Ambiguity Values of the Philippine Thematic Apperception Test

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The present study was designed to obtain ambiguity values of the cards in the ambiguity values of the cards in the Philippine Thematic Apperception Tests (PTAT) as a function of language used (English vs. Filipino) and sex of the subjects. Ambiguity is a stimulus characteristics which has been recognized as contributing to the abundance of subjects' responses in thematic apperception testing situations (Murstein, 1970). The traditional view is that there is a direct relationship between ambiguity and thematic response—the greater the ambiguity in a TAT card, the more likely it is for the subject to reveal more of his private world. Recent work (Murstein, 1963; 1970), however, demonstrates that the relationship between ambiguity and personality-revealing responses is curvilinear, with medium ambiguous cards being the most productive for personality assessment purposes. Since the ambiguity values of the cards in the PTAT have not yet been determined, it was decided to work on this problem and test for language effects and sex differences within a bilingual college sample.

By determining ambiguity values, the study aims to be useful both to the researcher and the clinician regardless of their theoretical orientation. That is, the data as such provide some index of the cards' stimulus values—a baseline against which situational and personality variables may be more systematically introduced and studied. Any kind of problem or theory using the thematic testing situation as a testing ground, has of necessity to reckon with the effect of stimulus properties. For example, behavior modification studies attempting to eliminate stuttering have tried to use the TAT to obtain measures of verbal fluency. However, it has been demonstrated that one correlate of high ambiguity is verbal disfluency (Seigman and Pope, 1965), and therefore, without prior knowledge about the cards' ambiguity values, measures of verbal fluency based on the TAT may only lead to spurious results. It appears, then, that even when the TAT is simply used as the basis for obtaining a measure of verbal behavior, ambiguity values of the cards used have to be known. This, in turn, suggests that the contribution of ambiguity to test performance has to be ascertained especially when the TAT is used for diagnostic purposes or as a measure of aroused drive states.

Together with the problem of defining ambiguity values, the present study also attempts to find out how the language of testing affects the ambiguity scores obtained. Since Ervin (1964) has suggested that there may be personality shifts based on TAT responses as function of the use of English or French among French-English bilinguals,

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it appeared necessary to test for the effects of Filipino and English among the Filipino-English bilinguals involved in the present study. The language used may affect ambiguity values in the same way that Ervin found changes in thematic responses as a function of using either English or French. Also, it is recognized that the PTAT may prove invaluable in intracultural studies where subjects may not be able to verbalize in English. Any information as to the effect of Filipino on ambiguity values will therefore contribute towards the validation of the instrument in that language. It was further suspected on the basis of a preliminary study (Ventura, 1973) that there may be sex differences in ambiguity values. These considerations resulted in the present 2 x 2 factorial design.

DEFINITION OF AMBIGUITY

Ambiguity is defined as uncertainty in meaning, especially with regard to variability of interpretation. This study is therefore aimed at a specification of PTAT stimulus properties from the responses given by the subjects to each card. This approach is to be differentiated from defining stimuli in terms of structure or of the objective physical properties like shading, focus, lighting, exposure time and the like. As Murstein (1963) puts it, "we do not obtain a measure of the ambiguity of the cards until we examine responses to the cards. A card might show a figure clearly structured so as to represent a boy, and yet the picture might be ambiguous with regard to the objects of his anger. Ambiguity is therefore not only related to the structure of the card but to the task required of the storyteller."

Levels of Ambiguity

This seems to indicate that the thematic apperception task deals with several levels of ambiguity. For example, subjects may agree on the *sex*, *age*, and *relationship* of the characters shown in the card but there may be considerable disagreement about *what is going on* and *why this is happening*. Thus, in the present study, separate ambiguity scores were obtained for Who (sex), Who (age), Who (relationship), What, Why, and End—each of these variables representing the different aspects of the TAT task.

Another point considered is the emphasis on ambiguity being partly dependent upon structure. Part of the analysis will therefore involve an examination of some properties of PTAT cards (for example, number and sex of the persons in the card) and their relationship with obtained ambiguity scores. In summary, this study will test for language effects and sex differences in ambiguity scores for each level of the PTAT task, and then there will be an attempt to explore the cards themselves for certain properties that may be related to the kind of ambiguity scores obtained.

The H Measures of Ambiguity

The particular measure for ambiguity used in this study is H, the measure of uncertainty, borrowed from information theory and first used by Murstein (1964) in his normative study on the ambiguity of the cards in the Muray TAT. H values are obtained from the formula

$$H = \Sigma(i) \log_2 p(i) \quad \text{(Equation 1)}$$

where p is the proportion in any I category. It was Kenny (1961) who originally proposed the use of to measure uncertainty because it takes into account both the number of alternative categories and the proportion of cases or individuals making any given categorization. Kenny adds that the application of the formula in no way commits one to any of the assumptions of information theory. To control for the effect of the number of categories used, the values obtained by Murstein (1970) are expressed in terms of relative H, which is the ratio between the obtained value and the highest possible H. The same procedure was followed in the present study.

The use of H as a measure of ambiguity is based on the assumption that it is better to use a large number of persons more or less representative of the population for whom it is desired to establish ambiguity values. Older approaches involved using expert clinical opinion to determine the ambiguity values of the cards (Kenny and Bijou, 1953). As Murstein (1963) points out this may not be reliable since it is based on what the clinicians recall about their sujbects' responses and the ratings may be more a function of the clinicians' sex, age, experience and personality, than anything else.

The application of yields an inter-individual measure of ambiguity with the results presented applicable to a bilingual college population having approximately the same characteristics as the University of the Philippines students. This approach is to be differentiated from the attempts to obtain intraindividual measures of ambiguity. It was Lesser (1961) who originally tried to distinguish between the two, and Kaplan (1969), taking note of Lesser's observations, proposed the use of Garskof's formula for associative strength, for obtaining intraindividual ambiguity scores. The formula involves

$$A = \frac{\Sigma \ \frac{1}{i=NRT}}{N} \qquad \text{(Equation 2)}$$

where A equals associative strength, N equals number of subjects, R equals ordinal rank of a given theme for a given subject, and T equals total number of associations for a given subject for a given card. The values obtained from Equation 2 were then utilized by Kaplan in the formula

$$A = 1 \Sigma \ p(i) \qquad \text{(Equation 3)}$$

where A is equal to ambiguity, and p(i) is the obtained value from the application of Garskof's formula (Equation 2).

Murstein, however, criticized methodology of Kaplan's work in terms of his failure to measure ambiguity in a natural setting, errors in measuring ambiguity, and inappropriate comparison between Murstein's and Eron's system. Lesser (1961) emphasized the fact that intraindividual measures of ambiguity are almost impossible to obtain since subjects generally try to tell a different story to the same card the second time it is presented. If the experimeter, on the other hand, instructs the subject to tell a different story during the second administration, and , in fact, the subject may want to tell the same old one, he may be introducing another factor into his measure of intraindividual ambiguity. Future

work may bring a resolution of the problems in measuring intraindividual ambiguity, since many of the objections are mainly methodological. In the meantime, one can bear in mind the distinction between the two concepts and make no further claims about H, the measure of uncertainty, beyond its being an approximation of interindividual ambiguity.

Apart from the problem of measuring the ambiguity of TAT cards, some authors have attempted to look for some correlates of ambiguity. Seigman and Pope (1965) found that ambiguity is correlated with hesitant and nonfluent speech in the TAT responses. In trying to seek some physiological correlates of high ambiguity, the same authors found that high GSR scores were not associated ambiguity (as reported by Molish, 1972). Also, it was found in a study trying to examine the effect of stimulus variation on the expression of sexual conflict; that avoidance reactions were elicited by structured but not ambiguous stimuli (Eiseler, 1968). Finally, TAT cards of moderate ambiguity compared with Rorschach cards elicited more extreme responses (Magnussen and Cole, 1967). These few studies all point to the observation that stimulus properties do affect responses to the TAT and that structured as well as ambiguous cards have their respective functions and the researcher's or clinician's purposes will determine which type of card will ultimately be used. The task of defining ambiguity values is not confined to the TAT as a review of the literature will show. Studies have been done on the Rorscharch (Magnussen and Cole, 1967), the sentence completion methods (Goldberg, 1965), and the MMPI (Harris and Baxter, 1965; Lazo, 1973). This trend towards an evaluation of stimuli used in psychodiagnostic instruments is perhaps part of introspective analysis evident in clinical psychology in the United States is undergoing change in terms of training and practice may be seen in the phasing out of psychodiagnostics in clinical programs (Molish, 1972). The contemporary influence of behavior modification is perhaps the major factor accounting for the decline in the popularity and use of psychodiagnostic methods in the clinical setting (Molish, 1972; Hertz, 1970). Behavior modification proponents have suggested the uselessness of diagnostic categories (Ullman and Krasner, 1971) and, necessarily, the instruments that have been developed as aids in defining these categories would be considered irrelevant. In spite of this, however, the research interest on projective techniques has not declined.

Projective techniques may be in a state of 'crisis' as noted by Hertz (1972), their use in the teaching and training of clinical psychologists may be declining, but the scope of the literature surveyed would certainly suggest that there is still a continuing vigorous effort to further explore their clinical and research application" (Molish, 1972). A similar evaluation is made by Murstein (Personal Communication, 1973) when he says that "projective techniques are more popular than is realized because most clinicians use them extensively. Many people are now talking about schools giving training more oriented to treatment and not solely to academic pursuits. It this comes to pass projective techniques will be more in the limelight.

Trends in current research on projective tests (which include emphasis on greater objectivity in scoring, the testing of models paying attention to stimulus functions and examiner subject interaction) appear to one to be a response to criticisms directed at

personality assessment in general, and an attempt to apply the psychometric approach to projective techniques. The problem of defining ambiguity values is probably best appreciated when viewed within the context of these contemporary developments in clinical psychology. Molish (1972) summarizes this trend very clearly when he says that "projective tests are beginning to be more and more conceptualized within the framework of new theoretical models with attention paid to stimulus functions, the properties of the situation in which the person is being tested, and in general exploring the concepts of generality vs. specificity."

In the Philippines, psychodiagnostic instruments are popularly used in the clinic as well as in personnel work, and courses in projective techniques are offered in a great number of schools as revealed in a survey of psychology curricula (Ventura, 1973). The TAT, according to Murstein (1963), is fairly well-entrenched as a measure of aroused drive states.

METHOD

Subjects

Three hundred twenty-five introductory psychology students at the University of the Philippines, fairly evenly divided by sex (166 males and 159 females) participated in the present study.

Materials

The PTAT consists of 25 cards (including one blank card) showing various scenes related to Philippine conditions. The test was developed by Dr. Alfredo V. Lagmay from an original pool of sixty-four cards. These were drawn by an artist according to specifications made by Dr. Lagmay. These specification were considerations of classical situations representing young and old characters, a single person vs. a group of males or females only vs. both sexes, etc. (Lagmay, Personal Communication, 1973).

Dr. Lagmay has conducted two validational studies on the PTAT, one on the original pool of sixty-four cards, using UP High School students. This first study was designed to be the basis for choosing the final set of twenty five cards (including one blank card). A second long-range validational study followed where a wide range of subjects (the sample included normals and pathologicals, rural and urban respondents of various age groups) were given the Rorschach and Sentence Completion Test in addition to the PTAT. The former tests were used as criterion measures for the PTAT responses (Lagmay, 1965).

A Kodak slide projector and a seven-by-nine-foot screen were used in projecting the slide reproductions of the PTAT. The subjects utilized structured story forms provided to them by the experimenter and a stopwatch was used to mark off the necessary time intervals. The Alfonso Bilingual Usage Schedule (Alfonso, 1972) was utilized as a measure of frequency of language usage.

Table 1. Distribution of Subjects for Each Set by Sex and Language Used

Card Number*	Filipino-Filipino			English-Filipino			Combined
	M	F	Total	M	F	Total	Totals
First Set							
17-21-2GF-16 8-6G-15-14	35	26	61	24	26	50	111
Second Set							
4-7 IBM-6FM IGF-18-3-12	25	25	50	25	25	50	100
Third Set							
11-9-6B-5 19-2BM-20-10	30	31	61	27	26	53	114
TOTALS	90	82	172	76	77	153	325

*The blank card was not included in this study.

Procedure

PTAT cards were randomly distributed into three sections of eight cards each and administered via slide projection to several groups of students. The schedule of the testing sessions was dependent upon the free time of the subjects. As a result, the sizes of the groups varied from ten to fifty. The experimenter saw to it that approximately the same conditions obtained from one testing session to another. (Each subject told stories to one section of the cards with four stories told in Filipino and four in English.) The language sequence was reversed for the succeeding group so that in effect, equal numbers of students told stories in the English-Filipino and Filipino-English sequences for each card. As a result, an average of fifty students told stories to one card either in English or in Filipino. Table 1 shows the distribution of subjects.

The subjects were provided with structured story forms and for the English stories, the following instructions (as found in Murstein, 1964) was read to them.

> You are going to see a series of pictures and your task is to tell a story that is suggested to you by each picture. Try to imagine what is going on in each picture. Then tell what the situation is, what led up to the situation, and what the people are thinking and feeling, and what they will do. In other words, write as complete a story as you can—a story with plot and characters.
>
> You will have 20 seconds to look at a picture and then 4 minutes to write your story about it. Write your first impression and work rapidly. I will keep time and tell you when it is time to finish your study and to get ready for the next picture.
>
> There are no right or wrong stories to these kinds of pictures, so you may feel free to write whatever story is suggested to you when you look at a picture. Spelling, punctuation, and grammar are not important.

What is important is to write out as fully and as quickly as possible the story that comes to your mind as you imagine what is going on in each picture.
Notice that there is one page for writing each story. If you need more space for writing any story, use the reverse side of the paper.
On each story sheet, these four questions are printed with about a two-and-a-half-inch space for writing following each question:

1. Who is in the picture? Give approximate ages. If more than one person is seen, give relationship of the characters to each other.
2. What is going on?
3. Explain why this is happening.
4. How does the story end?

The corresponding Filipino instructions was given prior to the Filipino part of the story telling task:

Makakakita kayo ng mga larawan at ang gagawin ninyo ay maglahad ng isang kuwento batay sa inyong pagkaunawa sa bawat larawan. Buuin sa inyong isipan kung ano ang pangyayaring nagaganap sa larawan. Pagkatapos ay isulat ninyo kung ano ang pangyayari, ano ang pinagmulan ng pangyayai anu-ano ang mga pinagmulan ng pangyayari anu-ano ang mga iniisip at nararamdaman ng mga tauhan; at ano ang kanilang gagawin. Sa madaling salita, kayo ay susulat ng isang buong kuwento sa abot ng inyong makakaya—isang kuwento na may banghay at tauhan.

Mayroon kayong 20 sandali upang tingnan ang larawan at 4 na minuto para isulat ang inyong kuwento tungkol dito. Isulat ninyo ang unang kuwentong sasagi sa inyong isipan. Oorasan ko kayo at sasabihin ko kung dapat na ninyong tapusin ang inyong kuwento.

Walang tama o maling kuwneto, kaya't Malaya ninyong maisusulat ang anumang kuwnentong ipinahihiwatig sa inyo ng larawan.

Mapapansin na may isang buong pahina para sa bawat kuwento. Kung kailangan pa ninyong lugar na pagsusulatan, gamitinang likod ng papel.

Makikita sa bawat pahina ang apat na sumusunod ngmga tanong na sinusundan ng mga 2 ½ pulgadong puwang na inyong susulatan.

1. Sino ang nasa larawan? Kung mahigit sa isang tao ang inyong nakikita, ibigay ang kaugnayan ng mga tauhan sa bawat isa.
2. Ano ang nangyayari?
3. Ipaliwanag kung bakit ito nagnyayari?
4. Ano ang wakas ng kuwento?

A post test for frequency of language usage was made by administering Alfonso's Bilingual Usage Schedule (Alfonso, 1972). This was done to see if this variable would have an effect on the ambiguity scores obtained.

RESULTS

The protocols were scored by three judges, all of whom were psychology graduate students who had taken courses on projective techniques. They scored the stories in terms of Who (sex), Who (age), Who (relationship), What, Why, and End variables and frequency counts were made of the various categories under each variable. Based on this, the values were computed using the formula.

$$H = \Sigma\, p(i) \log 2\, p(i) \quad \text{(Equation 1)}$$

after which, relative values were obtained by getting the ratio of H/H maximum. An example of the scoring procedure for one English story and another one in Filipino will clarify the method.

6FM (English)

> I'll call her Sara. The two boys are just two of the school crowd. They're in the same year in high school within the age bracket of 15–17. The boys are whispering behind Sara's back. She is aware of it but she has become numb to such talk though sometimes she still feels the bite. The boys spite Sara and treat her like "pasa-asa" girl because of the mean rumors spread by her first boyfriend whom she broke off with. She's actually a nice girl. She graduates from high school with nothing happening to prove that she is innocent of the cruel charges and unworthy of the insults she has received.

Scoring

$Who_{(sex)}$	Man, Man, Woman
$Who_{(age)}$	3 teen-agers
$Who_{(rel)}$	Classmates
What	2 Men ——=—— > Woman
Why	X_h ----------=---------- > W
END	–

6FM (Filipino)

> Si Paulita Gomez, 20 taon ay pinag-aagawan ng dalawang lalaki: isang mestiso, si Juanito, at isang Pilipino, si Isagani. Sila ay 22 taong gulang. Nag-aaway ang dalawang lalaki at pinagsabihan si Paulita na na mamili na agad sa dalawa. Si Paulita ay maganda at gusting gusto ng lalaki na mapasakanila. Nag-iisip ngayon kung sino sa dalawa ang gusto ni Paulita. Pinili ni Paulita si Isagani pagkat kahit hindi mayaman ay mabait naman.

Scoring

$Sino_{(kasarian)}$	1 babae; 2 lalaki
$Sino_{(edad)}$	Babae, 20; 2 lalaki, 22
$Sino_{(kaugnayan)}$	Mga manliligaw babae
Ano	$Lalaki_1$ =><= $Lalaki_2$
Bakit	2 Lalaki ----------+---------- > Babae
Wakas	0

On the basis of Murstein's study (1964) and the preliminary study alone by the present author, the categories used for the different variables were developed and explained to the three judges prior to their scoring the stories. It was relatively easy to categorize the responses for the three *who* variables. It was just a matter of identifying the sex of the characters (for who [sex]), their age (who [age]) and the relationship(s) between the characters. Scoring for the *What* and *Why* variables was difficult sometimes because the categories were similar as well as numerous. To clarify *What* was happening and *Why* this was happening, arrows were used to indicate the direction of action and the affect expressed was represented by a positive (+), negative (-) or neutral (0) indicator above the arrow. The *End* variable was simply scored in terms of its being happy (=), sad (-) or neutral (0). Thus for the English story in the example, we have two men and a woman (who [sex]) all of whom are teenagers (who[age]), and classmates (who[rel[). The two men aggress against the woman verbally (what) because of her past (why) and the story ends negatively for the woman.

Interjudge reliability was measured by having the three judges read and score 120 randomly selected stores. The judges agreed on the scoring of *who* (sex) 100 percent, *who* (age) 98 percent, *who* (rel) 97 percent, *what* 81 percent, *why* 75 percent and *End* 72 percent.

After computing the scores for the English stories for a particular card, frequency counts were made for the categories obtained for each of the variables.

These data were used as the basis for computing the H values for each variable, for each card as the following example will show.

Card 6FM

Sex of Respondents	:	Male
Language Used	:	English
Number of Respondents	:	25
Variable	:	Who (sex)

Formula: $H = \Sigma p(i) \log 2\, p(i)\, p(i)$, where p equals the proportion of cases in any category (i).

Categories	Obtained frequency	f/n	1/f/n	Log_2 1/f/n	f/n x Log_2 1/f/n
2 Men					
Women	22	.8800	1.1	0	.0000
2 Boys					
Girl	2	.0800	12.5	3.58	.2864
2 Men					
Girl	1	.0400	25.0	4.64	.1856
	n = 25				H = .4720

To get the H relative uncertainty value, the following ratio was obtained:

$$\frac{H}{H \text{ maximum}}$$

Therefore,

$$H\,rel = \frac{.4720}{1.58} = .3114 \text{ or } 31.14\%$$

In obtaining the proportions for each category, the reported frequencies are divided by N and to facilitate computations the original formula was translated as

$$H = \Sigma\, p\,(i) \log^2 \frac{1}{p\,(i)}$$

since one of the rules for manipulating logarithms states that

$$\log \frac{1}{x} = \log x$$

To make the comparisons across variables and across cards meaningful, it was necessary to express obtained H values as a function of the number H (H_{max}) since H is a function of the number of categories used. In the example above, H_{max} would be equal to 1.58, assuming equal representation in each category. (The product of three times 33 $\log_2 \frac{1}{33}$ yields the value 1.58) Dividing the obtained H (.4720) by H_{max} (1.58), we obtain a relative uncertainty value for who (sex) of 1.14 percent. This simply means that compared to other cards in the series, 6Fm is relatively structured with respect to the sex of the characters depicted in the story. For the Filipino stories, the relative H values range from 0.0 percent (Card 12, for who [sex] for males) to 98.12 percent (Card 6G, for who [relationship] for males) and for the English stories, 0.0 percent was obtained for Card 1BM (for who [sex] for both males and females) while 99.24 percent was obtained for Card 11 (for *End*, for males).

With reference to the variables across all cards, a comparison of means was done by applying Duncan's Range Test. The results for Filipino stories show that *Wakas* was most uncertain, followed by *Sino* (edad), *Bakit, Ano, Sino* (kasarian), and *Sino* (kaugnayan) in that order. The significance of the differences between these means may be seen in Table 8.

On the other hand, Table 9, shows the means of English stories, with *Who (age)*, as the most ambiguous, followed by *End, Why, What, Who (rel),* and who (sex). Results of the Ducan's Range Test show that there is no significant difference between *Who (age)* and *End* but are both significantly more uncertain than *who (sex), who (rel),* and *What. Why* is likewise more ambiguous than *who (rel)* and *who (sex)* and finally *what* is significantly more uncertain than *who(sex).*

At the .01 level, *Wakas* is significantly more uncertain that *Sino (kaugnayan), Sino (kasarian)* and *Ano.* Also at the same level of significance, *Sino (edad)* is more uncertain than *Sino (kaugnayan).* At .05 level, *Sino (edad)* is significantly more uncertain than *Ano* and *Sino (kasarian)* and *Bakit* is more uncertain than *Ano* and *Sino (kasarian).*

All in all, there appears to be no strong shifts in ambiguity scores for each of the variables as a function of language used. To further test for the effect of language used

Table 2. Relative Uncertainy Values for Who (Sex) Variable for a Bilingual College Population*

	FILIPINO		ENGLISH	
	Male	Female	Male	Female
IBM	28.64	41.36	0	0
IGF	18.40	18.60	0	29.6
2BM	90.75	78.70	37.6	43.25
2GF	64.15	53.80	23.76	42.15
3	78.00	87.88	64.56	91.19
4	87.42	79.78	72.15	50.70
5	96.37	87.23	74.51	76.60
6FM	36.00	46.44	29.11	33.40
6B	71.89	51.00	42.94	19.04
6G	42.27	86.36	77.01	76.22
7	79.14	93.87	90.51	63.88
8	86.22	75.54	97.89	81.59
9	40.75	45.88	51.89	34.55
10	43.36	48.45	91.12	72.68
11	41.70	36.07	74.52	40.07
12	-	23.54	23.49	18.57
14	76.60	27.06	75.98	78.45
15	74.90	90.63	91.75	94.22
16	91.84	87.53	23.76	44.08
17	30.69	0	39.85	0
18	71.60	94.33	87.93	87.28
19	83.45	89.38	90.67	69.58
20	28.96	53.84	16.2	38.70
21	33.97	41.25	30.99	28.64

Table 3. Relative Uncertainy Values for Who (Age) Variable for a Bilingual College Population*

	FILIPINO		ENGLISH	
	Male	Female	Male	Female
IBM	76.25	71.03	82.34	9.36
IGF	72.55	82.39	72.68	72.75
2BM	85.64	84.88	88.53	79.36
2GF	73.07	51.89	79.54	38.38
3	90.05	92.82	89.69	89.38
4	78.74	91.34	88.30	91.28
5	71.23	73.56	72.83	78.87
6FM	91.50	73.76	90.83	92.10
6B	84.76	75.38	77.94	71.86
6G	94.19	76.23	95.60	91.08
7	77.60	77.76	89.33	90.96
8	96.97	94.85	89.24	92.17
9	82.45	69.34	84.29	74.45
10	85.58	91.40	89.55	86.09
11	43.02	71.57	69.75	39.08
12	-	29.17	23.49	-
14	88.62	41.52	92.46	83.72
15	77.44	87.08	73.16	86.69
16	89.24	43.64	73.19	85.59
17	77.19	92.55	83.88	90.06
18	93.88	90.48	90.44	73.89
19	87.60	87.16	81.43	81.05
20	87.05	76.20	80.07	79.57
21	84.53	75.38	74.87	82.29

*For TABLES 2–7, (-) signifies no response for that particular variable and (0) implies that only one category was used for that variable.

and sex of the subjects, across all cards, an analysis of variance was performed for each of the variables under study. There were no significant results obtained except for the *End* variable. It was found out that at the .05 level of confidence, the ends of stories were significantly more ambiguous in Filipino than in English for all subjects. In addition, Table 15 also shows that males have higher uncertainty scores for End in English.

The findings on the analysis of variance is further supported by the results of Spearman's Rank correlation. Table 16 reveals that the ranking of male and female ambiguity scores are essentially associated except for the End variables in both English and Filipino. Male and female rankings in Filipino for who (age) are likewise not associated but the value obtained (1.67) approach significance (1.717) at the .05 level of confidence.

Data on the effects of the number and sex of persons in the cards on ambiguity values obtained are shown in Tables 17 to 22. The PTAT stimuli were classified into

Table 4. Relative Uncertainty Values for the Who (rel) Variable for a Bilingual College Population

	FILIPINO		ENGLISH	
	Male	Female	Male	Female
IBM	-	-	-	-
IGF	-	-	-	-
2BM	74.18	75.26	87.63	72.00
2GF	42.53	28.10	37.69	28.45
3	96.17	45.67	74.30	84.24
4	80.03	75.22	50.75	72.20
5	32.06	30.39	0	29.42
6FM	88.89	73.39	63.20	87.24
6B	62.75	41.70	42.28	32.10
6G	98.12	59.01	84.13	78.80
7	79.60	23.49	54.49	34.32
8	97.45	37.88	42.95	77.25
9	39.50	20.16	47.02	41.32
10	35.02	32.26	81.25	31.98
11	20.50	26.03	17.57	32.26
12	0	-	-	-
14	85.50	46.14	37.55	35.56
15	-	-	-	-
16	43.54	28.10	39.73	0
17	-	-	-	-
18	89.25	86.02	89.28	44.00
19	85.78	82.08	80.81	87.23
20	-	-	20.50	-
21	-	-	18.31	-

Table 5. Relative Uncertainty Values for the What Variable for a Bilingual College Population

	FILIPINO		ENGLISH	
	Male	Female	Male	Female
IBM	94.48	46.80	46.00	44.42
IGF	36.71	90.24	45.50	69.28
2BM	75.51	76.32	83.31	89.27
2GF	50.93	50.20	75.12	90.03
3	72.86	75.57	43.86	51.03
4	37.92	41.76	82.75	65.38
5	83.10	77.22	76.35	82.04
6FM	48.40	78.96	46.00	76.41
6B	75.32	82.19	70.11	69.70
6G	79.21	47.20	24.11	28.85
7	84.89	81.95	70.00	86.37
8	81.95	90.49	86.74	83.01
9	78.97	83.49	43.07	43.03
10	73.84	77.60	72.84	81.00
11	74.55	84.61	74.79	74.23
12	46.00	94.99	53.56	73.84
14	80.90	32.26	89.70	48.16
15	69.14	86.41	63.81	78.56
16	82.87	28.10	43.93	28.45
17	42.14	35.25	92.72	77.06
18	79.73	85.72	73.48	82.43
19	64.10	73.89	81.48	72.09
20	51.07	91.25	87.40	90.75
21	78.36	34.69	91.37	43.03

cards containing multiple persons, one person, no persons, males only, females only and both sexes. The divisions included the following' for multiple persons, (4,9, 2GF, 16, 10,19, 6G, 3, 7, 18, 2BM, 8, 6B, 6FM); for males only (6B, 8, 2BM, 18, 20, 1BM, 5, 21, 17); for females only (2GF, 1GF, 15); for no person (12, 11); for one person (20, 1BM, 5, 21, 17, 15, 1GF) and for both sexes (7, 3, 19, 6G, 10, 16, 2GF, 9, 4, 6FM). Tables 17 to 22 show the results of the t-tests performed on the *what*, *why*, and *End* variables.

DISCUSSION

The findings indicate that different aspects of the PTAT story have varying degrees of ambiguity from card to card. It appears that language used and sex of the subjects do not substantially affect ambiguity scores obtained except for the *End* variable. This particular finding may be interpreted to mean that for a bilingual college sample, such as the one used in this study, language shifts may be allowed without having gross changes in the interpretation of stimuli. This would have positive implications for the PTAT as a test

Table 6. Relative Uncertainty Values for the Why Variable for a Bilingual College Population

	FILIPINO		ENGLISH	
	Male	Female	Male	Female
IBM	76.75	72.90	81.70	81.86
IGF	75.96	91.91	72.19	72.68
2BM	92.79	91.63	89.50	81.96
2GF	69.85	78.99	75.06	94.51
3	85.75	86.77	39.20	55.94
4	59.78	74.05	79.20	34.32
5	86.27	64.21	73.74	75.59
6FM	77.17	87.60	83.80	85.35
6B	88.41	73.88	91.23	71.25
6G	70.26	78.08	72.09	26.85
7	66.82	63.72	75.00	73.77
8	86.13	86.79	77.79	90.64
9	95.07	77.93	87.98	83.07
10	66.32	42.17	72.79	68.68
11	42.71	74.15	75.40	81.30
12	75.52	76.63	83.73	55.94
14	87.29	94.51	75.10	78.21
15	77.70	80.34	82.74	71.01
16	90.46	44.14	42.12	26.72
17	71.51	85.42	89.11	90.09
18	91.44	88.43	79.51	81.47
19	79.03	78.73	76.39	73.33
20	74.74	79.64	88.25	66.60
21	87.15	91.83	88.44	84.91

Table 7. Relative Uncertainty Values for the End Variable for a Bilingual College Population

	FILIPINO		ENGLISH	
	Male	Female	Male	Female
IBM	94.92	94.93	91.69	83.29
IGF	89.68	86.42	92.04	61.93
2BM	89.46	91.60	86.30	84.75
2GF	90.96	81.58	89.36	94.05
3	98.00	95.70	96.20	72.50
4	96.65	86.62	77.91	83.28
5	91.86	77.59	80.47	86.94
6FM	85.10	75.62	78.34	94.15
6B	82.64	85.10	78.08	46.66
6G	78.00	84.41	83.62	58.32
7	64.39	57.45	53.09	97.05
8	60.57	91.36	80.62	80.99
9	89.14	89.53	80.71	58.76
10	83.78	91.97	81.37	77.22
11	89.84	82.56	99.24	87.31
12	91.03	95.08	85.35	86.22
14	74.80	92.77	87.32	63.27
15	72.20	87.51	89.89	78.51
16	61.98	75.00	60.90	90.28
17	86.76	90.24	29.24	76.39
18	86.58	83.28	84.32	69.79
19	75.61	76.75	89.99	83.20
20	77.54	84.03	75.23	82.80
21	37.05	90.03	85.00	48.60

in the sense that responses are relatively stable (except for story endings) regardless of the sex of the subjects and the language (English or Filipino) used.

The significant interaction between sex and language used with respect to the End variable may be explained by the fact that the males in the present study gave more English word associations to the stimuli in Alfonso's Bilingual Usage Schedule. The males gave 63 percent of their associations in English whereas the females gave only 30 percent of their associations in the same language. In short, the males in this study are probably more associatively fluent in English that the females and this may account for their higher ambiguity scores in English for the *End* variable.

Another plausible explanation is the observation that since males are less stimulus bound than females (Newbigging, as quoted by Murstein, 1963), it is expected that males compared to females would be better able to handle story endings.

Compared to Murstein's study on the Murray TAT, the present study reports a wide range of ambiguity values for all the variables considered. The data for males and females

Table 8. Comparative Analysis of the Uncertainty Values of the Six Variables for Filipino Across All Cards

Variable	Mean	Difference Between Means				
		Sino (edad)	Bakit	Ano	Sino (kasa-ug)	Sino (ka-
				rian)		
Wakas	82.18	3.63	5.50	16.84**	9.58*	27.05**
Sino (edad)	78.55		6.87	13.21*	15.93**	23.42**
Bakit	76.68			11.34	14.08*	21.53**
Ano	65.34				2.74	10.21
Sino (kas)	62.20					7.47
Sino (kaug)	55.13					

* Significant at the .05 level
**Significant at the 0.1 level

Table 9. Comparative Analysis of the Uncertainty Values of the Six Variables for English Across All Cards

Variable	Mean	Difference Between Means				
		Who (age)	End	Why	What	Who (age)
Who (age)	80.57	3.72	7.27	15.55**	24.74**	26.45**
End	71.58		3.55	11.83*	21.02**	22.75**
Why	73.30			8.28	17.47**	19.18**
What	65.20				9.19	10.90*
Who (rel)	55.83					1.91
Who (sex)	54.12					

* Significant at the .05 level
**Significant at the 0.1 level

were fused to obtain card ambiguity values for the English and Filipino stories. It appeared unnecessary to test for the significance of the differences between means of the English and Filipino stories across each variable for all cards, since the means for both languages differed only by one or two points as the basis for future studies on the characterization of high, medium, and low ambiguous cards. The middle range of scores for both English and Filipino stories (the second set of eight cards according to rank order) generally cover values only from the seventies to eighties. It therefore seems that for a Filipino college sample, the Lagmay PTAT is a sensitive instrument for eliciting fantasy responses that could possibly be personality revealing—more so than the Murray TAT appears to be for an American College sample.

In this connection, it will also be noticed that Murstein's study reports no data for sixteen out of thirty-one cards (approximately 50%) for who (rel). For the same variables in the present study, there are only seven out of the twenty-four PTAT cards (pr 30%) having no values in Filipino while only four (or 16%) of the cards have no reported values in English. This may partly explain the generally wider range of ambiguity values for the PTAT since situations depicting interpersonal relationships most probably generate a greater variety of stories.

Filipino college students do not emphasize the same variables in the story-telling task. Murstein (1970) reports that for American subjects the hierarchy of ambiguity values from the most to least uncertain is in the following sequence: *Why, End, Who* (rel), *Who* (age), *What, Who* (Sex). Although the subjects in the present study also have high ambiguity scores for the *End* variable both in English and in Filipino, the ranking of the rest of the variables is different from the American trend. Filipino subjects tend to emphasize *Who* (age) followed by *Why*, and *What* in that order and finally *Who* (rel) and *Who* (sex) are the most structured. The finding on age becomes understandable when the cultural context is considered since age differences are relatively more emphasized in Filipino culture. Also linguistic markers differ (Enriquez, 1973) such that age differences are delineated in Filipino whereas sex differences are more specific in English.

Although the main purpose of this paper has been to describe ambiguity values as function of sex and language used, the data suggest a number of hypotheses concerning Filipino personality which could possibly be tested in future researches. For example, the sex difference with respect to the End variable could probably be explored further, and also the data gathered can be analyzed in various ways (e.g. the categories under what and why) for some information on the kinds of motives appearing in the fantasies of college students.

The other alternative would be highly relevant for specific descriptions of cards yielding high ambiguity scores. It appears in the present study that cards having only males represented yield richer stories with respect to the Why variable both in English and Filipino stories. Considering that the PTAT may be useful as a measure of aroused drive states, this particular observation should be significant when the test is used to elicit certain motives.

The significant findings reported in this study, however, may be open to other interpretations. The need to distinguish between ambiguity and level of explicitness

Table 10. Analysis of Variance of the Who (Sex) Variable

Sources of Variation	Sums of Square	DF	Mean Square	F
Among Groups:	(1,427.4646)	3		
Between language	1,161.7633	1	1,161.7633	1.5226
Between Sexes	11.5509	1	11.5509	.0151
Interaction:				
LxS	254.1504	1	254.1504	.3330
Within Groups	73,205.9099	93	763.0303	
Total	74,678.3745	96		

Table 11. Analysis of Variance of the Who (Age) Variable

Sources of Variation	Sums of Square	DF	Mean Square	F
Among Groups:	(438.9802)	3		
Between language	55.0096	1	55.0096	.1919
Between Sexes	381.4841	1	381.4841	1.3308
Interaction:				
LxS	2.486	1	2.486	.0086
Within Groups	26,657.27	93	286.6373	
Total	27,096.2507	96		

Table 12. Analysis of the Who (Relationship) Variable

Sources of Variation	Sums of Square	DF	Mean Square	F
Among Groups:	(3,910.9953)	3		
Between language	392.0641	1	392.0461	.5795
Between Sexes	2,396.9094	1	2,396.9094	3.5433
Interaction:				
LxS	1,122.0218	1	1,122.0218	1.6586
Within Groups	43,292.685	64	676.4473	
Total	47,203.6238	67		

Table 13. Analysis of What Variable

Sources of Variation	Sums of Square	DF	Mean Square	F
Among Groups:	(122.06)	(3)		
Between language	14.93	1	82.84	.2125
Between Sexes	82.84	1	14.93	.0383
Interaction:				
LxS	24.29	1	24.29	.0623
Within Groups	36,239.1798	93	389.6684	
Total	36,361.2442	96		

Table 14. Analysis of Variance of Why Variable

Sources of Variation	Sums of Square	DF	Mean Square	F
Among Groups:	(602.0178)	3	271.9593	1.4073
Between language	271.9593	1	271.9593	1.4073
Between Sexes	194.8260	1	194.8260	1.0082
Interaction:				
LxS	135.2325	1	135.2325	.6998
Within Groups	17,971.0842	93	193.2344	
Total	27,096.2507	96		

Table 15. Analysis of the End Variable

Sources of Variation	Sums of Square	DF	Mean Square	F
Among Groups:	(5,982.2646)	(3)		
Between language	541.6892	1	541.6892	4.64.59*
Between Sexes	.3337	1	.337	.0028
Interaction:				
LxS	5,440.2417	1	5,440.2417	46.6596**
Within Groups	10,843.2665	93		
Total	16,825.5311	96		

*Significant at .05 level.
**Significant at .01 level.

may be a serious limitation to the findings reported (Enriquez, 1973). That is, the degree to which explicitness is a function of language and/or sex is not clear at this point and the differences obtained may simply reflect a tendency to be explicit or implicit in describing various parts of the PTAT story. This appears to have been at least partially controlled by the specific questions in the structured story forms asking for the age and relationship of the characters. If degree of explicitness is a confounding factor in this study, it should affect descriptions of *What, Why*, and *End* more that the *Who* variables. Examination of the categories under each of these variables does not reveal very marked differences.

In summary, this study has attempted to specify the ambiguity values of the PTAT cards as a first step in helping both the researcher and the clinician make certain decisions concerning the use of the test. Although this is a simple descriptive study with limited applicability within the sample used, it basically points out the need to gather data in both English and Filipino for personality assessment purposes. Lazo (1973) stresses difficulties in translating foreign-made test for local use and it appears that local tests have to be developed. The PTAT partially answers this need and it is hoped that the present study has contributed towards a more effective use and a better understanding of the instrument.

Table 16. Summary Table of Spearman's Rank Correlation

Variable	DF	+	Variable	DF	+
WHO (sex)	22	4.27**	WHO (sex)	22	5.53**
WHO (age)	22	1.67	WHO (age)	22	3.57**
WHO (Rel	15	3.55**	WHO (rel)	15	3.35**
WHAT	22	.2397	WHAT	22	2.55**
WHY	22	2.41	WHY	22	1.94*
END	22	.2453	END	22	.1538

*level of significance at .05 (2-tailed test)
**level of significance at .01 (2-tailed test)

Table 17. Comparative Analysis of the Number of Persons for the What Variable in Filipino

No person	70.23	12.25	1.78	6.66	9.15	11.11
Males only	68.45	16.49		4.88	7.37	9.33
Both sexes	63.57	15.72			2.48	4.45
One persons	60.68	15.23				.96
Females only	59.12	14.25				

Table 18. Comparative Analysis of the Number of Persons for What Variable in English

Mean	SD	Males only	Females only	No Person	One Person	Both Sexes
Males only	71.01	16.78	1.33	2.51	6.89	11.88
Females only	69.68	13.32		1.18	5.56	10.55
No person	68.50	9.62			4.38	9.37
One person	64.12	16.92				4.99
Both sexes	59.13	21.02				

Table 19. Comparative Analysis of the Number of Persons for the Why Variable in English

Mean	SD	Males only	Females only	No Person	One Person	Both Sexes
Males only	82.50	77.0892	319	3.78	10.25	17.23*
Females only	79.31	5.4161		.59	7.06	14.04
No person	78.72				6.47	13.84
One person	72.25	11.61				6.98
Both sexes	65.27	15.9946				

*.05 level of significance

Table 20. Comparative Analysis of the Number of Persons for the Why Variable in Filipino

Mean	SD	Males only	Females only	No Person	One Person	Both Sexes
Males only	82.15	4.89	2.49	5.17	9.56	17.53*
Females only	76.98	4.96		4.41		12.36
No person	79.66	6.52		2.68	7.07	15.04
One person	72.59	7.81				7.97
Both sexes	64.62	20.50				

*level of significance .05

Table 21. Comparative Analysis of the Number of Persons for the End Variable in Filipino

Mean	SD	No Person	Females only	Both Sexes	Males only	One Person
No person	89.54	5.31	7.94	11.90	16.67	16.34
Females only	81.50	6.77		3.96	8.73	8.40
Both sexes	77.64	20.41			5.77	3.94
One person	73.20	14.28			.33	
Males only	72.87	15.59				

Table 22. Comparative Analysis of the Number of Persons for the End Variable in English

Mean	SD	No Person	Females only	Both Sexes	Males only	One Person
Person	89.57	5.84	5.56	7.76	8.49	9.22
Females Only	84.01	8.03		2.20	2.93	3.66
Both Sexes	81.08	11.98			.73	.46
Males Only	81.08	13.00				.71
One Person	80.35	14.29				

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