Comparison of In-between Concepts by Aldo Van Eyck and Kisho Kurokawa -Through Theories of 'Twin Phenomena' and 'Symbiosis'-

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Abstract

One of the solutions which emerged in response to the limitations of modernism was the issue of 'in-between'. Concepts relating to the in-between have been suggested and argued simultaneously in the West and the Far East. This paper aims to compare the in-between concepts discussed by two representative theorists of each region: Van Eyck and Kurokawa. Dimensions of the in-between, factors for practicing the in-between, and types of the relationship between two elements which are the subject of integration, are clarified, and comparison of their works is done using the above criteria.

Keywords: in-between; Aldo Van Eyck; Kisho Kurokawa; twin phenomena; symbiosis

1. Introduction

1.1 Background

Despite the positive effects of Modernism in the development of architecture, its limitations, such as a lack of spatial and functional integration, are inevitable. In response to such problems, at the end of the modernism period, various movements established and various ideas were suggested. Among such ideas were concepts about the importance of in-between space. Among them, concepts belonging to Van Eyck of Team 10 in the West, and Kurokawa of Metabolism Group in the Far East are quite significant and influential.

This study aims to compare the in-between concepts, which simultaneously were discussed in the West and the Far East, by these two representative theorists of each region.

First, through a review of Modernism, its limitations and reasons for appearance of in-between concepts is clarified. Through this review, four **'dimensions'** for in-between are distinguished: space, time, environment and human. These dimensions show the multi-dimensionality of the in-between concept.

Next, the two architects' theories about in-between are reviewed. Through this review, the conditions of in-between according to the types of relationship between two elements which are the subject of integration, is distinguished and named the **'set of two elements'**. According to these 'sets of two elements', the practices of the architects are reviewed, and in each set, the ideas which they used for the application of the in-between are clarified as **'factors'**. The two architects' practices are compared using these 'factors' (Table 1– horizontal direction). Content of the four 'dimensions' of in-between is also discussed using these 'factors' (Table 1 – vertical direction).

1.2 Existing Literature

Due to the importance of in-between in spatial formation, there have been various definitions and concepts related to this term. Martin Buber from whom Van Eyck borrowed the philosophical terms of the in-between, states that 'The fundamental condition of being human is man with his fellow man. It is rooted in the fact that a being considers another as an other, so as to be able to communicate with him in a sphere which is common to both and which transcends the individual spheres of both… I call the sphere of the in-between. It is a primary category of human reality. It will be the starting point for the real third.' [e] Louis Kahn discusses about outside and inside relationships, stating that '…the closed door in-between rooms… showing the possibility of communication.' [f] Herman Hertsberger argues about the transition of space, using the term "threshold". He says that 'The threshold provides the key to the transition and connection between areas with divergent territorial claims and, as a place in its own right, it constitutes, essentially, the special condition for the meeting and dialogue between

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areas of different orders.' [g] Yoshinobu Ashihara uses two terms of "positive space (P-space)" and "negative space (N-space)", or in other words, figure and ground. He argues about the transformation of them and configuration of "PN-space", indicating actual examples such as Japanese gardens. He states that 'Japanese gardens at first glance look very natural; on closer examination, however, they reveal themselves to be very elaborate, man-made miniatures of nature and to be different from N-space, which is true nature. It may be said that Japanese gardens are PN-space, which has resulted from architecture, or P-space, permeating gardens.' [h] Arata Isozaki uses the term "gap" between two things, and describes an old Buddhist term. He states that 'It seems to me that *ma* ought best be thought of as gap, or (as with the original Sanskrit meaning) an original difference immanent in things.' [i] Yoichiro Hosaka describes the "gap" or distance between two things as follows: 'In many cases we could see two worlds that are distant enough not to influence each other directly, but still related…gap is a vital part to make it possible for each area to keep its identity. In a physical level, gap has an amorphous structure.' [j]

There are remarkable references concerning the theories and practices of Van Eyck and Kurokawa. Francis Strauven in his book '*Aldo van Eyck, the Shape of Relativity'* aims to clarify the meaning of Van Eyck's ideas and works, showing that they are part of a consistent theory which is not restricted to architecture, but embraces an entire cultural philosophy. In his book, he has directly benefited from the cooperation of Van Eyck himself. [b] Also, Vincent Ligtelijn in his book '*Aldo Van Eyck: Works*' has documented a large number of Van Eyck's projects from the architect's own archive and original texts. [a]

The most significant books about Kisho Kurokawa are written by the architect himself. Some are written in cooperation with other architects. Dennis Sharp in '*Kisho Kurokawa from the age of the machine to the age of life*', gives an introduction about the transmission from machine age to life age according to Kurokawa's point of view, through reviewing his books and practices. Charles Jenks states that as a post-modern architect, Kurokawa has always kept several counter-themes going at the same time. He reviews Kurokawa's early concepts about Metabolism, ambiguity and fractal design, introducing him as an architect who continuously kept developing and moving beyond himself. [3]

2. Limitations of Modernism and Reconsiderations

Modern architecture was established by freeing itself from history and the styles of past. Its leaders such as Gropius and Le Corbusier regarded this severance from the past in order to free themselves from formalistic architecture and traditional craftsmanship and instead imply modern industry. Modern architecture has been regarded as entirely restricted to the present. It in turn rejected history and tradition, particularly as symbolized by 'non-functional' decoration; at the same time, it refused to predict any future. [1]

Although function in Modernism achieved several goals, it also resulted in over-articulated and concretized spaces. In that process, the nebulous and undifferentiated spaces that naturally exist between demarcated areas were ignored. [4]

The limitations of Modernism raised reconsiderations. Various changes happened. For example, the rapid economic growth which resulted in a excessive belief in the mechanical response and created the problems of lost identity and isolated settlements, brought some changes, such as mega-structures through networking, and free-developing structures based on infrastructure.

Also, various movements emerged, seeking solutions. Among them Team 10 in Europe and Metabolism in Japan were established. Van Eyck (1918-1999) and Kurokawa (1934-2007) were the key members of these groups, who also individually developed theories about the idea of coexistence in general, and the in-between in particular.

Such changes and movements all aimed at the reconsideration of Modernism, and the neglected aspects of design in Modernist way of thinking.

The separation of **space** according to the function in both urban and architectural levels was changed into the idea of integration of space.

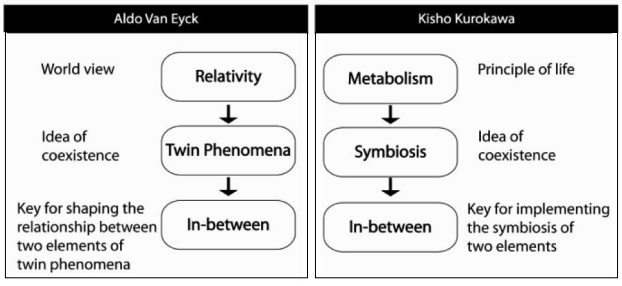
The restriction of modernist design to the present, raised the consideration of a **time** process from past to present to future in order to increase the flexibility of space.

Homogeneity of modern architecture in terms of space and time, which had resulted in the separation of **human** activities, changed into a more realistic consideration of multiplicity of human activities according to the time and space.

An unfriendly living **environment** created by modern industry, raised the importance of harmony between construction and environment, especially through awareness of local characteristics, values and traditions.

As a result, the ideas of space, time, human considerations, and environment have been the focusing dimensions in the reconsideration of Modernism, and the idea of the in-between.

Diagram 1. General Flow of the Theories



3. Concept of In-between as a Theory (Diagram 1)

3.1 Aldo Van Eyck's concept of in-between

▪Inspirations

Van Eyck became increasingly convinced of the significance of the interval which is able to transform vertical formations with a central and closed middle section, into open, horizontal systems with an expanding and linear character. He recognized this quality 1) through the work of artists in and connected with avant-garde, in particular De Stijl, and 2) through artifacts from archaic, so-called 'primitive cultures', tempted him into going on distant travels e.g., to the villages of Dogon in West Africa and Pueblos in North America. Van Eyck saw tradition as retaining its values as an expression of the human identity, which while manifesting itself in different forms in various ages and cultures, has essentially remained constant. In this light, he wanted to understand architectural heritage to enable himself to reconstruct it. He introduced new notions into architectural thinking, notions such as identity, reciprocity, twin phenomena, in-between realm, configuration, counterform, place and occasion, which opened a new structural insight into the potential quality of the built environment. [a]

▪Relativity, Twin Phenomena and In-between

Van Eyck was convinced that contemporary culture has to be developed in accordance with the new world view that was disclosed by avant-garde art and science at the beginning of the century; a world view which he held to be grounded on the concept of **relativity**. It implies that reality cannot be considered as having an inherent hierarchical structure, to an intrinsic center. [a]

Understanding of relativity as a complex coherence of space, time, matter and energy, a unity that necessarily manifests itself as diversity; the insight that the coherence of things does not reside in their subordination to a central, dominant principle but in their reciprocal relations. Relations that are just as important as the things themselves; the relativity of all frames of reference, the awareness that they are at the same time autonomous and mutually related.

"Right-size will flower as soon as the mild wheels of reciprocity start working- in the climate of relativity in the landscape of all twin phenomena."– Aldo van Eyck (1962) [b]

In **twin phenomena**, the opposites remain recognizable as opposites. But this does not imply that they must be taken to an extreme. It is a concept based on the insight that such opposites are not conflictive or mutually exclusive entities as is generally assumed in Western thinking, but that they are two different halves of the same entity. [c]

Van Eyck describes that polarities can occur at two different levels: that of structure, and that of form. At a structural level, the most obvious way to unite two opposing into twin phenomena is to establish an **in-between**. This is generally achieved by making the two poles overlap to some extent. The result should be a place where the two poles are simultaneously present, as if they were complementary colors. [d] It is the point at which two different worlds interpenetrate. It is a place filled with 'multiple meaning in equipoise'.

Francis Strauven has mentioned three kinds of method for fusing the form as follows: 1) a link between two different interior spaces, 2) a twin phenomena at a structural level by complete mutual interpenetration, the total fusion of two different patterns to form a new and complex structure, and 3) relating part and whole, particularly two areas at different configurative levels, by giving part and whole analogous structures, they can be made in principle equivalent despite their differences. The small implies the same values and meanings as the large, and the large becomes comprehensible through the small. [b]

Van Eyck shows that it is not a matter of choosing between two elements, but of employing both in conjunction in such a way that the right reciprocal effect is obtained. [a]

An architecture that aims to be humane, must consequently devote special attention to the in-between; specifically to the architectural forms and transitional places through which people meet, and invite them to stay. He believed that architecture should give shape to space in the image of mind. It can be so by specifying space into places; places whose shape is in each case determined by a specific set of dual (twin) phenomena. He states that space in the image of man is place, and time is occasion. [c]

3.2 Kisho Kurokawa's Concept of In-between

▪Inspirations

1) Communication with experts in different fields: Kurokawa expanded his contact with the world outside architecture. His most important achievement in the 1960s-and 70s was the creation of human channels between professionals in the more intangible fields, from politicians, writers, and philosophers to architects. He believed that new ideas and creative activity occur when people from different backgrounds come together.[1]

2) Buddhism and Japanese Vernacular Architecture: Kurokawa states that **Metabolism** is an eastern, and primarily Buddhist concept. At its base is the philosophy of **symbiosis**.[1] He tried to establish a connection between Metabolism and Buddhist concepts such as reincarnation, transmigration, and impermanence.[1] He tried to create the philosophy coming from Buddhism, but completed apart from it to be realized as a worldwide thinking. Also, he studied spiritual elements of Japanese culture to introduce them into contemporary architecture. This was the start of the philosophy of Symbiosis.[5] He precisely mentions Buddhist notions such as *ma* –literally meaning gap or intermediate– and *ku* –literally meaning emptiness – as precious notions for architectural creations. He also mentions some traditional Japanese elements e.g., *engawa* as a sort of veranda running around the house,

mediating between inside and outside. It protects the interior from climatic changes, and is a place to welcome guests and offer an entrance from the garden to the house. Also, he introduces the streets in front of *machiya* townhouses as traditional and intermediary zones, in which private space meets public space. [4]

▪Metabolism, Symbiosis and In-between

Kurokawa states that Western philosophy on which Modernism was based, is a philosophy of dualism in which issues such as religion and technology or art and science are opposed. **Metabolism**, in contrast, seeks for a coexistence of such issues. Metabolism is a life principle. And, **symbiosis** is an idea of the life principle.[5] The term metabolism was borrowed from the field of biology, where it refers to the processes and changes that a creature undergoes as it lives. It is based on two principles: 1) Symbiosis of different time periods, or a diachronic system: the term metabolism was chosen for the movement to express the conviction that a work of architecture should not be frozen and unchanging once it is completed, but should be apprehended instead as a thing –or as a process– that evolves from past to present and from present to future.[1] 2) Synchronicity of space: each culture has its own distinct character that can at the same time be linked to every other culture in the world. So, the syncretism Kurokawa speaks about is based on the principle of equal distance between each culture of the world. It is the main philosophic base for the move from internationalism to interculturalism.[1]

He pointed out and discussed types of symbiosis; symbiosis of part and whole, symbiosis of interior and exterior, symbiosis of history and present, and symbiosis of man and technology.

Kurokawa points out that whether in architecture and town planning, or in daily life, the concepts of intermediary space and ambiguity are vital keys to implementing the philosophy of symbiosis. In the West, one seeks to transcend dualism through the dialectical method of resolving opposites on a higher level. The two opposites are either unified, or one of the two is negated, and rejected. According to the idea of symbiosis, **in-between**, creates a dynamic relationship between contradictory elements while allowing them to remain opposed. Such relationship can be achieved by interpolating a spatial distance (neutral zone) or a temporal space (cooling-off period) between them. [4]

3.3 Reinterpretation of In-between According to the Theories

According to the theories, three types of relationship between two subjects of integration –A and B– are recognized and named as a 'set of two elements (A /B)'.

1. Contradictory A and B

In-between condition mostly appears between two opposites. According to the two architects' ideas, most frequent conditions of contradictory relationship in design could be contradictory spaces such as natural and man-made, interior and exterior, or notions such as old and new, and public and private.

2. Hierarchical A and B

When two elements in different configurative levels meet each other they could create an in-between. As remarked by Aldo Van Eyck in such a condition, A and B could be part and whole, which both imply the same value.

3. Similar A and B

In some cases two elements are not opposites but coexist in a complementary way. As mentioned in

Table 1. Comparison of In-between Concepts - Dimensions of In-between (AB), Set of A/B, Factors of In-between-

A B AB		Aldo Van Eyck				Kisho Kurokawa			
Dimensions of AB / Set of A & B		Space	Environment	Time	Human (Activity-Function)	Space	Environment	Time	Human (Activity-Function)
Contradictory	Natural/ Man-made		.Continuity of nature into buidling .Combination of materials			.Fragmentation of man-made volumes .Nature walks	.Greenery .Light, shadow, wind	.Combination of material	
	Old / New	.Overlap of new and old spcae .Horizontal - vertical gap	.Transparency	.Traditional essence		.Fragmentation of traditional elements (form, ornament, symbol) .Overlap of new and old spcae	.Traditional colors	.Traditional aesthetics, Spiritual atmosphere	
	Interior / Exterior	.Horizontal - vertical gap .Urban interior .Interior-exterior continuity .Interiorisation of exterior .Continuous structural frame	.Active color .Repetition of color	.Delayed entrance	.Users type & spatial balance	.Semi-open space .Linear -Planar gap .Interiorisation of exterior .Skin	.Transparency .Sheltering .Water	.Mobile element	.Multi-purpose space
	Public / Private	.Threshold - Doorstep			.Polyvalency	.Transitional zone			.Semi-publicness
Hierarchical	Part / Whole	.House-city relation .City-like intricacy .Sequence of units .Asymmetry & number of units .Multi-centrality .Fusion of different patterns .Contour characteristic				.3D Extension and rearrangement of homogeneous units			.Change of usage
Similar	Interior / Interior	.Articulation of different types of space			.Multi-purpose space	.Linear gap .Invisible connection			

the theory of Aldo Van Eyck, such a condition could appear when two different interior spaces are linked.

4. Comparison of In-between Practices

4.1 Analysis of Practices

The two architects have practiced the in-between concept, using different ideas. Their ideas of in-between are clarified as '**factors**'. Practices are compared, using the involved 'factors' in each 'set of A and B' (Table 1–horizontal direction, Fig.1):

4.1.1 Contradictory A and B

The in-between mostly could exist between two contradictory elements.

A Natural/ Man-made relationship is introduced in Van Eyck's Visser House through '**continuity of nature into building**' by repeating wooden columns, to have harmony with the surrounding forest. [a] Kurokawa expresses it, for instance, by '**combination of materials**' in the Hiroshima Art Museum; using traditional materials of stone and tile, combined with aluminum for a futuristic atmosphere.[3]

An Old/New relationship is introduced by Van Eyck through '**traditional essence**' in the Amsterdam Orphanage, using circular and rectangular shapes in the plan as the essence of his design language.[a] In the Hubertus House, '**overlap of new and old**' is put into practice through a new part accessible by the old entryway.[a] Kurokawa expressed the '**fragmentation of traditional elements**' in Wakayama Museum using traditional eaves in an abstracted way. [3] On the other hand, he insists on spiritual inspiration and '**traditional aesthetics**' in design. For instance, in the National Art Center, he used a fractal shape for the glass facade, inspired by natural curves in traditional Japanese garden.

The Interior/Exterior relationship is the most significant type in their works. Van Eyck created a '**vertical gap**' in the Hubertus House by employing a multi-story doorway between the outside and inside.[a] In the Schmela Gallery, aiming at the '**interiorization of exterior**', he designed a roofless vertical void, in which the exterior becomes an intimate inner space.[a] He emphasized the '**repetition of color**' in the Court of Audit in which the blue color moves independently from inside to outside.[a] In Visser House the '**continuous structural frame**' of wood underpins the equality of exterior and interior.[a] On the other hand, Kurokawa created a '**planar gap**' in the Nagoya Art Museum, designing a sunken garden and a connected atrium-lobby.[3] He introduced a '**semi-open space**' in Fukuoka Bank by employing an engawa-like space, interpenetrating interior and exterior.[4] In the Nara City Museum of Photography, glass walls emphasize the feeling of '**transparency**' and lightness as if the building is floating.[3] He goes further by designing the roof of Oita Stadium as a '**mobile element**', changing space to a closed or open one.[3]

The Public/Private relationship is introduced by Van Eyck through a '**Threshold**' in his Amsterdam Orphanage, where the threshold provides the key for transition between public and private realm. Here it is a forecourt that reaches to the heart of the building, a large doorstep that articulates into an urban square, as continuity of a public realm. [b] On the other hand, Kurokawa shows this relationship using the idea of '**Semi-publicness**' in Daido Seimei where he designed a pedestrian walkway passing through the building for convenience of pedestrians in downtown.[4]

4.1.2 Hierarchical A and B

A Hierarchical relationship between A and B in their works, is basically a Part / Whole relationship. This type is widely practiced by Van Eyck. For instance, in the Amsterdam Orphanage, the focus is on '**asymmetry and number of units**' in which asymmetrical composition makes it possible for units to have a dynamic development. A number of corridors were designed, giving independence to each unit. So, part and whole are repeatedly mutually linked. In his Wheels of Heaven Church, he introduces a different method through '**multi-centrality**'. Four circles with two points of focus form a multi-centered ambivalent place. By using different seat arrangements, a person can experience the same space from different perspectives; being in one part but recognizing the whole. [a] In Sonsbeek Pavilion, he introduces a '**fusion of different patterns**' by designing a series of parallel walls with straight, round, convex or concave shapes, mixed with each other to form the walls.[b]

Kurokawa, on the other hand, showed the Part/ Whole relationship through a metabolic concept. In Nakagin Capsule Tower, a '**change of usage**' is expressed. The building is without a center, being able to extend in defined units to infinity, and is able to be used in different ways.[1] In Kuala Lumpur International Airport(KLIA), '**3D extension and rearrangement of homogeneous units**' gives flexibility for future changes.[3]

4.1.3 Similar A and B

A Similar type of relationship between A and B, in the works of these two architects, is basically concentrated in an Indoor/Indoor relationship. Van Eyck puts it into practice, for instance, through '**articulation of different types of space**'. In his Catholic Church of Hague, different heights are articulated in the interior through combining low crypt-like space with a tall gothic-like one, having something of both. [a]

Kurokawa, on the other hand, has used a '**linear gap**' in Daido Seimei of Tokyo, in which the interior is divided into two parts on both sides of a street-like linear space.[4]

4.2 Analysis of 'Dimensions' of In-between by Using 'Factors'

Content of the four 'dimensions' of the in-between is discussed here using the above-mentioned 'factors' (Table1–vertical direction).

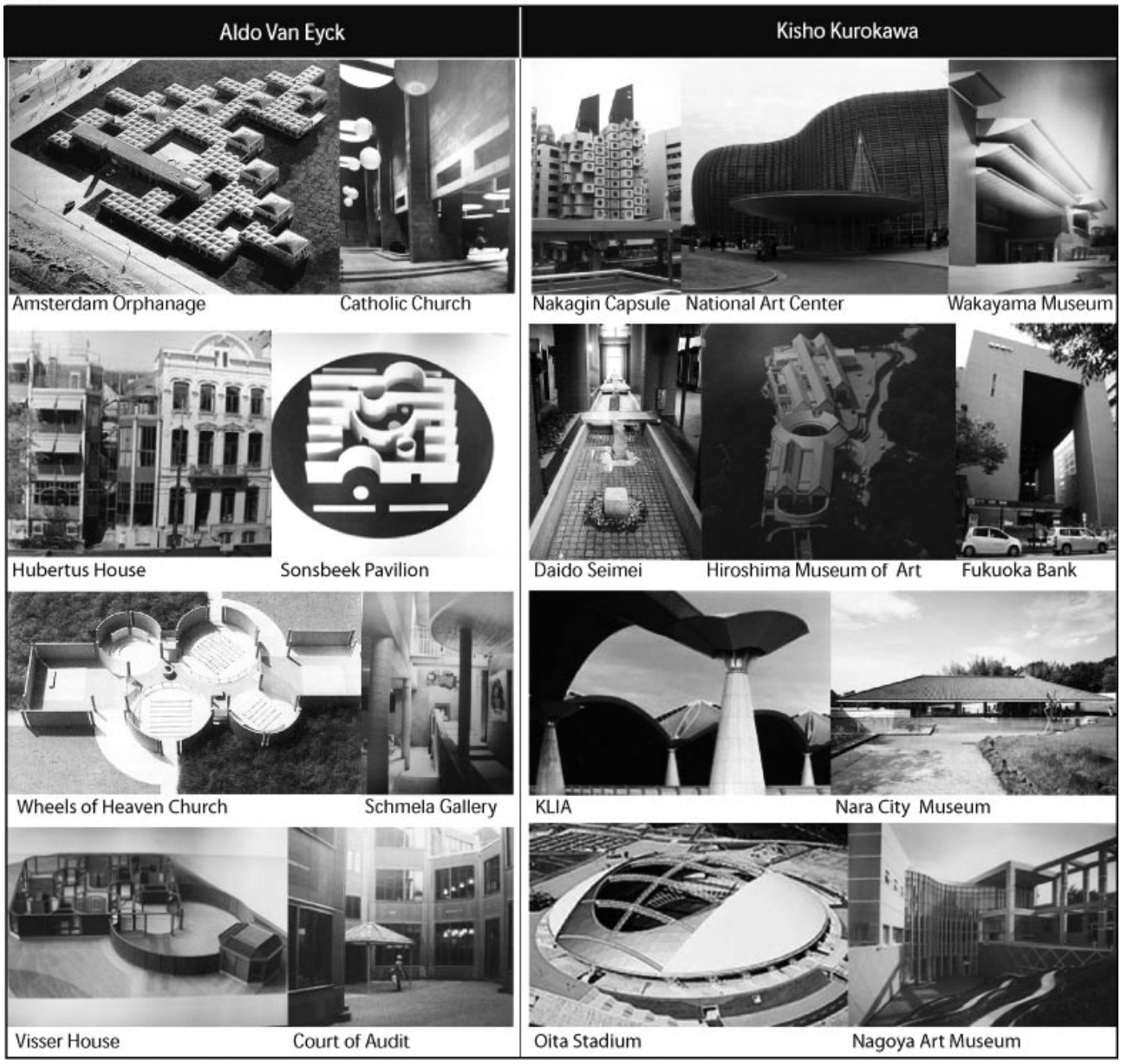


Fig.1. Photos of Practices

▪Space

In architectural design, space is the most significant dimension of the in-between. Many of the in-between practices express the spatial aspect of this concept. So, ambivalence of the in-between could be expressed through the overlap of two elements, the continuity of one into another, the articulation of elements to create a gap as a third space, the repetition of units and the formation of a whole, fragmentation of element for a more integrated relation, or fusion of different patterns or spaces.

▪Environment

Environmental in-between could be defined by bringing delicacy to design, in order to create ambiguity; using transparency, color, or materials such as water, light, shadow, wind and greenery.

▪Time

Time is an invisible dimension of the in-between. It could be described directly using physical traditional elements, or indirectly by expressing the traditional notion and spirituality of traditional places in a contemporary work. Also, it could appear through mobility and temporality of elements, making the building flexible for spatial and functional changes according to the time.

▪Human

This dimension expresses the overlap of different human activities, multi-usage and multi-functionality of a single space in order to produce a non-physical ambivalence concentrated on the human usage of space.

5. Conclusion

1) Limitations of Modernism resulted in various changes and new movements, perceiving the neglected aspects of design in the Modernist way of thinking. The in-between idea was a result of the reconsideration of Modernism. Such reconsideration was mainly focused on four dimensions of space, time, human and environment.

Among contemporary architects who discussed the limitations of Modernism and its solutions, Aldo Van Eyck and Kisho Kurokawa have clear theories about the in-between. They have put in to practice the coexistence of various issues through their architectural design, which were considered conflicting elements in the dualistic viewpoint of Modernism.

2) As argued in the theory level, both architects had relationship with experts from other fields of study. Additionally, both principles of 'metabolism' and 'relativity' are originally scientific terms adapted to architecture. Also, both architects were inspired by vernacular architecture, aiming at the reorientation of it to contemporary architecture through the concept of the in-between. They described the same issue of 'coexistence' –on which the in-between is based– using the terms of 'twin phenomena' and 'symbiosis'. However, Kurokawa preferred to divide such coexisting conditions precisely to specific types of symbiosis. And, Van Eyck through a poetic approach, discussed different sets of twin phenomena in parallel.

3) Through analysis of the theories, it was shown that an in-between condition could appear in various shapes between two elements of A and B.

Contradictory A and B appears between two opposites (natural and man-made, old and new, interior and exterior, public and private).

Hierarchical A and B appears between two elements in different configurative levels (part and whole).

Similar A and B appears between two elements which coexist in a complementary way (two interior spaces).

4) In their works, many 'factors' expressing the in-between are introduced. These factors were used for comparison of their designs within the framework of the above three types of relationship between two elements of A and B. Also, these factors helped in the analysis of four dimensions in the concept of the in-between.

Space is the most significant dimension of the in-between. Ambivalence of the in-between was expressed through ideas such as the overlap of two elements, continuity of one into another, or articulation of elements to create a gap as a third space.

Environmental factors were shown by bringing delicacy to design, using transparency, color, water, light, or greenery.

Time is an invisible dimension of the in-between. It is described as an in-between condition directly using physical traditional elements, or indirectly by expressing the traditional notion and spirituality of traditional places in a contemporary work, mobility and temporality of elements.

The human dimension was expressed through multi-usage and multi-functionality of a single space.

5) Interrelations between the above issues, as shown in Table 1, could prove that the more dimensions and factors related to the in-between get involved in a single design, the more complicated and multi-layered meaning of the in-between will be. And, such interrelations could bring new possibilities for designing the in-between.

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