

Linguistic issues we must resolve before the standardization of soundscape research

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Summary

As the definition in ISO 12913-1 clearly shows, soundscape is the understanding of a certain acoustic environment by people. However, human understanding depends highly on the languages people use, and therefore the understandings of soundscapes by different peoples will also depend to some degree on the language they employ. Since these international standards will be used by people from different language backgrounds, we should be aware of the effects that various terminologies have on the understandings of soundscape. Similarly, the creators of international standards of soundscape should thoroughly consider the effects of certain translations on various peoples' perception of soundscapes. This paper therefore discusses some of the linguistic related questions regarding soundscape research that we must answer before the standardizing of soundscape research.

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1. Introduction

Although soundscape studies in recent Japan are not particularly popular, researchers have actively pursued them around the world, especially in the current decade [1]. In this situation, the standardization of the soundscape has been discussed in ISO TC 43/SC 1/WG 54, and the definition of the soundscape in ISO was decided as “acoustic environment as perceived or experienced and/or understood by a person or people, in context [2].” As the definition clearly shows, soundscape is the understanding of a certain acoustic environment by people.

It has been pointed out that the understandings and perceptions of people depend highly on the languages they use [3]. This means that the understandings and perceptions of soundscapes by different peoples will also depend to some degree on the language they employ.

Since international standards will be used by people from different language backgrounds, we should be aware of the effects that various terminologies have on understandings of soundscape. Thus, this paper discusses the linguistic issues we must resolve before the standardization of soundscape research.

2. Definition of soundscape

The concept of soundscape originated in the ideas of R. Murray Schafer [4]. He and his colleagues conducted some fieldwork surveys regarding relationships between people and the sounds around them, and eventually defined the original concept of the soundscape as “an environment of sound (sonic environment) with emphasis on the way it is perceived and understood by the individual, or by a society [5].”

Hiramatsu et al. [6] described the process of the prevalence of the Schafer's concept of the soundscape in Japan around the 1990's. As they mentioned, the Japanese soundscape community decided to use a newly-coined loanword “soundscape (サウンドスケープ)” to indicate the concept. It is worth noting that they pointed out that “the word ‘soundscape’ is accepted as a Japanese word although we have a Japanese word translated by one of the present authors.” In fact, there were two Japanese words which were proposed for the translated words of “soundscape,” that is “Oto-Fukei (音風景)” and “Oto-Keikan (音景観),” with the former pointed out by Hiramatsu et al.

In each of these words, the first Chinese character of “Oto (音)” indicates “sound,” and both “Fukei (風景)” and “Keikan (景観)” are the translated words of “landscape.” As Schafer clearly acknowledged [7,8], the word

“soundscape” originated from the word “landscape.” In this meaning, both words are suitable to use in translations of “soundscape.” However, those two words are not equivalent in meaning.

Although the differences of meanings in detail between “Fukey” and “Keikan” are little bit different in the academic fields, in general [9, 10], it is thought that “Fukey” implies more subjective aspects of landscape than “Keikan”: only “Fukey” includes a subjective aesthetic evaluation of landscape, and “Keikan” appears the more objective-sounding assessment of landscape [11]. Some researchers believe that “Fukey” would be more suitable for the fields of humanity and social sciences and “Keikan” would be more suitable in engineering [12]. In addition, the words “Fukey” and “Keikan” have been clearly distinguished in the Japanese academic fields: the most representative example of this occurred when the book “the Landscape We See [13]” by an American landscape architect was translated into Japanese: the word “landscape” was translated using both “Fukey” and “Keikan” depending on specific contexts [14].

Therefore, it is thought that the composite word “Oto-Fukey” implies the more subjective aspects of soundscape, while the composite word “Oto-Keikan” appears to be used with the more objective-sounding assessment of soundscape. For example, “Fukushima Soundscapes (after 3.11) [15-17],” which documents the changing of soundscapes in Fukushima after the severe accidents of the nuclear power plants, is an acoustic archive of “Oto-Fukey,” not of “Oto-Keikan.” Hiramatsu [6,18] advocated that imagined auditory experiences are included in the concept of (deep) soundscape, and this thinking is best represented by the word “Oto-Fukey,” but not appropriate for the word “Oto-Keikan.” In addition, the idea that psychoacoustic parameters can describe an aspect of soundscape perception is suitable to the concept of “Oto-Keikan,” but odd to the concept of “Oto-Fukey.”

It is quite troublesome that both the meanings of “Oto-Fukey” and “Oto-Keikan” are sufficient to the definition of the soundscape by both WSP and ISO. Thus, in the case that either “Oto-Fukey” or “Oto-Keikan” was selected for the translated word of soundscape, there is a strong possibility of misunderstanding, or even distortion, that the meaning of another word is not included in the concept even by the people who know the

exact sentence of the definition. In this sense, to use the word “soundscape (サウンドスケープ)” is the optimum answer for the Japanese language system.

This kind of translation problems can occur not only between Japanese and English, but also between any languages. For example, Brown et al. [19] already pointed out that the meaning of the words using for the translated words of “-scape” are different in even European languages, and these differences can cause the differences of the understanding of the soundscape concept.

It is natural that the image of the extent of the research differs if the understandings of the concept differs. In this situation, it is quite difficult to make a consensus on the methods of research. Therefore, we must confirm the definition of the technical terms beyond the languages.

From the discussion above, we arrive at the following two questions:

Question 1: Are our understandings of the extent of the concept of the soundscape exactly the same amongst different language systems?

Question 2: Are there any technical terms in the field of soundscape in which the extents of the meanings differ amongst different languages?

3. Usage of the word “noise”

Linguistic problems caused by the differences between languages occur not only on the conceptual level like the definition of soundscape but also on

the usage of the technical terms. The typical problem of this type is found in the usage of the word “noise.”

IEC 60050-801 [20] defines the noise as “Disagreeable or undesired sound or other disturbance.” In Japan, the definition of the noise (騒音) in JIS Z 8106 [21] is the literal translation of the definition in IEC. In this way, the definitions of the noise in academic uses in English and Japanese seem to be the same.

Regarding the usage of the word “noise,” ISO/TS 15666 clearly stated that “[i]n many languages it is linguistically odd to use the word ‘sound’ in relation to unwanted sound. In connection with unwanted sound usually the word ‘noise’ is used [22].” This statement means that the words “sound” and “noise” represent a kind of dichotomy.

However, in Japanese, it is not strange at all to use the word “sound (音)” even in relation to unwanted sounds. In fact, in cases in which a complainer knows the source of noise, it is more natural to say “the sound from the source is annoying (too loud, or something like similar)” than using the word “noise” instead of “sound.” The word “sound (音)” can indicate all kinds of sounds, including noise, and also can be used as a contrasting word to the word “noise,” while the word “noise (騒音)” can only indicate a minor subset of the meaning of the word of “sound,” that is unwanted sounds. In the field of the semiology, the relation of the words “noise (騒音)” and “sound (音)” is called marked/unmarked. Indeed, in Japanese characters, “noise (騒音)” is expressed as “sound (音)” marked with the adjectival character for “annoying (騒).”

From the viewpoint of soundscape, it is impossible to know whether a certain sound is a noise or a sound for any particular individual without asking. When researchers ask about a certain sound in such situations, they can use the word “sound” if “noise” and “sound” are seen as marked/unmarked. But they should not use “sound” if those words are in dichotomous relation, because using “sound” implies that the sound is not a noise. In this way, although the definition of “noise” in English and that of “noise (騒音)” in Japanese are the same, the usage of those words are different. This means that a literal translation of any sentence using the word “noise” between English and Japanese may not indicate the same meaning. Thus, in order to make semantically the same sentence regarding noises, some sort of protocols beyond literal translation are needed.

Generalizing the above discussion, we arrive at the two questions below.

Question 3: Are there any technical terms in which linguistic structures are different between languages, despite the definition of the word is the same among the languages?

Question 4: How can we make sentences which have semantically the same meaning, using technical terms whose linguistic structures are different between languages?

4. Evaluation scales

Assessment of perception of soundscapes is one of the most important parts of soundscape research.

Therefore, the standardization of the method of assessment is a crucial issue in the standardization of soundscape research. Linguistic problems also occur in regard to the perceptual assessment of soundscapes.

For assessment of perceived soundscape quality, the Swedish Soundscape-Quality Protocol (SSQP) [23] seems to have become a de facto standard. However, as Jeon et al. pointed out [24], although this protocol has been translated into some 10-15 languages, validations of those translations were discussed in only a handful of studies.

One of the few studies regarding the validation of translated scales was conducted by Tarlao et al. [25]. In their study, the English scale and the French scale of the SSQP were compared using the results of research conducted in Montreal. The results revealed a general framework, with similar results between French and English in line with Axelsson's original study [26], in that pleasantness and eventfulness appear as the main and the secondary components of the principal component analysis (PCA). However, upon closer consideration, some differences were found in the attributes of scales of “monotonous,” “calm,” “chaotic,” and “eventful.”

Jeon et al. examined the validation of the SSQP in French, Korean, and Swedish [24]. As a general framework, their results of PCA also show that pleasantness and eventfulness appear as the main and the secondary components. Although they found that no major differences were observed in adjectives describing pleasantness, significant differences were found in adjectives describing eventfulness. In addition, they pointed out that the term “chaotic” in SSQP could not be translated into Korean, and therefore, they replaced the word with “noisy.”

No study using the SSQP has been done regarding translation of the SSQP into Japanese. However, there is some research in which perceptual assessments of soundscapes were conducted. For example, Kawai et al. [27] investigated the evaluation structure of environmental sounds, not sonic environment, and their results of PCA can also be interpreted that pleasantness and eventfulness appear as the main and second components.

Nagahata and Minegishi [28] evaluated the soundscapes of some Japanese parks using SD scales including a part of the SSQP scales. They also got the result of PCA that pleasantness and

eventfulness appear as the main and the secondary components. However, their results also show that the word “monotonous (単調な)” in Japanese means a pleasant and uneventful evaluation, while “monotonous” in English [26] means unpleasant and uneventful evaluation.

As these studies suggest, pleasantness and eventfulness are also fundamental components in the perceptual assessments of soundscapes in Japanese as a general framework, but there is a possibility that the details in evaluative structures of soundscapes differ between Japanese and English.

In order to check the translatability of the adjectives used in the evaluation scales, the adjectives used in SSQP were looked up in six popular English-Japanese dictionaries [29-34]. As Table I shows, the translated words for “uneventful” and “calm” overlapped with each other. This suggests that it is quite difficult to distinguish “uneventful” and “calm” in Japanese; therefore, the SSQP scales cannot be fully translated into Japanese without modifications.

In this way, although the framework of the evaluation structure, that is with pleasantness and eventfulness as fundamental components, seems to be robust beyond the languages, specific adjectives used for assessments of soundscapes may not be correspond between the languages. In this situation, a further question emerges.

Question 5: To what level (framework level, semantic level, specific word level, etc.) do the scales for assessments of soundscapes correspond beyond languages, as we attempt to use them as International Standards?

5. Final Remarks

As the discussion above clearly shows, linguistic problems occur at various levels, including conceptual levels, terminological levels, and actual assessment levels. Without resolving those problems, the standards of the soundscapes cannot be described as international acceptable standards which must be used and somehow transcend differences amongst languages. The international soundscape community should acknowledge and respect such linguistic issues regarding soundscapes.

Table I. Translated words for “uneventful” and “calm”

Dictionary	uneventful	calm
Kenkyusha's English-Japanese dictionary for the general reader [29]	たいした事件のない 波乱のない	穏やかな 静かな
Kenkyusha's new English-Japanese dictionary [30]	事件のない 多事でない 波乱のない 平穩無事な 平凡な	穏やかな 静かな 平穩な 太平な 平和な
Taishukan's genius English-Japanese dictionary [31]	普通の きまりきった 平穩な 静かな これといった事件もない	穏やかな 静かな 平穩な
Shogakukan Random House English-Japanese dictionary [32]	事件のない 波乱のない 無事平穩な 不都合のない	穏やかな 静かな 平穩な
The Wisdom English-Japanese dictionary [33]	事件のない これといった事が起こらない 平穩無事な	平穩な 穏やかな
O-LEX English-Japanese dictionary [34]	何事もない 平穩無事な	穏やかな

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