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PREFACE

What Can We Gain Through Cultural Exchange?

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1. Globalization/culture

The world today is undergoing rapid globalization. People, supplies and financial capital move freely around the world in spite of geographical distances, borders, cultural and religious differences. Japanese factories are relocated abroad to take advantage of a cheaper labor force and lower tariffs. Even agricultural production is going abroad. As Japanese activities are concentrated in Tokyo, depopulation in rural areas is becoming an increasingly serious problem. What can we expect will remain in this country in the future? Culture is one of the keys to recreating a country eroding from globalization.

Having mixed with many other different cultures, Japanese culture has not remained pure. Japan has always been eager to digest and assimilate foreign cultures. Since the middle of the 19th century the Japanese have admired and emulated the lifestyle and culture of the United States and Western Europe. For business to prosper, companies changed their written names from Kanji to English. Many young couples held their weddings in churches although they were not Christians. They took to using desks and chairs and sleeping on beds rather than on futons and tatami mats. Most people no longer wear traditional Japanese clothes but have adopted western clothing, which is both functional and convenient. And so, western culture is assimilated into Japanese culture. Frank Boas's theory of cultural relativism states that there is neither relative superiority nor inferiority among cultures. Yet in the past, the Japanese have at times despised certain cultures.

Today high-rise buildings similar in appearance are constructed at the center of big cities around the world. As a result of westernization, it is hard to find old traditional buildings in Tokyo, as they were demolished and replaced by new and indistinguishable high-rises. This trend of development has homogenized the cities of the world. Modernization of the urban fabric is more pronounced in East Asian countries than in southern nations such as India, quite possibly due to differing religions.

2. Global environmental ethics

Mass consumption enables mass production, which, in turn, increases job opportunities and enriches the standard of living. This is a global pattern. Rapidly developing advanced countries, including China, India and many others, strive for a rich life, achievable through mass consumption and mass production. However, as professor Tukio has commented, this trend may exhaust the entire world's supply of oil and metals in 90 years. At this rate we would need 2.5 Earths to satisfy the demand. For the sake of our descendants as well as the health and survival of our planet, we must control our daily consumption. Global environmental ethics are required to control our lives. One example is the symbiosis between man and nature.

3. Firmitas/utilitas/venustas

The 1st century B.C. Roman architect Marcus Vitruvius Pollio explained that architecture must possess three qualities: 'firmitas', 'utilitas' and 'venustas'. Today these three qualities can be interpreted as 'strength' to withstand the forces of nature (earthquake, snow, wind etc.) as well as to provide safety from hazards such as fire and to protect human life; the role of 'utility' is to satisfy human requirements; 'beauty' is for the aesthetic appreciation of architecture.

In his theories Vitruvius assimilated Greek architectural thinking, wherein 'venustas' consisted of 'ordinatio(taxis)', 'symmetria', 'dispositio(diathesis)', 'eurythmia', 'decor' and 'distributio (oikonomia)', which mean 'quantitative order', 'commensurable measure system', 'qualitative order', 'aesthetic posture', 'appropriateness' and 'management and economy' respectively. In the Gothic period 'beauty' and 'utility' were sacred. In the Renaissance 'strength' and 'utility' were secondary to 'beauty'. The design of storage and other facilities with only 'firmitas' and 'utilitas' was not the work of architects.

At the end of the 19th century the appearance of various new structural materials, advances in structural engineering based on the progress of analytical mechanics and the complexity of architectural function made it difficult for architects to design according to the conventional concept of beauty based on style. Prior to this, Immanuel Kant had already established the autonomy of 'beauty' as a quality separate from appropriate qualities of 'strength' and 'utility'.

But in the field of fine arts, defining beauty has not been so simple. From the start of the 20th century technology has grown bigger and bigger. Technology was perceived to create beauty. This beauty was referred to as technological beauty. The appropriate qualities of technology are 'strength' and 'utility'. New ideas emerged to explain the relationship between these appropriate qualities and 'beauty'. One such concept was functionalism – the insistence that form follows function. Yet it was art rather than technology that created technological beauty. With the application of conceptual and abstract technology, art materialized itself in concrete technology.

The characteristics of technology are essentially impersonal, abstract, quantifiable and appropriate for serving external purposes. 'Strength' and 'utility' need 'technology'. On the other hand, the characteristics of art are personal and individual. Art exists to satisfy its own goal. The indispensable and necessary reason for art is its aesthetic value. The significance of 'beauty' is in its being. It is enough for 'beauty' to be perceived intuitively.

But Vitruvius did not comment on the relationship between the three qualities. I propose that the three qualities can be compared to three bricks being stacked: the lowest brick being 'firmitas', next up is 'utilitas' and the third is 'venustas'. 'Utilitas' does not exist without 'firmitas' - a house may be utilitarian, yet it should not be inhabited unless it is solid and safe from earthquakes. Without the third brick, 'venustas', a building is just a facility and not architecture. By laying the third brick, the facility is transformed into architecture. Therefore, architecture becomes art by incorporating 'venustas'.

Architectural design can originate from one of three qualities: 'strength', 'utility' or 'beauty'. But we cannot design from more than two qualities at the same time. The initial design from the first quality will give expression to form in the first stage. The second design from the second quality will modify the form of the first stage. We cannot consider one quality as a dependent variable of another quality, as functionalism dictates that form (beauty) follows function.

4. Truth/goodness/beauty

Three universal and plausible values are 'truth', 'goodness' and 'beauty'. Immanuel Kant explained 'truth' of understanding in *Critique of Pure Reason*, 'goodness' of reason, to judge the ability of our acts based on the sense of duty, in *Critique of Practical Reason*, and 'beauty' of aesthetic appreciation in *Critique of Judgment*. These could be supplemented with 'sacredness'.

On the other hand, 'firmitas' (strength and safety) signifies mechanical stability and safety from

disaster, and ‘utilitas’ (function and ease of use) assures the best use. So both ‘firmitas’ and ‘utilitas’ are problems solvable by science and technology and thus belong to the search for ‘truth’. By adding the concept of ‘goodness’ to ‘strength’, ‘utility’ and ‘beauty’, we can more clearly understand the problems of architecture. ‘Sacredness’ is also inherent to religious architecture and culture.

5. Science/art/history

In the field of science we try to find common rules for various phenomena. Established rules enable us to predict future phenomena. New rules may incorporate existing rules, while those that are obsolete are abandoned.

In the field of art, however, the more original the work, the more people will appreciate it. There are a number of reasons why originality is valued: for instance, foreigners are interested in a Japanese individual who is well versed in his/her culture. Visitors to Japan enjoy traveling to cities with distinctive physiognomies. When the aesthetics of a city are appreciated globally by many people over time, the city takes on a universal existence, which leads to a historical existence. A historical city with a rich cultural heritage integrates the work of many talented architects of diverse periods, as though they had been working in collaboration. For instance, the canals of Venice are lined with exquisite examples of old and beautiful architecture. When architecture possesses the quality of ‘beauty’, it becomes art and may then be assured a place in history. Buildings, such as some modern high-rises, designed with only the qualities of ‘firmitas’ and ‘utilitas’ belonging to the cognitive quality of ‘truth’, will not be assured a historical existence.

6. Basic needs/derived needs/integrated activities

People have basic biological needs, as do animals, such as eating and sleeping. However, as people are different from animals, to satisfy basic needs, derived needs are generated. To satisfy derived needs, people built artificial environments, established economic and political organizations, set up legal and educational systems. B. Malinowsky refers to these as cultural responses. He furthermore explains that even such highly derived activities, such as research, art, religion and ethics, are also related to basic needs. But in the argument that I am presenting in this paper, I consider these as integrated activities, each with its own goal and unrelated to basic needs.

7. Urbanization/understanding different cultures

The following statements are based on anatomist T. Youro’s work. City is the realization of consciousness. Worldwide urbanization is rapid globalization. Urbanization is called civilization to distinguish it from culture. Urbanization, i.e., civilization, causes friction with the indigenous culture. Civilization is a conscious and objective phenomenon. Verbal language is a form of conscious expression that is managed in the left brain, but is spoken unconsciously in daily life. Yet meaning, when presented verbally, externally, and with full consciousness, can be transplanted to another civilization.

On the other hand, non-verbal language, such as painting and music, originates in the right brain both consciously and unconsciously**.** Culture is complex and multi-faceted, encompassing the conscious and the unconscious. The unconscious content disappears during the transplant between different cultures. ‘Japanese culture and Western learning’ illustrates one example of cultural transplant from the West to Japan in the 19th century.

There is no limit to the discussion of culture, which is both verbal and non-verbal. Before understanding a different culture, one must undertake the very difficult task of being conscious of one’s own culture. Understanding another culture is much more difficult. R. Benedict’s *The*

Chrysanthemum and the Sword is an exception, which is famous for its understanding of Japanese culture despite the fact that the author wrote it without first visiting Japan. Different cultures are best understood not only through language but also by living in the culture.

8. Design collaboration

While urban centers of the world rapidly tend to be homogenous, what would the result be if each culture could retain its own style of urban design? As an example, let us look at the unique design of a new urban area.

The plan for one of the new residential areas of Borneo-Sporenburg in Amsterdam consists of a row of houses and two linear buildings extending to the sea. A row of houses lines both the canal and the interior street. There are two other linear buildings, one of which lines two waterfront streets and the other sits along one of the waterfront streets and an interior street. The two buildings are subdivided into individual houses having the same form.

A row is not simply subdivided into houses, but each house has its individual character within the row. Each house seems to be designed elegantly and independently by a different architect with apparent harmonious coordination between the architects. The facades are roughly uniform in line, height and width. Fifty percent of spatial capacity is left void in each house. The overall appearance of a row in which each house was independently designed is more vivid than the rows where all the dwellings are the work of one and the same architect. Each house has its unique physiognomy and collectively they are complementary. The townscape consists primarily of rows of town houses, each with its intrinsic properties.

This coordinated design approach to group housing independently designed by multiple architects can also be an example for a cultural exchange method. It is also similar to the design method for Japanese tea houses, where independent design of each column and beam are complementary.

Borneo-Sporenburg, Amsterdam:

LEFT: Houses along the canal. On the left side each house is designed by an independent architect and has an individual character. The overall appearance is more vivid than on the right side of the canal, where all the houses are designed by the same architect.

RIGHT: Houses along the interior street. On the left side each house is designed by a different architect - on the right, by a single architect.

9. Japanese tea house/stones in the garden

Repeating the same columns in the Japanese tea house is prohibited. Each column should be independently designed and possess a different physiognomy. Their harmony forms a strong sense of

the tea house as a whole. Each column and beam used comes from a different kind of tree. It is preferable that the raw materials be natural, retaining the bark of a tree and the bend in the trunk. The shape of each window is also different. The ceiling changes its incline and texture depending on expected function and significance, such as the spaces for an honored guest and host.

Each stone in the Japanese garden is positioned to express the stone's natural physiognomy. The feeling and expression of the garden as a whole are produced by the harmony among stones.

LEFT: Tea house at Ohbaiin temple: each column possesses a different physiognomy.

RIGHT: Garden at Chishakuin temple: harmony is achieved through the natural physiognomy of each stone.

10. Physiognomy of streets

The French writer and philosopher Jean-Paul Sartre once commented that strolling in New York is easy, because all junctions of streets and avenues are signed and numbered. But it is not easy in New York without these signs. On the other hand, there are no signs on the street corners in old European towns. The physiognomy of each corner tells us where we are.

11. Globalization of cityscape

High-rise buildings the world over look similar because they are designed and constructed using universal technologies and materials such as cutting-edge structural engineering, strong construction machinery and high-strength materials made of metal and petroleum products.

In traditional towns, houses were constructed using simply processed regional resources: cutting and milling trees, firing local clay to make bricks. This was in harmony with the natural regional landscape. Various trees, clay and construction methods formed the indigenous culture of each region.

High-rise buildings are different. An artificial interior space, made employing universal materials and methods, is separated from nature and is constructed skyward far from the ground. To create the future cultural city it is indispensable to redesign high-rise buildings and to reconsider the relationship between urban space and nature.

12. Coexistence between technology and culture

The difference between technology and culture is in question. The same material when handled by an artist or an engineer takes on a completely different meaning. While a material in engineering is homogenized and quantified by the law of cause and effect, a material in art is personal, depending on

the artistic intent. Natural material touched by the hand of the artist becomes one with the artist's body and inner self. The artist's material can no longer simply be called material.

Different cultures experience and understand materials differently. This was apparent when foreign carpenters were working on the construction of one of my design projects. They cut and planed timbers as if cutting styrene foam. Stone was considered stone only after being shaped into blocks or a rectangular plate. Often foreigners fail to grasp the deeper meaning of objects in nature, asserting that 'things are things' and ridiculing traditional Japanese memorial rituals for things.

But today even in Japan stone and timber in their natural state are no longer useful unless they have been processed and formed through technology. Never has there been a period when nature has been so openly dismissed and looked down upon. This disdain and neglect are clearly the result of homogenization and quantification by the law of cause and effect.

Technology and art should coexist. Yet technology has rapidly become dominant, resulting in a homogenized world. Regeneration of regional and indigenous art, coexisting with technology, will sustain a full and humane global living environment.

13. Global advantages of cultural exchange

It should be the role of science and technology to provide people with the tools for a civilized world which ensures a rich life. But science and technology, eager to predict every phenomenon, will, as a result, be the dominant factors in globalization.

In design, the application of science and technology provides architecture with 'firmitas' and 'utilitas'. Without 'firmitas' and 'utilitas', 'venustas' will not exist. But without 'venustas' it is not architecture. Not only are science and technology necessary to civilization, but culture, which encompasses beauty, religion and play, is indispensable for the enrichment of people. It is the character of people that shapes and determines culture.

Ethnocentric people are convinced, sometimes unconsciously so, that the culture to which they belong is by far superior to others. On the other hand, in cultural relativism people have a good understanding of different cultures and their value systems in relation to their own. As a consequence, they have a better understanding of their own culture.

It is a pleasure to observe the collaboration of different cultures, wherein each has an understanding of the other's good qualities. This appreciation is similar to the experience derived when viewing the harmony of a cherry tree with bark intact and bamboo, or when making an arrangement of natural stones of different size and texture. When two objects with different physiognomies are in harmony, together they create a new spatial expression and wholeness. This is the root of polytheistic philosophy, which unconsciously accepts different existences.

Foreign cultural exchange requires not only passing down our traditional architecture and religion to successive generations, but also opening new avenues for our own culture. At the same time, life in all countries must change for the better as a benefit of science and technology. We have to seek methods to coexist with science and technology, leading us to a homogeneous world. Thereby, the culture created will be based on the individual and collective aspirations of the people. This is a challenge for the whole world and also for individuals. The dialectic between civilization and culture has the same roots as the unyielding relationship between 'firmitas and utilitas' and 'vinustas' for each architect.