

Of Metabolism: future cities for our contemporary world

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There is a new surge of interest in Metabolism both as a movement and as a conceptual field. This manifests itself today in manifold ways in the works by many architects and future architects¹ across the world, but has recently shone at the opening of the 24th World Congress of Architecture in Tokyo in 2011 through the exhibition *Metabolism: the City of the Future*, at the Mori Art Museum, and the launch of the book *Project Japan: Metabolism Talks...* by Koolhaas and Obrist. The authors also presented the book on a round table at the Architectural Association in London, in February 2012. Interestingly enough, this renewed gaze towards a movement that emerged some 50 years ago has reached now a peak of attention, and it is fair to say, not only in Japan. In so being, what then makes Metabolism so appealing today, after more than half a century after the launch of its manifesto? How can we review their tenets in the light of our troubled cities and fragmented preoccupations? How can the optimism and collective willpower of the 60s resonate in today's severed societies and individualistic behaviours?

Metabolism: the City of the Future is probably the first and most comprehensive retrospective of the movement ever put together. With stunning models, original drawings and newly created 3D simulations of old classics such as Tange's Tokyo Bay Plan (1960), the exhibition was at the centre of the UIA2011 reception event and symbolically kick started the debates around future cities and the problems of reconstruction that permeated the Congress. Needless to say, Japan is facing the devastating effects of the tsunami and earthquake that hit the country in 2011, which, in the words of the curators of the exhibition, makes it "a perfect time to learn about the Metabolism movement and

discover some of its many hints for architecture and cities".²

Rem Koolhaas in "Whatever happened to urbanism?"³ points out the paradox of how today, in the most urbanized period of our entire history as a species, urbanism, as a discipline, has completely lost its power to define the future of our cities. The schism between the profession and the city would have been caused by our denial of the fact that the forces of history have distorted and stretched the very same notion of the urban condition to a point of no return. In this light, can the revision of metabolism give us some clues as to how urbanism can regain its importance in facing the immense challenges of intense urbanization, and more and more of reconstruction?

As a movement, Metabolism dates back from 1960 with the launch of their manifesto at the World Design Conference held in Tokyo, although many of its central ideas had been previously gestated by Kenzo Tange. Developed in the 60s and 70s, they pushed forward the Project of Modernity as the way not only to collectively reconstruct the optimistic and thriving Japan after the formal ending of the post-war period, but also as a critical revision of the dwindling and agonizing categorical abstraction of modernism. The persistent belief in progress and technology is coupled with an interest in Japanese traditions and biological processes. In relation to this approach, it is important to highlight that Giedion had alluded in the 40s to the split in human nature in modern times, between knowledge and feeling, reason and emotion, man and nature, science and religion. The historian urged for the need of synthesis as a necessary condition for the achievement of the

¹ See my previous essay in *Risco* 13.

² MORI Art Museum (2011). *Metabolism: The City of the Future – Dreams and Visions of Reconstruction in Postwar and Present-Day Japan*. Catalogue of the exhibition.

³ Koolhaas R. (1995). *Whatever happened to urbanism?* In: Koolhaas, R. S,M,L,XL, New York, Monacelli, p.959-71.

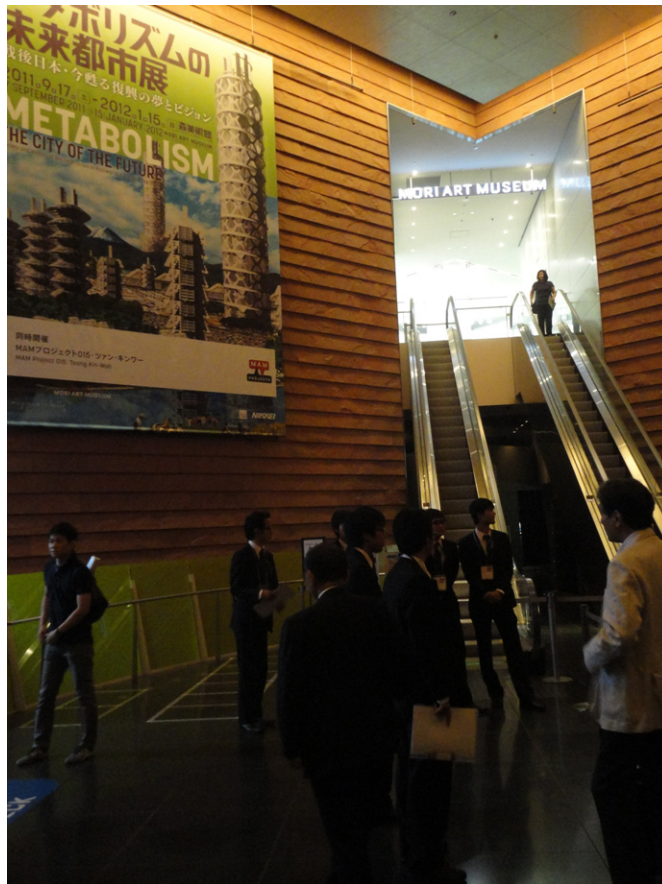


Figure 1: Metabolism: the City of the Future Exhibition at Mori Art Museum, Tokyo. Photo: Fabiano Lemes de Oliveira (Sept 2011).



Figure 2: Rem Koolhaas at the Architectural Association participating on a round table about the book Project Japan: Metabolism Talks... Photo: Fabiano Lemes de Oliveira (07/02/12).

4 Giedion, S. (1942). *Space, Time and Architecture*. London: Oxford University Press, p.762. See also p.12-3, 760-1.

5 See Koolhaas (2011), p.12.

6 Koolhaas (1995).

7 Idem, p.19.

8 Koolhaas (2011), p.20.

9 See Capra, F. (1997). *The Web of Life: a New synthesis of Mind and Matter*. London: Flamingo, p.29.

10 Haeckel, E. quoted in Capra, F. (1997), p.33.

goals of any collective project.⁴ Giedion sees our “split personality” as an aporia of modernity inherited from the 19th century. He highlights that “at the moment when there is a schism, the inner kernel of personality is split by a difference of level between the methods of thinking and those of feeling. The result is the symbol of our period: the maladjusted man.” As a matter of fact, architecture and urban planning would be key instruments in supplanting this scission. In face of that, the Metabolist project sought synthesis of tradition, technology, man and nature. The past is creatively interpreted and the future is assumed as a collective construct of a nation. The present offers the challenge of balancing the need to build and the lack of space in a country where tsunamis and earthquakes threaten any attempt of permanence and stability. It also offers technology, new materials and cultural conditions for innovation and experimentation on land, on sea or indeed in the air.

Metabolism is one of a series of movements and manifestations that emerged following the collapse of the CIAM in the post-war context aiming at resolving the problem of the “maladjusted man”. It shared with the Smithsons, Aldo Van Eyck and Cedric Price the need to reconnect man and the built environment, individual aspirations and collective needs, and as Giedion would suggest, knowledge and feelings. But again, why the specific renewed interest in the Metabolists?

Koolhaas and Obrist’s book highlights the fact that Metabolism was “the last movement that changed architecture”⁵ and the last moment when architecture was a public rather than a private affair. The book is a recollection of interviews of the main names of the movement as an attempt to gather together their memories and give voice to those from within the group. In fact, according to Koolhaas’ paradox mentioned above, Metabolism is the last movement before the suggested banalisation of urbanism in its negation to acknowledge the dissolution of the idea of city on its primordial condition and face the challenges of ever-increasing urbanization processes. In other words, it was the last moment when urbanism made a difference at large, at least as a coherent discourse. In a period of impermanence and uncertainty, Koolhaas puts forward the creation of a “new newness” capable of accommodating processes

and reinventing “psychological space”, in essence: a “New Urbanism”⁶.

This is exactly the title of the Metabolist manifesto: “Metabolism/1960 – the Proposals for a New Urbanism”. The document sets out to reinvent the nature of the urban realm, focusing on ideas for future cities. It contained four essays: “Ocean City”, by Kiyonori Kikutake; “Material and Man”, by Noboru Kawazoe; “Toward Group Form”, by Masato Otaka and Fumihiko Maki and “Space City”, by Kisho Kurokawa.

According to the latter, it was about making the shift from a “mechanical to a biodynamic age”, in which man, technology and nature would be brought together.⁷ Since the Scientific Revolution, the Cartesian method of analytic thinking – in which the whole can be understood by analysing its parts – topped by the Newtonian Laws of Motion and the definition of an immutable, absolute and abstract space brought about a mechanistic view of the universe, which ran as a perfect machine. This scientific paradigm was at the heart of the modern movement functionalist thinking. The analytic method was also used as a tool to design in a way in which the functions of the tantalizing modernist model cities were envisaged as isolated, uncontaminated, pristine entities. Kurokawa draws attention to the shift towards a more holistic and integrative thinking in the 60s. Architecture would be understood as an organic and comprehensive whole, or as Obrist would call – as Ecology.⁸ The direct reference to natural processes is in tune with the development of Ecology as a scientific field and of “systems thinking” in organismic biology (and for that matter in quantum physics) in the first half of the 20th century.⁹ In fact, the very definition of Ecology – by the biologist Ernst Haeckel – as “the science of relations between the organism and the surrounding outer world”¹⁰ can be read in the Metabolist references to mutual relationships and the interconnectedness of things.

Space and time were not conceived as absolute concepts anymore, but instead as relative and interdependent entities. As opposed to the idea of space – abstract and detached from material form and cultural interpretation – the Metabolists preferred the concept of “environment”. An example of that was the 1966 “From Space to Environment”

11 Mori (2011).

12 The Ise Shrine is, for instance, rebuilt every 20 years. The idea of preservation here is not connected to the "original" materials, but to the form, to the essence of the building. See Koolhaas (2011), p.385.

Figure 3: Nakagin Capsule Tower, Tokyo, by Kisho Kurokawa. **Photo:** Fabiano Lemes de Oliveira (Sept 2011).

exhibition and the Osaka Expo 70, which embraced a series of events under the topic "environment".¹¹ This did not mean any reliance on existing, localised environments – as it would be for the revivalism of the idea of "place" in the new empiricist approaches of Jacobs, Lynch and Rowe in the West – but indeed led to proposals for new territories of existence. For a country where over 70% of the area is mountainous and extremely difficult to inhabit, envisaging new man-made plinths for development, wherever they may be, was at the same time a call for the power of technology, of human spirit and a link with tradition and culture – as terraced rice fields have been created throughout Japanese history out of terribly uneven natural settings. The focus is on the interrelation of design, people and territory (existent or man-made) at different scales. With regards to time, as a

living organism, architecture would be affected by its passing and would change and adapt accordingly and, eventually, as also defended by Cedric Price, when ran out of vitality and presentness, "die". As a result, ideas of change and impermanence – also intrinsic elements of traditional Japanese culture¹² – manifested themselves in the proposals of the Metabolists under many different derivative concepts, such as, on the one hand: adaptability, mutation, growth and shrinkage; and on the other: transience, temporality and life span. The ever-changing and multifaceted nature of natural organisms becomes a model, and complexity and dynamism become essential elements of the Metabolist vocabulary.

Initially it was about constructing a new Japan, but soon after the oil crises of the early 70s, the Metabolist had the opportunity to



develop international projects – mainly in northern Africa and in the Middle East. It was then about forging a “new world”. To some extent, it is in the latter location that today we see some of the Metabolist ideas, particularly Kikutake’s fascination for marine architecture, taking place in the form of island development and megastructures. In a world menaced by natural disasters and by floods generated by climate change, floating cities have become an appealing topic of enquiry.¹³

And it is when the Metabolists run out of energy in the *laissez-faire* and globalization of the 80s, that most of our contemporary challenges have been accentuated. Today we live in a world where more than half of the total population inhabit urban areas and we expect that this ratio will increase to 70% by 2050, when the population will have grown to more than 9 billion people. Needless to say that the role that cities will play in the future of mankind is absolutely crucial. Koolhaas suggests that it is only by facing frontally the challenges of the most urbanised parts of the world that urbanism can become significant again and reconnect to our own cultural processes.¹⁴ Furthermore, in order to promote better sustainable and equitable cities, that is a necessity. With that in mind, what lessons then can we learn from the Metabolists?

To resuscitate their ideals as they were in today’s society would be meaningless. The process of critical appropriation and selective revision of the past, on the other hand, can help us to elaborate well-informed visions of the future in the light of our current and forecasted challenges. Indeed, many contemporary discussions are related to the principles adopted by the Metabolists. For instance, “Systems Thinking” has been the springboard for a series of complexity and network theories in the sciences. In urbanism, ideas of intrinsic self-organising patterns have made their way into the works by Jane Jacobs, Christopher Alexander and more recently Niko Salingrados, Stephen Marshall and others.¹⁵ Emergent theories (heavily derived from genetics and the study of biological processes), embodying explanations of how complex natural systems work

and can be used to generate architecture and urban form, claim to set out a new model of “Metabolism”¹⁶, which would go beyond the already traditional notion of sustainability.

In addition, the underlying principle of holism or “wholeness” points us towards the appreciation of the significance of understanding the interrelationships of the processes involved in making cities for our urbanised world. The question of promoting integrated urbanism in tackling our challenges is widely defended in the field, from Rogers and Arup to Krier and the followers of the (American) New Urbanism. There will be no effective direction of action without joint efforts from disciplines as the scale of our contemporary problems cannot be dealt with closed solutions and stagnant interventions. The role of technology in promoting more sustainable and sociable cities, as well as in pushing the boundaries of architecture is undeniable today.

In this regard, we can borrow from the Metabolists not only their acceptance of change, adaptation and uncertainty, but also of the holistic and of the role of technology in the construction of cities. But perhaps, and most importantly, we can borrow their absolute reluctance to be parted from a vision. This is the glue that orchestrates the space-time (or “environment-time”) aspects of the proposals, responding to the human spirit and enlivening our interpretations of the past. Faced with new contemporary problems, it responds to the need to mobilise the forces at hand to envisage holistic processes to happen and, ultimately, present new ways of thinking the city – so desperately needed. Is that the way? Will we be able to re-establish our connection to our own time and reconcile knowledge and feeling? Man and nature? Scientific development and the inner urge for artistic manifestation? The needs for change and the presence of the past? Utopianism and contempt? Bottom up and top down? The time will tell. In the meantime, it is worth having a look at what these now old colleagues from the Far East have to tell us. More than ever we need some optimism and vital energy.

¹³ See for instance Vicent Callebaut’s Lyllypad island, Koolhaas’ Waterfront City in Dubai, or student projects from last year at Barlett. Relating to the imagery of water: “Digital Dreams of a Floating World”, “Floating Library in Istanbul”, “(In-) Water Dwelling and Some other Clues”; to the idea of building in space: “The Wild Blue Wonder”, etc.

¹⁴ Koolhaas (1995).

¹⁵ See Jacobs, J. (1965). *The death and life of great American cities*. Harmondsworth: Penguin, Alexander, C. (1965). *The city is not a tree*. *Architectural Forum*, 22(1-2), p.58-62; Alexander, C. (1977). *A pattern Language: Towns, Buildings, Constructions*. New York: Oxford University Press; Salingaros, N. A. (1998). *Theory of the Urban Web*. *Journal of Urban Design*, 3, p.53-71; Salingaros, N. A. (2003). *Connecting the Fractal City*. Paper presented at the 5th Biennial of Towns and Town Planners in Europe; Marshall, S. (2009). *Cities, Design & Evolution*. London: Routledge.

¹⁶ Weinstock, M. (2008). *The Architecture of Emergence: The Evolution of Form in Nature and Civilisation*. Winchester: John Wiley & Sons; Hensel, M. (ed). (2004). *Emergence: Morphogenetic Design Strategies*. Winchester: John Wiley & Sons.