

A STUDY OF THE PERSONAL PREFERENCES OF CHINESE UNIVERSITY STUDENTS BY EDWARDS PERSONAL PREFERENCE SCHEDULE¹

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A. PURPOSES OF THE STUDY

Since the publication of the EPPS, a considerable number of studies have been conducted on various aspects of the Schedule. Some aimed to determine the validity of its individual scales (Bernberg, 1960; Gisvold, 1958; Gordon, 1951; Gustard, 1956; Zuderman & Gross, 1958); some tried to find the inter-correlations of them (Allen, 1957; Bernberg, 1960). The problem of social desirability was the central issue of many researches (Buss, 1959; Corah, 1958; Edwards, 1957, 1959; Heilbrun & Goldstein, 1961; Kenny, 1956; Navran & Stauffacher, 1959; Silverman, 1957; Walker, 1962), and so was the comparison of EPPS with other tests (Chance, 1958; Dunnette, 1958; Himmelstein, 1958; Melikian, 1958; Wiggins, 1959). The application of EPPS to some special groups in the United States (Klett, 1957a, 1957b; Merrill & Heathers, 1956) or to people of other cultures (Fuster, 1962; Ghei, 1963; Lovaas, 1958) was also tried by many scholars. In Taiwan, Peng (1961) made a small scale study of its use among Chinese students. It is evident that the EPPS has attracted the attention of psychologists all over the world.

The purposes of the present study may be outlined as follows:

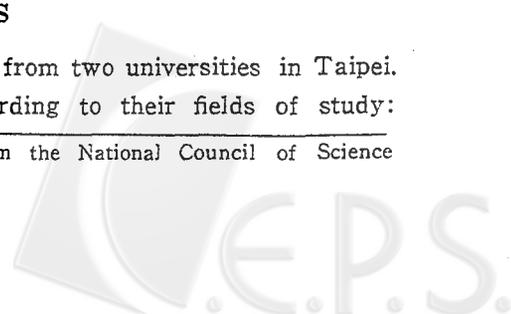
1. To study the general tendency of the reaction of Chinese university students to the EPPS.
2. To study the differences between the reactions of men and women in Chinese university population, and the differences among the groups when the students are classified according to their fields of study.
3. To explore how the scores of Chinese university students differ from those of American students.
4. To determine the social desirability scale values of the EPPS items based on the ratings given by Chinese university students; and to compare the SD values thus found with Edwards' data.

The Schedule has been translated into Chinese for the present study; but no alterations have been made as far as the content is concerned.

B. THE SUBJECTS

The subjects for the present study are drawn from two universities in Taipei. They can be classified into six sub-groups according to their fields of study:

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Education, Literature & History, Mathematics & Physics, Art & Music, Biological Sciences, and Social Sciences. All of them are students in the classes of Introductory Psychology. The EPPS was given by their instructors with an explanation concerning the purposes of the research. The students were very interested in taking the "test" and were very cooperative during its administration. The entire sample consists of 660 students and the distribution is given in Table 1.

Table 1. Sex and Group Distribution of the Subjects

Group	Men	Women	Total
Education	62	61	123
Literature	57	66	123
Mathematics	63	43	106
Biological Sc.	66	50	116
Social Sc.	52	51	103
Art	53	36	89
Total	353	307	660

C. THE RESULTS

1. Means and Standard Deviations of the EPPS

The means and standard deviations of the 660 Chinese university students on the EPPS scales are given in Table 2. It is of interest to find that Nurturance and Endurance have the highest score and the Heterosexuality gets the lowest. However, one should not jump to the conclusion that Chinese university students have the greatest need on Nurturance and Endurance with little interest in Heterosexuality. It is always important to keep in mind that any score here, high or low, represents only the reaction to those particular patterns of behavior described by the EPPS items.

Two months after the first test, a group of 71 students (equally divided by sex) were given the Schedule again. The test-retest correlations shown in Table 3 indicate a rather good stability of the scores. The fact that the coefficients are in general smaller than those reported by Edwards is due probably to the greater time interval between test sessions in the present study. Edwards gave the second test only one week after the first session.

2. Differences between Men and Women Students

In the present study, men differ from women significantly on seven of the EPPS scales as shown also in Table 2. The girls get higher scores on Deference, Order, Affiliation, Succorance, and Change than the boys while the latter show greater need on Dominance and Heterosexuality.

Table 2. Means and Standard Deviations of the EPPS Scores for Chinese University Students

Scales	Total		Men		Women	
	Mean	σ	Mean	σ	Mean	σ
Achievement	15.51	3.17	15.37	3.37	15.71	3.11
Deference	13.15	3.71	12.61	3.80	13.77*	3.60
Order	15.85	4.15	15.36	4.22	16.46*	4.10
Exhibition	9.39	3.27	9.59	3.47	9.18	3.30
Autonomy	12.98	3.88	13.37	4.02	12.55	3.77
Affiliation	15.16	3.63	14.73	3.55	15.75*	3.67
Intracception	14.64	4.04	14.44	4.35	14.88	3.84
Succorance	13.95	4.58	12.81	4.44	15.25*	4.50
Dominance	14.08	4.88	14.96*	5.14	13.06	4.50
Abasement	16.76	4.10	16.46	4.08	17.11	4.21
Nurturance	17.50	3.63	17.17	3.86	17.91	3.75
Change	14.49	4.26	14.02	4.32	15.03*	4.24
Endurance	17.05	4.54	16.90	4.59	17.23	4.60
Heterosexuality	8.35	6.09	11.07*	6.21	5.15	4.32
Aggression	10.58	4.10	10.80	4.20	10.32	3.99
CON.	12.00	1.58	11.82	1.50	12.20	1.60

* Means significantly greater (at the 1% level) than the corresponding mean for the opposite sex.

Table 3. Test-Retest Reliability of the EPPS Scores

Scales	Reliability		Scales	Reliability	
	Hwang's	Edwards'		Hwang's	Edwards'
Ach	.659	.74	Dom	.820	.87
Def	.858	.78	Aba	.744	.88
Ord	.748	.87	Nur	.684	.79
Exh	.571	.74	Chg	.711	.83
Aut	.680	.83	End	.657	.86
Aff	.688	.77	Het	.737	.78
Int	.640	.86	Agg	.666	.78
Suc	.766	.78			

However, when this result is compared with Edwards' data of American students, one would find that the sex difference on the EPPS scores among Chinese students is less evident than that among American students. For American subjects, significant sex differences occur on 12 of the 15 scales with Order, Exhibition, and Endurance as the only exceptions. Meanwhile, such differences are in general greater in magnitude than those found in the present study. In both countries,

boys get higher scores on Dominance and Heterosexuality as is often expected. While American college women show definitely lower preference on Achievement, Autonomy and Aggression and higher score on Abasement than their opposite sex, Chinese girls match the boys on these psychological needs. In other words, there seems to be more homogeneity among Chinese students as far as sex difference is concerned.

Allen, in a study in the University of Miami, also found a more homogeneous result than that reported by Edwards. Allen's explanation (1957a) was that all his subjects were drawn from one university while Edwards included 20 State and seven private universities in the normative population. The subjects of the present research come from two universities in Taiwan, and it seems that our sampling is in resemblance to that of Allen. Perhaps the homogeneity of the sample is a factor that has minimized the sex difference. The fact that there is even smaller sex difference within all those sub-groups supports this point.

3. The Inter-Group Differences

As it is mentioned before, the students for this study can be divided into six sub-groups according to their fields of study. The mean scores of these six groups are given in Table 4. The scores of one group have been compared with those of all other five groups. Among the 450 possible comparisons, 34 have reached the one per cent level of significance as shown in Table 5. Among the boys, the students of Art tend to show greater interest in Affiliation, Order, and Abasement, with less preference on Autonomy and Aggression than students in other groups. The scores of the girls are less homogeneous. Women in Education get significantly lower scores on Exhibition, Autonomy, and Succorance; those in Mathematics show less interest in Heterosexuality; and the Social Science group tend to have less concern on Order and Abasement. As a matter of fact, the girls of Social Science seem to stand out from the total sample of women students on many scales. They differ significantly from girls in Education on 6 scales, and from those in Literature and in Mathematics on four of the 15 variables. It seems that they tend to show less feminine character than girls in other groups.

4. Variances between Different Cultural Groups

The result of the present study is finally compared with the existing data of other cultural groups. Edwards (1959), when standardizing the EPPS, developed a norm for American college population based on a sized sample of 1504 subjects. More recently, Fuster (1962) gave the Schedule to 288 Indian students at St. Xavier College at Bombay. The results of these two studies are shown in Table 6 along with the data of the present research, and the significance of these cross-cultural differences are indicated in Table 7. From those figures, one can find the following facts:

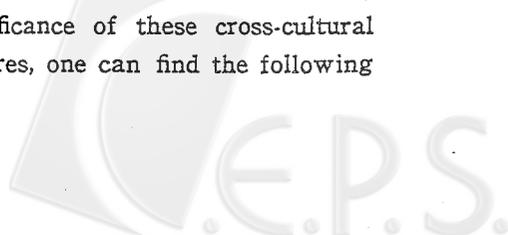


Table 4. Mean Scores of Men and Women Students in the Six Sub-groups

	Education		Literature		Mathematics		Biological sc.		Social sc.		Art	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Ach	15.40	15.68	14.89	16.38	15.68	15.90	14.89	15.50	14.85	15.25	16.12	15.94
Def	12.53	14.14	12.78	14.26	13.24	14.03	12.86	12.70	11.42	13.28	12.61	14.11
Ord	15.40	17.75*	15.10	17.35*	14.53	16.87*	15.89	15.54	14.73	14.46	16.54	16.28
Exh	9.48	8.08	9.06	8.41	9.60	9.83	9.83	9.78	10.35	10.30	9.30	9.88
Aut	12.28	11.16	13.76	13.41	14.07	12.36	13.71	13.34	13.88	12.93	12.12	11.94
Aif	14.79	16.47	14.57	15.56	14.29	15.62	13.98	15.30	14.73	15.56	16.16	15.87
Int	14.85	14.76	15.03	14.47	13.99	15.15	14.17	14.90	14.65	15.24	13.93	14.67
Suc	12.60	13.85	12.50	15.62*	12.53	15.15*	13.11	14.74	13.69	16.07	12.50	16.63*
Dom	16.12*	12.93	14.43	12.50	14.08	12.31	14.71	14.14	16.23	13.91	14.65	12.50
Aba	16.69	17.97	16.85	16.98	16.17	17.62	16.08	17.78	15.27	14.85	17.70	17.56
Nur	17.24	18.86	16.85	18.17	18.17	17.52	16.56	17.14	16.42	17.83	17.68	17.52
Chg	13.92	14.30	14.89	14.59	13.76	15.06	14.35	16.14	13.12	15.36*	14.02	15.06
End	17.40	18.63	16.96	17.47	17.13	18.17	16.50	16.54	16.04	15.56	17.28	16.67
Het	9.96*	4.30	10.78*	4.71	11.04*	4.34	12.47*	5.38	12.27*	7.05	9.97*	5.72
Agg	10.47	10.21	10.96*	9.38	11.23	10.27	10.86	10.70	12.08	11.83	9.22	9.66

* Means significantly greater (at the 1% level) than the corresponding mean of the opposite sex.

Table 5. Significance of the Inter-Group Differences

Groups	Women										Men										
	Def	Ord	Exh	Aut	Suc	Aba	Nur	Chg	End	Het	Agg	Def	Ord	Aut	Aff	Dom	Aba	Nur	Chg	Het	Agg
Ed.-Lit.				—*	—b							—a									
Ed.-Math.		—*								+a		—b		+b							
Ed.-Bio.	+a	+*	—*	—*			+b	+a	+a			—a								—b	
Ed.-Soc.	+**	+**	—**	—b	—*	+**			+**	—**	—a	—a								—a	—a
Ed.-Art		—b			—*			+a						—b							
Lit.-Math.		—a							+*												
Lit.-Bio.	+b	+b	—b							—a											
Lit.-Soc.	+**	—*				+b		+a	—*	—*									+a		
Lit.-Art		—a										+a	—b								+b
Math.-Bio.										—*								+b			
Math.-Soc.	+*				+*			+*	—**	—**		+b		—a				+b			
Math.-Art									—*	—*		—*	+b	—*	—a			—a			
Bio.-Soc.						+*															+b
Bio.-Art																					+a
Soc.-Art	—a				—*					+b		—b	+a	—a	—*			—*			+**

* Differences significant at 0.01 level;

** Differences significant at 0.001 level;

"a" Differences significant at 0.05 level;

"b" Differences significant at 0.02 level.

"+ " Score of the former is greater than that of the latter.

"— " Score of the former is smaller than that of the latter.

Table 6. A Comparison of the EPPS Scores of Chinese, Indian and American College Students

Scales	Total		Male			Female		
	Chinese	US	Chinese	Indians	US	Chinese	Indians	US
Ach	15.51	14.38	15.37	16.20	15.66	15.71	14.20*	13.08
Def	13.15	11.80	12.61	12.92	11.21	13.77	12.75*	12.40
Ord	15.85	10.24	15.36	13.31*	10.23	16.46	11.33*	10.24
Exh	9.39	14.34	9.59	12.97*	14.40	9.18	12.13*	14.28
Aut	12.98	13.31	13.37	12.57	14.34	12.55	12.85	12.29
Aff	15.16	16.19	14.73	12.55	15.00	15.75	15.56	17.40
Int	14.64	16.72	14.44	15.15*	16.12	14.88	16.74*	17.32
Suc	13.95	11.63	12.81	10.88*	10.74	15.25	12.86*	12.53
Dom	14.08	15.83	14.96	15.56*	17.44	13.06	12.98	14.18
Aba	16.76	13.66	16.46	15.54*	12.24	17.11	17.97	15.11
Nur	17.50	15.22	17.17	15.23*	14.04	17.91	18.11	16.42
Chg	14.49	16.35	14.02	14.81*	15.51	15.03	17.54	17.20
End	17.05	12.65	16.90	16.23*	12.66	17.23	13.52	12.63
Het	8.35	16.01	11.07	11.22*	17.65	5.15	8.50*	14.34
Agg	10.58	11.70	10.80	14.62	12.79	10.32	12.75	10.59
CON	12.00	11.64	11.82	11.83	11.53	12.20	12.33	11.74

* Scores of Indian Students that fall between the scores of Chinese and American Students

Table 7. Significance of the Difference between Three Groups

Scales	Chinese-Americans		Chinese-Indians		Indians-Americans	
	Men	Women	Men	Women	Men	Women
Ach	+ **	+ **	+ *
Def	+ **	+ **	+ *	+ **
Ord	+ **	+ **	+ **	+ **	+ **	+ *
Exh	- **	- **	- **	- **	- **
Aut	- **	- **
Aff	+ **	- **	- **
Int	- **	- **	- **
Suc	+ **	+ **	+ **	+ **
Dom	- **	- **	- **	- *
Aba	+ **	+ **	+ **	+ **
Nur	+ **	+ **	+ **	+ *	+ **
Chg	- **	- **	- **
End	+ **	+ **	+ **	+ **
Het	- **	- **	- **	- **	- **
Agg	- **	- **	- **	+ **	+ **

* Difference significant at 0.1 level.

** Difference significant at 0.01 level.

+ The mean of the former is greater than that of the latter.

- The mean of the former is smaller than that of the latter.

- a. The reaction of Chinese students to the EPPS is remarkably different from that of Americans. For the girls, significant differences are found on twelve scales with Autonomy, Affiliation and Aggression as the exceptions. Similarly, Chinese boys differ from Americans on all scales except Achievement and Affiliation.
- b. In most of the cases, the differences between Chinese and Americans are in the same direction for both sex.
- c. The differences between Chinese and Indian students are in general not so great as those between Chinese and Americans. It is interesting to find that in majority of the comparisons, scores of Indians fall between those of Chinese and Americans. This does not mean that Indians are in the middle position as far as cultural differences are concerned. The fact is that on some of the scales (Succorance for example), Indian students seem to be more like Americans, and on others, they show better resemblance to Chinese students.

5. The Social Desirability Scale Values (SD)

a. Chinese and American SD values. In developing the EPPS, Edwards (1953a) tried hard to minimize the influence of the SD factor by matching the SD scale values of the two statements in a pair. Later, he pointed out (Edwards, 1959) that the SD values of an item might vary from culture to culture. In the present study, one hundred students, equally divided by sex, were asked to rate the EPPS items one by one on a 9-point scale. Each statement was written on a card for the convenience of grouping. Then by using the successive intervals methods, the Chinese SD scale values for the 135 items were secured. These were compared with the American SD values found by Edwards. The correlation between the two sets of variables is considerably high ($r=.72$), indicating that there is a similar trend among Chinese and Americans in rating the EPPS items. This is very close to the result of Lovaas' study (1958) in Norway: the coefficient of correlation between the Norwegian SD values and that of Americans was found to be .78.

However, one must not be misled by the fairly high correlation and feel that there is a close resemblance between the Chinese and American SD values. On the contrary, they are at considerable variance with one another. For 73 of the 135 items (54 per cent), the difference of the two variables exceeds .50; and in about one fifth of the cases, the variance is greater than 1.00 (see Table 8). This is not at all surprising because there is a world of difference between the two great cultures.

b. Sex Difference on SD Values. After having reviewed the various studies concerning social desirability, Edwards (1957) concluded that subjects of different sex, age and socio-economic levels tend to rate the EPPS statements in a similar fashion. The present author, however, does not agree with him on this point.

Table 8. Differences between Chinese (Hwang's) and American (Edwards') SD Values for the EPPS Items

Difference*	<-1.0	-0.99~ -0.50	-0.49~ -0.10	-0.09~0	0~+0.09	+0.10~ +0.49	+0.50~ +0.99	> 1.0
Ach	—	—	1	1	—	2	2	2
Def	—	1	—	—	—	5	1	2
Ord	—	—	—	—	—	—	5	4
Exh	—	3	3	1	—	2	—	—
Aut	—	2	3	2	2	—	—	—
Aff	—	2	1	—	—	3	2	1
Int	1	—	3	1	2	2	—	—
Suc	2	3	3	—	—	1	—	—
Dom	—	—	1	2	—	2	3	1
Aba	—	1	1	—	1	1	4	1
Nur	—	1	—	—	—	2	4	2
Chg	2	2	1	—	1	2	1	—
End	1	—	—	—	—	2	3	3
Het	5	—	4	—	—	—	—	—
Agg	—	4	1	—	1	2	1	—
Number of Items	11	19	22	7	7	26	26	17

* The Difference is given a "+" sign when Hwang's SD is greater than the corresponding Edwards' SD.

The result of the present research suggests that men and women seem to rate the items quite differently. In Table 9, the male and female SD values for the items on three scales are shown. For those items on Intraception, the average difference of the male and female SD value is very small and probably negligible. But for items on Heterosexuality, the average sex difference is five times greater (0.619). This latter variance is about equal to the average width of the intervals of the 9-point scale used in the successive intervals method, and it cannot be overlooked. It is also shown in Table 9 that the sex difference on the means of the three scales varies parallelly with that in the SD values.

c. SD value Difference Within a Pair of Statement. As pointed out before, Edwards matched the SD values of the statements when he paired them. Elsewhere, he mentioned that in 160 pairs (76 per cent), the SD value difference of the two statements fall into the range of 0—0.5, and that of the remaining 50 pairs exceeds 0.50. All these facts suggest a good matching. But if we use the Chinese SD values developed in the present study, the same picture does not exist any more. In 150 of the 210 pairs (71.43 per cent), such difference is greater than 0.50; and in exact 50 pairs, that difference has passed the margin of 1.50. It seems that the effort of Edwards has gone completely, and the Schedule can no longer be regarded as a SD controlled device.

Table 9. Women & Men SD Value Differences on Three Scales

Item	Intraception			Succorance			Heterosexuality		
	W	M	diff.	W	M	diff.	W	M	diff.
1.	1.52	1.74	-0.22	2.75	3.00	-0.25	1.33	2.40	-1.13
2.	2.11	3.16	-0.05	3.64	3.24	0.35	1.79	2.36	-0.57
3.	2.47	2.83	-0.36	1.75	1.38	0.37	2.75	3.54	-0.79
4.	3.45	3.38	0.07	1.46	0.71	0.75	1.19	1.89	-0.70
5.	2.80	2.85	-0.05	3.32	2.98	0.34	1.71	1.99	-0.28
6.	3.11	3.00	0.11	2.87	2.45	0.42	2.03	2.47	-0.44
7.	3.36	3.15	0.21	2.58	2.69	-0.12	1.61	1.99	-0.38
8.	2.20	2.20	0.00	1.27	1.67	-0.40	1.19	1.85	-0.66
9.	2.66	2.74	0.08	3.51	3.29	0.22	2.28	2.90	-0.62
Av. diff.*			0.13			0.39			0.62
Mean Score	14.88	14.44		15.25	12.81		5.15	11.07	

* Average difference is obtained from the absolute value of the difference between each pair of SD values.

D. CONCLUSION AND DISCUSSION

1. The Chinese-American Differences

It has been pointed out that the college students of the two countries differ from each other greatly in their reactions to the EPPS. One needs an extensive study of the life philosophy of the two peoples to give a full explanation of this result. However, it is not too difficult to accept these differences. Traditional behavior patterns in China has, for more than two thousand years, been following the teaching of Confucius the essence of which may be found in the following excerpts from Lun-yu, the Analects of Confucius.

"Tuan-mu Tz'u said: 'Our Master gets it (his information) through his gentleness, his superiority, his humility, his restraint, and his complaisance.'" (Chapter 1, Lun-yu)

"Confucius said: 'He who in this world can practice five things (humility, magnanimity, sincerity, diligence and graciousness) may indeed be considered Man-at-his-best.'" (Chapter 17, Lun-yu)

"Confucius said: 'There are nine things of which Great Men must be mindful: to see when he looks, to hear when he listens, to have a facial expression of gentleness, to have an attitude of humility, to be loyal in speech, to be respectful in service, to inquire when in doubt, to think of difficulties when angry, to think of justice when he sees an advantage.'" (Chapter 16, Lun-yu)

"Great Men cherishes excellence,.... cherishes the rules and regulations...." (Chapter 4, Lun-yu)

Hence we can see that humility, gentleness, restraint and living by rite are highly desirable traits in Chinese culture. These are actually synonyms to abasement, deference, endurance and order in Edwards' terms. And it is not all surprising that Chinese students tend to score high on these scales. That also explains their low scores on Exhibition, Dominance, Change and Aggressiveness.

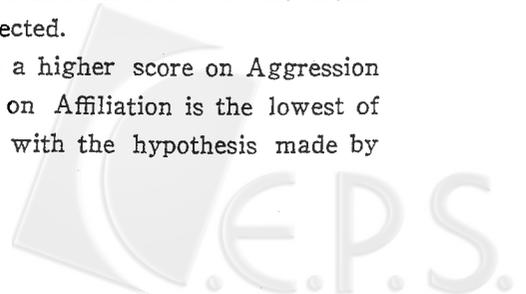
Scofield and Sun (1960) in a study of Chinese students in American universities (N=40) by using Catell's 16 PF Test, concluded that Chinese could be described as more withdrawn, more shy, more emotionally insecure, more introverted, more sensitive.... Some of those findings may be only true among the Chinese who have lived in a foreign country for a long time; but traits like introversion and withdrawn seem to be very common characters of the Chinese people.

There is little doubt that the difference between Eastern and Western culture is great. However, there is also the possibility that the fifteen variables in the EPPS do not represent the same number of independent factors. Edwards (1957) thought so; because he found very low intercorrelations among the scales. But other studies do not yield the same result. Allen (1957b) found in his study in the University of Miami that the inter-correlations were much higher than those reported by Edwards with five of them more than .40. In a study with a male prison population, Bernberg (1960) found eleven of such high correlations, and two of them were even greater than .60.

In a different approach, Trehub (1959) paired Aggression and Deference, Succorance and Nurturance, Order and Change, Autonomy and Abasement, and pointed out that high scores on both scales in a pair indicated a trait he called Ego-Disfunction. He found that this variable was low among college students, higher among neurotics and character disorders, and the highest among schizophrenics. All these suggest the existence of a common factor underlying those highly correlated variables. Bernberg, therefore, suggested that factor analysis should be done for the fifteen EPPS scales to reduce the number of the variables.

We have also mentioned that many scores of the Indian students fall between the corresponding means of Chinese and Americans. As Fuster (1962) obtained his data from students of St. Xavier College which is one of the most cosmopolitan and westernized colleges in India, it is not surprising that those students have received a great deal of influence from the western culture and thus tend to react in a more westernized way than their Chinese friends. One should, of course, keep in mind that this group from St. Xavier may not constitute a good sample of the total Indian college population. However, it is also possible that the British ruling over India prior to her independence might have westernized the latter to the extent that reactions of Indian students to the EPPS are affected.

It is of interest to find that Indian students have a higher score on Aggression than both Chinese and Americans, while their score on Affiliation is the lowest of the three cultures. These facts seem to be congruent with the hypothesis made by



Hsu in his intensive study of these three great cultures. He pointed out that "the basic guide for the Hindu's behavior is his relationship with the gods. His worldly ties with his family and others are often overshadowed, or at least strongly affected,...." (Hsu, 1963, p. 5) This may be responsible for the low score of Indians on the scale of Affiliation. On the other hand, the status strife and resentment against ritualism and casteism of the Hindu may well be the dynamics of his aggressiveness.

2. The Problem of Social Desirability

As it was mentioned before, a great deal of discussion has been centered on the problem of social desirability since it was brought out by Edwards. Despite his laborious work in matching the SD values of the EPPS items, people keep on questioning the effectiveness of the forced-choice arrangement. Corah et al. (1958), in a study of a short form EPPS, found that the factor of SD was still an important influence.... Judges had a definite preference for one member of the pair.

It has been found in the present study that the Chinese SD values differ greatly from the American ones; and in addition to that, there is sex difference in SD values. The latter seems to have significant correlation with the differences between the mean scores. If there is a need to develop SD values for each cultural group as pointed out by Edwards, it seems equally justified to demand a set of SD scale values for either sex. And that is certainly not the end of it; there is perhaps other inter-group difference that has to be also considered. This is probably the reason why Scott (1963) felt that Edwards' efforts in pairing the statements were in vain. He raised the point that "substantial agreement on desirability would be only found in extremely homogeneous cultures; but such cultures are difficult to find." In other words, as a SD matched inventory, the EPPS is only adequate for the American culture, or perhaps only good for the normative population of Edwards.

Scott suggested that concept of desirability tend to correspond to individual differences in self concept and overt actions. Heilbrum and Goldstein (1961) made similar conclusion when they found that the "Individual Social Desirability values were more highly related to EPPS performance than were group desirability values". No attempt has been made in the present study to determine the "individual desirability", hence it is not known how much influence it does have on the EPPS scores.

But it has been noticed that besides the personality elements of the subjects, SD values of an item is not the only factor that influence his performance. When two statements are put in a pair, the probability that one of them will be chosen depends upon still another factor—the relative desirability of the two items.

For Chinese students, the SD values for statements in most of the pairs are no longer matched. According to Edwards, the one with a greater SD will be chosen more often. But this is not always true. In one hundred randomly selected records,

the average rate of being chosen for each item has been found and correlated with its SD value. The coefficient is .46 and that means the SD values may account for only 19 per cent of the total variance of item choice. For the remaining 81 per cent, other factors may have played their part, and the combination of the pair seems to be one of the determinant. To illustrate: both items 69A (Exh) and 69B (Het) have similar SD value of 1.55, but 60 per cent of the subjects choose the former. Similarly, 66 per cent of the students choose 192A (Chg) which has an equal SD value as 192B (Dom). An item on Deference has been chosen by majority of the subjects when it is paired with another item of Exhibition and one on Autonomy. But in the pair with an item on Abasement, it loses the favor despite of its higher SD value. Another item of Deference appears in three pairs in which its SD value is greater than all its partners. Nevertheless, this item has not won the majority in two of the three cases (Table 10). There is little doubt that the choice is still determined by social factors, but they are not included in what Edwards called SD.

Table 10. SD Values and the Rate of Being Chosen

Item No.	22A	22B	67A	67B	158A	158B
Scale	Def	Aut	Def	Het	Def	End
SD value	3.53	3.36	3.53	2.09	3.53	3.32
Rate of Being Chosen	38%	62%	72%	28%	37%	63%

3. The Need of a Revised EPPS for Chinese Subjects

The EPPS was originally developed for American subjects and it has inevitably a flavour of American culture. One will naturally question its applicability to an entirely different culture like that of China. For what is thought as a general expression of Autonomy in America might be regarded as rudeness in China. Likewise the way that an average American man behaves towards an individual of opposite sex might be considered as immoral or indecent among Chinese. Hence many people feel that the Schedule should be revised before it is used here. The present author sees such a need; but he also feels that the EPPS can be used in countries other than America if one keeps in mind its limitations. One should realise that the terms like aggressiveness and endurance do not have a definite meaning, nor do they have a quantitative connotation. No two persons who use these terms are referring exactly to the same thing. Edwards was fully aware of this; and when he introduced these terms, he gave a very clear description for each of them. These operational definitions will no longer apply if the EPPS is to be revised. Comparative study between different cultures will be impossible because of the difference in the content of the inventories. We do need an instrument that fits our unique cultural and social background; but we need also some material that can be used internationally. Though the EPPS may not be a perfect instrument, it has been used very widely in

recent years. It seems justified to keep its original form so long as one remembers that the needs or traits referred to are defined in Edwards' terms and nothing else. It is very possible that working on the EPPS may give us insight and experience that is helpful to the development of new tests and inventories for the Chinese population.

4. The Use of the EPPS among Chinese Students

Despite all those problems discussed in this paper, the EPPS seems to be a useful instrument in school guidance programs in Chinese schools. The fifteen scales can provide information concerning the relative strength of psychological needs of an individual. Such information is of great value in counseling service. In many cases, the maladjustment is often caused by lack of balance among one's various needs. An over-dominant individual may have difficulty in interpersonal relationships; too much emphasis on Exhibition may be a defense against feelings of inferiority and insecurity; an extremely strong need of Achievement often leads to constant tension and anxiety. Hence the profile of the 15 psychological needs can offer a picture of one's personality and consequently may be of great value to the understanding of an individual. Recently, there are plans to develop guidance programs in colleges and secondary schools in Taiwan. An inventory like the EPPS will be very useful. To make it adequate for practical use, a norm in T-score will have to be established so that the raw scores can be converted into standard scores instantly. That will give more convenience to the counselors to use the result of the Schedule. This is going to be the next step following the present research.

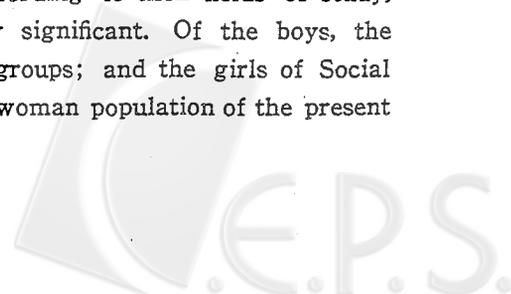
E. SUMMARY

1. The Edwards Personal Preference Schedule (EPPS) is given to 660 university students in Taiwan. The sample included pupils from six different groups classified according to their fields of study.

2. When the result of the present study is compared with Edwards' data, Chinese students get higher scores on Deference, Order, Succorance, Abasement, Nurturance and Endurance; and lower scores on Exhibition, Intraception, Dominance, Change and Heterosexuality.

3. Of the Chinese students, the women show greater needs on Deference, Order, Succorance, and Change; while the men have better preference on Dominance, and Heterosexuality. In general, the sex difference among Chinese student population is not as great as that among Americans.

4. When subjects are classified into groups according to their fields of study, some of the inter-group differences are statistically significant. Of the boys, the students of Art seem different from those of other groups; and the girls of Social Science tend to be less feminine than others of the woman population of the present study.



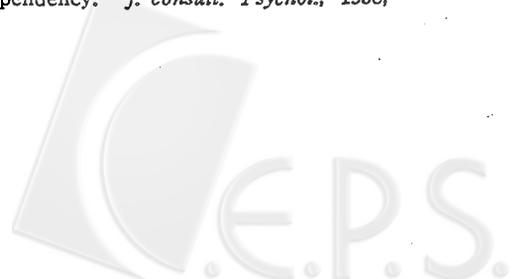
5. The Chinese SD values of the EPPS items have a substantial correlation with Edwards' SD values ($r=.72$); but the differences between the two sets of variables are not to be overlooked. In most of the pairs, the items are not matched in Chinese SD values.

6. The EPPS seems to be a very useful instrument in guidance and counseling service so long as one keeps in mind the operational definitions for the scales given by Edwards. The inventory is particularly of value in cross-cultural studies.

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中國大學生在艾德華斯氏個人 興趣量表上之反應

黃 堅 厚

摘 要

本研究係利用「艾德華斯氏個人興趣量表」(Edwards Personal Preference Schedule, EPPS)以研究我國大學生的興趣傾向，受試者達 660 人，可按其所修習之學科分為：教育、文史、數理、生物、社會、藝術等六組，各組男女生人數均甚接近。

本研究所得結果，曾與艾德華斯氏美國大學生常模相比較，發現中國學生在順從性，秩序性，求援性，謙遜性，慈善性及堅毅性等方面表現較高之分數，亦即表示對這些類別的行為，有較高的興趣。但他們在表現性，省察性，支配性，變異性和愛戀性等方面的分數，則低於美國學生。至於 J. M. Fuster 氏所報告印度大學生的分數，多數係在中國及美國學生分數之間。

中國女性大學生在順從性，秩序性，親和性，求援性及變異性等分數上高於男生；而男生則只在支配性和愛戀性上較女生的分數為高。此一傾向，與美國大學生中情形大致相同；不過一般言之中國學生間之性別差異，似不若美國學生間顯著。

如按所習學科區分，也有一些差異是統計上頗為顯著的，藝術組男生似乎在好幾種興趣傾向上和其他組別的男生不同；而社會組的女生，在表現「女性」的幾種分數上，均不及他組女生那麼顯著。

關於量表中每一項的「社會認可值」，本研究中曾按中國學生的評量予以重訂，和艾氏的結果雖有顯著的相關，但別數值却相去甚遠。艾氏原會按社會認可值相近的項目配在一組，以減少該因素的影響。若按本研究所得的「社會認可值」來看，則每項中兩個項目已不是完全相配的了。

本研究發現「艾德華斯個人興趣量表」是一種極有價值的量表，對於學生輔導工作尤有幫助。國外在此方面的研究極多，因此它又可以用作國際間比較研究的良好工具。

