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COMMUNICATION DISTANCES AND DOMINATION
—Translation from Language to Language—

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Introduction

In 1985, the United States withdrew from the United Nations Educational, Scientific, and Cultural Organization (UNESCO), accusing it of inefficient management and criticizing its role in the international communications debate. That was a symbolic event, which showed the ideological division in the world over communications issues.

The debate in UNESCO can be summarized in the following way. The First World, most notably the United States, has insisted on the "free flow of information" principle. The "non-aligned" nations[1], supported by the Second (communist) World, have come to consider this long-standing principle as "cultural imperialism." At the Algiers conference in 1973, the leaders of the non-aligned regimes proposed to create a New International Information Order (NIIO), together with a New International Economic Order. According to Mustapha Masmoudi, the crux of the criticism against the existing order has centered around monopolization of communications resources and flow of communications by developed countries, cultural imperialism through the imposition of alien and irrelevant Western lifestyles by images communicated by the media of developed countries, and economic imperialism through the economic structures and export of media products by developed countries to developing countries (Mehra, 1986).

To resolve the conflict, the MacBride Commission was formed by UNESCO. In 1978, the MacBride Commission submitted its report to UNESCO. This report apparently dissatisfied some of the First World, even though what the report sought was a synthesis of the opposing

views by the commission members consisting of "those strongly tilted toward the First World"[2] (Singh and Gross, 1981). Journalists from 20 countries in Western Europe expressed their objections in the "Declaration of Talloires." The *New York Times* and *The New Republic* urged that unless UNESCO dropped this effort, U. S. representatives "should simply quit" and "go home" (Singh and Gross, 1981). And the U. S. did. The primary reason of the U. S. withdrawal from UNESCO, as officially expressed by the Reagan administration, was its financial mismanagement and waste. The criticism against UNESCO's role in the information order debate was only one among several reasons cited by the State Department. Yet, the actual message conveyed to the world was that UNESCO "needs to modify its policies in, among other things, the area of international communications or lose the political and financial support of the United States," which constituted 25 percent of UNESCO's annual budget (Mehra, 1986).

In essence, the issue is parallel to the division between the "freedom of opportunity" principle and that of affirmative action, or more broadly, the division between the free-trade doctrine and dependency theories. In spite of the significance of the issue, "few empirical studies have been undertaken," while "there has been considerable theoretical development of media imperialism literature" (Mehra, 1986). The majority of existing empirical studies have focused on "the role of transnational corporations or media interests," and the scope of research has been limited to "the flow of particular products of the mass media such as television programs or news stories between the developed countries and Third World nations" (Fejes, 1981). Fejes notes that one of the necessary directions of advance in media imperialism literature is the cultural dimension.

The purpose of this paper is to measure world communication imbalances in a cultural dimension. The data of cultural flow used here are the numbers of translated publications. While technical and scientific information is often obtained by professionals in the original languages, the information in translated publications is mainly aimed at the general public. The information conveyed through translated

publications is thus highly cultural.

This paper attempts to show (1) the map of the language version of the world system based on communication distances among languages, and (2) the continuing imbalance in translation flows. First I will present the loglinear-systemic model of mobility. The next section explains the nature of the data. Then the results from the loglinear-systemic model are examined. Two of my primary interests are discussed: the state of communication distances and the state of domination.

Loglinear-systemic Model of Mobility

The systemic model was obtained through generalization from different types of approaches to mobility tables (Alonso, 1978). The equations of the systemic model can be summarized as follows.

$$M_{ij}=V_iD_i^{\alpha-1}W_jC_j^{\beta-1}T_{ij} \quad (1)$$

$$M_{i+}=V_iD_i^{\alpha} \quad (2)$$

$$M_{+j}=W_jC_j^{\beta} \quad (3)$$

$$D_i=\Sigma_jW_jC_j^{\beta-1}T_{ij} \quad (4)$$

$$C_j=\Sigma_iV_iD_i^{\alpha-1}T_{ij} \quad (5)$$

where M_{ij} : the flow from i to j

V_i/W_j : the function of variables evaluated at the origin i/the destination j

D_i/C_j : the local value at i/j of a systemic function employing arguments evaluated over the entire system

Since this model is the most generalized form of mobility models, its implications are significant. The model suggests that to explain any kind of transition, we have to take into account not only the attributes of source and destination, but also their relations and the system as a whole in which those elements are situated. The relationship of elements, transivities and systems is circular: we cannot explain the movement of elements without considering the field force of the system, and vice versa. This mutually dependent nature of the components is illustrative of the highly complex nature of reality.

It also should be noted that this model is a systemic model:

descriptive rather than hypothesis-testing. On using this model, there are no a priori assumptions of any kind other than very general and circular models of mobility. The model is a kind of conceptual lens to see the reality through; this model is a tool to sort out different forces existing intermixedly in the real world. After finding meaningful patterns through the lens, hypothesis formulation would be easier and more valid.

Since this model is circular by nature, loglinear models are combined with the systemic model to estimate each component (Alonso, 1988). In the systemic-loglinear combined model; D and C can be formulated independent of the values of α, β, V_i and W_j.

$$D_i=\Sigma_j M_{+j} C_j^{-1} T_{ij} \quad (6)$$

$$C_j=\Sigma_i M_{i+} D^{-1} T_{ij} \quad (7)$$

When the kernel U is accepted as the estimate of T, the following formulas are obtained.

$$U=G(M_{i+}/D_i)G(M_{+j}/C_j) \quad (8)$$

$$U_i=(M_{i+}/D_i)\,G(M_{i+}/D_i) \quad (9)$$

$$U_j=(M_{+j}/C_j)\,G(M_{+j}/C_j) \quad (10)$$

$$U_{ij}=T_{ij} \quad (11)$$

D_i is interpreted from the equation (7) in two ways: as a weighted sum of openings or opportunities from the point of view of element i ($\Sigma_j \frac{T_{ij}}{C_j} M_{+j}$), or as the weighted sum of the transivities from i to the rest of the system ($\Sigma_j \frac{M_{+j}}{C_j} T_{ij}$). Similarly, C_j as a weighted sum of potential arrivals or the amount of competition from the point of view of element j ($\Sigma_j \frac{T_{ij}}{D_i} M_{i+}$), or as the weighted sum of the transivities to j ($\Sigma_j \frac{M_{i+}}{D_i} T_{ij}$).

U_i is interpreted in two ways: as the relative importance for the system of category i as a source of migrants (the number of actual migrants available at i (M_{i+}) weighted negatively by the alternative opportunities available to them (D_i), relative to their respective geometric averages), or the total work or effort involved in placing the members of the origin class i relative to other classes (the number of candidates (M_{i+}) times the probable cost per candidate (D_i)). Symmetrically, U_j can be interpreted either as the relative importance in the

system of j as a destination for migrants or the work expended by the system in gathering the arrivals to j.

It should be noted that the interpretation of translation matrices could be different from migration, occupation or trade matrices. First, in terms of migration, occupation or trade matrices, the intention of actors in class i is one of the moving forces, which is not always the case in terms of translation. Secondly, the nature of competition is different. In terms of migration, occupation or trade matrices, a person or an item can be obtained only by one destination. In the case of translation, translating one book into English doesn't mean the same book is not available in other languages.

Data

The data used in this paper were taken from the *UNESCO Statistical Yearbook.* UNESCO has compiled national book production statistics in accordance with the 1964 Recommendation about the definitions and classifications.[3] According to the Recommendation, book production statistics should cover printed non-periodic publications with the exception of the following categories:

a) Publications issued for advertising purposes
b) Publications belonging to the following categories of transitory character: time-tables, price lists, telephone directories
c) Publications belonging to the following categories in which the text is not the most important part: musical scores, maps, charts

The following types of publication should be included in book production statistics:

1) Government publications
2) School textbooks
3) University theses
4) Offprints
5) Publications which form part of a series
6) Illustrated works
   ex. albums, picture books for children, comic books

7) Pamphlets

Although UNESCO collects data on many original languages of translated publications, it collects only 16 destination languages. Thus, the data used here were 16×16 language matrices, consisting of the following languages: English, French, Spanish, Russian, Arabic, German, Italian, Japanese, Dutch, Danish, Norwegian, Swedish, Hungarian, Polish, Slovak and Turkish.

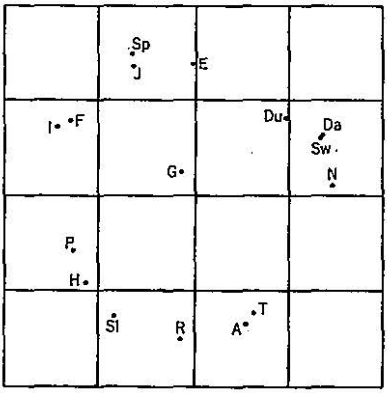
Results and Analysis

Interlanguage Transivity

The transivity measure, MU_{ij}, represents the easiness of access specifically from a language i to a language j without the effects of the row and the column margins. Since the MU_{ij} is the pure measure of transivity, the measure is expected to show some patterns of groupings: some languages form a group and they have greater communications among each other than with languages outside the group. Among the groupings expected to be shown in the clustering, two will be considered in this paper: language families and political alliances. I conducted the multidimensional scaling and the cluster analysis on the MU_{ij} data[4] to see if the results actually show these expected groupings. The results are shown in Figure 1 and Figure 2.

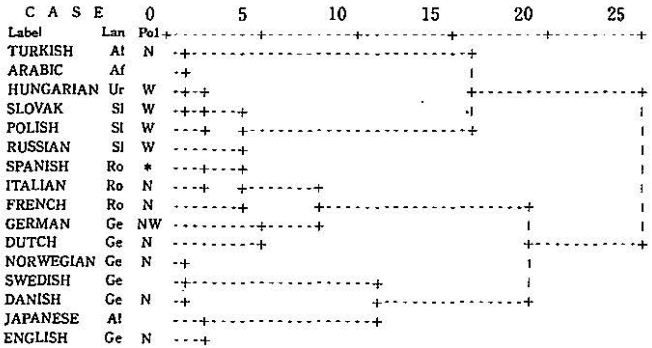
The figure of multidimensional scaling shows evident groupings (Figure 1). The X axe divides the plots into two political-economic groups: languages of the "free-trader" capitalist countries and those of the then communist countries. The language family grouping is also clear in the figure: the Y axe divides Germanic and Romance languages. The other languages locate in the map according to their distances from the four groups divided by the two axes, the political-economic dimension and the Germanic-Romance language family dimension. The groupings both by the political-economic groups and the language family groups are clearly shown also in the cluster analysis (Figure 2).

Figure 1. MDS Map of 1983



Symbol: SPANISH=Sp, TURKISH=T, ARABIC=A, ITALIAN=I, FRENCH=F, GERMAN=G, DUTCH=Du, DANISH=Da, NORWEGIAN=N, SWEDISH=Sw, POLISH=P, RUSSIAN=R, HUNGARIAN=H, SLOVAK=Sl, JAPANESE=J, ENGLISH=E,

Figure 2. Cluster Analysis and Political/language-family Affiliations (1983)



Language Family Symbol: Af(Afroasiatic) Al(Altaic) Ge(Germanic) Ro(Romance) Sl(Slavic) Ur(Uralic)

Political Family Symbol: N(NATO) W(Warsaw Treaty)

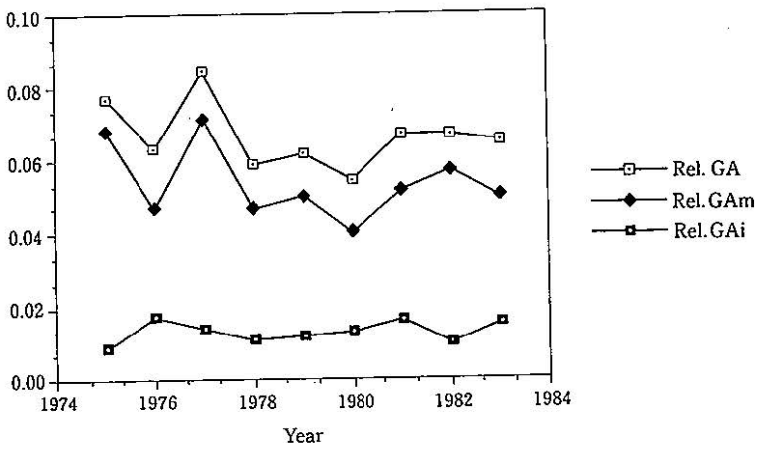
* Note: Spanish is not considered as a member of the NATO group. Spain belongs to NATO, but it accounts for only 27/150 (million) of the Spanish speaking people.

State of Domination

Singh and Gross pointed out that while the MacBride report confirmed "a free flow and a wider and more balanced dissemination of information," the Declaration of Talloires resurrected the original First World formulation of "free flow," conspicuously dropping the words "and balanced." If so, the issue of balance should be a central point of the dispute. I would like to examine, therefore, the state of asymmetry.

An asymmetry index, geometric asymmetry (Rel. GA), is the sum of marginal geometric asymmetry (Rel. GAm) and internal geometric asymmetry (Rel. GAi), all relative to maximum entropy (H*). Figure 3 shows how these asymmetry indices have been stable over nine years. The geometric asymmetry index, which ranges from 0.054 to 0.085, shows that the world translation flow is more unbalanced in symmetry than the Brazilian occupational mobility, whose geometric asymmetry measured 0.0434. The gap between sending and receiving languages has not diminished; rather, the latest asymmetry figure is higher than

Figure 3. Relative Geometric Asymmetry, 1975-1983

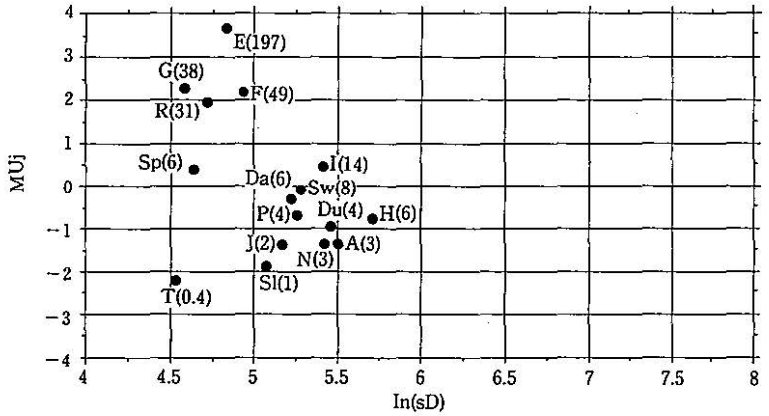


that of 1980. Figure 3 also indicates the asymmetry largely comes from margins, not from the interitem level. That means the languages which send a lot of translation to other languages are not necessarily those which receive a lot. The next task is to examine the margins, the low and the column effects, to single out dominant senders and active recipients of translated publications.

The row sum can be broken down into two components: MU_i represents a result of the work by the class i and sD represents a result of the work by the system where the class i is situated. Figure 4 plots the sixteen languages by these two dimensions. As shown in the figure, English is a predominant sender. This predominance is also indicated by the fact that English accounts for more than 70% of the total marginal geometric asymmetry (0.0364 out of 0.050).

In addition, Figure 5 shows that the pattern of dominance in translation sending has been almost constant over nearly a decade: the pattern with English outstanding from others, and German, French and Russian forming the second dominant group.

Figure 4. Translation Sending (MUi x sD)



Note: ( )=row margins in hundred

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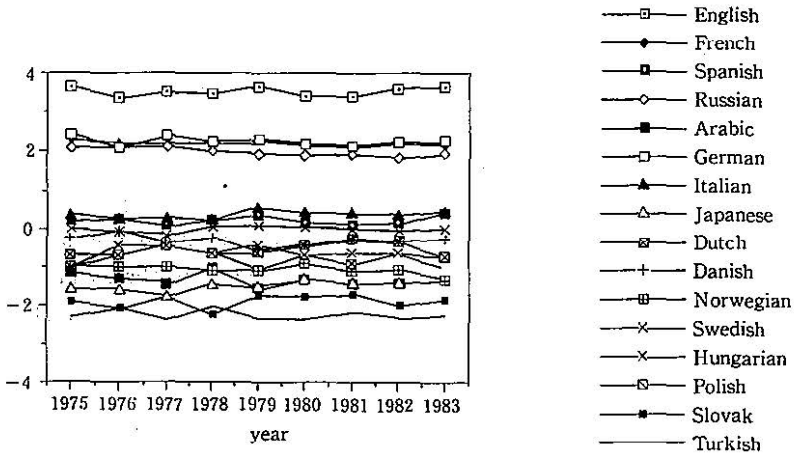
Figure 5. Translation Sending as the Work by the Origins (MUi), 1975-1983

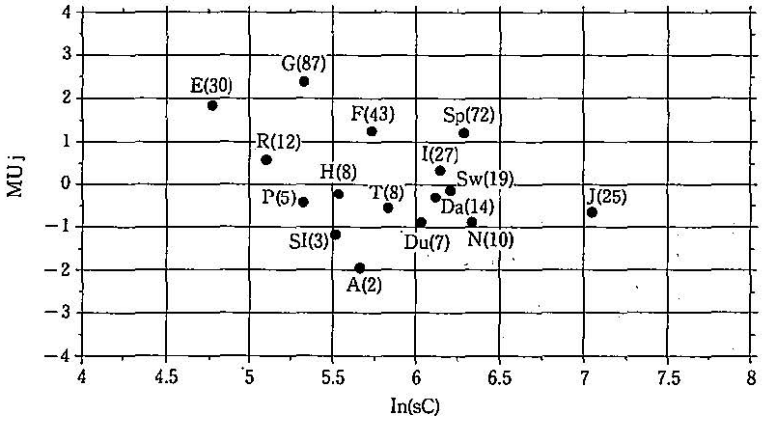


Satellite Languages: Japanese and Spanish

On the other hand, Figure 6 shows that the destinations are more widely scattered in the $MU_i \times sC$ field than the origins in the $MU_i \times sD$ field. Almost the same amounts of publications are translated into Spanish and Japanese as into German and English respectively, but while the latter are more from the work of the destination languages, the former are more as a consequence of situations, in this case, the situation as satellite languages. The outstandingly high value of Japanese sC is due to a weighted transivity with English, which accounts for almost 80% of the value.

Spanish and Japanese locate in the MDS map (Figure 1) closely to each other not because of the high transivity between the two, but because of their status as a satellite language of English and French. As senders, Spanish and Japanese are rather isolated from the rest of the world. Their closeness to the English and French are due to one-way flow. Considering the language speaking population, these two languages are relatively underrepresented in the field of translated publications.[5]

Figure 6. Translation Receiving (MUj x sC)



Note: ( )=row margins in hundred

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Trends

Japanese not only has a high value of sC but also shows a distinctive growth trend in recent years (Figure 7). The high and ever growing value of sC of the Japanese language is due to its growing one-way transivity with the predominant sender, English.

Four trends are manifest by the comparison between the MDS maps of 1983 and 1975 (Figure 8): (1) the English's loss of interest in Russian publications ($MU_{Ru,En}$: 0.284→−0.094), (2) the growing distance between English and French ($MU_{Fr,En}$: 0.216→−0.411; $MU_{En,Fr}$: 0.614→0.192), (3) the growing independence of German and (4) the growing English satellite-ization of Spanish and Japanese (Element of Rel GAi from English to Spanish: 0.0010→0.0052; from English to Japanese: 0.0000→0.0017).

Figure 7. Translation Receiving as the Work by the System (sC), 1975-1983

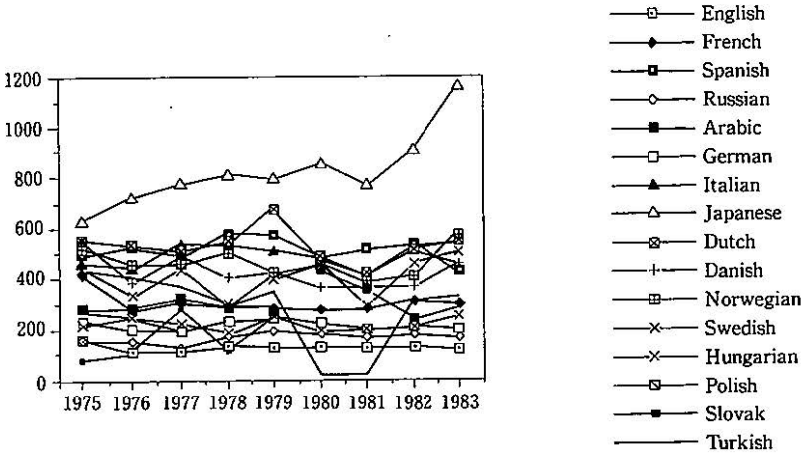
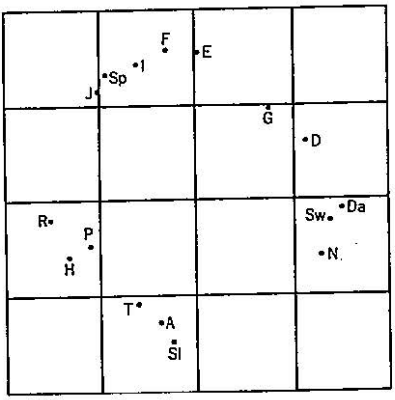


Figure 8. MDS Map of 1975



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Summary

This paper has shown asymmetric flows of translation, with English as a predominant sender. The languages were mapped and clustered according to the transivities between each pair, and the results show the clear groupings of languages in accordance with language families and political alliances. The map has also shown that the predominantly receiving languages locate as satellites rather than in periphery.

This research was counducted with a number of limitations. First, only sixteen languages were available, many of which were European languages. Secondly, because the matrix was from languages to languages, the nationality of translation was not available, although it is desirable to distinguish the former colonies from the First World. It would improve the study, in addition, if contents of translated publications are identified.

As far as translated publications are concerned, the existence of "cultural domination" is apparent from the unbalanced flow of translation. Whether or not this imbalance is functioning as "cultural dependency," as "cultural imperialism" adherents are arguing, remains to be answered. To answer this question, it is necessary to investigate the actual impact of translated publications on the lives of people. Aside from answering this question, however, the unbalanced flow of information, which is clear from the results in this paper, is already a problem in terms of the First World's principle of "a free and balanced" flow of information. There is an easier way to solve this problem than the Third World trying to prevent dominant cultures from pouring in: the First World trying to increase translation of publications from the rest of the world. That would increase the total amount of world communication and thus enhance mutual understanding. What is needed now is the practice of the Western principle of free discussion rather than the withdrawal from discussion.

Notes

(1) In 1956, former colonies organized a "non-aligned" movement at the Bandung conference.

(2) The MacBride commission consisted of 16 members, 6 from the First World, two from the Second, and 8 from the Third World.

(3) In 1985, the new recommendation was adopted by the General Conference of UNESCO.

(4) I used the SPSSx ALSCAL program to conduct multidimensional scaling (MDS). Because of the conditions of the program, I transformed the transivity data (MU_{ij}) into the distance data ($4-MU_{ij}$). The results obtained from using three other ways of transformation are also available: (1) exp (MU_{ij}), (2) 1-exp (MU_{ij})/ max (exp (MU_{ij})), and (3) 1/exp (MU_{ij}). The transformation $4-MU_{ij}$ is used in this paper because the squared correlation coefficient is the highest with $4-MU_{ij}$ in interval measures.

(5) The numbers of translated publications per capita are 4.1 for Spanish and 1.9 for Japanese in 1983, compared to 93.4 for French and 79.0 for English.

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コミュニケーションの距離と支配関係：

言語から言語への翻訳を通じて

〈要　約〉

武　石　智香子

世界における文化面での支配－被支配関係については，第一世界の第三世界に対する「文化的帝国主義」の有無というテーマの下に論争が繰り返されてきた。しかし，その問題の重要性にも拘らず，これまで実証的研究は充分なされてきたとはいえない。数少ない既存の実証的研究も，特定の企業やメディアの利害とその特定の文化的商品との関連に焦点がおかれるものがほとんどであった。本論文は，翻訳された出版物の数をデータとして，William Alonsoの開発した社会移動を数的に捉えるモデルを用い，より一般的な文化の流れを測定することを試みたものである。このモデルからは，移動地点間の距離や，移動の非対称性といった指標を得ることができる。第一の指標である移動地点間の距離は，本論文においては，翻訳を媒介とする文化的交流関係の近接性を意味する。Alonsoのモデルで得られた近接性指標を，MDS分析によって視覚化するという新しい試みを行った結果，言語系統，政治同盟・従属関係をきれいに反映する一種の言語版世界システム図を得ることができた。第二に，移動モデルから得られるもう一つの指標である「非対称性」を分析すると，翻訳物を通じた文化の流出においては，英語による情報が圧倒的に世界で支配的であるという傾向が継続的にみられることが明らかになった。