Shaping Experience in Landscape and Soundscape Design

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Abstract: This study treats both landscape design and soundscape design as similar processes of reproduction and practice. In the process of designing landscape, designers create simple ambiguous shapes not found in previous landscape in both landscape and soundscape design. Landscape designers make stylised shapes to avoid more natural shapes that they dislike. Soundscape designers do the same thing, but they also want to make original objects that appeal to them and have never existed before.

The totality of landscape can be felt as a reflection of the designer’s subjectivity rather than an integral object. Simple geometric shapes are considered to reflect the feelings experienced by the designer, and these ambiguous shapes can be contrasted with actual objects in experiencing landscape.

(Received on October 30, 2006, Revised on February 9, 2007)

1. Introduction

1.1. Creation as a process of ‘reproduction’ and ‘practice’

‘Landscape’ is not one object but a view of many combined materials. Each of the materials can be treated as constructed material (an ‘object’) in a cultural context. So ‘landscape’ is a complex, constructed object. The concept of landscape is based on the experience of entire accumulations of objects perceived through the senses of individual people.

In this decade, landscape has been studied as part of the subject matter of anthropology or cultural studies, as it is treated in diverse cultural contexts and not limited to the perspective of a Western cultural context but. Many such studies include not only visual objects but also aural elements that comprise landscapes (for example: Roseman 1998). Landscapes are created by people, so they can be treated as artificial objects made through human subjectivity. In this perspective, attention is being paid to noteworthy objects that make up the landscape and how such objects have been made or can be made significant. These studies do not see landscapes as reflections of cultural issues in particular societies but treat them as objects created subjectively by each society (for example: Selwyn 1995). In either case, landscapes are depicted as processes of experience of selected noteworthy objects by people living in diverse societies.

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Common, ordinary views with no symbolic objects have a complex appeal, as exemplified by some landscape paintings or photographs. This has been mentioned by many art critics (for example: Takayama 1995). In treating landscapes as accumulations of specific things, studies are often directed toward particular concrete objects and such ambiguities are neglected. ‘Subjective’ sensitivities are also neglected in the field of landscape design; they are dismissed by designers and the public as ‘fashionable’ or ‘arty.’

This study deals with the social process of designing landscapes, focusing on the representation of subjective, ambiguous perceptions of the shape of objects. If social values are reflected in the forms of artificial landscapes, subjective practices are also reflected in the forms of landscape by the designing subject. This study treats landscape and soundscape design workshops in present-day Japan. The former is described in an insider report based on the experience of the author, and the latter is studied through participant observation with supplementary interviews.

Human beings have long created objects known as representational art. These cultural objects include paintings, music, sculptures, and other forms of art. People who compose or make them want to express their feelings in material objects commonly called ‘art.’ They suppose that they create the objects with reference to images in their minds or engage in performing arts on the basis of their talents and a general mastery of technique. Creators are expected and thought to express ‘originality’ in shaping artificial objects.

From the standpoint of social determinism, each society has its own concepts of expressive objects known as ‘art.’ All people experience the material world in their lives. They are influenced by their individual experiences and no experiencing subject is free from the environment. So the person who creates or builds such objects (called artists in our society) never create purely original objects. The art objects they produce always resemble previous objects.

At the same time, each person has an independent body and soul, so objects made by different persons differ slightly in shape from previous objects. Unconventionality in ‘art’ is found in this slight difference amid overall homogeneity.

In recent anthropology or sociology, the process of making homogeneous objects is referred to as ‘reproduction’ and the process of making a unique object by an individual is referred to as ‘practice.’ The area of ‘arts’ in our society is divided into many categories like painting, sculpture, music, dance, architecture, etc. The efforts of each person making art are directed toward creating something included in such established categories.

In practice, the experiences of each person are perceived in different ways. Overall human experience derives from the entire population of individual selves. And each self responds in his or her own way. Under such conditions, how can different individuals accept only one object officially recognised as an ‘art’ object? It is hard to believe that each person who creates an ‘art’ object only thinks of one antecedent ‘art’ object before creating their own because every person perceives their environment through his five senses and the selective awareness of his own mind.

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1 The notion of subjectivity mentioned in this article is related to the perception and expression of ambiguous or vague qualities.
Consider the pure and absolute shapes of objects without regard to use in the process of ‘reproduction’ and ‘practice.’ How are individual emotions felt and reflected in individual practices of making objects? These processes indicate how the material world has been experienced by individuals and how these experiences of the world have been incorporated into artistic objects in our society. It is significant to consider these processes in terms of the experience of various forms of objects.

This study is concerned with professional landscape design workshops in present day Japan. In today’s Japan, the concept of ‘landscape’ is used in a broad range of technical and aesthetic fields engaged in making the sort of objects described above, including civil engineering, architecture, landscape architecture, horticulture, and city and regional planning. ‘Landscape’ is almost synonymous with landscape architecture, but here I use it to refer to the sounds treated in soundscape design as well as physical objects\(^2\). This field includes both technological and humanistic aspects. The humanistic side of landscape design shares many issues with representational art that are mentioned above. This paper treats these issues in terms of individual ‘practice.’

Ambiguous, humanistic values in landscape are related to the value of beauty in landscape painting or photography. Amos Rapoport has referred to this feature as ‘high style’ in a constructed environment (Rapoport 1990: 21). Specialists in landscape design usually want to incorporate ‘high style’ in the forms they design. In the field of soundscape design, there are fewer official constraints than in landscape design because soundscapes are not often used in public institutional projects. A comparison of the two fields will shed light on these differences in practice.

### 1. 2. The process of making ‘landscape’

The process of landscape design involves the shaping of many different objects. They can be treated as a complex of objects in the design environment. Amos Rapoport has shown this process in a non-verbal communication model (Rapoport: 1990: 120) that can be regarded as a ‘reproductive’ process. According to Rapoport’s model, the designer’s own experiences precede the work of design. Designers can use their experiences selectively in determining the shape of objects (Fig. 1). The designers’ process of selection corresponds to the concept of ‘practice.’

![Diagram](image)

**Figure 1. Environmental design process as a reproductive process for individual designers**

*From (Rapoport 1990: 120), partially changed by author*

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2 R. Murray Schafer poses the term ‘soundscape’ (Schafer 1977), treating sounds as elements of landscape. The broad acceptance of the idea of soundscape has widened the potential of sounds beyond the functions of music or signals. Recent ethnographic studies have demonstrated that many non-western societies do not differentiate between visual and acoustical issues in environmental perception (YAMADA 2000).
If the designers’ own experiences of the material world do not have a clear shape, it is difficult to incorporate clear shapes into the processes of ‘reproduction’ and ‘practice.’ And we humans do not always imagine clearly shaped objects. So how should we regard experiences produced by such uncertain shapes? The key is ‘landscape.’

In studies of constructing landscape as a social process, impressive objects like symbolic buildings or holy mountains are discussed in terms of the way they are seen in specific societies (for example: Santos-Granero 1998). But these approaches treat landscape as an elemental object, so they neglect the more ambiguous impression made by the overall landscape.

Eric Hirsh compared the concept of ‘landscape’ in many cultures (Hirsh 1995: 4) and posed a bipolar and complementary notion of ‘landscape.’

foreground actuality ↔ background potentiality

The concepts on the left side of the table roughly correspond to what we would understand as the context and form of everyday, unreflective forms of experience (Bourdieu 1977), while the concepts on the right roughly equate to the context and form of experience beyond everyday. These latter are often imagined as standing apart, as relativity separate and detached through never completely disconnected. I have referred to this as perceived ‘potentiality’ (‘the way we could be’). The purest form of potentiality is emptiness itself, and it is interesting that sacred sites and places are sometimes physically empty or largely uninhabited, and situated at some distance from the populations for which they hold significance.

Although the items in the table above have been arrayed in two columns, it is important that they are not regarded as unconnected. They are, rather, moments or transitions possible within a single relationship, analogous to the experience of a person momentarily losing his/her way on a familiar journey before relocating him/herself by reference to an external perspective; or to the ‘empty place’ which periodically fills ‘foreground’ experience before receding to its customary, ‘background’ location. (Hirsh 1995: 4-5)

Applying this concept to landscape design, foreground actuality corresponds to clearly distinct shapes in ‘reproductive’ processes and background potentiality corresponds to less definite images that are the result of the design process. The latter correspond to the subjective ‘practice’ of landscape design.

The latter process is often described as ‘original’ because of the lack of definite reference shapes available in the process of ‘reproduction.’ If a reproduced object is not given a technological or functional context by designers, the object or landscape is called ‘artistic’ (a word that might have both positive and negative meanings: aesthetic, understandable, nasty, etc.).

There is more than personal difference in the ‘practice’ of landscape design. Landscape designers do not reproduce established, clear shapes as creative objects, as in art, but reproduce ambiguous images as actual shaped objects through personal ‘practice.’ Below I examine the approaches of landscape and soundscape design in Japan. The next chapter will treat workshops for shaping landscape and the subsequent chapter will discuss soundscape design workshops. The former deals with a straightforward physical experience of landscape and the latter with an ambiguous non-physical experience. In the last chapter, both clear and unclear experiences of
landscape are compared and the role played by experiences of ambiguous shapes in ‘reproduction’ and ‘practice’ is considered.

The concept of ‘landscape’ used by Japanese practitioners has meant establishing infrastructure to change Japan into a developed country on the Western model. I have designed many public gardens in Japan as a professional landscape designer since receiving a master’s degree in landscape architecture in Japan fourteen years ago. Here I summarise how Japanese designers make ‘landscape’ through the processes of ‘reproduction’ and ‘practice.’

‘Soundscape design’ in Japan is derived from the famous concept of ‘soundscape’ posed by R. Murray Schafer in the 1970’s. But the idea of designing sounds as landscape was first developed by a firm called Sound Process Design (SPD), which was established in Tokyo in 1983 (from Ogawa et al. eds. 1986).

2. Designing ‘landscape’: unclear images made into clear shapes

2.1. Disneylandization in Japanese landscape architecture

‘Landscape architecture’ is a profession engaged in creating public parks or conserving natural areas which was established in Western countries in the modern age. The Japanese government of the Meiji era applied the methods of landscape architecture to the construction of public parks and promenades in westernised cities. Public parks were instrumental in making the Japanese landscape ‘Western’.

Japanese landscapists are concerned with making more beautiful green spaces. They see this as the best way to improve regional landscapes and make people’s lives better and happier. But what is a good landscape? An easily recognised objective criterion is necessary. In a word, it is ‘the greatest happiness for the greatest number.’ Design professionals working in cities also share this criterion.

Figure 2. Example of ‘Disneylandization’ in a Japanese building

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3 Japanese landscape architecture has been developed according to the example of Western Europe and the U.S.A. SHIRAHATA, Yozaburo points this out and criticizes the failure to consider the independent demands of the public in Japanese policy (SHIRAHATA 1991)
Designers want to hear people’s reasons for wanting green spaces, but people in rural areas tend not to get actively involved. Local government officials often hold town meeting to hear the opinions of local people about new parks or preserves, but in most cases few people attend these meetings. The same few people dominate the meetings and others fail to state their specific wishes. They make general comments like “parks should be harmonious with nature” or “accessible to elderly people and children.” Professional landscape designers are already aware of such common desires and would rather hear more specific requests suited to the place where the people live.

I previously discussed the connection between such complacent attitudes and ‘Disneylandization’. Modern Japanese governments have encouraged the construction of urban parks and public gardens throughout country, but this policy is not the only reason for the Westernisation of Japanese landscapes. Landscaping professionals have gone out of their way to produce eye-catching designs in order to promote their work and justify the spending of tax money. As a result, the shapes and colours of facilities in public parks have become increasingly gaudy and outlandish (KATAGIRI 2006).

2. 2. Natural design ‘practice’

Most professional designers, however, would prefer not to be involved in such ostentatious projects. They refer to such designs as kiwamono (capricious work). Designers generally prefer more subtle forms, but they find it difficult to justify expenditure of public funds with them. By ‘subtle,’ I mean elegant forms that suit sophisticated taste.

Such forms are rejected in the design approach of specialists who are concerned with satisfying the demands of engineering. The result is a tendency in designs for public projects to give visible form to social values in large, symbolic structures. Since public works are supported by taxes, the social values they represent must be broadly acceptable to the public, and the forms of symbolic structures tend to become pretentious and grandiose. This is the process that leads to ‘Disneylandization.’ It is difficult for designers to reject these attention-grabbing forms because of the ‘official’ context in which they are used.

Conscientious designers, however, are dissatisfied with the bad taste of such designs. They certainly cannot be described as having “high style.” Faced with this situation, designers develop individual practices unique to themselves. They reflect their own subjective tastes in peripheral objects at a distance from central symbolic structures which do not influence the overall ‘official’ meaning of the landscape. In comparison to important, symbolic buildings at central locations, these smaller structures on the periphery need not be designed to make a strong impact, so designers can design them with more subtle forms that reflect their personal taste (of course these objects must be safe and serviceable at the same time).

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4 This recent architectural trend has been in criticised various ways. Edward Realph called the phenomenon ‘Disneyification,’ noting that it reflects the absence of sensitivity to place (Realph 1976: 92–93). Neal Smith described it as ‘exopolis,’ construction enabled by the unexpected power developed by modern society (Smith 1992). Architect NAKAGAWA, Osamu poses the term ‘Disneylandization’ (NAKAGAWA 1996). He discusses it in terms of characteristic features of public facilities without giving a distinct definition.
Designers are naturally interested in creating more sophisticated forms. There are many types of facilities required in public parks, and they are all subject to functional requirements of safety and hygiene. Even ‘Disneylandization’ fulfils a function in the Japanese social context, but budget limitations prevent the ‘Disneylandization’ of everything. Municipal officials often require inconspicuous facilities like benches and bowers to have more moderate forms than those of large central buildings and playgrounds, so designers can apply more sophistication and taste to them. Local officials are practical and can ignore factors that lead to pomposity in the form of central facilities. They may refer to the designers’ more sophisticated forms as *asobi* (amusement). The originality and creativity of such forms are recognized within the field of public design, but ordinary people seldom notice them. In the author’s opinion, these design practices need to be given greater acceptance in the official design process. Simple geometric patterns are good examples of high style in such design practices, as seen in fig. 3. The beam brackets of the arbour are flat bars of finespun steel. The number of beams is greater than that needed for structural strength. Many arbours in Japanese parks are shaped like simple cubes. Cube-shaped arbours have been fashionable for many decades in Japanese landscape design.

One of my informants makes fun of designers by calling such simple geometric patterns *kakikaki* (patterns of connected angular shapes used by Japanese children). He owns a commercial firm that builds park equipment with such *kakikaki* designs, and it is a good business. Why does he laugh at designers? The *kakikaki* shapes appear to be imitations of the minimal or conceptual art popular in the 1960s. It has been pointed out that the designs of landscape architect Syunsaku MIYAGI (MIYAGI 1992) have a formal similarity to minimal, conceptual, or environmental art. The practice of appropriating forms from the fine arts to express the subjective taste of designers can be regarded as reflecting a desire to inject ambiguous feeling in the

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5 Examples include cul-de-sacs in a promenade or playground sculptures designed so that children can jump off them.
landscape through specific forms. Designers' 'practice' leads to elegant objects, and this 'practice' is a process of 'reproducing' objects previously experienced by designers.

So why are current designers choosing simple geometric patterns despite the many alternatives in contemporary minimal or conceptual art? It is a sound process for designing landscape projects.

3. Designing sound as ambiguous experience

Designing sound as landscape is not institutionalised in Japan (or most Western countries). So sound design projects are challenging for landscape designers. Therefore, sound may be more instructive than the constructed objects of landscape design in examining the 'reproductive' process 'practised' by designers.

3.1. Designers' 'practice' on sound design

Designers have made efforts to express ambiguous values through sound in Japanese soundscape design. This means that soundscape designers have been concerned with issues of high style. This is part of their subjective practice within the context of public projects\(^6\).

The specialists who create sound design are composers. How do composers 'practice' sound design? I previously reported SPD’s sound design process at a Tokyo redevelopment project, a new tower called 'Tornale Nihonbashi Hamacho'. The sound design was made for the open space next to the tower (fig. 4). Composers surveyed the atmosphere of the site, their foremost purpose being to sense the atmosphere rather than examine the structure of the building. Then they began designing the sounds according to their emotional response to the site. This process is almost the same as composing music. The composers sit and manipulate a keyboard without conscious thought, creating a sequence of discrete sounds just as in composing music. The workshop staff goes back and checks the site again and again until the composers are satisfied (KATAGIRI 2005). The words written here, “without conscious thought,” were suggested to me by one of the composers. Although this is difficult to prove objectively, it seems that composers want to avoid conscious thought while designing a soundscape. The composers 'reproduce' the landscape as sounds from their experience.

After deciding on the basic phrase and the equipment to be used for sounding, the composers' workshop moves to the studio. SPD composers and staff manipulate the sounds in various ways.

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\(^6\) Soundscape design includes the creation of sound signs or sculptures for listening by the public. These sounds are not designed to be ambiguous but reduce soundscape to an object for listening with clear meaning. Such soundscape are similar to large central buildings in landscape design.

\(^7\) SPD currently uses the phrase 'sound design' rather than 'soundscape design' because they feel that the idea of soundscape design has been overly analyzed by scholars and has become uninteresting. One of my informants (sound designer, male, in his 50's) dislikes explaining sound in terms of function and theory. This attitude is commonly seen in artists. It is the same as a landscape designer's opinion that it is hard to give a rational explanation of the making of forms. The informant's view correspond to designers' avoidance of 'official' values in landscape design.
Each person adds his or her input to the sound as ideas are developed through casual conversation in cordial atmosphere. Everyone expresses their own impressions of the sound and these statements lead to creation of new ideas. The ideas are carried out at immediately and modified according to the group’s response. This process is continued.

In this process, they are no particular criteria for modifying the sound. The only norm is the subjective feelings of the composers or staff. The sound design is completed when these specialists are satisfied with it in the studio. They refer to the product of this process as おも (sound).

The おも is then presented to their clients for approval. According to SPD, the clients do not make suggestions for readjustment of the sound in most cases.

The designed おも is played at the project site as a trial. This process is called おも-だしが (making sound)⑧. The sound specialists check sound equipment and listen to the おも being played at the site to see if it truly reflects their feelings. If they are not satisfied with the おも, they will change it at the studio again. In this case, おも-だしが was repeated three times.

The ‘practice’ of the composers (soundscape designer) emerges from this process. At first glance, it seems as if they are composing music, but that is not their intention. One of the composers working for SPD (age forty) once told me over drinks, “I feel that my work doesn’t become a ‘work’. ” He meant that the sound he makes is not a musical ‘piece.’ Another composer told me, “Designed sound harmonised with a previously existing landscape isn’t bad. But it’s unsatisfactory. It must become a ‘piece.’ ” The president of SPD uses the word ‘jump’ frequently to explain sound design. He is talking about a creative leap, a jump to a different dimension. In conversation with composers, he often talks about “a form that jumps a little” when he describes the creative process of making things that do not fit previous categories of art.

⑧ The time schedule for おも-だしが is reserved in the work schedule on whole construction, because of this work needs ordinary level of environment sounds. But at the time of this work, there are very noisy constructive sounds around here to build the tower. I heard from Staffs of SPD that every sound design project, おも-だしが work held in such noisy conditions of construction. This means soundscape designing is not regarded as operation of public work.
or design. He wants to explain the making of something good that is not ‘art’ or ‘music.’ This means leaping from objects with a clear reference to objects that look good but cannot be described in words, so he uses the word “jump.”

The designer’s job is not to design sound to harmonize with an existing landscape. Designed soundscapes are not just objects for listening. They must be part of a landscape that is vividly experienced.

3. 2. Shapes of designed sounds

The volume is decided by playing the sound at a low level where it can just barely be heard by someone on the site. In the oto-dashi phase, designed sound is added to each person’s landscape experience, and they decide whether the oto is good or bad subjectively. The oto that is composed and presented to clients is not the product of sound design specialists; the landscape, which echoes the designed sounds, is their final product. If we regard this as a process of reproduction, we can say that individual designers use previous landscape experience, designed oto, and the experience of adding the oto to landscape in order to create a landscape experience. In brief, soundscape design is regarded as the process of reproduction by adding designed sound to experienced landscape to create a “good” experience. The experiencing and designing agent is the individual sound designer. Designed sounds, previous experiences of landscape, and the new experience of the designed landscape are also active agents that act on the individual designers.

Designed sounds were indicated by a musical score written on site at Tornale Nihonbashi Hamacho Tower in fig. 5 (The composers I talked to do not use music paper, so they do not produce scores. They all use a personal computer linked to a keyboard.) According to this score, simple melodies are repeated indefinitely. In this case, two types of designed sounds are played from different speakers in real time. People heard a subtly modulated canonical melody. This canonical style is typical of the sounds used in landscape design.

This type of oto does not follow a chord progression, passing from introduction to cadence. Also, because they are set at such a low volume, they do not require a large audience. In an ordinary cultural context, such an array of sound would not be called ‘music.’

![Figure 5. Designed sound phrase](image-url)
A resident of the tower (male in his sixties, born nearby) said, “When I first heard that this soundscape design would be used outside our tower, I could not understand what the builders wanted to do. But then, when the buildings were completed and I heard the sound, it made me feel good somehow. I don’t know why, but it is good.”

This is not “background music.” In a discussion of the MUZAC® System playing at shopping malls, Jonathan Sterne referred to foreground music and background music. The former is an independent object for listening. The latter enhances other objects such as the products on sale (Sterne 2003: 323–326). But neither of these categories can be applied to design sounds.

These sound designs are ambiguous expressions that cannot be identified as a particular form such as music. To create them, as noted by the president of SPD, the designers use their experience effectively and ‘jump’ to a different dimension.

### 4. Comparison and Discussion

In both landscape and soundscape design, good designers tend to use subtly modulated simple shapes. In landscape design, they produce forms described as *kakikaki*, connecting posts and beams sequentially and systematically to create playful forms. In soundscape design, they use canonical phrases.

Designers in each field avoid concrete, established forms. In landscape design, designers wish to avoid ‘Disneylandization’ and their ‘practice’ is applied to peripheral facilities. In soundscape design, designers (composers’) want to prevent their designed sounds from becoming music for listening and keep the volume low.

A contrast can be observed in this process. Central objects with clear forms and peripheral objects with ambiguous forms may be juxtaposed in the same landscape. This contrast could be applied to Hirsh’s model.

- foreground actuality $\leftrightarrow$ background potentiality (Hirsh 1995: 4)
- ostentatious $\leftrightarrow$ simple
- objects for show $\leftrightarrow$ geometric patterned objects
- music for listening $\leftrightarrow$ quiet canonical phrase

The forms on the left side are commonly accepted and easy to notice. Those on the right side are rather hard to explain and more subtle in style. These contrasts are subjective and hard to define, but designers who want to create good forms are attracted to the features on the right side. It is hard for them to explain their work and why they make such an effort in spite of the obstacles in their working environment.

Individual ‘practice’ is carried out in established fields or with objects what have been defined in particular cultures, but human beings have an inborn capacity for responding freely without being influenced by what is socially acceptable. They are capable of constructing things

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9 MUZAC is an in-house radio system playing various music channels. It is the name of the company that pioneered in the use background music systems and is now used to refer to all such systems.
without worrying about what is established by society. They can produce objects, known as art, that make people feel good. The concept of a good landscape may be vague and ambiguous, but it can be perceived and created in practice by designers. If designers want to make better ‘landscapes,’ they will create indescribable experiences, objects we call ‘art.’

Acknowledgement

I am grateful to MIYATAKE Kimio for his comments and encouragement, and I would like to express my appreciation to a number of creative individuals, especially sound designer TANAKA Munetaka, composers YAMASHITA Yasushi, INOUE Makoto, SHIKATA Nobuo, and sculptor Stan Anderson, for their assistance in this study. I would also like to thank the anonymous referees for their helpful comments.

References

NAKAGAWA, Osamu（中川敏）, 1996, Giso Suru Nippomon (Camouflaging Japan). Syokoku-Sya. （‘擬装するニッポン」 影図社）
OGAWA, Hiroshi, SHONO, Yasuko, TANAKA, Naoko & TORIGOE, Keiko (eds.), 1986, Namiko Kifuho (Wave Notation). Jiiji-Tsushin-Sha. （‘波の記譜法」時事通信社）
RELPH, Edward, 1976, Place and Placelessness. Pion Limited.
SHIRAHATA, Yozauro（白鳥雄三郎）, 1991, Koen Nante Mo Iparai (We Cannot Need Parks More). In Chuo-Koron (7) 184–197, Chuo-Koron-Sha, Tokyo. （‘公園なんてもういらない」 中央公論）

Yamada, Yoichi (山田陽一), 2000, Shizen no Oto Bunka no Oto (Natural Sounds, Cultural Sounds). In Shizen no Oto Bunka no Oto. Yamada, Yoichi (eds.), pp.5–23. Syowa-Do. (‘自然の音・文化の音’,‘自然の音・文化の音’,昭和堂)