

A QUANTITATIVE STUDY OF LINGUISTIC LANDSCAPE 言語景観に関する計量的研究

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Introduction

Linguistic landscape is understood as visual associations of complicated relationship between language and society. As the globalization progresses, linguistic landscape reflects the change of era sensitively and can be an index to measure globalization. In other words, language is a product of social activity and language usage condition is a miniature copy of a social condition. The purpose of this research is to explicate the social formation process by quantitatively examine the actual situation of language use in landscapes.

要旨

言語景観は言語と社会との複雑な関わりを可視化したものとして捉えられる。グローバル化が進むとともに、言語景観はこのような時代の変化を敏感に反映し、グローバル化を測る指標になりつつある。すなわち、言語は社会活動の産物であり、言語使用状況は社会状況の縮図でもある。本稿は、景観に見られる言語使用の実態を計量的に考察することによって、その社会的形成過程を解明しようとするものである。

本稿では、言語景観の実態を把握した上で、言語景観のパターンを本国志向型、折衷志向型、欧米志向型に分類し、共通性を示した。さらに、社会経済的要因がいかに関与しているかを解明し、法則性を見出した点では、意義のある研究である。今後、言語景観の研究を考える上で、こうした社会経済的属性を重要な要因として考慮しなければならないことを明らかにしたのだと考えている。また、考察の結果を踏まえて、言語景観とは景観における言語の社会的属性を包括的に表現したものだとして新たに定義づけている。そして、研究方法論、言語景観における言語使用に見られる言語変化の現象、より普遍的な言語景観研究の理論的枠組みについて、改めて総括し、言語景観研究を理論的に位置づけた。

Previous Researches

Jiang (2009) categorized and introduced 4 categories of previous researches as theoretical origin; geological research, social linguistic research, economical linguistic research, and language service. At the same time, there are various researches done from different perspectives and methods overseas. Here, the problems and challenges of previous researches are discussed. First, it is difficult to compare research done by others subjectively since previous researches are done in different methods. The synchrony of current descriptions, such as previous research, is necessary, and what is accomplished in the research of linguistic landscape is quite large. On the other hand, however, it is true that it requires the implementation of the perspective of diachronic study in linguistic landscape. In other words, change in language use in linguistic landscape should be understood as a progressing language change phenomenon and perspective that grasp the change in language use tendency including projection of the future change should be implemented. Next, there are many that focus on the language or language use, meaning that the focus is on the internal aspect of language in linguistic landscape. But external aspect of language, such as sociological aspect of the society where the linguistic landscape is located, should be focused more. Also, there are many that are focused on special signs in the special areas and there are none that focused on commonality of usage tendency in linguistic landscape worldwide or formation of linguistic landscape, meaning the law of formation.

From what I mentioned above, I also utilized historical photography and data provided by other researchers as well as the data gathered for this research. I will position the linguistic landscape research theoretically by calculating the ratio of text combinations and used languages (native, English, and others), comparing the data with my data as much as possible, and establishing the theory of linguistic landscape research.

Research Summary

Research Objective

It is not a simple language problem when the whole linguistic landscape is being grasped even as an outline including the formation process of linguistic landscape. It involves social and cultural problems as well as political and economic problems. The language aspect is not sufficient. Therefore, the most important objective of this research is to examine the actual condition of language use in landscape from sociolinguistic perspective to clarify its formation process. Another objective is to give a new definition of linguistic landscape and empirically measure the progress of social change such as globalization, Anglification, and multilingualization.

Research Subject

In this thesis, 2 sociological items (area and industry) and 3 linguistic items (language type, text type, and notation) were set up as research items of linguistic landscape. The graphs composed in triangle graph and correspondence analysis were examined comprehensively from macro perspective. Also as a supplementary research, it is compared with historical photography as well as the actual research results. Furthermore, supplementary analysis was done using data acquired by other researchers for previous research as materials for comparison.

The materials and data that are acquired by others are indicated below.

(1) Inoue (Privately printed book)

(2) *1850-2010 A Photo Contrast of Past Glories and New Accomplishments*

The research on linguistic landscape was done in the following 4 cities and 16 areas after multiple roadside observations and preliminary investigation. It was done in Ginza, Omotesando, Shinjuku, Akihabara, and Monzennakacho in Tokyo 23 wards from June to December 2007, in Nanjing Road, Yu Garden, Shintenchu in Shanghai in February 2009, in Dotonbori, Shinsaibashi, and Nihonbashi Denkigai in Osaka in March 2009, and in Mong Kok, Yau Ma Tei, Tsim Sha Tsui, Causeway Bay, Lan Kwai Fong in Hong Kong in June 2010. The reason for choosing these 16 areas is that they are generally known, are representative commercially concentrated area in quality and quantity, and have a concentrate of social and economic activities.

Previous research said that “economic principle is easily reflected on linguistic landscape in commercial facilities so there is more linguistic variety than public signs (Inoue 2007).” So commercially concentrate areas are chosen in Tokyo 23 wards. To be specific, top 3 commercially concentrated areas were listed per ward according to “Commercially concentrated areas of Tokyo (Commercial statistical research report-statistics of commercially concentrated areas) for 1997. Next, main streets from 5 areas are chosen according to the ward with most number of shops; Ginza area in Chuo ward (most shops in the ward) was the first, Omotesando area (third most shops within the ward) on Aoyama street in Minato ward was the 11th, Shinjuku station east exit (most shops in the ward) in Shinjuku ward was the third, Akihabara (most shops in the ward) in Chiyoda ward was the 10th, and Monzennakacho area (second most shops in the ward) in Koto ward was the 15th. The general image of the 5 area that were researched for this thesis are; Ginza is an old shopping district filled with luxurious image, Omotesando is a stylish area with foreign luxurious fashion brand and trees, Shinjuku is a new shopping district filled with energy, Akihabara is an electronics area attracting people from all over the world, and Monzennakacho has the friendly atmosphere of the traditional commercial and working-class neighborhoods. In this thesis, I would like to focus on how much the image is reflected on the language usage in linguistic landscape for each area. The result of this examination is divided into the language use pattern seen in the linguistic landscape in those 5 areas into home country oriented (Ginza, Shinjuku, Monzennakacho), Western oriented (Omotesando), and Asian oriented (Akihabara). Later, I selected and researched areas in Osaka, Shanghai, and Hong Kong that are similar to the 3 patterns in those 5 areas to see if other city in Japan or abroad will follow the same pattern as the examination result.

The research subject was all signs that are located on both sides of the main street of the researched area that are visible, including store signs and advertisements that are mainly non-public linguistic landscape. Since landscape change at night, the researched time was limited to daytime.

In this research, gathered picture data were divided in to 5 categories of area, language type, display method, and text type combination and industry and were given codes and turn into numerical value so it can be used in multivariate analysis called correspondence analysis using SPSS (version 15) statistic software.

Triangle Graph

Figure 1 is a visualization of **Table 1**, and data is lined up in the order of area that has the highest native language use. It shows the ratio of language type in linguistic landscape of each area. To show the correspondence of three types of language, a triangle graph like **Figure 1** was composed.

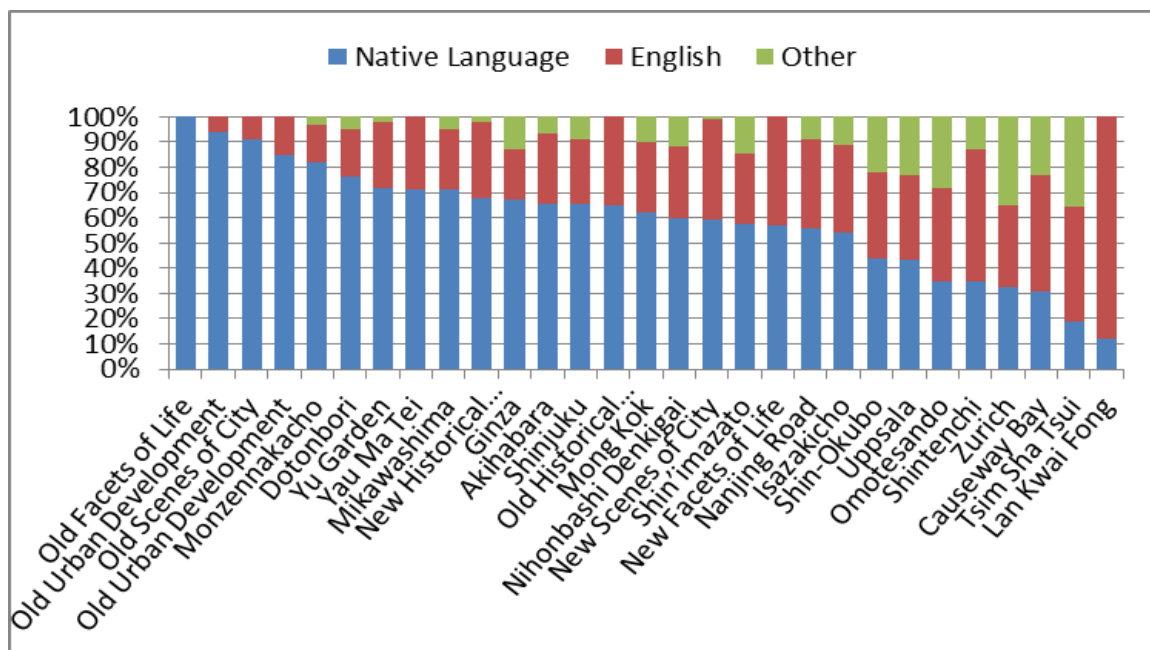


Figure 1 Ratio of language use in linguistic landscape

Table1 Detail of ratio of language use in linguistic landscape

| | Native language | English | Others |
|------------------------------------|------------------------|----------------|---------------|
| Old Facets of Life | 1.00 | 0.00 | 0.00 |
| Old Urban Development | 0.94 | 0.06 | 0.00 |
| Old Scenes of City | 0.91 | 0.09 | 0.00 |
| Old Urban Development | 0.85 | 0.15 | 0.00 |
| Monzennakacho | 0.82 | 0.15 | 0.03 |
| Dotonbori | 0.76 | 0.19 | 0.05 |
| Yu Garden | 0.72 | 0.26 | 0.02 |
| Yau Ma Tei | 0.71 | 0.29 | 0.00 |
| Mikawashima | 0.71 | 0.24 | 0.05 |
| New Historical Architecture | 0.67 | 0.30 | 0.02 |
| Ginza | 0.67 | 0.20 | 0.13 |
| Akihabara | 0.66 | 0.28 | 0.07 |
| Shinjuku | 0.66 | 0.26 | 0.09 |
| Old Historical Architecture | 0.65 | 0.35 | 0.00 |
| Mong Kok | 0.62 | 0.28 | 0.10 |
| Nihonbashi Denkigai | 0.60 | 0.28 | 0.12 |
| New Scenes of City | 0.59 | 0.40 | 0.01 |
| Shin'imazato | 0.58 | 0.28 | 0.15 |
| New Facets of Life | 0.57 | 0.43 | 0.00 |
| Nanjing Road | 0.56 | 0.35 | 0.09 |
| Isazakichou | 0.54 | 0.35 | 0.11 |
| Shinokubo | 0.44 | 0.34 | 0.22 |
| Upsala | 0.43 | 0.34 | 0.23 |
| Omotesando | 0.35 | 0.37 | 0.28 |
| Shintechi | 0.35 | 0.53 | 0.13 |
| Zurich | 0.32 | 0.32 | 0.35 |
| Causeway Bay | 0.31 | 0.46 | 0.23 |
| Tsim Sha Tsui | 0.19 | 0.46 | 0.36 |
| Lan Kwai Fong | 0.12 | 0.88 | 0.00 |

First of all, use of native language is the starting point. Most of the time, Chinese are used in China and Japanese are used in Japan, and the increase usage of English is a characteristic of globalization. Also, the trend of versatile globalization is promoting the use of other languages (European and Asian languages).

When each area is summarized, the trend of change in used language is observed as it shows on the top of **Figure 2**. In other words, the trend of used language originates from the use of native language, then use of English increase at one point and goes upwards. Then the synergic use of others (European languages and Asian languages) will lead to the well balanced location. As it shows with the arrow in **Figure 2**, it indicates the changes of language use in linguistic landscape from modern era to current era with the reference of historical situation, and it can project the direction of future changes.

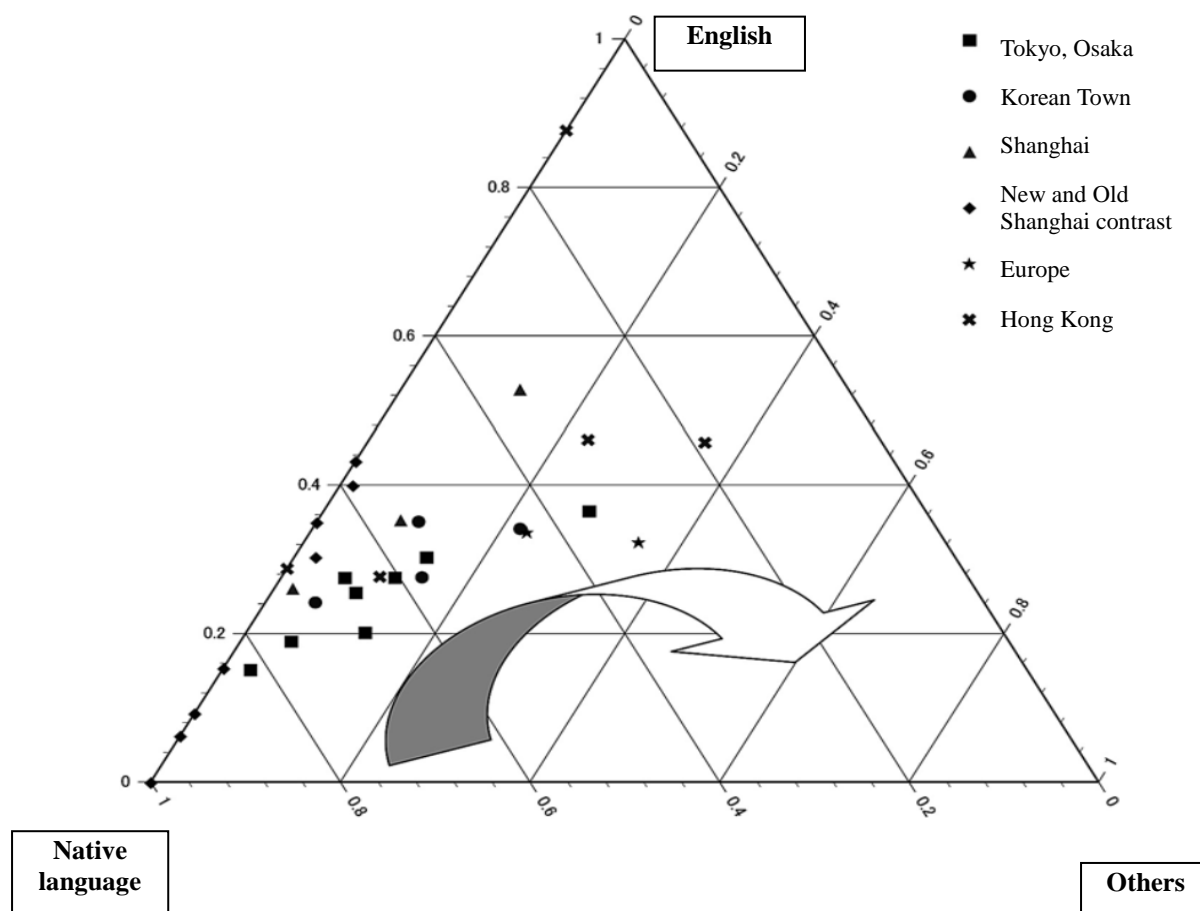
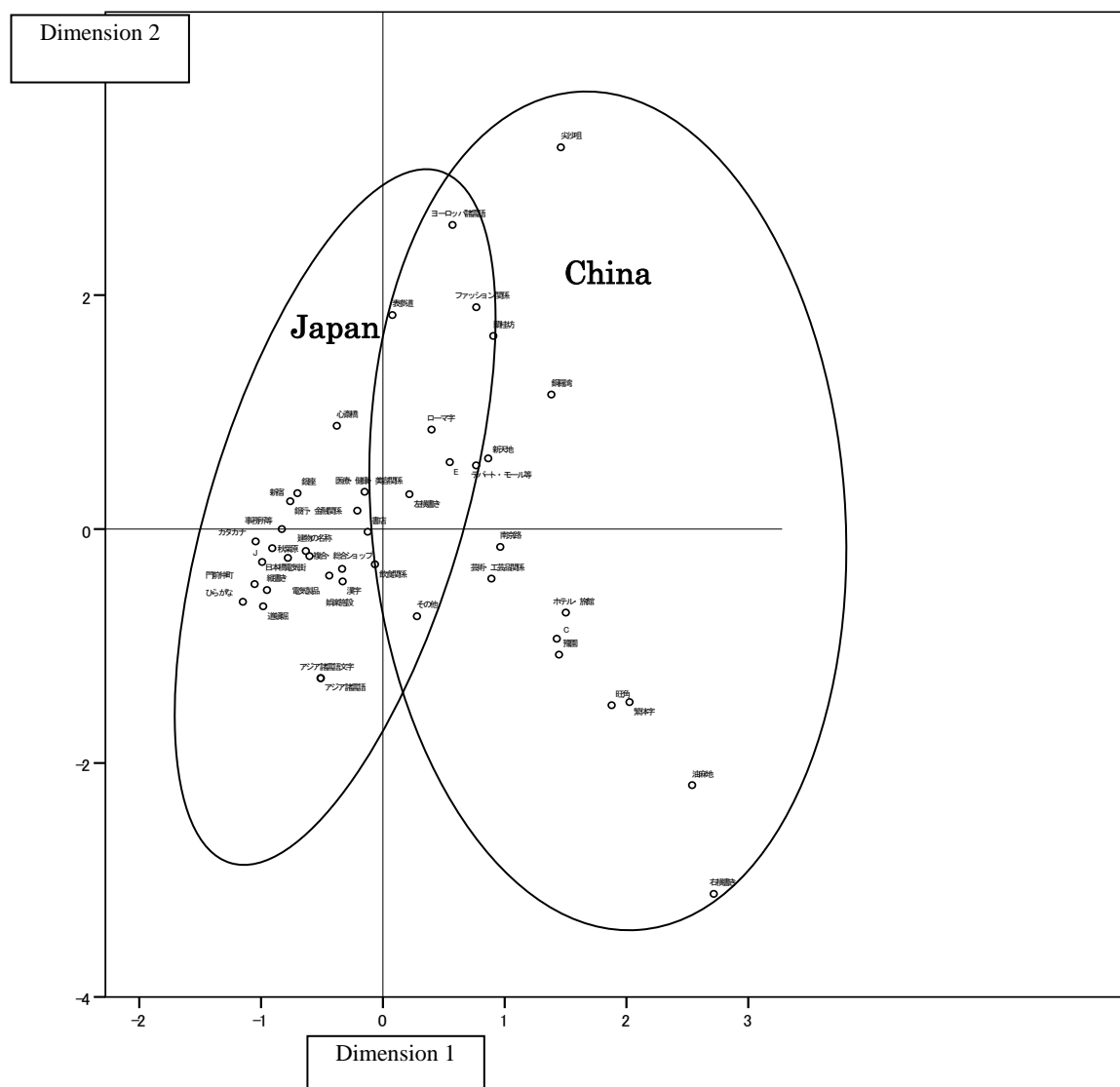


Figure 2 Triangle graph of ratio of used language type
(Native language, English, and others)

Comprehensive examination with correspondence analysis

Correspondence analysis is one of the multivariate analyses that maps the multidimensional totalized data in multidimensional area and express the relationship of data elements in a visual form. Combination of 1 dimension and 2 dimensions shows the correlation of the main factors when correspondence analysis of multivariate analysis method was applied.

First, when it is viewed from the side as in **Figure 3**, first dimension is divided vertically by the used language (Chinese or Japanese) with Japanese being on the left and Chinese being on the right.



**Figure 3 All items in correspondence analysis
(Dimension 1 and Dimension 2)**

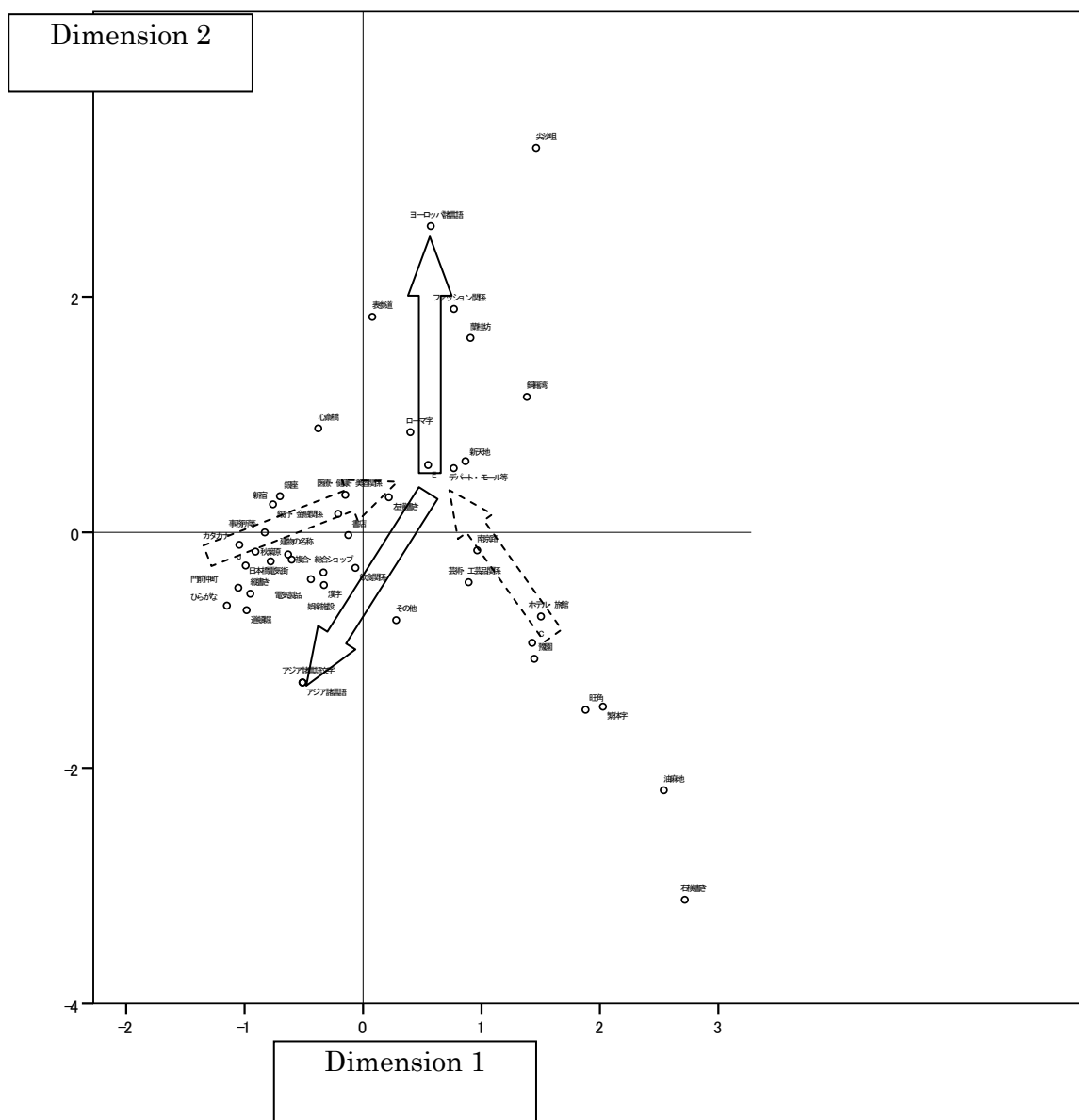
When it is viewed from the horizontal angle as in **Figure 4**, the second dimension is plotted top to bottom according to the linguistic attributes and social attributes based on whether it is fashion related that uses the European language often.

When it is examined comprehensively, they are divided into 3 groups; one that uses European languages and English, one that often uses the native language, Japanese, Chinese, or English equally, and one that mainly uses the native language, Japanese, and Chinese.

These three groups are called Western oriented type, eclecticism oriented type, or home country oriented type (Japan oriented or China oriented) based on their linguistic characteristics.

From this classification, it is assumed that there are common usage pattern of language use in linguistic landscape even when the countries are different. When it is considered from the perspective that society is influencing the language, the characteristics of each group are result of synergic effect of usage situation of linguistically attributed item and sociologically

What I have mentioned above is considered as the result of external consideration. Phenomenon of language change involves the flow of convergence and dispersion. For language use in linguistic landscape, I will reflect the graph acquired by the multivariate analysis technique of correspondence analysis again to see what kind of language change can be seen. When I focus on the used language type, language change is happening in the direction of arrow indicated on **Figure 5**.



**Figure 5 All items in correspondence analysis
(Dimension 1 and Dimension 2)**

First in **Figure 5**, both on the left, Japanese, and the right, Chinese, start from their native language, and English increases due to the globalization. This change to English can be understood as it was accompanied by globalization.

Next, 2 arrows are pointing to European languages and Asian languages from English since English only cannot play its role as communicator or mood maker. So it is considered that European languages and Asian languages are taking over some of the roles that English cannot take. For example, fashion related shops that deal with French or Italian brands uses French and Italian languages as is. In the same way, Korea restaurants would use Korean on their signs instead of English. This phenomenon indicates variation of globalization other than globalization in English.

From the internal examination result mentioned above, selection of used language type in linguistic landscape shows convergence from native language to English, and then dispersion from English to European languages or Asian languages. The understanding of this phenomenon matches the projection from triangle graph.

However, the point that language change in linguistic landscape is not the change of the language itself should be differentiated from the language change phenomenon such as standardization of Japanese dialect.

New definition

As Jiang (2009) pointed out, the existing definition have various problems. Since this thesis clarified the rules of influence of socially attributed items (areas and industries) on linguistically attributed items in linguistic landscape, it can be newly defined that linguistic landscape is comprehensively expressing the social attribution of language in landscape. In other words, this structure shows that the language and society are expressed through landscape. Those three are in relationship that is shown in **Figure 6**.

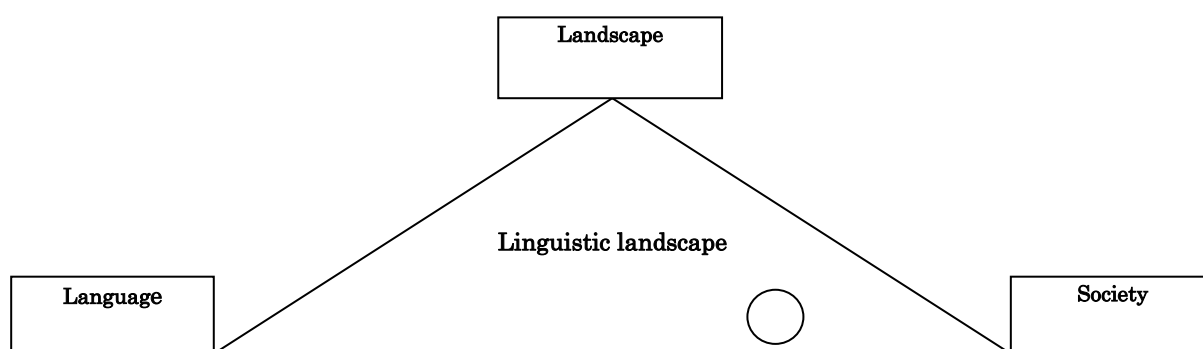


Figure 6 Relationship of language, landscape, and society

Since the area of linguistic research relating to linguistic landscape brings the language closer to the research subject, I would like to take a stance to expand the area and bring the subject closer to the society. When this thesis is placed in **Figure 6**, it is considered to be located in the circle. The previous research that was introduced in 1.3 is located in the same place in **Figure 6**.

Conclusion

In this thesis, the pattern of linguistic landscape was divided into home country oriented, eclectic oriented and Western oriented and found the common ground after understanding the actual situation of linguistic landscape. Furthermore, it is a significant research since it clarified how the socioeconomic factors are influencing the formation of linguistic landscape and discover the rules. It is considered that it clarified that socioeconomic attribution is an important factor in considering a research on linguistic landscape in the future. Also, based on the examination result, it newly defined that linguistic landscape is comprehensively expressing the sociological attribution of the language in landscape. Also, it re-summarized the language change phenomenon seen in language use in linguistic landscape and theoretical framework of more universal linguistic landscape research, and theoretically placed linguistic landscape research.

At last, I would like to construct the theoretical framework of linguistic landscape research based on the result of this thesis as my future challenge. Also, I would like to enrich the material of linguistic landscape and by combining them with the materials for this research, I would conduct correspondence analysis subjecting linguistic landscape of the world to extract the factors that are influencing the formation of linguistic landscape other than industries and economy. I feel the necessity to do international comparison of linguistic landscape in broader perspective.

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