

Preface

The term “KATACHI” contained in the title of this special issue is a Japanese word. Although it does not seem yet to be popular enough in foreign countries, we have already some English publications with titles containing this term. For example, after the international symposia “KATACHI U SYMMETRY” (“U” means a mathematical symbol for “union”) held in Tsukuba in 1994 and 1999, their proceedings were published with titles same as those of the symposia (see references below).

KATACHI means “Form”, “Shape” or “Pattern”. As is generally common among all languages, each word has its own background brewed in respective culture and history. KATACHI has a region of meaning which overlaps largely with Form and Shape, while a region is left to indicate a certain concept which is characteristic in the Japanese spiritual culture. It is interesting to discuss on this concept here.

A popular interpretation of the term KATACHI is made by dividing it into two parts, “KATA” and “CHI”. The former is equivalent to “Pattern” and means an outer shape for producing a lot of similar objects. Therefore, it does not contain a concept of “inner power”. On the other hand, the latter is an ending to add a meaning of “inner power” or “spiritual power”. In Japanese language we have some examples with this ending, such as “INOCHI” (life), “OROCHI” (monster snake), “IKAZUCHI” (god of thunder) and “CHI” (blood). Then, the combination of KATA and CHI lets the term KATACHI acquire a special meaning, i.e. “form with spiritual power” or “form with completeness”. This meaning is essential in a common Japanese phrase, “This work has become a KATACHI”, which means “This work is completed and is strong”.

In the Western cultures we have a popular term “Symmetry”. It means usually a spatial property of an object. However, it also has its own region of meaning, i.e. a “common measure”. It came from the combination of “sym” (common) and “metry” (measure), as is discussed by NAGY (1996). In this respect Symmetry is looked upon as a term comparable to KATACHI.

A difference between KATACHI and Symmetry is suggested as follows. KATACHI contains concepts of “balance” and “elegance” in addition to “geometrical shape”. On the other hand, Symmetry contains concepts of “severity” and “beauty”. The gravitational balance can be attained even without geometrical symmetry, and we have tried in the long history to seek for shapes of objects with balance and elegance without geometrical symmetry. This tendency has become an essence of Japanese arts. It should be noted here that people in the Western culture also appreciate shapes lacking geometrical symmetry. A term “Dissymmetry” is used for the situation, where symmetry is broken to a certain degree (NAGY, 1996).

Now, an international symposium “Fifth Interdisciplinary Symmetry Congress and Exhibition” was held in Sydney in July 2001. In the opening session of this Congress the author of this preface had a chance to present a general idea of Japanese culture in relation to the word KATACHI. It has given the participants from other countries a chance to consider about the concept of KATACHI.

In this Congress we had about twenty participants from Japan. Abstracts of all papers with each few pages are published already as an issue of Journal, “Symmetry: Interactions of Art and Science” (LUGOSHI and NAGY, 2001). However, since it is reasonable to provide an opportunity to write full papers, it was suggested to submit papers to FORMA with free will about the same or similar topics among Japanese participants. This issue includes more than half of the papers by the Japanese participants of the Congress. One paper by Matozaki was not presented, but it is included here because it is looked upon as a paper dealing with KATACHI.

At the stage of editing the author of this preface had an impression that all of the papers have more or less an essence of KATACHI. It is also true for other papers presented by Japanese participants. It is expected that the effectiveness of the concept of KATACHI will be in future accepted widely in other countries and cultures so that the scientific and cultural (even political) situations in the world become more favorable to human beings. It is worth noting that “balance” inherent in KATACHI is an important concept for harmonious development of human cultures.

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