁷⁴ Banham (1976), p. 8.

⁵⁷⁵ *Ibid.*, p. 9.

⁵⁷⁶ Fumihiko Maki, *Investigations in Collective Form* (St. Louis: Washington University, The School of Architecture: 1964), p. 8.

⁵⁷⁷ Banham (1976), p. 16.

⁵⁷⁸ *Ibid.*, p. 10.

professional architects' and still 'reflecting the monumental and aesthetic values of professional architecture.'⁵⁷⁹

Space, Place, and Image

In the metabolist schema the notion of place is neglected in favour of issues of spatial relationships, change, temporality, and process. The interest in exploring new spatial organizational patterns is more prominent than the longing for recreating a lost place; rather, potential new forms of 'habitats' are explored. The experience of war and consequent loss of place trigger the creation of new architectural terms, architectural imagery, and a shift in the discourse. In the work of the metabolists the architectural image replaces the category of 'place'.

During the 1960s, the group produced mostly visionary theoretical work on a large urban scale. However, the few projects that actually got built were of moderate size. Although showing metabolist features such as signs of expandability and mixed use, they often only looked metabolistic, but did not necessarily work that way. This is the case in his broadcasting centre in Kofu (1968), and Isozaki's library in Oita (1968). However, over time their program could become more mixed by appropriation, as is the case in the metabolist icon, the Nakagin Capsule Tower, a residential building by Kisho Kurokawa built as late as 1972 in Tokyo. Its capsules now serve different purposes and are used for living, working, and as space for storage, as one can see through the washing-machine-like windows.

Two different aspects of the metabolist image can be discussed: first the early visionary proposals and second the work that was actually built. Kyonori Kikutake's built work and his theoretical projects differ quite heavily in language and scale. His visionary projects for experimental dwellings speculate on urban scales of millions of inhabitants and are represented in a sketchy way, often in charcoal with a dreamy character and frequently containing some national-romantic details, such as using the rising sun reflected on the surface of the ocean or Mount Fuji as a backdrop. Kikutake's built architecture orientates itself towards traditional forms and styles while using contemporary materials and construction methods. Most buildings are of a moderate scale and well integrated into their surroundings, as for example the Izumo Shrine Administrative Building and Treasury of 1963 on the grounds of the Izumo Shrine, and the 1964 Tokoem Hotel in the summer resort of Tottori. The Office Building for the Grand Izumo Shrine is a concrete structure mimicking a transparent wooden construction. The short sides consist of concrete panels with stylized tree ornaments symbolizing a forest. Hotel Tokoem, also a concrete structure, is an interpretation of traditional wooden constructions in another scale and with new materials. Its white tent-like roof structure is shaped in the form of traditional Japanese palace or castle roofs. These built images can be called dialectical in the way they address the future as well as the past. For the public they provided a familiar image in an unfamiliar fashion. The erection of these works coincided strangely with the re-erection of the national monuments – historical wooden buildings that had been dismantled

⁵⁷⁹ Ibid., p. 9.

before the war and stored during the fires – by then completely alienated environments, as Wendelken points out.⁵⁸⁰

A more ironic use of images can be found in the photomontage ‘Incubation process’, often also called ‘Future City’, by Arata Isozaki in 1960/61. In this drawing from Isozaki’s competition entry, *City in the Air*, for Tokyo’s Shinjuku district, Isozaki represents a megastructure situated within a field of classical ruins. The image pictures the city as the place where many life cycles of various cultures rise, overlap, and decline. In this juxtaposition of the already declined (*Western* architecture) with the visionary (*Japanese* Metabolist architecture) and its future (parts of the new scheme already collapsed), historical time appears compressed.



7.27 Arata Isozaki, Incubation (1961)

The theme of construction-destruction was also taken up in the photomontage for the 14th Triennale in Milan in 1968. The image was part of a larger installation called ‘Electric Labyrinth’ and showed collapsed megastructures, the ruins of a future city (collaged on the burned earth of Hiroshima). This scene provided the background for projections of future plans for Japanese cities. Isozaki commented: ‘Only when we realize that construction and destruction, planning and extinction are synonymous can meaningful spaces that are in touch with reality come into being.’⁵⁸¹ A second part of the exhibition consisted in sixteen curved and revolving panels. Depictions of hell, corpses from the atomic bombing, famished demons and ghosts were printed on these panels that could be rotated by hand or through a signal from an infrared counter.

The ‘culture of images’ of the Japanese Metabolists coincides with similar strands in the west at the same time. An example is the representations of the urban project *New Babylon* (1956-1974) by the Dutch artist Constant

⁵⁸⁰ Wendelken (2000), p. 290.

⁵⁸¹ Arata Isozaki, ‘“Electric Labyrinth” 14th Triennale Di Milano Milan, Itali 1968,’ *GA Architect*: Arata Isozaki Vol. 1 1959-1978 (Tokyo: A.D.A. Edita, 1991), p. 92.

Nieuwenhuis. Nieuwenhuis worked for almost twenty years on the scheme without a physical site in models, drawings, photomontages, and paintings. He frequently presented it at international conferences on urbanism, but rarely in the art context of the gallery. The presentations consisted of slide shows of the models, which had been put in scene with different coloured light settings to demonstrate various atmospheres, accompanied by a sound track. The performance of the presentation, as well as the incorporation of the role of the architect or urban planner, was as important to the artwork as the exhibits themselves. In the exhibition catalogue, *Constant's New Babylon: The Hyper-Architecture of Desire*,⁵⁸² Mark Wigley addresses 'hyper-reality' as a quality of representation in relationship to Constant's artwork. The Singapore architect Kok-Meng Tan relates this condition to the metabolists. Metabolism essentially produced a hyper-architecture that existed without being built. Meng argues that the potency of metabolism, in respect to its reception in the West, lies in the hyper-real quality of its images, and that the movement is to be understood in those terms.

The end of metabolism is often dated as coinciding with the Expo in Osaka in 1970. Banham explains this in reference to its visual similarity with the former Expo in Montreal three years earlier, which seemed to have exhausted the possibilities of the megastructural concept, or at least its visual imagery.⁵⁸³

Reception

Metabolism received more media attention in the west than in Japan itself. Abroad, it generated an enormous interest in Japanese culture in general, and architectural magazines produced special issues on Japan, like *Architectural Review* in 1962 and *Architectural Design (AD)* in 1964 in Britain. Wendelken criticizes the stereotypical representation of metabolism in the special number of *AD* with the words:

[T]here is little mention of recent Japanese history, a period that saw wartime devastation, foreign occupation, and rapid growth. Metabolist designs appear to be sui generis, negating any projected or existing physical site or historical context yet are described in language that stresses the fundamental, the enduring, the inevitable. *AD*'s presentation of the Metabolists, like much post-war writing on Japanese architecture both foreign and Japanese critics, naturalizes the work with the rhetoric of modern science and simultaneously nativizes it with the rhetoric of ancient philosophy.⁵⁸⁴

Metabolism meant different things in the east and in the west. In Japan, the movement triggered an engagement with the past and Japanese culture, as well as a departure from preconceived western architectural conceptions. In the west, the

⁵⁸² Mark Wigley, *Constant's New Babylon. The Hyper-Architecture of Desire* (Rotterdam: Witte de With, Center for Contemporary Art/ 010 Publishers, 1998).

⁵⁸³ Banham (1976), p. 103.

⁵⁸⁴ Wendelken (2000), p. 281.

metabolist schemes triggered a new appreciation for visionary projects on big scales, especially in Europe.

The work of the metabolists is often compared with that of Archigram. In *Modern Architecture: A Critical History*, Kenneth Frampton looks back and criticizes both the metabolist's futuristic city visions and the imagery of the British group Archigram as 'inaccessible fantasmagoria.' He refers to the Italian architectural historian Manfredo Tafuri who had pointed towards the late avant-garde as validating itself through the media. He relates Archigram's high-tech, lightweight and infrastructural approach to Buckminster Fuller's work and Yona Friedman's *L'architecture mobile* of 1958. He sees Cedric Price's projects Fun Palace of 1961 and Potteries Thinkbelt of 1964, projects he calls 'meeting an evident demand for popular entertainment and a readily accessible system of higher education,' as being in the same spirit. For Frampton, the poetic visions of Kikutake's floating cities equals a 'frantic futurism' that is even more impossible to build than Archigram's suggestive images. Frampton determines metabolism's end to be 'with the ideological emptiness of the Osaka Exhibition' in 1970.

It can be said that the metabolists and Archigram mutually inspired each other on a formal level, but they take different points of departure. While Archigram in Britain had more to do with pop culture, there is still social and political thought behind the metabolist's schemes. Archigram formed in 1961 among a group of architecture students. They became known through their self-produced *Archigram*-fanzines (numbers 1-9, between 1961 and 1974). From the middle of the 1960s, Archigram received international attention and was invited to big exhibition events like the Paris Biennale in 1967, the 14th Milan Triennale in 1968, and The Expo '70 in Osaka. Like the metabolists, Archigram projects deal with expandability, the capsule, and the topic of mobility and mass production, which they saw as fundamental aspects for self-determination and independence in a dynamic society. The projects like Plug-In City (1964) were orientated towards metabolist megastructural principles. After 1965, the frames were abandoned, and a series of free capsule projects like Living Pod (1965), Cushicle (1966-7), and Suitaloon (1968) were developed. These inflatable suit-homes and hybrids of cushion and vehicles, etc., incorporated the idea of architecture as *device* or *equipment*, like in travel suits and survival kits. The Instant City projects (1968-72) were moving further away from traditional architectural terms and relied now only on 'components'. Typical components were stage elements, information pergola, pylon trucks, open-air enviro-monitors, pneumatic enclosures, balloons as information signs, screen walls, audiovisual jukeboxes, etc. - elements that could be easily assembled, demounted, shifted and re-configured. Instead of fixed structures, the creation of environments that adapted to the body, 'architecture as portable hardware'⁵⁸⁵ became the central issue. However, Archigram did not, unlike the metabolists, focus on a general restructuring of society; rather they envisioned more stimulating urban environments for a leisure society.

Archigram's architectural language is inspired by temporary shelter and emergency architecture, including the protection suit. Frampton points to Archigram member Ron Herron's Walking Cities (1964) as a reference to a ruined world in the aftermath of a nuclear war, and relates the project to Buckminster

⁵⁸⁵ Peter Cook (ed.), *Archigram* (New York: Princeton Architectural Press, 1999).

Fuller's proposal of a giant dome over Manhattan. The dome was conceived as a smog shield in 1962, but could easily be imagined as a shield against nuclear fallout as well, he claims.⁵⁸⁶ There was another common issue at stake in the metabolists' man-made landscapes, Archigram's Walking Cities, as well as in Constant Nieuwenhuis' urban project New Babylon (1954-72) and Yona Friedman's space frames: the possession of land becomes undesirable, if not impossible, when cities are no longer determined to fixed territories. In these new emerging 'environments', which consider urban *life* rather than the city as fixed physical structure, the traditional relationships between technology (architecture), nature, and the human body are challenged and redefined.

It was the goal of the metabolists and megstructuralists to find catalysts for urban development that could solve the issues that came with the rapid growth of megacities, which had never been seen before on this scale. They hereby addressed questions of land scarcity, housing shortage, unplanned sprawl, but also fundamental organizational considerations and philosophical reflections on the structure and essence of society in general. The strict separation of public and private realms, which would turn one part of the megacity into 'infrastructure' at large, and dissolve the other part into a micro-landscape of cells, would mean a radically different conception of the city that did no longer strove for social equilibrium. It shows a population constantly on the move, freely connecting and disconnecting according to personal desire. This society is not bound to place; it integrates through the non-representational availability of the megastructure, symbolic images such as cycle and tree, and the idea of an underlying cultural code. The megastructure introduces thereby a topological order and offers unlimited possibilities of circulation. The image of the tree, literally and metaphorically, through its possession of a trunk, roots, branches, and leaves; symbolizing change, rhythm, and a specific spatial and temporal organization. Finally, the cultural code, similar to DNA, enables an exchange of information, which society reproduces as ever new images.

⁵⁸⁶ Kenneth Frampton, *Modern Architecture. A Critical History* (London: Thames & Hudson, 1992), p. 281.

Conclusion

The organism, cell, and society – The city – Information and the visual paradigm – Metabolism – The organic

The organism, cell, and society

In 1790, the philosopher Immanuel Kant was among the first who defined the figure of the organism as 'organized nature.' The organic body was not only an organized being, it was also self-organizing. The 'discovery' of the organism announces hereby a larger shift characterized by the advent of the *individual*, and, as Foucault poses it in *Les mots et les choses*, an anthropocentrism that focused on man's mode of being and the possibility of getting to know him as a living, labouring, speaking, and thinking *subject*. At around the same time the natural historian Georges Cuvier positions life in relationship to death, not as opposites but as 'modes of life.' With the help of the metaphor of a spring, this concept was intended to capture the way in which highly specialized internal organizations could entertain compatible relations with the 'general conditions of existence.' Through its organized nature, determined by actions, the organism appears more as a network of forces than a system of organs. Following this, the representation of the organism becomes synonymous with 'life' in a discourse of philosophy and natural sciences.

The organic returns particularly strongly in social and political thinking at the end of the nineteenth-century. It takes its point of departure in a metaphorical transcription from biology and political economy, and refers to the concept of the division of labour. Here it appears either in a critique, as in Marx's interrupted metabolic cycle through the division of labour, or in the positive image of the organism as a sort of workshop or factory, under the aspect of increasing structural differentiation and functional specialization in terms of relative complexity. In both cases, technological imagery is in the background of the analogy of society as an organism. In these different positions, society appears as a collective (Marx) or an aggregation of individuals (Spencer, Durkheim). Parallels to cell theory in biology (of plants around 1825, of animals around 1840) can be drawn that previously had turned attention towards the problem of integrating elementary individualities and partial life forms into the totalizing individuality of an organism in its general life form.

The cell carries anatomical, spatial, and functional notions. It gives rise to what Canguilhem calls a *discontinuous imagination* of objects by analogy with discrete rather than continuous models. The idea is that one element, the basis of all things, forms compounds with itself that produce the appearance of diversity. The life of an individual is therefore an effect rather than a cause, a product rather than an essence. An organism is a mechanism whose global effect is the necessary consequence of the arrangement of its parts. In a *continuous imagination*, as in the romantic school that had as much influence on physicians and biologists as on men of letters such as Goethe, the organism is not a sum of elementary biological entities; it is rather a higher entity whose elements are subsumed. Conceptualizing society not as an association of individuals as conceived in Spencer and Durkheim, but rather as a unified community can and has provided the basis for a

totalitarian political philosophy.⁵⁸⁷ Urban visions attempt to solve this conflict between individual and society spatially.

The city

Not only in urban imaginations does the analogy of the city appear as an organism (we find this normative thought earlier in the artwork as organism, in Winckelmann and Kant), biology also applied the image in reverse. The physiologist Claude Bernard asks us to consider a complex living thing 'as a city with its own special stamp,' in which individuals all enjoy the same identical food and the same general capacities, yet contribute to social life in different ways through their specialized labour and skills. In 1899, Ernst Heinrich Haeckel wrote, 'the cells are truly independent citizens, billions of which compose our body, the cellular state.'⁵⁸⁸ What is dominant in the notion of the cell is the character of individuality, but individuality is here not an endpoint, but rather a term in relation. Cells need a coordinating mechanism such as the nervous system to live and act within an organism, which is just as important as the cells themselves. The figure of the city provides for both, an image for social cohesion and a presentation of functional differentiation.

The issue of such a mediation lies also at the heart of the biologist and city planner Patrick Geddes' urban work. In his transcription from biology to city planning, co-operation as social action provides the necessary cohesion while a constantly ongoing process of subjectification is conveyed through visual learning that educates every member of the community as self-determined citizens. Through these processes both conditions are constantly re-negotiated. Spatial experience and mobility play hereby a decisive role. Mobility secures the individual's autonomy. In Geddes' city, we are connected to our environment topologically, in changing relationships, rather than in a fixed geometrical pattern. In Geddes, individuals never appear as completely independent; they rather emanate from a specific type and environment and they take part in a complex project, which they themselves co-organize and steer as subjects. The city appears here as an instrument for social evolution. Its structure is the material for active transformation. It is through the common 'work' of envisioning spatial change that the subjects come together in co-operation and make the place.

Information and the visual paradigm

A shift takes place in the reception of the organic in parallel with the rise of information theory, which also transforms a biological language. Cybernetics is the general theory of servomechanisms. Such machines form the heart of self-regulating systems, and the comparison with self-organizing organic systems is close. This analogy runs both ways. In a regulated system not only the parts interact but also a feedback loop connects monitored outputs and inputs. An organism can thus be understood as an open dynamic system that seeks to preserve its equilibrium. Such a system is capable of altering its relation to the environment. This thought was central to the artist, photographer and filmmaker Gyorgy Kepes' and the architectural historian Siegfried Giedion's conceptions of a creative

⁵⁸⁷ Canguilhem (2000), pp. 168-170.

⁵⁸⁸ Haeckel, *Die Welträtsel*, quoted in Canguilhem (2000), p. 171.

subject-object relation, in the way in which we perceive the world. Both saw a threat posed to the individual by an environment that had fallen into disorder through the disintegrating effects of modernity. This threat consisted in a split between intellect and feeling, as it was already realized in the split of art and industrial production. Reconciliation was posed in the correlation of experience and knowledge for re-achieving the necessary organic unity of feeling and thought.

In their cognitive model, vision becomes a mode of reception that generates objects of its own. These are still the objects of fragmentation and abstraction, found in the operations of cubism; but they are also images purified from everyday 'noise,' that respond to a corrupted visual environment more authentic with their capacity to immediately evoke emotions. As such they pose an aesthetic solution to a restorative project, which promises to reinstitute an undivided experience on the psychic level through the active and constant selection, transformation and integration of outer images into a new inner symbolic repertoire. Thus, Giedion restores the historical situation itself, as Michael Hays has pointed out. Giedion's theory, which initially came into being as a protest and defence against reification, emerges as the perpetuation of a conception, in which the individual subject would somehow, fully conscious of her or his determination by intrinsic structural conditions of capitalist logic and modernity, be able to reintegrate and resolve these determinations in the visual experience of architectural form. This desire for unity Hays finds in Giedion's belief in the autonomous vision of a centralized self, for which that vision is a metaphor.⁵⁸⁹ In Kepes' and Giedion's urban visions, the city emerges as a flat image, a Panoramic City as Christine Boyer has termed the modernist aesthetic convention which aspires to visual totality.⁵⁹⁰ In contrast to Geddes, here the city is created by all citizens individually.

Metabolism

In 1952, James D. Watson and Francis Crick discovered the *spatial* configuration of DNA, for which they would later receive the Nobel prize. The chemical components were already known since the 1930s; through electron-microscopy, it was now possible to construct a spatial model, which gave insight in the process of the information exchange itself. Canguilhem frames Watson and Crick's discovery of the structure of the double helix as an information system, one in which the code and the cellular milieu are in constant interaction without a simple, unidirectional causal relation between genetic information and its effects. The new understanding of life shifts from the structuring of matter and the regulation of functions; it is found now in another location and scale, in its genetic information, which becomes inscribed, converted and transmitted within living matter. With this, contemporary biology has also adopted a new language. It has dropped the vocabulary and concepts of classical mechanics, physics and chemistry, more or less related to geometrical models, in favour of the vocabulary of linguistics and communication theory. Messages, information, programs, codes and decoding constitute the concepts of the new life sciences. Life is the production, transmission and reception of information. To understand life, its message must

⁵⁸⁹ K. Michael Hays (1992), pp. 20-21.

⁵⁹⁰ Boyer (1994).

first be decoded. For understanding living things, a non-metric theory of space, a science of order, a topology, rather than geometry, is required.⁵⁹¹

In the work of the metabolists, the organic re-emerges as information. The horrific experience of the destruction of the war's fire bombings and the atomic blasts is the background for an urban conception that builds upon the imagination of an underlying code, similarly to DNA, from which culture like nature could become regenerated. Life is seen as polarity. It emerges and dissolves in cyclic processes of creation and destruction, whereby death forms the constitutive condition for a new becoming, as texts of Kenzo Tange, Noboru Kawazoe, and Arata Isozaki claim.⁵⁹² The process of metabolism, the biological nutritive system of assimilation and excretion expressing this polarity, becomes the all-over metaphor for the construction of a range of other polarities. The work of the metabolists it can be said, is carried precisely by these contradictions. In urban schemes that blur the boundaries between building and urban fabric, between architecture and urbanism, they celebrate the dissolution of the traditional architectural object. The city is split into infrastructure and numerous individual cells. At the same time, the schemes are rescued from disintegration through a transcendent idea of megaform that re-organizes the particles into a holistic symbolic image. Thus there is both a dissociating imagination as well as a totalizing tendency mirroring the utopia of individual freedom *and* societal integration, at the same time. The non-representational nature of the structure is undermined by the mimetic figure of the tree, the latent idea, and a resulting monumentality of the actual compound. The symbol of the tree corresponds to the underlying cultural code. The building/ city is thus a generator and not an object. As a natural object it also points beyond itself to processes of growth and change. It reproduces unity via its image.

With the dissolution of autonomous form, the metabolist project represents a challenge to what Hays has called the cognitive project of humanism.⁵⁹³ Simultaneously, the formal fragments are recollected in a coherent representation. Here is an acceptance of rupture and discontinuity, but there is also a positive program that attempts to subsume destructive processes in a larger world-ordering system called nature, which is both creative and destructive. This oscillation between dissolution and reorganization is expressed in the contradiction between an attitude of nihilism in the megalomaniac theoretical project proposals themselves, out of 'human scale,' and the humanist rhetoric of Tange and Fumihiko Maki that accompany them.⁵⁹⁴ Metabolism attempted to integrate the collectivist thought of functionalism and the humanist needs of the post-war era, to integrate the language of sciences, and a mimetic impulse. Despite the emphasis on process and change, their projects take on an emblematic form,

⁵⁹¹ Canguilhem (2000), pp. 20, 316-318.

⁵⁹² See Tange (1960), Noboru Kawazoe, *Metabolism* (1960), and Arata Isozaki, 'The City Demolisher Inc.' in *A New Wave of Japanese Architecture*, The Institute for Architecture and Urban Studies, Catalogue 10, September 25, 1978 to November 14 1978, pp. 48-67.

⁵⁹³ Hays (1992), pp. 152-153.

⁵⁹⁴ See Tange's numerous articles in *The Japan Architect*, during the 1950s and 1960s, Maki (1964).

and despite their rational ideology of science and technology, the projects are propagating and even seductive in their figurative representations.

The structural rhetoric pretends that the spatial and constructional elements conveyed their availability to society at large. Capsules/ cells, the subsystem of the urban concept, point to the reproductive processes of its making, seemingly generating its own representation without authorial mediation. The architectural elements articulate an available reproductive system rather than a self-involved object. The dream: A city/ building that generates itself; the fiction: Continual self-production negates the controlling action of the architect and city planner. The strategy for this becomes the attention to movement and change. For the global concept, this is of course only an illusion. Metabolism is more than an organizing force on the material level; it transcends its object, the city, in its natural metaphors. The process of change itself, the underlying megastructural figure, and the hierarchy of the tree, are completely conceived and integrated into the logic of the market; Maki will address this problem with his proposal for the alternative organizational model of the cluster that abandons structural determination, which he calls Group Form. Despite the rhetoric against landownership, and a critical view on speculation, the reorganization of the city as a total organization is conceptually bound up with capitalist modernization and reification, and their consequences. The rhetoric of mass-production is part of the image-system. In the late metabolist proposals of Kisho Kurokawa, the cell returns as a fetish object.

The organic

There has been relatively little enquiry into 'the organic' as part of the larger system of modernism in architecture and urbanism. This is because of its unclear identity. Historically, urban organic rhetoric emerged in times of change, revision, or when a debate about basic principles of planning practice was at stake, in times that were experienced as crisis. As we have seen, the rhetoric of the organic springs from the desire or need to reconcile conflicting parts into a coherent whole. The urban schemes discussed here, such as Patrick Geddes' vision of an organic city, or the megastructures of the metabolists, are based on contradictions taking in aspects of individual agency and collectivity, or fragmentation and totality. These schemes can be much criticized for their naivety and their impossibility. However, it is precisely through their ambiguity that they add important aspects to a discourse in architecture and urbanism. Attempting to take a holistic perspective on urban processes and city change, they opened up for a range of political issues concerning authority in city planning and the status of the citizens in this procedure. Beside formal questions we find organizational concerns that go beyond static plans in envisioning sustainable futures through the thinking in processes and the proposal of programs.

Beside the threat of totalizing tendencies that reduced and exhausted the figure of the organic to its quality as unifying organization, there have been more interesting imaginations that have rethought the nature/ culture relationship. In admitting that nature and culture are intertwined, they have moved away from an anthropocentric viewpoint by acknowledging parameters other than purely human ones in the construction of nature, or they have explored nature's

‘artificiality,’⁵⁹⁵ as the metabolists did. In this they have laid a foundation for a variety of future organic imaginations.

The organic has not disappeared; aspects of it still emerge now and then, for example, in the animated form architectures of the 1990s. Here it has offered an interesting organizational approach, as well as an alternative formal language, breaking away from the confines of the autonomy of the architectural object and opening up to a complexity of forces and field conditions, as this was prefigured already in the work of the Smithsons and the metabolists. However, different from their predecessors, these schemes were largely uninterested in social, political or ecological issues. In the area of furniture and object design the term ‘organic’ is widely used, reduced to an aesthetic image of soft forms. Politically the organic has come under suspicion, carrying either right-wing connotations of reactionary and totalitarian tendencies, or only the nostalgic association of Ferdinand Tönnies’ *community*. There is however an aspect often announced but still widely unexplored, to which the Smithsons, Geddes and even the metabolists have already referred: namely the organic’s self-organizing capacities in urban planning and architectural design. This aspect was at the foundations of the organic, today largely forgotten, not yet exploited, but certainly worth reviving.

⁵⁹⁵ See Donna Haraway, ‘Otherworldly Conversations; Terran Topics; Local Terms,’ *Science as Culture* 3 (1), (1991), pp. 64-98.

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