International Comparisons of Positive Interests towards the Sea— I .
—Among Japanese, American, German and Swedish Students—

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海洋志向性の国際比較— I .
—日・米・独・スウェーデンの大学生について—

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要 旨

海洋志向性に関する研究の一環として、これまでに日本の大学生について社会調査を実施し、また同様の項目で米・独においても調査を実施し、結果の検討を行ってきた。今回、サンプル数は少数であるが、新たにスウェーデンの大学生についての調査結果を入手したので、従来の結果と対比させつつ、全体的な検討を行った。

調査項目は、SD 法による海・船・船乗りのイメージ、海事に関する意見、スポーツ・趣味などの海陸志向、海事に関する知識の程度などである。

本稿は主として単純集計の結果についての報告であり、主な結果として、海に対するイメージはアメリカ、スウェーデンの大学生がよく、親近感ドイツの商船・海洋大学生に強く持たれていたこと、日本の大学生は、海事に対する知識は持ちあわせているが、海そのものに関する関心はむしろ外国の学生ほど高くないこと、特に商船大生でも海や船に対して親近感が強いわけではない、などの事実が明らかにされた。

1. Introduction

As a psychological viewpoint to investigate positive interests toward the sea in Japanese marine students, we have conducted a series of social surveys on the images of sea affairs and compared the results with those of general college students^(1, 2).

To deepen the understanding of images Japanese students hold, it is very helpful to perform cross-cultural studies and to examine the differences and similarities among the countries.

Although parts to the results were already reported about American and German students⁽³⁻⁶⁾, we summarized those results again and compared them with Swedish data¹ that were obtained recently. The reason why Sweden was selected is the country is called a land of forests and lakes and still nature is well preserved. Japan is islands country surrounded by the sea, and also formally called plenty of water-rice. Although we can find some geographical resemblances between these two countries, the Japanese images toward the sea and nature seem to have changed after the modern industrialization and recent rapid land reclamation.

The three key concepts, the sea, ships and seamen in the previous studies, were also selected here to examine the affectionate feelings towards maritime affairs. The focus of the present study

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is to clarify characteristics of the images among those college and marine students.

2. Method

Subjects : Total of 596 general college students and 224 marine/navigation school students participated in this study.

The abbreviations are used to show sample groups, U : university (or general college) and M : marine school, and J : Japan, G : Germany, S : Sweden and U : U.S.A., for example, JU denotes Japanese university students.

The detailed sample numbers are : JU=243 (174 male, 68 female students), GU=54 (25, 29), SU=60 (25, 35), UU=239 (88, 151), and JM=155 (143, 9), GM=69 (62, 7).

Date of Survey : The surveys were conducted from the spring of 1990 to the fall of 1992 in those four countries.

Questionnaire : The questionnaire sheet was composed of (1) face sheet items, (2) the rating scales for the three concepts, (3) attitude to maritime matters (the results are omitted in this report), (4) preference of hobbies, sports, foods and others of the sea or land, and (5) quiz items to measure the knowledge on sea affairs.

Every category has ten to twenty items and these are randomly arranged. The original survey sheet was written in Japanese and translated from Japanese to English by an English researcher of our college and the present Japanese authors. The German and Swedish versions were translated by the co-workers.

3. Results and Discussions

3.1 Face Sheet Items

To investigate the background of the subjects participated in the surveys, the face sheet items were firstly analyzed. They were 1. majoring fields at colleges, 2. age, 3. sex, 4. brought up place (city, farm, fishing or mountain district), 5. geographical environment (seashore, not far from the sea, inland), 6. frequency contacted with the sea or ships (many, not often, seldom, never) and others.

More than ninety percent of the Japanese and the American subjects were undergraduates and below twenty years old. They were younger than German and Swedish students. The Japanese samples were almost male students, but about one third to half were male in other countries.

The Japanese college samples majored in liberal arts about forty percent, and the others did in a variety of social sciences, medical science, business, engineering, education, pharmacy and so on.

Most of the subjects were from cities and those from farm area were less thirty percent. The patterns of the brought up places were similar among the cultures except the German groups.

Concerning the geographical environments of brought up places (Fig.1), about half were from '3. inland', and the rest were from '2. not far from the sea' in the Japanese sample.

On the other hand, relatively large number of subjects were from '1. seashore' and about half were from '3. inland' and the rest were from '2. not far from the sea' in German and Swedish samples.

On frequency to contact with the sea or ships before entering college or university (Fig.2), those who respond to 'many times' were twenty percent of the Japanese subjects and more than eighty percent did not contact with the sea so often. On the contrary, more than half were contacted so many times in the Swedish and the American samples. The German samples were about forty percent.

3.2 Images

Images of sea affairs were measured by using semantic differential format, namely fifteen bi-polar scales with seven response categories, negative one to positive seven for each concept. Social images can represent people's ambiguous feelings and they are suitably analyzed through this method. Ten of the fifteen scales were common scales among the three key concepts and the rest five were specific to each concept.

Firstly we examined the patterns or distributions of the ratings among the cultural groups and found that the ratings as a whole were normally distributed indicating that the scales were similarly treated even by the groups of different subjects⁹⁾.

Further, it was found that ratings were systematically distributed in almost all scales, that is, most of the bi-polar adjective scales were clearly understood by our subjects, although some scales were rated at their middle neutral category that denotes 'neither positive nor negative' or difficult to respond.

The average rating scores for the images of the sea, ships and seamen were calculated in the four general college students. The larger average scores more than four points indicate positive evaluation in the seven-point scales.

Sea : The common patterns of ratings among the four cultures were that "the sea" was '4. important', '5. powerful', '14. great', and relatively '7. dangerous'. The Japanese subjects rated very high on scales, '5. powerful', '14. great', and '15. plentiful' and relatively less '2. joyful' and '4. important'. The unique points of the German ratings were relatively less '8. familiar', '9. intimate', '11. bright' and '15. plentiful'. They lived far from seacoasts and did not have closer images to the sea. The Swedish subjects rated very high on '2. joyful', '4. important' and '10. interesting'. The ratings on the '11. dark-bright' scale were on darker side in the German and the Swedish samples and were on brighter side in the Japanese and the American subjects. Finally, the American subjects rated very high on '1. pleasant', '3. romantic', '8. familiar', and '12. rough' scales.

Ships : As the ratings of all groups varied widely, there was no common evaluation pattern and their responses were in general not as clear as those of "the sea".

The "ships", however, were rated as '4. important' and '10. interesting' except Japan. For the Japanese samples, ships were relatively less '1. pleasant', '7. safe' (namely dangerous), '8. familiar', '14. fast' and '15. hasty'. The Japanese ratings were the most negative in the four cultures. The German subjects also rated ships less '9. intimate', '12. showy' and the Swedish subjects were '1. pleasant', '2. joyful', '3. romantic', '8. familiar', '11. beautiful' and '13. magnificent'. They were the most positive evaluation. The Americans rated high on the scales, '4. important', '5. powerful' and '6. masculine'. There seemed to be a tendency that the Swedish group saw the aesthetic aspect to ships and the American group did the practical one.

Seamen : Similarly to the rating patterns of the sea, there is a rather clear tendency common to all subjects that "seamen" are '6. masculine' and '11. strong'. The profiles of the three foreign groups are rather closer to each other and the rest Japanese is different from them.

The Japanese is the most negative in three scales, '7. safe', '8. familiar', and '10. interesting', and most positive in '11. strong', '12. generous' and '13. glamorous'. On the other hand other cultures did not mark very high in the scales stated above, for example, '13. less glamorous'.

3.3 Preference of the Sea or Land

The next items are preference of the sea or land in sports, hobbies, foods that were prepared in pairs and were rated by five-point scales.

The common tendency among the four cultures were that '1. crossing continent', '11. crossing ocean', '18. coral' were attractive. For the Japanese samples, '5. meat dishes', '6. car driving' and '18. coral' were also attractive and '15. sea food', '16. yacht' and '17. swimming' were rather attract-

Fig.1: Geographical Environment

Sample groups are JU: Japanese university, GU: German u., SU: Swedish u., UU: US u., JM: Japanese marine and GM: German marine school.

Fig.2: Contact with the Sea

Fig.3: Image Average Scores of the Sea
Factors are I. Affective evaluation, II. Dynamism and III. Mental closeness.

Fig.4: Average Scores of Preference,
Sea or Land

ive but lowest scores in the four groups. The German and Swedish subjects rated less preferred '3. rodeo' and '6. car racing'. For the Swedish, the scales, '1. continent', '11. ocean crossing', '14. ocean movie' and '15. seafood' were preferred, but '9. mount climb' was rather the least choice. The samples in the U.S.A. preferred '7. skiing', '16. yacht' and '20. ocean cruising', which reflected their geographical characteristics that Oregon State, where the survey was conducted, is very close to both ocean and mountain districts. The two wachings of animals or fishes, '2. zoo' and '12. aquarium', were also relatively attractive.

To compare group differences, simple average scores were tentatively calculated pooling total ten sea items and ten land items (Fig.4). The average scores were almost nearly neutral points (score 3) and the Japanese students, both general and marine, showed little difference between marine and land preference, though other three groups denoted that the sea items were much preferred to the land items, especially in German marine and Swedish general students, The Japanese mercantile marine students seemed almost the same attractiveness as general college students.

3.4 Knowledge on Sea Affairs

The last questionnaire items are quizzes about popular literary works, historical events, geographical knowledges and recent topics which are all related to sea affairs. Short phrases were gathered

from high school textbooks in Japan and whether they reflected people's degree of concern was investigated. Finally, twenty items were selected by a preliminary survey.

Some phrases are correct and others are wrong. Subjects were asked they are true (T) or false (F). Difficulty of the quiz items does not seem homogeneous level, and school curriculum is different in each country, so simple comparison of quiz scores among groups seems meaningless. It is the only tentative investigation.

The averages of total numbers of correct responses were 10.01, 9.09, 9.10, and 6.69 for Japanese, German, Swedish and American general college students, and 9.47 and 11.70 for Japanese and German marine students respectively. Full mark is twenty, because there are twenty quiz items.

Examining the items with high correction rate for example more than sixty percent, the Japanese had knowledge of '5. Neptune', '6. the surface', '14. Titanic', and '20. biggest trade ports', and the German did '1. Treasure Island', '4. Robinson Crusoe', '5. Neptune', '7. Maracca', '11. Trafalger', '14. Titanic' and '15. Invincible Armada'. In general, the correction rates were relatively high for categories related to literature and history in two European countries and to geography and topics in Japan (Fig. 5). The German marine students showed higher scores than the general students, but almost the same as for Japan.

3.5 General Comparisons

In our previous studies^(2,4,6), we succeeded to extract three factors common to all concepts separately. They were named as (I) affective evaluation, (II) dynamism and (III) mental closeness after Osgood, C.E.⁽²⁾. Scales correlated to those factors were in many cases almost the same ones, so they were called common scales and useful for any comparisons among the concepts or samples.

The Swedish data showed nearly closer factor structures as to the above results. Although Fig. 3 is for a simple comparison and the exact factor scores are discussed in our later report, the average scores denote differences or similarities of the images in the four cultures. We obtained the following results: (1) Images of the sea are rather higher average scores on the three concepts and they are uniformly at the same level among the three factors. (2) A high affective evaluation (I. the first factor) towards the sea was made by Swedish and the American students. They had lived closer to seashores and have been familiar with the sea. (3) Marine students had higher mental closeness (III. the third factor) than general college students. Especially the German marine students did. (4) The four general college students do not have familiar images towards ships and seamen, though they have dynamic images (II. the second factor) to seamen. (5) Image structures are to some extent different in German college and marine students, but in Japan they are resemble each other between them. The Japanese marine students are not at all different from ordinary or general college students. They do not seem to choose their school from their own deep concerns.

We are going to apply multivariate statistical methods either to the merged data of all samples or to every separate data in order to discriminate cultural differences of the image structure which lies behind characteristics. After a series of surveys has ended, we construct a database of the results to see not only their raw data but their distinctions visually with easy comparison on the three dimensional graphics. Statistical computer applications with powerful visual functions such

Fig.5: Average Scores of Quiz

as "S-Language²" and "SAS/Insight³" are suitable to this purpose.

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質 疑 応 答

鶴田三郎(東京商船大学): 過去発表された著者らの論文に対する新規性をお教え下さい。

吉田光雄: 今回、新たにスウェーデンのデータを手に入れましたので、その分析結果を加え、過去のデータと比較対照しつつ、報告させていただきました。

²ISAC

³SAS Institute Japan