

# Water Control Systems and the Traditional Festival at Miyawaki, on the Seto Inland Sea

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Miyawaki, a village facing on enclosed coastal sea, holds an annual festival including fascinating folk-art performances. The pleasure of this festival has brought forth a strong self-organization that has succeeded in overcoming the difficulty of water distribution. This report describes a skillfully employed mechanism of control by means of emotion nurtured by a traditional society and adapted to modern times.

## 1 Water Control System for Irrigation at Miyawaki

Miyawaki (formerly Miyawaki Village) is located in Ehime Prefecture's Oonishi District on the escarpments of the Seto Inland Sea. It has the typical characteristics of a village situated on the steep inclined hills of this coast. There is very little rainfall due to the typical Seto Inland Sea climate, and what rainfall there is disperses instantly downhill if left on its own, causing frequent water shortages. For this reason, the control and organization of irrigation system facilities, indispensable for paddy-field cultivation, has been a constant endeavor of the village from olden times. In order to maintain a complicated irrigation system, a large number of reservoirs have been built utilizing the natural landform, and waterways have been configured like the mesh of a net for thorough irrigation of the paddy-fields (Fig. 1). There are also crossing canals for emergency use which have names associated with Shinto and Buddhism such as *jinjya-watashi* (shrine crossing) and *terabi-watashi* (temple-conduit crossing). These are opened at times of water shortages to allow mutual exchanges of water between organizations which normally do not do so, in a irrigation system made possible, through the construction of facilities for a high level control.

The basic social unit for water control and management is called a *Gawa* (a unit similar to the *tonarigumi* or neighborhood group). *Koochi* are formed from a number of *Gawa* located near and utilizing the same waterway, and these are joined to form the united *Koochi* of which Miyawaki is composed (Fig. 2). Thus, this village can be said to be organized by the irrigation system itself.

## 2 The Systemization of Miyawaki through Water and Festivals

The festivals in the village of Miyawaki play a major role in the organization and functioning of the water-utilization system.

At Miyawaki's Ooi-Hachiman Shrine Spring Festival, folk-art performances are held within a shrine compound, that is eighty-five steps down from the main shrine located on a small hill (Photo 1). At the head of the *miyuki* (festival procession) is a *yagura*, a high, wheeled float, followed by a procession of *yakka* men in navy blue traditional costumes, male and female *shishi* (lion mask) performers, in brilliant colors, two sacred red-and-white portable shrines carried by adults, and at the end, eight more sacred portable shrines with gold decorations carried by children. Among the festivals are dramatic performances making skillful use of the steep hills, so that the audience can observe with fascination the mutual relations of each element at a glance in panoramic form. The festival presents a tremendous contrast of colors, and the music is organized so that although each piece is performed independently it builds to a heterophonic geometric effect.

The basic organization in charge of the performances is the abovementioned *Gawa*. Some of the *Gawa* join together to worship the local tutelary deities, who are called *Yabukami-san*. At a rank above these are the *Komiya* deities, and above them the deities of Ooi-Hachiman Shrine. Local irrigation system neighbors and the festival community coincide at the level of the *Gawa*, and as a whole are incorporated into Miyawaki village. However, at the intermediate stage of the village organization, the two kinds of structural units do not coincide in part, a phenomenon that makes a major contribution to the prevention of opposition between different water systems (Oohashi, Kawai, 1982). For example, suppose a conflict arose between

those belonging to different water systems but also belonging to a group worshipping the same Yabukami-san. Such conflict might be seen as a cause of a break in the festival community, or a breach of faith in the gods, together with a dissolution of the everyday mutual-aid relations. Instead, however, a sort of negative-feedback-control effect is effected in the festival community when conflict arises concerning the irrigation system. In Miyawaki, a cross-purposes phenomenon is concentrated where conflict is most likely to arise concerning the irrigation.

### 3 The Shishi Performance as Stimulus for Self-organization by the Villagers

The focal point of the festival at Miyawaki is the shishi performance. The Miyawaki shishi, a structure comprised of a large head and body, is of great size, and is said to be one of the biggest in Japan (Photo 2).

The first characteristic of the shishi which should be pointed out is the threatening expression of its great head and the speed of the performance. In folk-art performances seen in Asian festivals, masks with threatening expressions produced by wide-open eyes and bared teeth make major contributions to inducing pleasure in the festivals. The shishi at Miyawaki can be said to be a typical example, while other typical examples can be seen in Bali and other places (Oohashi, 1987).

In comparison with the *Ise Daikagura*, which is said to be the origin of the Miyawaki shishi performance, the shishi mask at Miyawaki is far more threatening in its expression, and the speed at which the head is moved is about 10 times as fast. What makes this vigorous movement possible are frequent changes of the person moving the shishi head. While fatigue is dispersed by this rotation system, the powerful and superhuman performance of threat, which is continued for many hours with each player contributing his utmost strength, induces a powerful pleasure in the visual patterns and attracts people to the festival. In conventional shishi performances, the distribution of the part is such that the person moving the head plays the principal role while the others act as backstage actors. At Miyawaki, on the other hand, all are given the chance to play the principal role. Such equality is effective in attracting active participation in the festival.

Until the Meiji Period (commenced in 1868) there was a land-use tradition called *ji-narashi* in Miyawaki. This system consisted of rotating the right of ownership and cultivation of paddy-fields according to year, aiming at the equalization of advantages and disadvantages resulting from the farming conditions such as water availability, sunlight, etc. Edo Period (1603-1868) documents called *Ninbetu Ji Aratame Cho*, which list those using the specific locations of land which served as a basis for the *ji-narashi* system, were found this year. *Ji-narashi* may also be said to be a superb product of thought similar to the rotation of the shishi head operators.

The second characteristic of the shishi at Miyawaki is that the form and functions of the shishi performance has been altered to include an acrobatic performance called *tachigei*. In this performance, people stand on top of each other's shoulders and on the very top a child stands to perform acrobatic stunts, with a maximum of five people, one on top of the other (Photo 3). Upon examination, it was found that the people forming *tachigei* come from different water-system groups. Those who act as a foundation at the bottom, the one who controls the child, and the child at the top must understand each other's roles and be responsible for the other's lives, while putting aside feelings of conflict related to the their opposing irrigation system interests. This brings the villagers together and plays a decisive role in nurturing the villagers' sense of values and reliability for coexistence and coprosperity.

### 4 The role of emotion as a control system

The above will be reconsidered here from a biological perspective.

The higher animal has a control system which is directed by pleasure and its absence, or discomfort. Characteristic of this system is the fact that pleasure is maximized and discomfort minimized when the most appropriate behavior or most comfortable environment is selected. However, when investment increases for adaptation due to a retreat from the most appropriate environment or behavior, pleasure decreases and discomfort increases. According to this pleasure-discomfort rule, as long as the higher animal goes after pleasure and keeps away from discomfort, it is able to choose the most comfortable environment and the most

appropriate behavior. Even if temporary adaptation occurred due to unavoidable circumstances, automatic return to the most appropriate behavior would be possible (Oohashi et al. 1985). In traditional societies, including that of Miyawaki, there are quite a few examples of organization that make skillful use of this pleasure principle.

Ecstasy and exaltation can be experienced, when attending a festival, and feeling one with the gods etc. is a great pleasure in itself. People who have experienced this pleasurable feeling can be expected to actively participate in the festival community. This phenomenon can be called pull-form control by emotion (the gravity or compensation form). From another standpoint, when people become conscious of the gods, they are less able to betray them, owing to their fear and respect, or to move away from the festival community. This is push-form (the pressure or punishment form) control (Fig. 3). Apart from control by emotion, pull and push systems of control characterized by reason are to be found.

In many civilized societies, there is a general tendency to restrain the innate control system of emotion, which higher animals, including humans have in their bodies, due to the supposition that it hinders the organizational power of artificially constructed societies. At the same time, there exist mechanisms of compulsion such as law and morals which stand in conflict with the natural characteristics of man. The advantages of behavior control by the gods and festivities in traditional societies, in comparison with more civilized societies, especially behavior control in modern society, is reliance on control by reason as opposed to control by emotion, whereas in traditional societies emotional control coexists with rational control, without contradiction between the two, thus creating a stronger overall control mechanism. The push-and-pull type behavior control manifested in celebrations and festivities can be said to suppress conflict within man, and is a form of wisdom for automatically strengthening organizational power. Here pleasure is given high status.

From the perspective of the inducement of pleasure for the above-mentioned role, experimental consideration was given to the highlight of the shishi performance at Miyawaki, the tachigei. The questions posed were: what would the psychological situation of the child at the top of the tachigei be? And would he be feeling pleasure? These problems have not been the objective of scientific discussion since there were no reliable methods of analysis or measurement for this purpose. Thus, a new method for measuring brain activity by means of an advanced electrophysiological technique was developed (Oohashi et al. 1990), and electroencephalograms (EEG) of the child performing tachigei were measured by a telemetric method, and Fast Fourier Transformation (FFT) analysis was conducted. The results showed a tendency for the theta-wave range of the EEG to be activated while tachigei was being performed (Fig. 4). In the past, theta-waves were seen in EEG during sleep, but in recent studies they have been reported to be active during ecstasy. These theta-waves reach a peak when the tachigei is completed and the child is at the highest position. This suggests that the child is in ecstasy or a trance state at the time the tachigei reaches its climax.

## 5 Modern Miyawaki with traditional wisdom

The traditional wisdom inherited in Miyawaki has been adapted to solve problems in the organization of modern society. After the Second World War, this festival was temporarily stopped. Local development after the war saw the construction of a series of industrial factories which then brought forth conflict between Miyawaki villagers and the newcomers. As a result of an open invitation to participate in the shishi performance by the villagers to the newcomers, not only was the festival resurrected in great style but the conflict and problems were solved within a few years, contributing enormously to a harmonious relationship between the villagers and newcomers.

Therefore, the water-control systems and festival at Miyawaki have adapted the traditional wisdom nurtured in this coastal sea areas to modern times, and it serves as an inspiring example.

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Photo 1 Festival procession of Ooi-hachiman Spring Festival

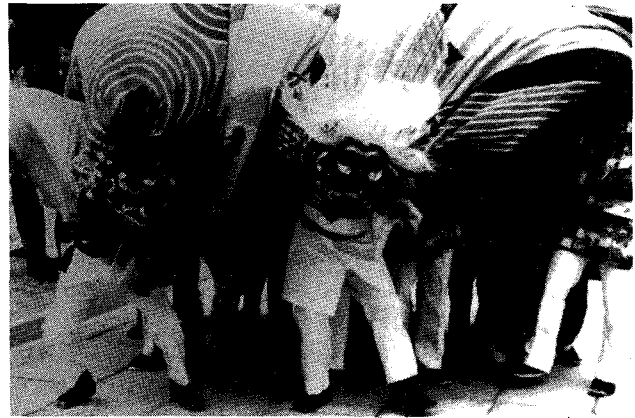


Photo 2 *Shishi* of Miyawaki  
The expression of intense threat



Photo 3 *Tachigei*

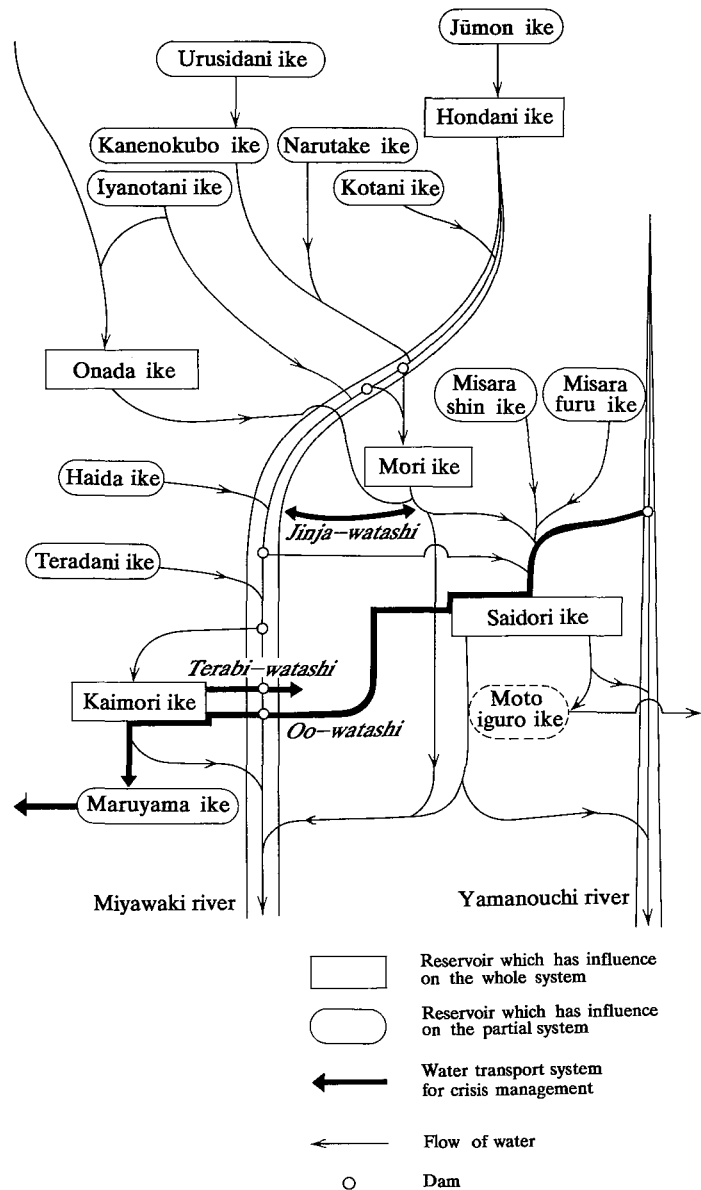


Fig. 1 Irrigation system of Miyawaki

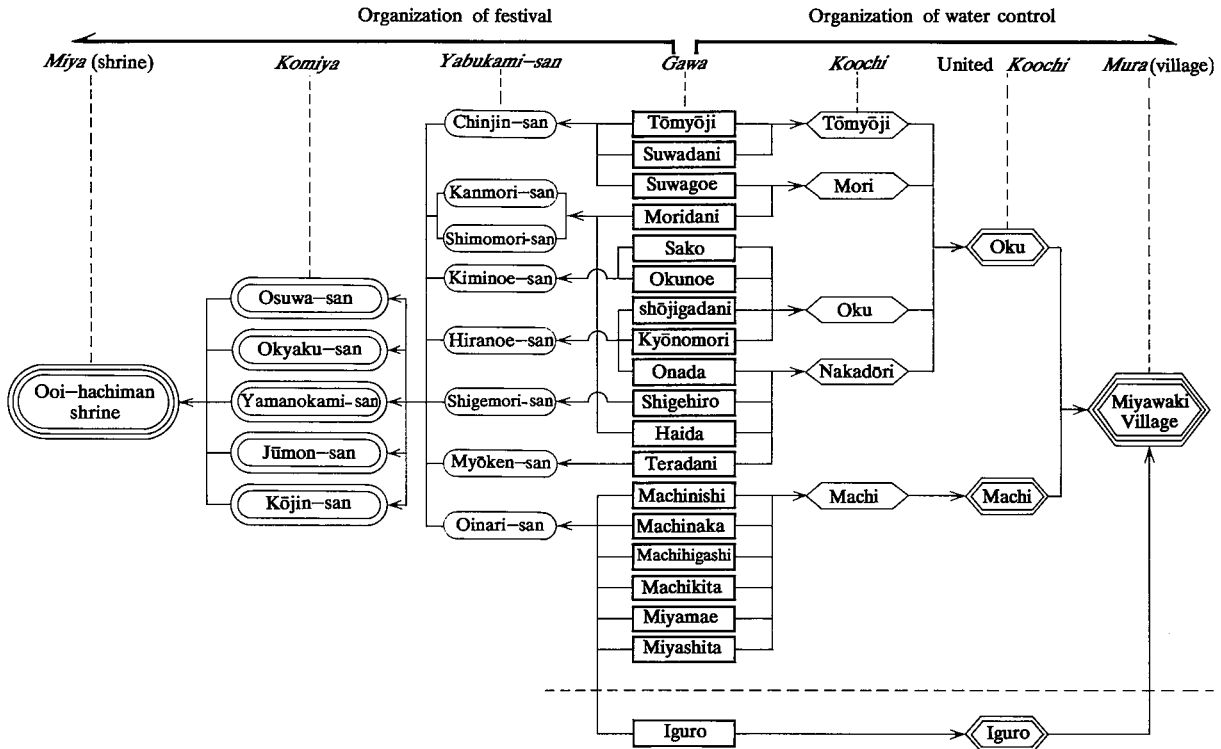


Fig. 2 Dual organization of Ooi-hachiman Shrine Union

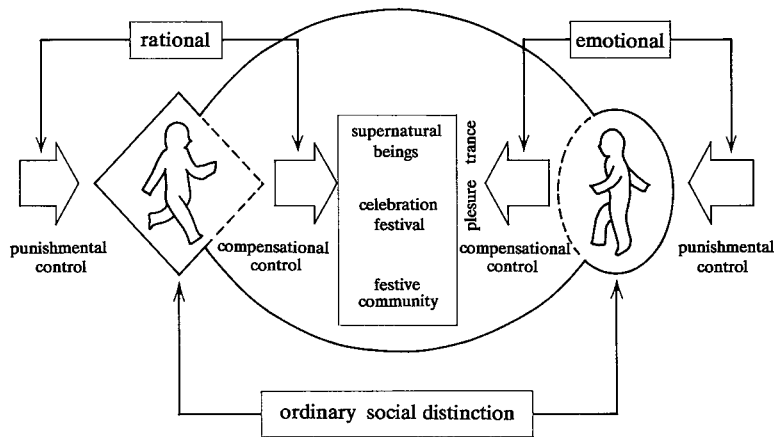


Fig. 3 Push and pull type self-organization mechanism of community by celebration and festival

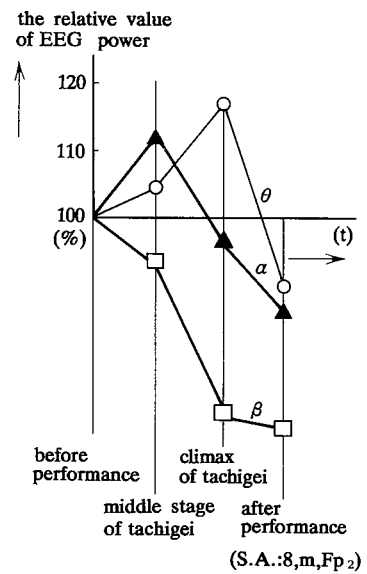


Fig. 4 Change of the relative value of EEG power classified by three bands (the tachigei performer)