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THE USE OF THE SEMANTIC DIFFERENTIAL IN CROSS-CULTURAL RESEARCH[1]

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Two groups of English-Tagalog bilinguals rated each of eight ethnic group labels on the same 48 semantic differential scales. One-hundred-and-two *Ss* responded in English while a second group of 111 *Ss* was administered an identical form of the scales prepared in Tagalog by means of a back-translation procedure. The results indicated that there was moderate agreement between the factor structures of the ratings on both forms of the scales. In terms of responses on individual scales it seemed clear that the *Ss* who responded in their native language (Tagalog) were more willing to express themselves evaluatively than thos *Ss* who made their ratings on the English form.

The social scientist is confronted with unique problems when attempting to conduct research involving cross-cultural comparisons. These obstacles are most acute when the material to be used is in the form of a questionnaire or rating scale and these are to be administered to members of a culture other than the one for which the materials were originally prepared. The semantic differential (Osgood, Suci, & Tannenbaum, 1957) has become an important instrument for the study of person perception, attitudes, and stereotypes in many cultures (Felipe, 1968; Gardner & Taylor, 1968; Taylor & Gardner, in press; Triandis & Vassiliou, 1967; Triandis, Vassiliou, & Nassiakou, 1968; Tucker, 1968; Vorwerg, 1966). It would seem important, therefore, to explore in detail the operation of this scale in different cultural contexts.

The properties of the semantic differential in cross-cultural research have been investigated at two levels. The first involves a comparison of the structural aspects of a series of scales to insure that different cultural groups utilize comparable dimensions when rating different concepts. The second approach focuses on enduring response patterns among members of different cultures to isolate those aspects which are unique to a given group.

The structural aspects of the semantic differential have been studied in many contexts. Osgood and Triandis (1958) have found that when monolingual *Ss* respond in their appropriate language the resulting factor structure appears to be stable and highly similar from culture to culture. This finding has been replicated with bilingual *Ss* (Suci, 1960) who nevertheless responded in their native language. Furthermore, Kumata and Schramm (1956) had bilingual *Ss* respond in both languages and found that the *Ss* made similar use of the semantic space. The *Ss* were bilinguals who acquired the languages in the context of the cultures associated with these languages. In a bilingual culture like the Philippines, and many others, the *E* has the alternative of testing in the native language of the culture or in English. It would seem important, therefore, to study the structural aspects of the semantic differential in English and the native language for *Ss* who have not had bicultural experience.

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In an initial investigation of cultural response tendencies, Stricker, Takahashi, and Zax (1957) used the semantic differential to elicit Japanese and American reactions to Rorschach inkblots and found that the two groups made highly similar ratings. The study appeared to provide evidence that the semantic differential was an appropriate instrument for cross-cultural research. In a second study, however, Zax and Takahashi (1961) discovered that Americans *Ss* had a tendency to make more use of the extremes when making their judgments on the semantic differential scales as compared with Japanese *Ss* who took the same English form of the scales. These results were interpreted in terms of cultural differences; however, it is equally possible that the lack of extreme ratings by the Japanese students was a function of these *Ss* having to perform the task in English rather than in their native language.

To fully explore the unique responding pattern of *Ss* from different cultures it would be necessary to compare the ratings made by bilingual *Ss* in English with a second group of bilinguals who perform the task in their native language.

The present experiment was designed to explore the differential responding pattern of bilingual *Ss* who received either an English form of the scales or materials prepared in their native language. Ethnic group labels served as the concepts to be rated because of their social significance and the responses in the two languages were explored in order to determine the extent of structural similarity and possible response tendencies in either language.

METHOD

Subjects

The *Ss* for this experiment were 213 female sophomores at the Philippine Normal College, Manila. The *Ss* were selected because they had previously indicated that their first language was Tagalog and that they identified themselves as a member of the Tagalog regional group. For all *Ss*, however, the medium of instruction had been English since the third year of school. Of the 213 *Ss*, 102 received materials written in English while the remaining 111 were given an identical set of materials in Tagalog.

An additional 25 students were also tested to ascertain the evaluative nature of the traits employed in the semantic differential scales.

Materials

The materials consisted of an English and a Tagalog form of a questionnaire wherein *Ss* were required to rate the concepts *Myself, Tagalog People, American, Ilocano People, Visayan People, Chinese People* (Living in the Philippines), and *Muslim People* on a series of 48 semantic differential scales. The first three labels were chosen because they represent concepts with which these *Ss* would identify while the remaining five were chosen because they are out-groups of special significance for these *Ss*.

The instructions were similar to those suggested by Osgood, Suci, and Tannenbaum (1957) except that they were modified both to refer to ethnic groups and were slightly more redundant to insure clarity. The 48 scales were chosen to refer to a wide range of behavioral characteristics (cf. Gardner, Wonnacott, & Taylor 1968) and because of their potential relevanve to the ethnic groups included in the prersent study (cf. Guthrie, 1968; Tucker, 1968). To avoid possible order effects, the concepts in each questionnaire were arranged in a different random order and the order of the scales for every concept was different. Also, the position of the bipolar adjectives for each scale was determined randomly.

Translation Procedure

The questionnaire was prepared initially by the *E* in English. This form was then translated into Tagalog by a native speaker of that language. This translated form was subsequently retranslated into English by a second bilingual who had not seen the original English questionnaire. The *E* then compared the two English versions and differences were resolved by consulting both persons who were instrumental in the translation procedure. On this basis a Tagalog form of the questionnaire was prepared which was a direct translation of the English original and which conformed to the format of the English scales.

Procedure

A female *E* who was equally fluent in English and Tagalog conducted two testing sessions, one in English and a second in Tagalog. After a short introduction the *E* read the instructions while the *Ss* followed a written copy which accompanied each questionnaire. *Ss* were requested to raise their hand if they had questions and the *E* answered these in English or Tagalog depending upon the language of the particular testing session. The testing time for both groups was approximately 45 minutes.

A third group of 25 students was given a booklet containing each of the English and Tagalog traits used to form the semantic differential scales. For each trait the *Ss* were asked to indicate whether they thought the trait was "positively evaluative," "negatively evaluative," or "relatively neutral."

RESULTS AND DISCUSSION

The evaluative nature of each trait was determined by tabulating the most frequent category used by the group of 25 *Ss* to describe its evaluative nature. In the tables to follow, only the more positively evaluative trait for each bipolar scale is presented.

The concepts *Tagalog Pepole, Americans*, and *Chinese People* were selected from the eight ethnic group labels to test for the structural similarity between the English and Tagalog versions of the 48 scales. For both forms, a factor analysis was performed for each of the three concepts. Each analysis involved a principal axis factor analysis, with the highest absolute correlation serving as the communality estimate. Investigation of the eigenvalues indicated that five factors adequately reproduced the correlation matrix and hence, for each analysis, five factors were rotated according to the normalized varimax procedure. The first three factors for each of the analyses accounted for the greatest portion of the variance and the loadings on the first three factors for each of the six analyses are presented in Table 1.

Inspection of the loadings for the three English factors as compared with the corresponding Tagalog factors indicates moderate agreement among the loadings. To statistically assess the relationship between the two forms, a coefficient of similarity between the factors for each of the three concepts was computed using a procedure introduced by Wrigley and Neuheus (1955). The coefficients of similarity between the factors for each of the three concepts are presented in Table 2.

The indices of similarity, although substantial, are not as high as those reported by Kumata and Schramm (1956). Three factors could account for the relatively low coefficients of similarity obtained in the present study. Kumata and Schramm (1956) employed a quartimax rotation while the present indices of similarity are based on a varimax rotation procedure and this difference in procedure could account for the different patterns. As well, Kumata and Schramm (1956) had one group of *Ss* respond in both languages while the present study employed two groups of *Ss*. When the same *Ss* use both language forms it is possible that their ratings in one language are affected by their previous ratings in the other language. Finally, the *Ss* in the present study did not have bicultural experience and perhaps they maintained separate frames of reference for each language according to its appropriate use in the culture. The present results suggest, therefore, that *Ss* make slightly different use of the semantic space as a function of the language employed and hence caution should be exercised when a nonnative language is employed as a vehicle for testing.

To further explore the responding pattern of *Ss* on the English and Tagalog versions of the questionnaire, *t* tests were employed. For each of the eight ethnic group concepts, *t* tests were performed comparing mean ratings between the two languages on each of the 48 scales. It was anticipated that for the eight concepts, if a particular scale was repeatedly used differentially in English and Tagalog then the differences would probably be due to a difference in the connotative meanings of the words used to define the scale in the two languages. Those scales for which there was a significant difference between the English and Tagalog form for at least four of the ethnic group concepts are presented in Table 3. For each of the scales presented in this table, the English form results in consistently different ratings from the Tagalog form. For example, for each of the eight ethnic group concepts, the ratings on the English form are concentrated more toward the "*truthful*" end of the scale than the corresponding ratings on the Tagalog form. This consistency for each of the scales presented in Table 3 suggests that linguistic equivalence was not achieved between the English and Tagalog traits used to define these scales. This lack of equivalence was obtained despite the rigorous back-translation procedure employed and this serves to illustrate the difficulties inherent in composing materials which are to be treated as linguistically equivalent.

First Three Factors After Normalized Varimax Rotation

Version Concept	English Tagalogs			Tagalog Tagalogs			English Americans			Tagalog Americans			English Chinese			Tagalog Chinese		
Scales	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1. responsible	—55	04	—22	—06	—05	—46	—10	—18	—06	—16	—19	—01	25	—41	—14	20	—23	—04
2. ambitious	—53	12	—12	01	09	—37	—52	—35	08	—25	—21	20	06	—18	—29	07	—57	06
3. considerate	—78	10	—19	—20	—09	—57	16	—29	—10	—06	—64	01	42	07	—09	42	—24	—05
4. conforming	55	—23	—05	16	—01	—10	—03	03	—03	—01	14	39	—38	—01	13	—08	—14	03
5. musical	13	—57	05	10	—59	—03	32	01	—13	34	22	24	—33	—13	32	13	02	25
6. reliable	15	—36	38	26	—52	10	14	03	09	04	43	51	—30	—09	38	—18	—02	41
7. courteous	—57	—23	—24	—16	12	—61	01	—46	—29	—10	—12	—11	—40	—14	51	—32	—13	45
8. religious	33	—01	—04	26	—44	34	15	09	08	—01	—15	54	—19	—09	61	—15	06	53
9. individualistic	03	27	—07	30	—15	27	08	—50	07	—03	22	02	—04	—26	25	—21	00	44
10. intelligent	52	—26	02	24	—21	04	—09	—64	—08	—40	—27	—06	—01	—45	—14	02	58	—14
11. friendly	15	—26	04	33	—42	48	08	03	05	06	05	06	—67	04	19	—22	—13	32
12. dominant	34	—41	—02	—20	—10	—32	34	—12	—13	04	—25	—06	06	—18	50	61	—11	01
13. successful	52	—33	—10	08	—48	—01	11	20	—10	43	23	12	01	—65	—21	14	—60	18
14. peace loving	48	15	—05	64	07	12	02	—10	30	03	23	38	—32	11	—05	—03	08	—03
15. independent-minded	01	—04	—42	—31	04	—29	—27	—34	—10	—05	—18	03	—05	03	06	00	—07	39
16. trustworthy	58	—19	09	34	—22	17	—05	—57	—10	10	—53	—16	42	—31	—16	57	—20	—24
17. hardworking	30	—05	02	26	04	—02	37	29	19	23	07	50	—13	43	31	—01	52	08
18. affectionate	—48	01	—34	—13	—03	—73	15	12	25	01	15	33	—27	08	17	—16	08	34
19. not treacherous	—09	—02	04	—31	—13	—40	—12	08	—05	—01	—40	—18	—16	03	06	45	11	—10
20. business-like	—15	00	—38	—20	08	—23	52	—07	—18	29	16	03	02	43	29	—09	38	04
21. adventurous	42	—20	—00	16	—29	—17	17	06	—12	17	—21	04	09	—22	—31	19	—37	14
22. hospitable	—71	—14	—07	03	09	—66	—09	—10	—54	07	—23	—07	62	02	—08	54	—05	—06
23. pleasant	—76	—07	—13	—02	10	—69	—11	—50	01	—25	—59	—01	66	13	—19	64	—25	—21
24. calm	—02	—31	—20	—31	—00	—21	12	—09	—34	—15	—39	10	14	—13	11	49	12	13
25. trust in self	15	08	02	—08	—16	—04	—07	—31	23	—01	02	26	—11	—41	09	32	04	00
26. easy to communicate with	56	—12	—07	20	—30	—02	12	—03	13	11	47	21	—12	07	—03	—10	—00	11
27. active	37	—34	—35	46	—16	—11	—07	—62	—05	—21	—36	21	13	—50	16	24	—48	—08
28. humble	41	06	09	58	—04	07	—09	—06	44	12	—05	41	22	—14	05	60	—14	—06
29. happy	48	—20	—35	—07	—51	02	37	06	—16	31	—05	07	—30	32	—09	11	25	21
30. clean	50	—04	—09	39	—20	—02	18	27	—06	31	06	45	—11	—22	—07	07	—09	45
31. delicate	—05	04	—47	—42	01	—30	38	—09	—00	—10	—22	—41	—18	07	—24	19	16	—26
32. artistic	05	—43	14	—00	—38	15	28	15	—46	31	—20	37	—07	01	16	57	17	41
33. truthful	—58	11	—07	—25	—09	—43	01	20	31	10	11	58	—50	26	06	—06	—06	12
34. sociable	38	—06	—10	—18	—41	01	65	01	—00	33	—14	01	—48	01	09	—05	15	42
35. unselfish	35	11	14	35	—22	13	—13	—14	—05	—03	03	21	—63	—07	—24	—21	10	24
36. educated	—01	—46	26	—04	—52	22	73	10	09	60	19	18	08	—14	—35	13	—50	—07
37. rational	—09	07	—56	05	—48	01	10	—29	11	26	07	02	—11	—06	—26	05	02	03
38. sensitive	27	—12	04	06	—36	18	—36	—00	19	—15	—20	35	—07	—02	06	03	—22	15
39. honest	—18	—04	—19	—06	24	—57	—06	—68	—07	—02	—55	—07	23	16	—21	54	—28	—23
40. wealthy	—16	09	—01	05	—02	—06	16	32	—32	71	10	26	13	43	—08	18	34	25
41. knowledgeable	—24	42	—27	04	29	—46	—24	—57	06	—57	—26	—01	—04	—11	—56	03	—61	—31
42. likeable	53	—02	—16	54	—29	12	15	17	00	28	02	29	—67	—20	—07	—21	—03	42
43. light skin	—04	—34	—17	04	—00	—31	—06	44	—19	51	10	08	05	25	—02	02	41	—08
44. patriotic	—36	03	—23	—19	11	—40	13	16	—03	09	04	37	—47	03	05	—01	04	09
45. urban	10	—05	—17	09	—22	—12	13	08	—43	45	—06	—12	—08	—02	—08	17	37	30
46. modern	07	—69	—02	02	—41	08	23	11	—45	60	—02	10	—12	07	—05	31	19	38
47. quiet	—05	24	—24	59	08	—00	13	—08	46	07	—01	61	—05	—19	04	—13	—05	—01
48. thrifty	14	22	—11	17	02	—01	22	—31	36	03	—07	37	—06	05	15	07	23	—01

Note — For this table the decimals have been omitted.

TABLE 2

INDEX OF SIMILARITY BETWEEN ENGLISH AND TAGALOG FACTORS FOR THE CONCEPTS TAGALOG PEOPLE, AMERICANS, AND CHINESE PEOPLE

TAGALOG PEOPLE

Factors for English version	Factors for Tagalog version 1	2	3
1	54	47	61
2	03	62	00
3	14	01	56

AMERICANS

Factors for English version	Factors for Tagalog version 1	2	3
1	64	17	22
2	49	57	14
3	29	27	35

CHINESE PEOPLE

Factors for English version	Factors for Tagalog version 1	2	3
1	55	20	57
2	16	67	08
3	20	39	48

Note— Index of similarity has the same upper and lower limits as the correlation coefficient. For this table the decimals have been omitted.

TABLE 3

SCALES FOR WHICH A SIGNIFICANT MEAN DIFFERENCE BETWEEN THE ENGLISH AND TAGALOG VERSION WAS OBTAINED FOR AT LEAST FOUR OF EIGHT CONCEPTS RATED[1]

	IN-GROUP LABELS			OUT-GROUP LABELS				
Concepts / Version	MYSELF Eng.-Tag.	TAGALOG Eng.-Tag.	FILIPINO Eng.-Tag.	ILOCANO Eng.-Tag.	VISAYAN Eng.-Tag.	AMERICAN Eng.-Tag.	CHINESE Eng.-Tag.	MUSLIM Eng.-Tag.
Scales[2]								
truthful	1.78-2.44	2.27-3.38	2.17-3.18	2.58-3.38	3.01-3.79	2.58-3.43	3.64-4.23	2.98-3.75
rational	5.20-3.37	5.17-2.82	4.80-3.12	4.40-3.30	5.25-3.92	3.54-2.37		3.96-3.46
clannish	4.41-3.36	4.24-3.18	4.17-2.93	4.38-3.40	4.31-3.28	4.44-3.76	4.26-3.61	
peace-loving	1.57-2.04	2.11-3.21	2.38-3.42	2.48-3.74	3.73-4.90	2.54-3.62		4.16-4.74
conforming	2.31-3.02	2.51-3.27	2.87-3.37	3.00-3.45		2.52-3.65		4.20-4.73
submissive	4.48-2.58	4.76-3.39	4.68-3.19	4.46-2.96	4.63-4.01	5.16-4.25		
not treacherous	4.44-2.65	4.29-3.19	4.46-3.29	4.25-3.44	4.46-4.05	4.91-4.00		
hospitable	1.61-2.00	1.48-2.32	1.20-1.71	2.31-3.44				3.38-4.40
urban	4.04-2.69	3.63-2.48	4.10-2.98			2.82-1.58		
adventurous			2.36-2.98	2.41-3.10	2.06-2.68	1.59-2.72		

[1] Independent *t* tests were used to compare ratings on the two versions and all mean differences reported in this table are significant at .05 level.
[2] Only the more positively evaluative trait for each scale is presented.

TABLE 4

SCALES FOR WHICH SIGNIFICANT DIFFERENCES BETWEEN ENGLISH AND TAGALOG VERSIONS WERE OBTAINED FOR IN-GROUP OR OUT-GROUP LABELS[1]

Out-group labels				In-group labels			
Scale[2]	Concept	English version	Tagalog version	Scale[2]	Concept	English version	Tagalog version
patriotic	Ilocano	2.18	2.59	reliable	Myself	2.08	1.74
religious	Ilocano	2.44	2.90	affectionate	Myself	1.86	1.42
educated	Ilocano	2.65	3.05	hardworking	Myself	2.65	2.09
courteous	Visayan	3.53	4.10	humble	Myself	2.20	1.85
light skin	Visayan	3.90	4.41	business-like	Myself	2.54	3.39
insensitive	American	4.17	3.57	wealthy	Filipino	4.03	3.63
calm	American	3.11	4.45	quiet	Myself	3.16	2.66
thrifty	Muslim	3.50	3.02				
modern	Visayan	3.04	3.72				
considerate	Ilocano	2.82	3.58				
	American	2.74	3.20				
	Muslim	3.06	3.58				
sociable	Ilocano	3.37	3.84				
	Visayan	2.71	3.30				
	Muslim	3.62	4.15				
responsible	Ilocano	2.37	2.94				
	Chinese	3.05	3.95				
friendly	Ilocano	2.39	2.95				
	Chinese	3.25	3.84				
musical	Ilocano	2.88	3.45				
	Visayan	2.24	2.88				
ambitious	Ilocano	2.18	2.80				
	Visayan	2.32	3.11				
trustworthy	Chinese	3.53	4.22				
	Muslim	3.30	3.76				

[1] Independent *t* tests were used to compare ratings on the two versions, and all mean differences reported in this table are significant at .05 level.
[2] Only the more positively evaluative trait for each scale is presented.

Table 4 presents those scales for which there was a significant difference for less than half of the eight ethnic group labels rated. Furthermore, only those scales are presented for which the differences were responses to either exclusively out-group or in-group labels. It might be anticipated that since differences on these scales were only obtained for less than half of the ethnic group concepts these differences may be of some psychological significance rather than simply a lack of translation equivalence. Examination of the nature of the differences reveals that the *Ss* who responded in Tagalog were significantly more favorable when rating in-group concepts than the *Ss* who responded in English. Alternatively, the *Ss* who responded in Tagalog were consistently more negative in their ratings when out-group labels served as the stimulus. Only three of the 32 significant differences presented in Table 4 do not follow this trend. The consistency of this pattern suggests that *Ss* are more willing to express themselves evaluatively when they are responding in their native language.

This interpretation receives strong support from those scales presented in Table 5. Those scales are presented for which differences occurred for both in-group and out-group labels on the same scale. For five of these scales the in-group labels are rated significantly more positively while the out-group labels are rated significantly less positively in Tagalog as compared with English. Since these differences are opposite in direction but occur on the same scale, it seems clear that the *Ss* are more willing to express themselves evaluatively when they are responding in their native language. This may be a finding which is

TABLE 5

SCALES FOR WHICH SIGNIFICANT DIFFERENCES BETWEEN ENGLISH AND TAGALOG VERSIONS WERE OBTAINED FOR BOTH IN-GROUP AND OUT-GROUP LABELS[1]

Scale[2]	Concept	Type of label	English version	Tagalog version
independent-minded	Myself	in-group	2.73	2.01
	Filipino	in-group	3.61	2.94
	Chinese	out-group	3.66	4.52
happy	Tagalog	in-group	2.09	1.68
	Ilocano	out-group	2.39	2.90
	Chinese	out-group	2.91	3.48
pleasant	Filipino	in-group	2.49	2.05
	Visayan	out-group	3.25	3.84
	Chinese	out-group	4.04	4.53
intelligent	Myself	in-group	2.50	2.23
	Muslim	out-group	3.27	3.71
artistic	Myself	in-group	2.70	2.11
	Visayan	out-group	2.85	3.36
delicate	Myself	in-group	2.87	2.21
	Americans	out-group	4.70	3.52
likeable	Myself	in-group	1.87	2.30
	Visayan	out-group	3.35	4.05
	Chinese	out-group	3.76	4.27
trust in self	Myself	in-group	4.36	3.21
	Filipino	in-group	4.61	3.84
	Ilocano	out-group	3.93	3.37

[1] Independent *t* tests were used to compare ratings on the two versions, and all mean differences reported in this table are significant at .05 level.
[2] Only the more positively evaluative trait for each scale is presented.

unique to the Philippines since, in this culture, the English language is reserved mostly for formal education, business transactions, and most ritualistic social interaction. Thus it is possible that, in this culture, English has been used in restrained situations whereas Tagalog remains the language of most normal social interaction where feelings may be more freely expressed.

SUMMARY AND IMPLICATIONS

The results of the present study suggest that there is at least moderate agreement among semantic differential ratings of ethnic group labels in English as compared with Tagalog. Many of the obtained differences appear to be the result of a lack of linguistic equivalence of scale defining adjectives; however, there is reason to believe that the semantic differential may be a useful tool for cross-cultural research. One finding obtained in this study, however, warrants further investigation in other cultural settings. The present results suggest that, at least for this culture, Ss tend to be evaluatively more expressive when responding in their native language as compared with English and this factor should be recognized in the interpretation of cross-cultural comparisons.

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