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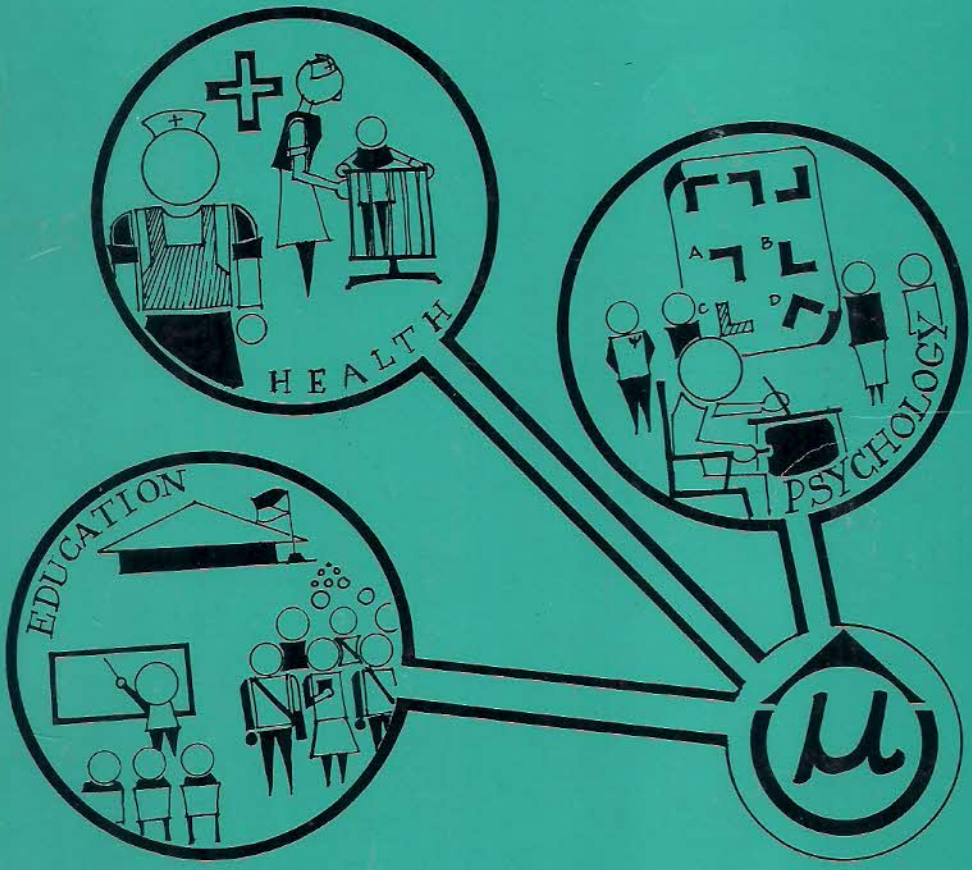

Indigenous Measurement Approaches

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FOREWORD

Someday, when indigenous and indigenized psychological and educational measurements in this country shall have far advanced beyond their present states, those of us with a sense of history may look back to the works culled in this volume as efforts undertaken in times when significant studies in the field were few and far between.

The call for indigenous test development is not germinal in this modern era. Virgilio G. Enriquez (1985) recalls, "the current Philippine objection to the uncritical importation of Western psychological models is at least sixty years old . . . and . . . the credit for the first attempt at indigenous psychological test development goes to Sinforoso Padilla. . . who took the cudgels for appropriate and relevant psychological testing . . . as chairman of the psychology department at UP in the 1920's." However, it was only in the latter two decades that the lonely realm of indigenous testing has effectively beckoned a considerable number of other Filipino scholars. In the intervening years, the struggle was a Sisyphean labor for one or two souls interested in indigenous instrumentation. The current enthusiasm for indigenization is, interestingly, in step with the beat of today's drums throughout most of the developing world where a few, yet substantial slice of psychologists' circles slip away from the mainstream and take the less travelled track of indigenous psychology.

Local literature is now replete with concern about the inapplicability of western-made tests to the Philippine setting, expressed by prominent psychologists, notably, G. Guthrie, J. Bulatao, A. Lagmay, and V. Enriquez, among others. This particular issue of the Philippine Journal of Educational Measurement is an attempt not only to give renewed resonance to this concern but hopefully, to also serve as a worthy repository of some early works on the development of indigenous measures.

For this issue, we have brought together the descriptions of the development of two indigenous personality measures, an indigenous intelligence test for rural children, and a local norm for a Western-made screening test for the health professions.

In their article "Towards the Assessment of Personality and Culture: The 'Panukat ng Ugali at Pagkatao'" Virgilio G. Enriquez and Ma. Angeles C. Guanzon describe the development of a measure that is relevant and meaningful to the study of the Filipino personality. The scope and importance of the PUP are most eloquently underscored in the fact that the test has been translated in nine versions including six major ethnolinguistic groups (Ilocano, Bicolano, Cebuano, Waray, Ilonggo, and Maranao), Filipino parallel forms A and B, and an English form, with a number of realiability and construct validity studies invariably showing favorable results. Some years' experience with PUP also unveiled the important lesson that "there is a direct relationship between the quality of data (obtained) and the nature of interaction with the respondent." This means that when the interview is simply on the level of civility with the respondent, he is likely to elicit civility-type of data; that involved-type of data can be sifted mainly with involved-type of interaction, and so on. This lesson can be valuable to researchers in the various sciences who must interact in order to gather data.

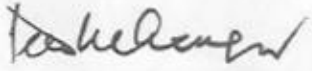
Annadaisy J. Carlota presents here the development of the Panukat ng Pagkataong Pilipino (PPP), a personality inventory. A response to the pressing need for more indigenous tests, the PPP is another contribution in the area of original psychological measurement. Extensive studies have been done on the PPP by several researchers, and the author makes specific suggestions on further studies to evaluate its psychometric adequacy. The literature review accompaying Carlota's article is in itself an important account of the status of indigenous measurement in our country.

Babes Almario Velazco's work is a pioneering effort in the area of developing indigenous measures of rural children's mental ability. The accompanying literature review is a substantial contribution to knowledge of trends in relevant intelligence measurement in many other parts of the world.

Phoebe D. Williams achieved a major coup for Philippine pediatrics and health education when she established Metro Manila norms for the Denver Developmental Screening Test (DDST), thereafter known as the Metro Manila Developmental Screening Test (MMDST). Used in the screening and early detection of infants and preschool children with developmental delays, the MMDST is a great contribution in the field of public health. Williams' study points to clusters of factors associated with children's performance and outlines the implications of these factors on the tasks of health practitioners.

The papers in this volume are compendiums of full-length originals. Readers who are interested in the originals in their entirety may write to the authors.

Generally, the works presented here are major breakthroughs and hopefully can benefit many of us in the fields of education, psychology and health.



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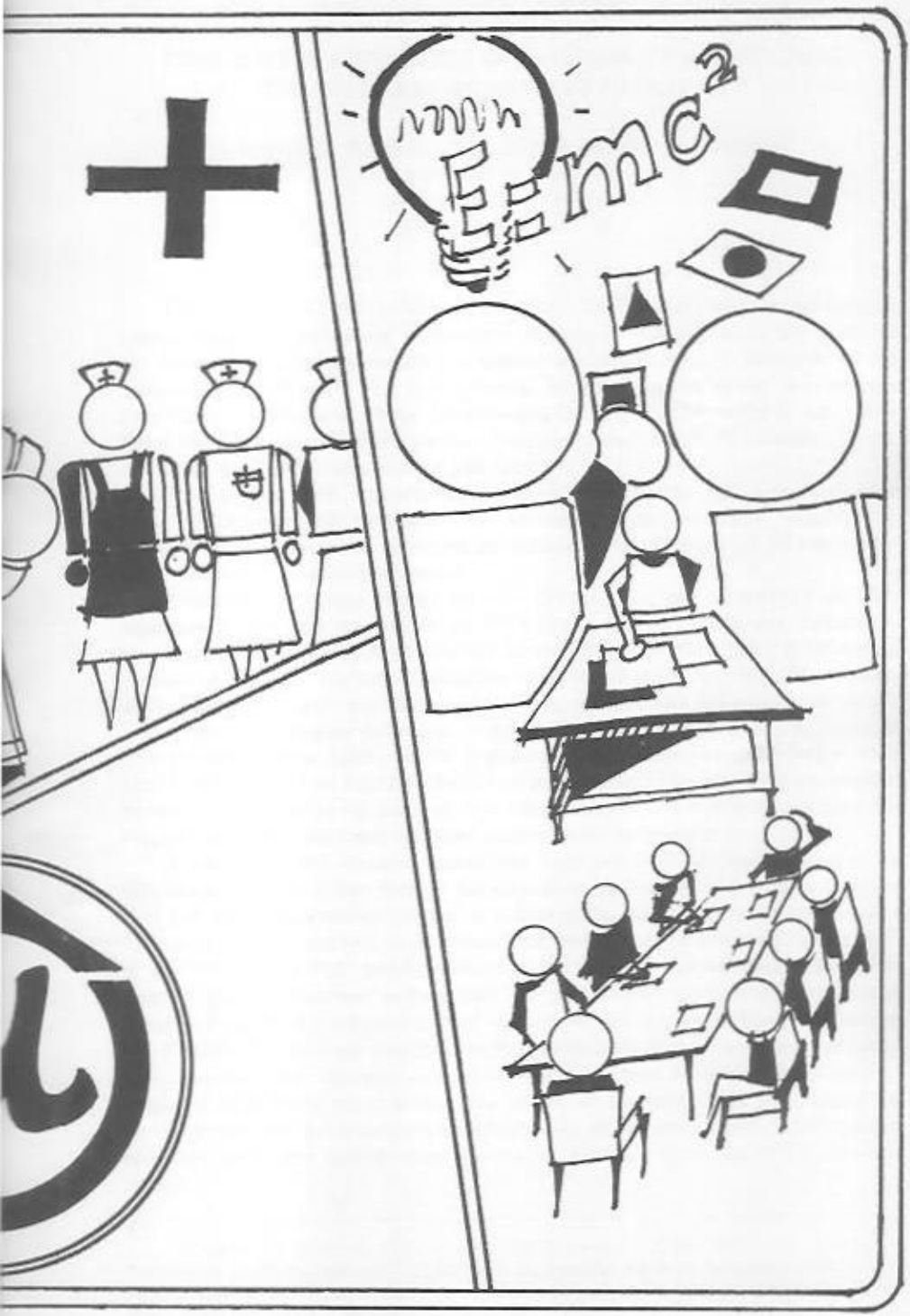
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TOWARDS THE ASSESSMENT OF PERSONALITY AND CULTURE: THE "PANUKAT NG UGALI AT PAGKATAO"*

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The *"PANUKAT NG UGALI AT PAGKATAO"* (PUP) aims to tap specific values, traits and behavioral dimensions relevant or meaningful to the study of the Southeast Asian personality, in general and the personally structure of the Filipino, in particular. The PUP consists of 24 subscales which tap selected personality dimensions. These 24 subscales consist of 124 items in all. Aside from the 24 subscales, there are two validity subscales and 15 identifier items. All in all, the PUP is composed of 160 items.

The present study reports comparative mean scores obtained from nine major Filipino ethnic groups in 26 subscales. Based on 3669 respondents, national mean scores and standard deviations were obtained on 24 value/trait subscales and two validity subscales.

Construct validation studies on nine (9) subscales out of twenty-four (24) subscales of the test were done on the Filipino version of the test. Reliability studies have been done on all versions of the PUP. The PUP 1982, A (Filipino) version of the test yielded a reliability coefficient equal to .901. The Bahasa Malaysian and English translation of the test as well as six (6) other translations into selected Philippine languages (Ilocano, Bicolano, Cebuano, Waray, Ilonggo and Maranao) were taken to be linguistically equivalent versions but further studies are needed to establish empirical equivalence. The two Filipino parallel forms of the *Panukat ng Ugali at Pagkatao* (Form A and Form B) are used for research purposes whenever repeated testing needs to be done.

A review of the research experience with the PUP has shown that while appropriate in the urban setting for screening applicants for a college position or a job, as a paper-and-pencil test it is difficult to administer and inappropriate for use in the rural setting. In an attempt to develop norms and validate the PUP, it was found that PUP administration in the form of a structured interview in lieu of paper-and-pencil testing was not particularly appropriate and rather cumbersome for the Filipino farmer. A suitable alternative method in assessing the Filipino farmer's personality was thus proposed: that of unstructured interview coupled with content analysis of responses and systematic observation. Informal statements made during the course of the interviews were found to be more relevant, informative and reflective of the Filipino farmer's personality structure and value system than the results gathered from the PUP's administration.

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*Updates the Enriquez and Almonte (1973) report. Includes data from *"Manwal ng Panukat ng Ugali at Pagkatao"*. (1980) and the masteral thesis of Guanzon (1984). Incorporates a paper presented at the Seventh International Conference on Personality Assessment, Honolulu, Hawaii, February 28-29, 1981.

Having found that there is a direct relationship between the quality of data one gets and the nature of the interaction with the Filipino respondent, we propose another approach to personality assessment in the Philippine setting. This approach is based on the research concept that social interaction should be a meaningful focus of analysis for Filipino personality researchers. Eight levels and modes of interaction in Filipino have been identified: *pakikitungo* (transactions/civility with), *pakikisalamuha* (interaction with), *pakikilahok* (joining/participating with), pakikibagay (in conformity with/in accord with), pakikisama (being along with), *pakikipagpalagayan/pakikipagpalagayang loob* (being in rapport/understanding/acceptance with), *pakikisangkot* (getting involved), and pakikiisa (being one with). Experience with the rural folk in Philippine barrios showed that there are differences in conceptual and behavioral meaning among these concepts. It is therefore argued that the research data one gets from the Filipino respondent depends on the level of interaction the researcher has with him.

What is the culture theorist's understanding of Filipino behavior? What aspects of the Filipino personality would a psychologist interested in cross-cultural assessment consider important? In addition to previously identified surface values such as *"hiya," "utang na loob,"* and *"pakikisama,"* research on the Filipino personality using the *Sikolohiyang Pilipino* perspective reveal other concepts which are particularly significant to the Filipino. Some of these are *"lakas ng loob"* (daring), *"katiyagaan"* (perseverance), *"pagkaresponsable"* (responsibleness), *"pakikitungo sa mga tao"* (generosity), *"pagkamatulungin"* (helpfulness), *"pagkasalawahan"* (fickle-mindedness), *"pagkamaalalahanin"* (thoughtfulness), *"pagkapalaaway"* (aggressiveness), and *"pagkasigurista"* (security-orientedness). With the aim of developing a device for assessing the Filipino personality, the *Panukat ng Ugali at Pagkatao* (PUP), a Southeast-Asian-oriented behavior-attitude-trait inventory was constructed. The PUP taps specific Filipino values and behavioral dimensions relevant or meaningful to the study of the Filipino as a Southeast Asian.

Trait definitions, values, behavioral and attitudinal dimensions were culled from proverbs, social science studies, dictionaries, word associations and interviews with informants including University of the Philippines students from various regions of the Philippines. Based on the information gathered, items were then constructed to tap each dimension. Items on a 5-point scale were either in the positive or negative direction and are positively or negatively worded. Agreement with items in the positive direction constitute a keyed response while agreement with items in the opposite direction means a non-keyed response.

To maximize the possible usefulness of the inventory, items which identify special characteristics and behavior such as smoking and accident proneness are included. Validity subscales are also included namely the *sub-iskala ng pagkakaila* (Denial Subscale) and the *sub-iskala ng kaugalian* (Cultural Norms Subscale). The Denial Subscale consists of items which the respondents are expected not to agree with if they are honest and careful in answering, e.g. *"Hindi pa ako nakapagsinungaling sa buong buhay ko."* ("I have never lied in my entire life.") Its inclusion in the PUP is suggested by the Minnesota Multiphasic Personality Inventory which also makes use of validity scales to check faking responses. However, the Denial Subscale has been included to guard against the possibility that some Filipino respondents may also deny (hence, "pagkakaila") the truth,

though not necessarily or consciously to protect their ego. The *sub-iskala ng kaugalian* consists of items that tap some standing truths in the Philippine culture as gleaned from previous studies and observations, e.g. "A man should offer his bus seat to a pregnant woman."

DEVELOPMENT OF PUP: PRELIMINARY FORMS

The first preliminary versions of the PUP is composed of 150 randomized items tapping the following Filipino values, behavioral dimensions and trait-concepts: 1) *pagkamahiyain* (shyness/timidity) (Alvarez 1975), 2) *pagkapikon* ("low tolerance for joking/teasing") (Sarra 1975), 3) *sumpong* ("mood") (Ramos 1973, de Quiroz 1975, Mataragnon 1978), 4) *pagkamatiyaga* (perseverance) (Almonte 1973), 5) *pagkamausisa* (inquisitiveness), 6) *pagkamaramdamin* (sensitiveness) (Bernardez 1975), 7) *pagkamatulungin* (helpfulness) (Cipres, Paulo and Rustia 1975), 8) *pagkasunud-sunuran* ("excessive conformity"), 9) *tigas ng ulo* (stubborness), 10) *pagkamapag-isa* ("preference for solitude"), 11) *pagkamapagkumbaba* ("humility"), 12) *lakas ng loob* (gut/daring), 13) *hirap kausapin* ("approachability/accommodativeness") (Pe 1975), and the two validity subscales.

The first preliminary version was pre-tested with a total of 696 male and female students, 397 from the University of the Philippines and 299 from the University of the East, distributed across different year levels and courses.

To obtain data from Filipinos in the rural areas, the same preliminary version of the PUP was also given to 38 adults from a barrio in Baliwag, Bulacan. Inasmuch as majority of the respondents were not literate, administration of the inventory was done verbally in groups of 7-8 subjects on the average (Santiago 1975).

The subjects indicated their degree of agreement or disagreement with each of the 150 PUP items by placing an x-mark on the circles provided to represent a five-point scale, i.e. *hinding-hindi* (strongly disagree) - HH; *hindi* (disagree) - H; *walang masabi* (neutral) - ?; *totoo* (agree) - T; *totoong-totoo* (strongly agree) - TT. The responses are quantified by assigning weights (1-5 points) to the choices. For items in the direction of the psychological concept tapped by the subscale, lower weights (1 or 2) are given to responses representing disagreement (HH or H) while higher weights (5 or 4) are assigned to responses representing agreement (TT or T). The neutral point *walang masabi* is given a weight of 3. For items in the opposite direction, a reverse scoring procedure is followed.

For the second preliminary version of the PUP, twelve (12) additional values and trait-concepts are tapped: 1) *ambisyon* (ambition), 2) *pagkasigurista* ("non-risk-taking"), (Mendoza 1974), 3) *pagkakuripot* (thriftiness) (Pernia 1975), 4) *pagkamagalang* (respectfulness), 5) *pagkamalikhain* (creativity), 6) *pagkamapagtimpi* (self-control), 7) *pagkapalaaway* ("aggression") (Alfonso 1974), 8) *pagkamapintasin* ("criticalness"), 9) *pagkarelihiyoso* (religious), 10) *pagkamapagbigay* (generosity) and 12) *pagkasalawahan* (ficklemindedness) (Quimio and Lalisan 1974).

Some procedural and methodological findings were obtained from the Bulacan administration of the PUP. First, some items were found difficult by the respondents because of sentence structure which was either awkward or complex. The use of English-derived words also made some items difficult. Hence, these items were modified. Second, the PUP administration was of longer duration (one hour to one and a half hours) not only because verbal administration

really takes more time, but more so because there was additional verbal and non-verbal interaction among the respondents and between the researcher and the respondents, which was found essential for a full understanding of the items. Verbal administration of the PUP in a social context is recommended just the same because this takes shorter time than the "standard" procedure whenever the respondents are unfamiliar with test taking even if they can read and write. Contrary to guidelines for standardization purposes advocating an impersonal atmosphere in the testing situation, establishing "pakikipagpalagayang-loob"* between the researcher and the *Ss* was found essential in getting the information aimed at by the inventory. Third, on the suggestion of the respondents, the varying degrees of agreement or disagreement were modified as follows: *lubusang tutol* to *hinding-hindi; tutol* to *hindi; sang-ayon* to *totoo; lubos na sang-ayon* to *totoong-totoo;* while *walang masabi* was retained.

According to the respondents, they may say "lubos na sang-ayon" to a statement of principle but this does not necessarily mean that they behave accordingly. Likewise, they may indicate "lubusang tutol" but act otherwise with regard to a certain item. However, when they say *totoong-totoo* (or *totoo*) or *hinding-hindi* (or *hindi*) to an item, it means that not only do they agree or disagree with an item but that they are also willing to act accordingly. Here, we see the importance of the distinction made between verbal agreement and its corresponding behavioral component. Fortunately an appropriate term or label is found available in the vocabulary for the intended distinction in meaning.

The use of walang masabi to indicate the neutral point in the 5-point scale is based on the results of a previous study (Enriquez and Almonte 1974) on response biases of Filipino respondents. The study was purposely conducted to find out if the labeling of the neutral point as *walang masabi* or as *alinlangan* would affect the subject's tendency to give noncommital responses. In other words, the study aimed at identifying which label for the neutral point would increase the amount of either agreement or disagreement with the items. For this reason, two sets of the *pagkamahiyain* (shyness/timidity) and the *pagkapikon* ("low tolerance for joking/teasing") subscales from a preliminary PUP version were administered to Elementary Psychology classes at the University of the Philippines. The two sets of questionnaires differed only in the label attached to the neutral point (i.e. either "walang masabi" or "alinlangan"). The results showed that while there were as many male *Ss* (n = 36) who responded with the neutral point when it was labeled *walang masabi* as when it was labeled *alinlangan* (n = 36); there were significantly more female *Ss* who responded with a neutral point when it was labeled as *alinlangan* (n = 130) than those who responded with a neutral point when it was labeled *walang masabi* (n = 74). The label *alinlangan* elicits more noncommital responses among female subjects so that the final PUP versions adopted the label *walang masabi* for the neutral point.

The total subscale scores for each individual; the subscale means and standard deviations for all subscales and the inter-subscale correlations, item correlations and frequency distribution of responses along the 5-point scale per item were obtained. A summary of subscale means for the 12 trait-concepts and the

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*A situation characterized by rapport and a degree of mutual empathy. A level of relationship beyond *pakikisama,* thus belonging to the "hindi ibang tao" category. For further discussion see Santiago and Enriquez (1976).

TABLE I

SUB-SCALE MEANS AND STANDARD DEVIATIONS*
ACCORDING TO DIRECTION OF SCORING:
FIRST PRELIMINARY VERSION OF THE PUP

Subscale	SCORING DIRECTION Positive		Negative		Subscale Means
	$\overline{X}$	S.D.	$\overline{X}$	S.D.	$\overline{X}$
KAUGALIAN (cultural norms)	–	2.61	–	–	4.14
PAGKAMATULUNGIN (helpfulness)	3.72	2.41	3.17	2.56	3.44
PAGKAMAUSISA (inquisitiveness)	3.57	3.26	3.21	3.52	3.39
PAGKAMAPAGKUMBABA (modesty)	3.68	2.92	3.06	2.93	3.37
PAGKAMARAMDAMIN (sensitiveness)	3.48	4.42	3.14	3.87	3.31
PAGKAMATIYAGA (perseverance)	3.58	2.66	3.06	3.07	3.32
TIGAS NG ULO (stubbornness)	3.39	3.66	3.14	3.23	3.27
PAGKAPIKON ("low tolerance for teasing")	3.29	3.04	3.06	2.66	3.17
LAKAS NG LOOB (guts/daring)	3.11	2.46	3.24	2.45	3.17
SUMPONG ("mood")	3.21	2.97	3.03	2.52	3.12
HIRAP KAUSAPIN (coyness)	3.29	3.10	2.90	2.90	3.10
PAGKAMAHIYAIN (timidity)	3.08	5.08	2.94	3.90	3.01
PAGKASUNUD-SUNURAN ("conformity")	2.84	3.11	2.99	2.62	2.92
PAGKAKAILA (denial)	–	3.24	–	–	2.20
OVER-ALL MEANS (excluding the 2 validity scales)	3.35		3.08		3.21

*n = 696 (UP Males = 185; UP Females = 212; UE Males = 45; UE Females = 254)

two validity scales in the first preliminary version of the PUP is shown in Table 1, while summary of the inter-scale correlations is shown in Table 2.

While the over-all mean of the twelve subscales for *Pagtanggap* (Positive scoring direction items) ($x = 3.35$) is higher than the over-all mean for *Pagtanggi* (Negative scoring direction items) ($x = 3.08$) which is the expected result on the basis of the general observation that Filipino respondents do not find it easy to disagree, the said difference is not statistically significant ($t = .12$). The validity subscales were not included in the computation of the over-all means inasmuch as all the items in said subscales are worded in the direction of *Pagtanggap*, i.e. agreement with the items constitutes a keyed response. This finding raises some doubts regarding the belief that Filipino respondents tend to acquiesce. The finding, however, that the *sub-iskala ng kaugalian* (cultural norms subscales) has the highest mean ($\overline{X} = 4.14$) clearly supports the contention that Filipino respondents, as culture bearers, should score highly on this subscale. Furthermore, if some meaning were to be inferred from the sequencing of subscales from the highest to the lowest subscale mean, the subscales next highest to the *"sub-iskala ng kaugalian,"* i.e. *pagkamatulungin* (helpfulness), *pagkamausisa* (inquisitiveness), *mapagpakumbaba* (modesty), and *pagkamaramdamin* (sensitiveness) are known to be characteristic of Filipinos. Except for *pagkamausisa* (inquisitiveness) the popular literature on Filipino traits refer to said characteristics time

and again. The *sub-iskala ng pagkakaila* (Denial Subscale) got the lowest mean value ($\bar{X}$ = 2.20); thus making it useful as a validity subscale. The obtained mean for *kaugalian* also support the use of said subscale as validity scale in the final versions of the PUP.

Observations on popular beliefs of Filipinos are consistent with the results of the intercorrelations among the different subscales (Refer to Table 2). For example, *pagkasunud-sunuran* ("conformity") is positively correlated with *lakas ng loob* (guts/daring) (r = .34) and *pagkamahiyain* (shyness/timidity) (r = .42), while *sariling pagpapasiya* ("self-decision") is positively correlated with *lakas ng loob* (guts/daring) (r = .36) and *pagkamapagmalaki* (boastfulness) (r = .36). Also, to cite more examples, *pagkamahiyain* (shyness/timidity) is positively correlated with *hina ng loob* ("cowardice"), *pagkasunud-sunuran,* ("conformity"), *pagkamaramdamin* (sensitiveness) *hirap kausapin* (coyness) and *pagkapikon* ("low tolerance for teasing) while *kusang loob* (initiative) is positively correlated with *lakas ng loob* (guts/daring) and *madaling kausapin* ("approachability/accommodativeness"). Not surprisingly, *kaugalian* (cultural norms) is positively correlated with *pagkamaramdamin* (sensitiveness) and has high correlations (although not statistically significant) with *hina ng loob* ("cowardice"), *pagkamahiyain* (shyness) and *pagkamatulungin* (helpfulness).

Some results cannot be explained easily. For instance, *matigas ang ulo* (stubborness) has significant positive correlations with *pagkamaramdamin* (sensitiveness), *pagkamausisa* (inquisitiveness), *pagkapikon* ("low tolerance for teasing") and *sumpong* ("mood") and has a negative instead of positive correlation with *sariling pagpapasiya* ("self-decision"). On the other hand, some results are contrary to expectations. For example, *pagkamausisa* (inquisitiveness) is found to be negatively correlated with *pagkabuo ng loob* (stout-heartedness), and *pagkasunud-sunuran* ("conformity") turned out to be negatively correlated with *madaling sumuko* ("weakness of resolve").

Factor Analysis: PUP Forms I and II data from University Students

The results of the factor analysis provide a rich basis for the interpretation of the relationships among the trait-concepts, values and behavioral dimensions. If only to gain some preliminary insights into said relationships, a tentative interpretation of the results from the University of the East students is presently attempted.

With respect to the principal axis factor matrix, seven factors emerged from the original 24 subscales (Refer to Table 3). Said factors can be identified as 1) *balat sibuyas-kalabaw* (a curious mix of guts and sensitivity), 2) *pakikipagkapuwa* (being one-with-the-other), 3) *kaugalian* (cultural norms), 4) *pagsunod* (conformity), 5) *kababaan ng loob* (humility), 6) *sumpong* (mood), 7) *pagkakaila* (denial) factors.

Factor 1 has substantial loadings on "mahiyain,"* "sunud-sunuran," maramdamin," "mapagkumbaba" and "mahina ang loob" which may all be conceptually included under the general term "hina ng loob." This factor, however, cannot be interpreted solely as "hina ng loob" since it loaded highly on two other clusters of conceptually related dimensions namely "matigas ang ulo-mahirap kausapin-mausisa" and pikon-sumpungin." There is also a modest

*English translations of Subsequent Filipino concepts are as indicated in preceding paragraphs.

TABLE 2

**SUMMARY MATRIX OF SUBSCALE INTERCORRELATIONS*
FIRST PRELIMINARY VERSION OF THE PUP**

	Mahina ang loob	Malakas ang loob	Mapagmalaki	Matigas ang ulo	Mahiyain	Buo ang loob	Madaling sumuko	Maramdamin	Madaling Kausapin	Kaugalian	Walang tiyaga	Mapagkait	Mausisa	Hindi mausisa	Sumpungin	Hindi sumpungin	Sariling Pagpapasiya	Pikon	Sunud-sunuran	Mahirap kausapin
Mahina ang loob					.35		.33												.36	
Malakas ang loob						.35											.36	.36		
Mapagmalaki							.36					.40								
Matigas ang ulo					.35			.35					.40					.36		
Mahiyain	.35			.35		.51								.33				.39	.42	.44
Buo ang loob		.35			.51				.41				.38							
Madaling sumuko	.33		.36							.37										.39
Maramdamin				.35							.33	.37			.34			.54		.51
Madaling Kausapin					.51															
Kaugalian						.41														
Walang tiyaga					.36		.33												.37	
Mapagkait			.40				.37													.34
Mausisa				.40		.38										.32			.47	
Hindi mausisa					.33															
Sumpungin				.34				.43												.34
Hindi sumpungin								.47					.32							
Sariling Pagpapasiya		.36	.36	.36																
Pikon				.36	.39			.54												.41
Sunud-sunuran	.36				.42						.37		.47							.33
Mahirap kausapin					.44		.39	.51				.34			.34			.41	.33	

*An r = .332 significant at $p < .05$; r = .359 significant at $p < .01$; in addition, *Mapagkumbaba* correlates with *Matulungin* (r = .34), *Madaling Kausapin* correaltes with *Buo ang loob* (r = .41).

loading on the *kaugalian* subscale. This admixture of traits, values and dimensions which defy easy categorization can be meaningfully labeled the "balat sibuyas" factor, or even more accurately the "balat sibuyas-kalabaw" factor. The results also give evidence to the polarity of five trait-terms: 1) "malakas ang loob – mahina ang loob", 2) "mapagkumbaba – mapagmalaki", 3) "matigas ang ulo – madaling sumuko", 4) "sumpungin – walang sumpong", and 5) "sunud – sunuran."

With regard to the *Pakikipagkapwa* Factor (Factor 2), four pairs of presumably opposite traits all have positive loadings, thus indicating the presence of bipolar dimensions. The four bipolar dimensions are "pagkahiya" ("mahiyain" and "walang hiya"), "pagkamaramdamin" ("maramdamin" ang "matigas ang loob"), "pagkapikon" ("pikon" and "nabibiro") and "pakikiusap" ("mahirap kausapin" and "madaling kausapin"). In addition, "hindi sumpungin" and "malakas ang loob" also load positively on this factor. Factor 2 has also modest negative loadings on "mapagkumbaba", "matiyaga", "matulungin", "mausisa" and "pagkakaila".

The *Kaugalian* Factor (Factor 3) is defined by high loadings on three trait-dimensions: 1) "hina ng loob – lakas ng loob", 2) "mapagkumbaba – mapagmalaki", and 3) "matulungin – mapagkait". "Matiyaga" and "kaugalian" also load on the factor.

The *Pagsunod* Factor has a positive loading on *pagkakaila* and has negative loadings on the "matigas ang ulo – madaling sumuko" and "mausisa – hindi mausisa" dimensions. "Walang tiyaga" and "matigas ang loob" also load on the *Pagsunod* Factor.

Factor 5 can be interpreted as the *Kababaan ng loob* Factor while Factor 6 is named the *Sumpong* Factor because said factors load more than others on the traits mentioned. "Pagmamalaki" and "sumpong" load negatively on the *Kababaan ng Loob* Factor while "madaling sumuko" and hindi "sumpungin" load negatively the *Sumpong* Factor. Finally the *Pagkakaila* Factor (Factor 7) has negative loadings on "hindi pakipot" and "pagkakaila".

A varimax matrix rotation was performed and the results are easier to interpret (Refer to Table 4). A *Mahirap Pakisamahan* Factor (difficult-to-get-along-with) (Factor I) emerged. It has high loadings on "matigas ang ulo", "mausisa", "sumpungin", "pikon", "maramdamin" and "mahirap kausapin" and thus, can be appropriately labeled as "mahirap pakisamahan". This factor has also high negative loadings on "malakas ang loob", "buo ang loob" and "sariling pagpapasiya".

Factor 2 establishes the bipolarity of two dimensions namely "pagkapikon" ("pikon" and "hindi pikon") and "pakikiusap" ("mahirap kausapin" and "madaling kausapin"). "Buo ang loob", "walang tiyaga" and "matigas ang loob" load positively on this factor.

"Mapagkumbaba," "matiyaga," "matulungin," "kaugalian," "mahina ang loob" load highly on Factor 3. Except for "matiyaga" and "mausisa," the rest of the traits support popular notions that Filipinos are "mahina ang loob," "mapagkumbaba," and "matulungin" if the high loadings of these traits on Factor 3 together with "kaugalian" were to be used as basis.

"Mahiyain", "maramdamin" and "sunud-sunuran" have very high loadings on the *Pagsunod* Factor (Factor 4) while "mahina ang loob" has a modest loading on it. Said trait-dimensions are all conceptually related to "hina ng loob." "Sumpungin," "mahirap kausapin" and "pikon" also show positive loadings on the *Pagsunod* Factor while "walang tiyaga," "masunurin" and

TABLE 3

FIRST AND SECOND PRELIMINARY PUP VERSIONS COMBINED
LOADING OF 26 SUBSCALES ON SEVEN FACTORS
(PRINCIPAL AXIS FACTOR ANALYSIS)

Subscale	FACTOR 1 Balat-Sibuyas	2 Pakikipag-kapwa	3 Kaugalian	4 Pagsunod	5 Kababaan ng loob	6 Sumpong	7 Pagka-kaila
Pagkamahiyain *(Shyness/Timidity)*	.5621	.4188					
Buo ang Loob *(Confident)*		.6286					
Pagkamaramdamin *(Sensitiveness)*	.6551	.4619					
Tigas ng Loob *("Hard-hearted")*		.6061		-.3058			
Hirap Kausapin *(Approachability/Accommodativeness)*	.6246	.3702					
Madaling Kausapin *(Approachable/Accommodative)*		.5400					-.310
Pagkapikon *(Low Tolerance for Teasing)*	.5726	.3317					
Nabibiro *(High Tolerance for Teasing)*		.4583					
Sumpong *("Mood")*	.5269				-.3844		
Hindi Sumpungin *("Not Moody")*	-.3818	.3790				-.5161	
Pagkamapagkumbaba *(Modesty)*	.3321	-.3197	.5245				
Pagkamapagmalaki *(Boastfulness)*	-.5162		.3032		-.4541		
Pagkamausisa *(Inquisitiveness)*	.5122	-.3059		-.4462			
Hindi Mausisa *(Low Inquisitiveness)*	-.4196			-.5938		.3897	
Katiyagaan *(Perseverance)*		-.3849	.3855				
Walang Tiyaga *(Impatient)*	-.5005			-.3021	.3823		
Lakas ng Loob *(Guts/Daring)*	-.3757	.3127	.3292				
Mahina ang Loob *(Coward)*	.4697		.3684				
Pagkasunud Sunuran *("Conformity")*	.6365						
Sariling Pagpapasiya *("Independence in Desicion-making")*	-.4858						
Pagkamatulungin *(Helpfulness)*		-.3246	.5812				
Pagkamapagkait *(Low Helpfulness)*	-.5403		.3731				
Tigas ng Ulo *(Stubbornness)*	.5285			-.4731			
Madaling Sumuko *("Weak-hearted")*	-.5737			-.3288		-.4104	
Pagkakaila *(Denial)*		-.4221		.3510			-.5900
Kaugalian *(Cultural Norms)*	.3934		.5285				

"hindi mausisa" show negative loadings on said Factor.

"Mahirap kausapin" and "pikon" may also fall under "hina ng loob" dimension because a person who is "mahirap kausapin" or "pakipot" cannot openly and readily accept jokes and tend to regard them as an insult. The high loadings on "matigas ang ulo", "matiyaga" and "mausisa" seem to be inconsistent with the "hina ng loob" conceptualization.

Factor 5 has modest loadings on "mahina ang loob" and "mahirap kausapin". Inasmuch as it has high negative loadings on "mapagmalaki," mapagkait," "madaling sumuko" and "sariling pagpapasiya," it can be tentatively called as the *Mapagkumbaba* Factor since "mapagkumbaba" seems to be the unifying concept. "Matigas ang loob" and "hindi mausisa" load negatively on this factor.

Factor 6 can be defined by its modest positive loadings on the "mausisa — hindi mausisa" dimension. The negative loading on "madaling sumuko" partially supoorts this interpretation. "Hindi pikon" and "hindi sumpungin" also load negatively on this factor.

"Buo ang loob," "matigas ang loob," "hindi mausisa" and "kaugalian" have positive loadings on Factor 7. Said Factor can be interpreted as the Pagtatapat Factor. To cite an example, Factor 4 can be interpreted as indicative of behavioral compliance at the face of cognitive resistance i.e., *nakikibagay lamang* ("external conformity").

THE PANUKAT NG UGALI AT PAGKATAO (PUP): FORM A*

Test Description

On the basis of previous findings towards the development of the PUP, parallel forms were constructed from the preliminary versions of the PUP, thus forming an inventory consisting of 26 subscales (24 trait-values-behavior concepts and 2 validity subscales). Parallelism of the test forms were arrived at on the basis of item content and rational considerations. Form A of the PUP was administered nationally to twelve (12) ethnic groups. These groups are: Bagobo (n = 205), Bicolano (n = 413), Cebuano (n = 495), Chabacano (n = 152), Ilocano (n = 643), Ilonggo (n =170), Kalinga (n = 109), Kapampangan (n = 194), Maranao (n = 282), Tagalog (n = 513), Waray (n = 380), Zambal (n = 29), and Others (n = 84).

The *Panukat ng Ugali at Pagkatao* (PUP) Form A is composed of 24 subscales consisting of 119 items which tap selected behavior and attitude dimensions from the preliminary versions. In addition, there are two validity subscales consisting of 14 items. All in all, the PUP Form A is composed of 160 items including 27 identifier and filler items.

The trait subscales: The subscales consist of an average of six (6) items each, to which the respondents signify agreement or disagreement with. Level of agreement or disagreement is scored on a scale of 1 to 5. Some items are scored in the positive direction and some items in the negative direction, depending on the content and direction of wording of the items. A low score on an item means that the respondent has more of the trait being measured by the item.

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*While the studies described herein pertain to PUP Form A, the description also applies analogically to Form B.

TABLE 4

FIRST AND SECOND PRELIMINARY PUP VERSIONS COMBINED
LOADING OF 26 SUBSCALES ON SEVEN FACTORS
(VARIMIX MATRIX ROTATION)

Subscale	FACTORS 1	2	3	4	5	6	7
Pagkamahiyain *(Shyness/Timidity)*				.717			
Buo ang Loob *(Confident)*	-.458	.456					.416
Pagkamaramdamin *(Sensitiveness)*	.354			.715			
Tigas ng Loob *("Hard-hearted")*		.514			-.350		.322
Hirap Kausapin *("Approachability/Accommodativeness)*	.313	.348		.488	.350		
Madaling Kausapin *(Approachable/Accommodative)*		.726					
Pagkapikon (Low *Tolerance for Teasing)*	.467	.318		.445			
Nabibiro *(High Tolerance for Teasing)*		.530				-.387	
Sumpong *("Mood")*	.486			.540			
Hindi Sumpungin *("Not Moody")*						-.679	
Pagkamapagkumbaba *(Modesty)*			.643				
Pagkamapagmalaki *(Boastfulness)*					-.685		
Pagkamausisa *(Inquisitiveness)*	.553		.379			.415	
Hindi Mausisa *(Low Inquisitiveness)*				-.523	-.367	.369	.312
Katiyagaan *(Perseverance)*			.639				
Walang Tiyaga *(Impatient)*		.384		-.630			
Lakas ng Loob *(Guts/Daring)*	-.570						
Mahina ang Loob *(Coward)*			.454	.333	.404		
Pagkasunud Sunuran *("Conformity")*				.691			
Sariling Pagpapasiya *("Independence in Decision-making")*	-.468				-.489		
Pagkamatulungin *(Helpfulness)*			.638				
Pagkamapagkait *(Low Helpfulness)*					-.648		
Tigas ng Ulo *(Stubbornness)*	.709						
Madaling Sumuko *("Weak-hearted")*				-.420	-.501	-.439	
Pagkakaila *(Denial)*			.613				.371
Kaugalian *(Cultural Norms)*							-.824

The final 24 subscales are 1) *ambisyon* (ambition), 2) *katipiran* (thriftiness), 3) *katiyagaan* (perseverance), 4) *hirap kausapin* ("approachability"), 5) *lakas ng loob* (guts/daring), 6) *pagkamaalalahanin* (thoughtfulness), 7) *pagkamagalang* (respectfulness), 16) *pagkamausisa* (inquisitiveness), 17) *pagkapalaaway* (aggressiveness), 18) *pagkapikon* ("low tolerance for joking/teasing"), 19) *pagkaresponsable* (responsibleness), 20) *pagkasalawahan* (ficklemindedness), 21) *pagkasigurista* ("risk-taking"), 22) *pagkasunud-sunuran* ("conformity"), 23) *sumpong* ("mood"), 24) *tigas ng ulo* (stubbornness).

Validity subscales: As in all previous versions, the final version of the PUP Form A has two validity subscales composed of seven (7) items each. These internal validity subscales are the *Pagkakaila* (Denial) Subscales and the *Kaugalian* (Cultural Norms) Subscale. All items in these subscales are scored in the positive direction.

The *Pagkakaila* subscale is composed of items to which the respondents are expected not to agree with. An example of an item from this subscale is *"Palagi akong masaya."* ("I am always happy.") Even the light-hearted and banter-happy Filipino is not always happy. If the mean score of a respondent on this subscale is greater than 2.5, his responses on the test are considered invalid.

The *Kaugalian* (Cultural Norms) subscale is composed of items to which the respondents are expected to agree with because of the influence of the Filipino culture on their personality. These items tap some standing truths in the Philippine culture as gleaned from previous studies and observations. The items tap selected Filipino values, for instance *"Handa akong alagaan ang aking mga magulang sa kanilang katandaan bilang ganti sa kanilang pag-aalaga sa akin noong ako'y bata."* ("I am prepared to take care of my parents in their old age in return for their caring for me in my childhood.") Research results showing a mean score of 4.18 on this subscale is supportive of the validity of the PUP (see Table 5).

Identifier items: The PUP includes 19 identifier items: items tapping behavioral, attitudinal, or personality characteristics which respondents may directly admit or deny. The identifier items shall enable researchers interested in selected characteristics to generate relevant personality profiles. For instance, item 157 can serve to identify *gamblers* from *non-gamblers.*

The 19 identifier items tap 15 characteristics: 1) *pagkamadasalin* ("prayerfulness"), 2) *kasipagan* ("industry"), 3) *karangyaan* ("luxury), 4) *katapatan* (sincerity/loyalty), 5) *may kusang loob* (initiative), 6) *madalas maaksidente* (accident-prone), 7) *maninigarilyo* (smokers), 8) *sekswalidad bago mag-asawa* (premarital sex), 9) *sekswalidad na extramarital* (extramarital sex), 10) *homosekswalidad* (homosexuality), 11) *pagsusugal* (gambler), 12) *pag-inom ng alak* ("drinking"), 13) *pananakit sa sarili* (aggression towards self), 14) *malikhain* (creativity), and 15) *mamimilosopo* (contemplativeness).

Versions and Translations

There are nine (9) versions of the PUP as follows:

1) PUP Form A: *Panukat ng Ugali at Pagkatao,* which is the primary version of the test. It is the version most extensively studied.

2) PUP Form B: *Panukat ng Ugali at Pagkatao,* which is a parallel version of the PUP Form A. It is meant for use in studies where repeated testing is needed.

TABLE 5

NATIONAL SUBSCALE MEANS AND STANDARD DEVIATIONS

N = 3,669

	SUBSCALE	MEANS	SD
1.	KAUGALIAN (cultural norms: validity subscale)	4.18	.95
2.	PAGKAMAGALANG (respectfulness)	3.57	1.18
3.	PAGKAMAPAGTIMPI (self-control)	3.49	1.17
4.	KATIYAGAAN (perseverance)	3.37	1.13
5.	PAGKAPAGKUMBABA (modesty)	3.34	1.32
6.	PAGKARESPONSABLE (responsibleness)	3.34	1.09
7.	AMBISYON (ambition)	3.33	1.43
8.	PAGKAMAALALAHANIN (thoughtfulness)	3.29	1.16
9.	PAGKAMAHIYAIN (shyness/timidity)	3.28	1.31
10.	KATIPIRAN (thriftiness)	3.23	1.27
11.	PAGKAMARAMDAMIN (sensitiveness)	3.22	1.31
12.	PAGKAPIKON ("low tolerance" for joking/teasing)	3.17	1.34
13.	PAGKASALAWAHAN (ficklemindedness)	3.15	1.15
14.	PAGKAMAUSISA (inquisitiveness)	3.14	1.26
15.	HIRAP KAUSAPIN ("approachability/ accommodativeness")	3.12	1.20
16.	PAGKASIGURISTA ("non-risk-taking")	3.10	1.18
17.	TIGAS NG ULO (stubborness)	3.08	1.33
18.	PAGKAMATULUNGIN (helpfulness)	3.08	1.51
19.	PAGKAMALIKHAIN (creativity)	2.94	1.13
20.	PAGKAMAPAGBIGAY (generosity)	2.90	1.16
21.	PAGKASUNUD-SUNURAN ("conformity")	2.88	1.29
22.	PAGKAMAPUNAHIN ("criticalness")	2.88	1.13
23.	SUMPONG ("mood")	2.56	1.19
24.	LAKAS NG LOOB (guts/daring)	2.56	1.16
25.	PAGKAKAILA (denial)	2.48	1.19
26.	PAGKAPALAAWAY ("aggression")	2.44	1.09

3) PUP Form A Bicolano: *Panukat kan Ugali asin Pagkatawo,* which is a Bicol translation of the PUP Form A with Robert Lucila as major informant-translator.

4) PUP Form A Cebuano: *Sukdanan sa Kinaiya ug Pagkatawo,* which is a Cebuano translation of the PUP Form A with Romeo S. Recide as informant-translator.

5) PUP Form A Ilocano: *Pagrukodan iti Ugali ken Kinatao,* which is an Ilocano translation of the PUP Form A with Elizabeth D. Alviar as translation co-ordinator.

6) PUP Form A Ilonggo: *Pagsukat sang Batasan kag Pagkatawo,* which is

the Ilonggo translation of the PUP Form A currently being evaluated for linquistic equivalence to the original PUP Form A.

7) PUP Form A Maranao: *Panakus ko Ola-ola ago Kapagintao,* which is the Maranao translation of the PUP Form A with James Lucman as translation co-ordinator.

8) PUP Form A Waray: *Pag-aram hit Kinaiya hit Tawo,* which is a Waray translation of the PUP Form A with Ananias Montano as translation co ordinator.

9) PUP Form A English: *A Filipino Behavior-Attitude-Trait Inventory,* which is an English translation of the PUP Form A with Amelia B. Alfonso as translator.

Translations into Pampango, Hiligaynon, Pangasinense, and Ibanag are currently in progress.

While the linguistic equivalence of the different translations to the original PUP Form A version has been established through a series of individual item translations and back-translations, the empirical equivalence still needs to be established.

Reliability

Reliability studies had been done on the earlier versions of the PUP, and a reliability study on the Tagalog data obtained on the latest version of the PUP was also made. The item-total correlation of scores on the final PUP Form A yielded a coefficent alpha equal to .90.

Validity

Out of the twenty-four (24) trait subscales of the test, nine (9) subscales have initially been studied towards their construct validation. These are: (1) *pagkapalaaway* ('aggressiveness'*), (2) *katipiran* ('thriftiness'), (3) *pagkamaramdamin* ('sensitiveness'), (4) *pagkamatulungin* ('helpfulness'), (5) *pagkamalikhain* ('creativity'), (6) *pagkasigurista* ('non-risk taking'), (7) *hirap kausapin* ('approachability/accomodativeness'), (8) *pagkasalawahan* ('ficklemindedness'), and (9) *sumpong* ('mood'). Critical studies had been made over a period of three years by a number of Filipino psychologists and students interested in personality assessment (Enriquez, 1973; Enriquez and Almonte, 1973; Ramos, 1973; Alfonso, 1974; Mendoza, 1974; Quimio and Lalisan, 1974; Bernardez, 1975; Cipres et. al., 1975; Paler, 1975; and Permia, 1975).

Measures were also taken to insure the internal validity of the test. As previously described, two validity subscales were included in the test.

Norms

Based on the responses on the PUP of 3669 respondents belonging to twelve (12) Philippine ethnic groups, over-all mean scores and corresponding standard deviation values were obtained on the 24 trait subscales. Means and standard deviations were also obtained on all these ethnic groups.

Tables 6a and 6b show the mean scores and standard deviations of twelve (12) ethno-linguistic groups. Just like the national mean score, the highest

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*The translation labels are not necessarily accurate. The authors tried to approximate the meaning of the subscale with the nearest English label.

scores obtained by four selected ethnic groups (i.e., Bicolano, Cebuano, Ilocano, and Tagalog) was on the validity subscale "cultural norms"(see Table 6a). The lowest mean scores were generally obtained on the trait subscale of "aggression", except for the Ilocano and Tagalog ethnic groups which got a lowest mean score on the validity subscale of "denial" (Ilocano denial: 240 Aggression 2.49; Tagalog denial: 2.41 Aggression 2.44). On the other trait subscales, the direction of the mean scores obtained by the selected ethnic groups is similar to the direction of the national mean scores. Departures from these general observations are of interest in an attempt to describe the ethnic group, e.g., the Bicolanos registered a subscale mean of 2.52 which is less than denial subscale of 2.56 thus indicating greater propensity to *"sumpong"* ("mood") than the average Filipino.*

Male and female percentile score norms for 14-19 year old Filipino adolescents are also available for use in the interpretation of the test (see Appendix).

PROBLEMS AND LIMITATIONS OF PUP ADMINISTRATION

In a research which aimed to study the personality structure and sociocultural make-up of the Filipino farmer, the *Panukat ng Ugali at Pagkatao* was administered to selected samples (Enriquez and Lagbao 1978). To facilitate the administration of the PUP, the test was translated into the dialects of the regions where it was administered. The present translated versions, i.e., Ilocano, Ilonggo, Cebuano, Pampango, Bicolano, Waray and Maranao are equivalent to PUP Form A in content. While an English version of the test is also available, studies on the empirical equivalence of these translations with the original Filipino version have yet to be done.

Initially, a preliminary meeting with a group of rice farmers of Tanay, Rizal was deemed necessary prior to PUP administration. Conversation and interaction was casual+, and topics such as way of life in the barrio was discussed. It was in the subsequent meetings that the PUP was administered orally to the farmers.

Originally, the PUP was meant to be a paper-and-pencil inventory for the respondent to answer on his own. However, in the case of the Tanay farmers, this was not possible since most of them are not used to paper-and-pencil testing, having reached only the primary level in school. Instead, the PUP was used in effect as a structured interview schedule. The farmers found the interview long and tedious. Even the interviewers felt this to be the case since they had to read the questionnaire (which consisted of 160 items in the form of statements) orally to each individual. The farmer usually added a few statements or opinions regarding the items being read and answered, thus lengthening the time spent

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*The PUP was used to initially verify statements claimed to be true about the Bicolano personality in the research literature (Enriquez 1980). Based on a comparison of national mean scores with Bicolano mean scores on the PUP, the Bicolanos appeared to be more persevering, respectful, modest, conforming, generous, creative and better at self-control than other Filipinos, and that they are less daring, ambitious, aggressive, inquisitive, fickle-minded, and thrifty than others. His findings supported a number of other studies made on the Bicolano personality by different researchers. (Flores 1971; Espino 1971; Bulatao 1973; Espinas 1968; and Beo 1971.)

+the level of *pakikitungo* (amenities)

TABLE 6a

SUBSCALE MEANS AND STANDARD DEVIATIONS OF SELECTED ETHNO-LINGUISTIC GROUPS

	Bicolano (N = 413)		Cebuano (N = 496)		Ilocano (N = 643)		Maranao (N = 282)		Tagalog (N = 513)		Waray (N = 380)	
	X	SD	X	SD	X	SD	X	SD	X	SD	X	SD
I. KATAPATAN (validity)												
1. KAUGALIAN (cultural norm)	4.12	.76	4.19	.19	4.20	1.05	3.90	1.14	4.29	.85	4.22	.8
2. PAGKAKAILA (denial)	2.42	1.38	2.46	1.11	2.40	1.12	2.84	1.15	2.44	1.08	2.43	1.1
II. PILING POSITIBONG KATANGIAN (selected positive dimensions)												
1. PAGKAMAGALANG (respectfulness)	3.52	1.10	3.51	1.17	3.62	1.21	3.28	1.16	3.65	1.11	3.86	1.2
2. PAGKAMAPAGTIMPI (self-control)	3.49	1.09	3.51	1.15	3.49	1.18	3.36	1.21	3.46	1.15	3.41	1.1
3. KATIYAGAAN (perseverance)	3.46	1.05	3.32	1.09	3.49	1.16	3.23	1.18	3.33	1.11	3.31	1.1
4. PAGKAMAPAGKUMBABA (modesty)	3.32	1.21	3.33	1.30	3.39	1.33	3.16	1.34	3.40	1.25	3.36	1.2
5. PAGKARESPONSABLE (responsibleness)	3.33	1.07	3.34	1.09	3.37	1.10	3.16	1.14	3.27	1.06	3.37	1.0
6. AMBISYON (ambition)	3.40	1.39	3.31	1.47	3.40	1.48	3.07	1.40	3.46	1.45	3.28	1.2
7. PAGKAMAALALAHANIN (thoughtfulness)	3.25	1.10	3.22	1.17	3.36	1.19	3.17	1.17	3.41	1.09	3.30	1.1
8. KATIPIRAN (thriftiness)	3.16	1.13	3.34	1.26	3.20	1.27	3.21	1.25	3.20	1.35	3.24	1.1
9. PAGKAMATULUNGIN (helpfulness)	3.16	1.24	3.15	1.89	3.08	1.42	2.89	1.31	3.07	1.83	3.13	1.3
10. PAGKAMALIKHAIN (creativity)	2.98	1.04	2.96	1.10	2.97	1.17	2.86	1.13	2.91	1.11	2.90	1.1
11. PAGKAMAPAGBIGAY (generosity)	2.85	1.12	2.92	1.14	2.91	1.18	2.85	1.21	2.88	1.12	2.97	1.1
12. LAKAS NG LOOB (guts/daring)	2.58	.94	2.57	1.17	2.51	1.20	2.96	1.07	2.48	1.24	2.53	1.2
III. PILING NEGATIBONG KATANGIAN (Selected negative dimensions)												
1. PAGKAMARAMDAMIN (sensitiveness)	3.11	1.39	3.11	1.25	3.26	1.23	3.28	1.19	3.31	1.21	3.22	1.1
2. PAGKAPIKON ("low tolerance" for joking/teasing	3.12	1.14	3.19	1.94	3.15	1.21	3.17	1.17	3.18	1.19	3.18	1.2
3. PAGKASALAWAHAN (fickle-mindedness)	3.12	1.14	3.17	1.10	3.18	1.15	3.06	.19	3.16	1.13	3.17	1.1
4. HIRAP KAUSAPIN ("approachability/ accommodativeness")	3.13	.97	3.17	1.16	3.16	1.18	2.88	1.59	3.12	1.16	3.18	1.1
5. TIGAS NG ULO (stubbornness)	3.13	1.15	2.99	1.22	3.15	1.16	2.94	1.24	3.25	1.19	3.0	1.2
6. PAGKASUNUD-SUNURAN ("conformity")	2.78	1.12	2.80	1.72	2.94	1.24	2.94	1.16	2.90	1.15	2.92	1.1
7. SUMPONG ("mood")	2.52	1.02	2.46	1.66	2.54	1.12	2.87	1.16	2.60	1.0	2.57	1.1
8. PAGKAPALAAWAY ("aggression")	2.44	1.0	2.36	1.03	2.45	1.14	2.81	1.18	2.44	1.09	2.42	1.1
IV. PILING KATANGIAN NA DI-POSITIBO O NEGATIBO (others)												
1. PAGKAMAHIYAIN (shyness/ timidity)	3.13	1.12	3.31	1.93	3.24	1.24	3.26	1.18	3.30	1.11	3.33	1.0
2. PAGKAMAUSISA (inquisitiveness)	3.28	1.06	3.16	1.81	3.13	1.17	2.04	1.15	3.20	1.12	3.13	1.1
3. PAGKASIGURISTA ("non-risk-taking")	3.06	1.09	3.11	1.13	3.13	1.16	3.11	1.14	3.17	1.09	3.07	1.0
4. PAGKAMAPUNAHIN ("criticalness")	2.73	1.15	2.91	1.17	2.82	1.17	2.91	1.18	3.87	1.19	2.88	1.2

TABLE 6b

SUBSCALE MEANS AND STANDARD DEVIATION OF SELECTED ETHNO-LINGUISTIC GROUPS

	Bagobo (N = 205)		Chabacano (N = 152)		Ilonggo (N = 170)		Kalinga (N = 109)		Kapampangan (N = 194)		Zambal (N = 29)	
	X	SD	X	SD	X	SD	X	SD	X	SD	X	SD
I. KATAPATAN (validity)												
1. KAUGALIAN (cultural norms)	4.26	.90	4.12	1.03	4.22	.84	4.11	1.12	4.17	.97	4.5	.79
2. PAGKAKAILA (denial)	2.67	1.19	2.57	1.14	2.16	1.83	2.74	1.29	2.49	1.06	2.29	1.02
II. PILING POSITIBONG KATANGIAN (selected positive dimensions)												
1. PAGKAMAGALANG (respectfulness)	3.49	1.28	3.63	1.18	3.52	1.19	3.60	1.26	3.63	1.09	3.90	1.09
2. PAGKAMAPAGTIMPI (self-control)	3.59	1.20	3.48	1.15	3.61	1.08	3.40	1.42	3.54	1.06	3.63	1.11
3. KATIYAGAAN (perseverance)	3.29	1.22	3.32	1.09	3.39	1.06	3.26	1.32	3.52	1.07	3.56	1.08
4. PAGKAMAPAGKUMBABA (modesty)	3.32	1.37	3.29	1.36	3.36	1.27	3.34	1.79	3.38	1.26	3.63	1.16
5. PAGKARESPONSABLE (responsibleness)	3.25	1.17	3.31	1.10	2.46	1.10	3.25	1.22	2.40	1.02	3.52	1.05
6. AMBISYON (ambition)	3.21	1.44	3.36	1.43	3.28	1.45	3.30	1.49	3.36	1.41	3.41	1.52
7. PAGKAMAALALAHANIN (thoughtfulness)	3.15	1.21	3.18	1.18	3.37	1.12	3.30	1.33	3.26	1.13	3.57	1.13
8. KATIPIRAN (thriftiness)	3.32	1.29	3.40	1.23	3.01	1.21	3.20	1.74	3.23	1.16	3.30	1.21
9. PAGKAMATULUNGIN (helpfulness)	2.96	1.11	2.96	1.30	3.30	1.31	2.86	1.46	3.13	1.27	3.03	1.29
10. PAGKAMALIKHAIN (creativity)	2.99	1.18	2.92	1.08	3.0	1.13	2.99	1.26	2.95	1.05	3.08	1.14
11. PAGKAMAPAGBIGAY (generosity)	2.82	1.18	3.05	1.06	2.95	1.13	2.95	1.31	2.90	1.11	2.78	1.15
12. LAKAS NG LOOB (guts/daring)	2.49	1.21	2.71	1.12	2.58	1.13	2.43	1.17	2.42	1.10	2.28	1.21
III. PILING NEGATIBONG KATANGIAN (selected negative dimensions)												
1. PAGKAMARAMDAMIN (sensitiveness)	3.27	1.24	3.18	1.18	3.28	1.18	3.12	0.31	3.26	1.15	3.33	1.28
2. PAGKAPIKON ("low tolerance" for joking/teasing)	3.13	1.28	3.33	1.15	3.21	1.23	3.23	1.28	3.17	1.18	3.04	1.24
3. PAGKASALAWAHAN (fickle-mindedness)	3.17	1.18	3.09	1.07	3.23	1.12	3.02	1.24	3.06	1.48	3.30	1.09
4. HIRAP KAUSAPIN ("approachability/accommodativeness")	3.16	1.22	3.17	1.16	3.09	1.14	3.12	1.26	3.07	1.10	3.24	1.08
5. TIGAS NG ULO (stubbornness)	2.97	1.26	3.07	1.21	3.04	1.12	3.09	1.36	3.09	1.53	3.11	1.24
6. PAGKASUNUD-SUNURAN ("conformity")	2.81	1.22	2.89	1.14	2.81	1.22	3.0	2.04	2.92	1.10	2.70	1.24
7. SUMPONG ("mood")	2.45	1.19	2.56	1.18	2.53	1.10	2.68	1.24	2.48	1.03	2.42	1.06
8. PAGKAPALAAWAY ("aggression")	2.42	1.13	2.48	1.07	2.34	.99	2.43	1.15	2.49	1.04	2.28	.99
IV. PILING KATANGIAN NA DI-POSITIBO O NEGATIBO (others)												
1. PAGKAMAHIYAIN (shyness/timidity)	3.44	1.19	3.34	1.19	3.21	1.16	3.30	1.30	3.32	1.12	3.32	2.10
2. PAGKAMAUSISA (inquisitiveness)	2.93	1.22	3.12	1.23	3.21	1.12	3.03	1.32	3.10	1.07	3.09	1.17
3. PAGKASIGURISTA ("non-risk-taking")	3.08	1.21	2.69	1.82	3.10	1.12	3.15	1.24	3.10	1.05	3.16	1.17
4. PAGKAMAPUNAHIN ("criticalness")	2.91	1.23	2.89	1.19	2.86	1.15	2.85	1.34	2.90	1.15	2.87	1.19

in conducting the interview. These informal statements were what we found to be more relevant, informative and reflective of the Filipino farmer's personality structure and value system than the scores gathered from the PUP administration. The PUP, even if administered orally, was clearly not the best method to use in investigating the personality of the Filipino farmer.

What single concept did we learn from the Tanay farmers which we think might be useful for our research and which can be shared with other researchers, not only those in the social sciences but with any researcher for that matter? We found out that there is a direct relationship between the quality of data that you get and the nature of the interaction with the respondent. This very simple statement has its foundation in the concept of "kapwa". Society involves people and interaction among people is clearly an important aspect of social life. True enough, analysis of social interaction in the Philippine setting as codified in the Filipino language of Tanay reveals a lot. For this reason, social interaction should be a meaningful focus of analysis.

The Filipino language provides a conceptual distinction among several levels and modes of social interaction. Santiago and Enriquez (1976) identified eight levels and modes of interaction in Filipino:

1) *pakikitungo* (transactions/civility with)
2) *pakikisalamuha* (interaction with)
3) *pakikilahok* (joining/participating with)
4) *pakikibagay* (in conformity with/in accord with)
5) *pakikisama* (being along with)
6) *pakikipagpalagayan/pakikipagpalagayang loob* (being in rapport/understanding/acceptance with)
7) *pakikisangkot* (getting involved)
8) *pakikiisa* (being one with)

These words seem to convey the same meaning. But our experience with the folks in Tanay and other Philippine barrios told us that there are differences in meaning among these words. And the research data that you get will depend on the level that you are with them. For example, if you are simply *nakikitungo,* you'll get the *pakikitungo*-type of data, if you are *nakikilahok,* then you'll get the *pakikilahok*-type of data, and if you are *nakikisama,* the *pakikisama*-type of data is what you get.

In conclusion, it is contended that Filipino personality assessment should be sensitive to the nature of interaction between the investigator and the subjects under study. Personality assessment as a data-gathering process involving social interaction is invariably affected by the interaction process itself and must be so interpreted. To safeguard quality of data and to minimize distortions of observed phenomena attributable to the subtle biases, demand characteristics and other variables due to the investigator's conceptual framework, we propose that the assessment technique involved in the data-gathering must be in the context of social interaction process familiar to and understood by the respondents themselves. A very strong case for the use of Filipino-oriented, time-tested and familiar methods, i.e., "metodong pakapa-kapa" (Santiago 1976) and "pagtatanong-tanong" (Gonzales 1977) among others, as against the use of unnatural and imposed procedures, processes and instruments, is herein made.

In the characterization of culturally meaningful methods, level of interaction entailed is a critical factor. Different kinds of phenomena require different observation processes, which in turn entail different levels of interaction.

Our experience with the use of the *Panukat ng Ugali at Pagkatao* in the assessment of Filipino personality showed that interaction between the investigator and the respondents must go beyond the level of pakikisama (level of adjusting) and must at least be at the level of pakikipagpalagayang-loob (level of mutual trust). The quality of data obtained depended on the level of interaction between the psychologist and the respondent.

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APPENDIX
(Norms for Filipino Adolescents 14-19 years old)

1. AMBISYON
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
		23	100
		22	100
		21	100
20	100	20	99
19	99.56	19	98
18	99.13	18	96
17	97	17	95
16	93.3	16	92
15	84.28	15	84
14	70	14	73
13	53.33	13	57
12	36.66	12	36
11	21.43	11	18.9
10	7.14	10	10
9	5	9	4.5
8	1	8	2.7
		7	2.16
		6	1.62
		5	1
		4	.54

2. KATIPIRAN
(Trait Subscale)

Female Norms		Male Norms	
Raw Scores	Percentile Scores	Raw Scores	Percentile Scores
15	99.5	15	100
14	99	14	99
13	95	13	95.8
12	88.68	12	94
11	76.91	11	82
10	43.53	10	71
9	42.42	9	50
8	27.66	8	32
7	15.34	7	16.6
6	6.56	6	13.28
5	2.93	5	9.96
4	.76	4	6.64
		3	3.32

3. KATIYAGAAN
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
25	100	25	99.82
24	99.62	24	99.64
23	99.24	23	98.72
22	98.08	22	95.94
21	95.65	21	93.93
20	91.93	20	90.36
19	95.88	19	83.57
18	77.39	18	74.44
17	65.88	17	62.5
16	53.83	16	51.11
15	41.04	15	31.67
14	29.2	14	21
13	19.39	13	12.5
12	11.76	12	6.82
11	6.44	11	5.97
10	3.5	10	5.12
9	1.33	9	4.26
8	0.54	8	3.41
		7	2.56
		6	1.71
		5	.85

4. HIRAP KAUSAPIN
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
26	100	26	100
25	99.68	25	99.99
24	99.35	24	99.98
23	99.02	23	99.97
22	97.4	22	99.96
21	95.66	21	98.45
20	92.33	20	96.63
19	86	19	94.44
18	75.51	18	87.78
17	60.61	17	76.25
16	47.01	16	60
15	33.33	15	48.33
14	20.49	14	32.86
13	10.77	13	19.17
12	4.64	12	10.89
11	2.28	11	4.89
10	.81	10	4.54
9	.41	9	3.78
		8	3.03
		7	2.27
		6	1.51
		5	.76

5. LAKAS NG LOOB
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
20	100	20	99.67
19	99.88	19	99.33
18	99.62	18	99
17	99.37	17	97.86
16	99.11	16	96.71
15	97.56	15	95.57
14	95	14	93.08
13	88.16	13	89.09
12	78.41	12	78.33
11	61.82	11	58.66
10	45.17	10	46.15
9	28.89	9	30
8	19.662	8	20
7	10.8	7	10
6	5.108	6	4.64
5	3.088	5	2.82
4	1.14	4	1.41

6. PAGKAMAALALAHANIN
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
20	99.5	20	99
19	97.91	19	98
18	96.7	18	97
17	95.48	17	96
16	89	16	95
15	78.75	15	90
14	65	14	81.66
13	48.57	13	66
12	33.33	12	46
11	20	11	18.33
10	12	10	10
9	4.89	9	6
8	4.01	8	3.28
7	3.12	7	2.62
6	2.24	6	1.97
5	1.35	5	1.31
		4	.66

PAGKAMAGALANG
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
20	99.54	20	98.96
19	97.76	19	97.92
18	94.44	18	95.04
17	87.78	17	90.71
16	75	16	83.33
15	58.57	15	73.75
14	44.29	14	60
13	31.29	13	48
12	21	12	32.86
11	13.57	11	16.92
10	7.78	10	16.67
9	4.27	9	6.8
8	2.3	8	2.35
7	.921	7	1.88
6	.769	6	1.41
5	.461	5	.94
4	.230	4	.47

8. PAGKAMAHIYAIN
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
		45	99.35
		44	98.7
		43	98.05
42	100	42	97.4
41	99.5	41	96.75
40	99	40	96.1
39	97.67	39	95.45
38	96.33	38	90.9
37	95	37	86.38
36	91.98	36	81.82
35	88.75	35	77.27
34	82.22	34	72.73
33	75	33	68.18
32	63.33	32	63.64
31	56	31	59.09
30	47	30	54.55
29	40	29	50

PAGKAMAHIYAIN (cont.)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
29	40	29	50
28	39.16	28	40
27	25	27	31.22
26	19	26	22.46
25	14	25	18.6
24	9	24	13.6
23	6.67	23	8.6
22	4.69	22	7.11
21	3.92	21	4.86
20	3.15	20	2.6
19	2.38	19	.35
18	1.62	18	.32
		17	.29
		16	.25
		15	.22
		14	.19
		13	.16
		12	.13
		11	.10
		10	.06
		9	.03

9. PAGKAMALIKHAIN
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
		25	99.67
24	99.8	24	99.33
23	98.16	23	99
22	97.46	22	97.84
21	96.76	21	96.68
20	96.05	20	95.52
19	95.35	19	94.36
18	94.86	18	91.12
17	83.85	17	86.45
16	76.15	16	80
15	56.67	15	65.07
14	45	14	48.03
13	18.57	13	21.99
12	15.55	12	15.77
11	8.33	11	5.89
10	4	10	5.05
9	2	9	4.21
		8	3.37
		7	2.52
		6	1.68
		5	.84

10. PAGKAMAPAGBIGAY
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
15	100	15	100
14	99.5	14	99.54
13	99	13	99.09
12	96.06	12	97.21
11	91.28	11	95
10	82.71	10	87.41
9	64.4	9	72
8	40	8	50
7	10.67	7	20
6	6.98	6	8.81
5	1	5	4.01
		4	.96
		3	.77

11. PAGKAMAPAGKUMBABA
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
		30	99.8
		29	99.6
28	100	28	99.4
27	100	27	99.2
26	100	26	99
25	97.46	25	96.71
24	93.89	24	93.56
23	87.27	23	87.24
22	77.78	22	80
21	65.71	21	70
20	50	20	58.6
19	37.5	19	47.7
18	25.56	18	30
17	16.67	17	19.16
16	10	16	12.5
15	5.83	15	7.49
14	4.22	14	4.19
13	3.24	13	2.06
12	2.27	12	.85
11	1.2	11	.57
10	.22	10	2.14
		9	1.16
		8	1.07
		7	.54
		6	.27

12. PAGKAMAPAGTIMPI
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
30	99.83	30	99.8
29	99.5	29	99.6
28	99.16	28	99.4
27	98.11	27	98.5
26	95.2	26	97.16
25	92.27	25	95.82
24	85.83	24	93.1
23	76.67	23	87
22	65.56	22	78.32
21	54.44	21	66.20
20	43.33	20	65
19	33	19	40
18	24.17	18	30
17	17.5	17	18.27
16	12.5	16	11.37
15	8.33	15	6
14	5	14	3.6
13	2.33	13	1.87
12	.89	12	1.64
11	.67	11	1.40
10	.44	10	1.17
9	.22	9	.94
		8	.70
		7	.47
		6	.22

13. PAGKAMAPUNAHIN
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
20	100	20	99.36
19	100	19	98.71
18	100	18	98.07
17	99.33	17	97.43
16	97.46	16	96.78
15	94	15	96.14
14	88	14	93.64
13	79.66	13	85.6
12	58.33	12	71.21
11	38	11	50
10	21.42	10	32.93
9	10	9	18.72
8	3.75	8	7.5
7	2.6	7	3.4
6	.92	6	2.55
5	.55	5	1.7
4	.185	4	.85

14. PAGKAMARAMDAMIN
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
35	100	35	98.60
34	99.67	34	97.20
33	99.33	33	95.81
32	99	32	94.41
31	97.77	31	93.01
30	96.54	30	91.61
29	95.31	29	90.21
28	94.08	28	88.81
27	88.1	27	87.42
26	83.1	26	86.02
25	76.96	25	84.62
24	68.27	24	75.71
23	54.93	23	60
22	41.6	22	44
21	31.2	21	32.2
20	22.21	20	22.97
19	15.37	19	12.47
18	9.35	18	7.8
17	4.87	17	5
16	3.87	16	3.67
15	2.87	15	2.34
14	1.87	14	2.08
13	.99	13	1.82
12	.913	12	1.56
		11	1.30
		10	1.04
		9	.78
		8	.52
		7	.26

15. PAGKAMATULUNGIN
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
25	99.9	25	99.875
24	99.73	24	99.75
23	99.55	23	99.5
22	99.37	22	99.25
21	99.19	21	99
20	99.01	20	97
19	96.4	19	95
18	91.48	18	93.3
17	80.8	17	81.6
16	63.68	16	70
15	49.01	15	56.66
14	36.4	14	42
13	21.11	13	27.33
12	12.82	12	13.33

PAGKAMATULUNGIN (cont.)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
11	6.8	11	12.35
10	4.18	10	11.5
9	2.91	9	10.88
8	1.64	8	10.36
7	.84	7	7.77
6	.5	6	5.18
5	.17	5	2.59

16. PAGKAMAUSISA
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
		30	99.9
29	100	29	99.8
28	99	28	99.6
27	98.2	27	99.4
26	97.4	26	99.2
25	96.6	25	99
24	95.8	24	97
23	95	23	95
22	90.83	22	88.91
21	84.66	21	81.09
20	77.27	20	73.3
19	67.14	19	61.63
18	51.67	18	44.86
17	35	17	33.34
16	23	16	24.84
15	14.61	15	22.58
14	8.33	14	20.32
13	4.85	13	18.07
12	4.11	12	15.81
11	3.37	11	13.55
10	2.63	10	11.29
9	1.89	9	9.04
8	1.15	8	6.77
		7	4.52
		6	2.26

17. PAGKAPALAAWAY
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
25	100	25	99.9
24	98.48	24	99.8
23	97.74	23	99.6
22	97	22	99.41
21	96.26	21	99.21
20	95.52	20	99.02
19	94.46	19	97.25
18	92.69	18	95.25
17	90.89	17	92.083
16	86.87	16	87.27
15	80.62	15	80
14	71.82	14	71.11
13	62	13	53.96
12	51.11	12	40.63
11	38.33	11	30
10	22.86	10	18.75
9	13.85	9	9.99
8	8.44	8	4.88
7	5.31	7	3.66
6	3.56		
5	1.96		

18. PAGKAMAPIKON
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
		25	99.45
24	100	24	98.91
23	99	23	98.36
22	97.67	22	97.81
21	96.33	21	94.29
20	95	20	91.06
19	90.73	19	84.55
18	83.36	18	76.39
17	73.62	17	67.53
16	61.07	16	54
15	45	15	38
14	30	14	21.64
13	15.08	13	20
12	8.02	12	5.9
11	3.96	11	2.19
10	1.86	10	1.88
9	.227	9	1.56
		8	1.25
		7	.94
		6	.63
		5	.31

19. PAGKARESPONSABLE
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
20	100	20	99.67
19	100	19	99.33
18	99	18	99
17	97.29	17	97
16	91.5	16	95
15	86.667	15	86.84
14	75.385	14	73.64
13	56.667	13	53.2
12	37	12	35.83
11	21.33	11	18.18
10	7.703	10	15.91
9	5	9	13.64
8	2.5	8	11.36
7	1	7	9.09
6	5	6	6.82
		5	4.55
		4	2.27

20. PAGKASALAWAHAN
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
16	100		
15	100	15	99.67
14	99.23	14	99.33
13	96.498	13	99
12	93.65	12	96.38
11	86.667	11	90.1
10	74	10	79.8
9	50	9	50
8	28.305	8	29.79
7	13.108	7	19.3
6	4.84	6	9.65
5	3.24	5	4.7
4	1.64	4	1
3	.2771	3	.5

21. PAGKASIGURISTA
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
		30	99.44
		29	98.86
		28	98.33
27	100	27	97.77
26	99	26	97.21
25	98.73	25	96.66
24	98.47	24	96.1
23	98.21	23	95.54
22	94.86	22	92.08
21	94.14	21	84.74
20	89	20	74.44
19	69.4	19	60.77
18	59.78	18	47.78
17	39.5	17	30
16	29.2	16	20
15	20.5	15	10
14	9.8	14	7.43
13	4.96	13	6.6
12	4.78	12	5.78
11	4.58	11	4.95
10	4.38	10	4.13
9	4.19	9	3.3
8	1	8	2.48
		7	1.65
		6	.83

22. PAGKASUNUD-SUNURAN
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile	Raw Score	Percentile Score
25	100	25	99.88
24	99.52	24	99.77
23	98.89	23	99.65
22	97.81	22	99.53
21	96.73	21	99.41
20	95.65	20	99.3
19	93.26	19	99.18
18	88.33	18	96.67
17	81.67	17	91.79

PAGKASUNUD-SUNURAN (cont.)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
16	70	16	81.89
15	52.3	15	63.44
14	36.92	14	47.14
13	24.5	13	34.89
12	17.05	12	28.29
11	11.17	11	24.75
10	6.36	10	21.22
9	3.96	9	17.68
8	2.48	8	14.14
7	1	7	10.61
6	.5	6	7.07
		5	3.54

23. SUMPONG
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
		25	99.92
24	100	24	99.84
23	100	23	99.76
22	99.75	22	99.68
21	99.5	21	99.6
20	99.25	20	99.52
19	99	19	99.05
18	95	18	97.5
17	95	17	95.83
16	89.17	16	93.33
15	80.83	15	90
14	70	14	82
13	55.38	13	72.5
12	40	12	62.11
11	27.06	11	43.33
10	16	10	26.66
9	8	9	12.5
8	3.86	8	6.66
7	1	7	3.5
		6	2.33
		5	1.17

24. TIGAS NG ULO
(Trait Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
		30	99.61
		29	99.22
28	100	28	98.83
27	99.6	27	98.45
26	99.2	26	98.06
25	98.33	25	97.67
24	97	24	97.28
23	95.67	23	94.45
22	92.5	22	88.9
21	85.83	21	79.1
20	76.66	20	70.98
19	64.03	19	58.59
18	48.18	18	45.07
17	31.53	17	28.74
16	21.82	16	20
15	14.66	15	16.53
14	8.5	14	5
13	4.08	13	3.94
12	1	12	2.8
11	.66	11	1.8
10	.33	10	1.5
		9	1.2
		8	.9
		7	.6
		6	.3

25. PAGKAKAILA
(Internal Validity Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
		35	99.925
34	99.9375	34	99.85
33	99.625	33	99.71
32	99.3125	32	99.57
31	99	31	99.43
30	98.2453	30	99.24
29	97.491	29	99.14
28	96.736	28	99
27	95.9811	27	97.66
26	95.2264	26	96.33
25	93.654	25	95
24	91.7308	24	92.85
23	89.5455	23	90.71
22	85	22	86.91
21	80.4546	21	82.3
20	73.0769	20	76.24
19	64.5455	19	68.73
18	55	18	61.26

PAGKAKAILA (cont.)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
17	42.75	17	51.7
16	33	16	41.7
15	23.6364	15	31.7
14	15.7143	14	21.7
13	8.75	13	3.4
12	4.2727	12	9.67
11	2.4546	11	4.9
10	.8334	10	3.92
		9	2.94
		8	1.96
		7	.98

26. KAUGALIAN
(Internal Validity Subscale)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
35	99.31	35	99.5
34	97	34	99
33	92.14	33	95
32	84.02	32	90
31	72.86	31	82.3
30	60	30	74.1
29	47.38	29	64.4
28	35.96	28	52.5
27	26.94	27	40
26	20	26	29.33
25	15.5	25	22.67
24	10.99	24	17.27
23	8.48	23	12.72
22	6.52	22	9.23
21	4.87	21	7.4
20	4.3	20	5.5
19	3.73	19	4.77
18	3.16	18	3.7
17	2.59	17	2.9
16	2.02	16	2.21
15	1.44	15	1.45
14	0.96	14	1.29
13	.77	13	1.13
12	.57	12	.97
11	.38	11	.81
10	.19	10	.64
		9	.48

27. PAGKARELIHIYOSO
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
5	60	5	89.55
4	32	4	79.09
3	17	3	40
2	5	2	16.71
1	1.2	1	4.66

28. KASIPAGAN
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
10	99	10	98.66
9	96.38	9	97.33
8	91.14	8	95.99
7	82.5	7	88.59
6	49	6	74.59
5	29.83	5	35
4	8.75	4	18.14
3	3.012	3	12.09
2	.77	2	6.05

29. KARANGYAAN
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
10	99.5	10	98.91
9	98	9	97.81
8	96	8	95.7
7	86.67	7	91.65
6	75.24	6	82.02
5	46.66	5	51.76
4	25	4	36.88
3	8.62	3	10
2	3	2	.95

30. MATAPAT
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
11	100		
10	99.26	10	98.87
9	92.14	9	97.73
8	89.66	8	92.73
7	71.04	7	81.56
6	46.72	6	60
5	27.35	5	31.28
4	15.96	4	17.3
3	4.54	3	7.27
2	1	2	1.81
		1	.55

31. MAY KUSANGLOOB
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
11	100		
10	100	10	99.5
9	97	9	99
8	91.15	8	95
7	79.09	7	81.02
6	57.78	6	60
5	35	5	30
4	17.5	4	15.08
3	4.73	3	3.96
2	3.58	2	1
1	2.25	1	.5
0	1.65		

32. MADALAS MAAKSIDENTE
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
		9	100
		8	100
		7	97
		6	81
5	99.16	5	64
4	82.5	4	49
3	52.5	3	33
2	24.59	2	19
1	4.3	1	9.5

33. NANINIGARILYO
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
5	98.34	5	96.67
4	94.34	4	93.33
3	84.77	3	70
2	68.31	2	39.33
1	35	1	17.77

34. SEKSWALIDAD BAGO MAG-ASAWA
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
5	100	5	92.2
4	91.08	4	84.4
3	81.85	3	63.84
2	70.24	2	41.66
1	50	1	15.45

35. SEKSWALIDAD NA EKSTRA-MARITAL
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
5	100	5	94.44
4	88.57	4	88.27
3	70.70	3	64.12
2	43	2	34.12
1	8.75	1	12.55

36. HOMOSEKSWALIDAD
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
5	95.39	5	94.6
4	75.85	4	89.19
3	47.78	3	62.75
2	22.105	2	35
1	2.33	1	11.95

37. PAGSUSUGAL
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
5	99.83	5	98.37
4	96.00	4	96.54
3	87.78	3	85.71
2	76.25	2	70
1	55.71	1	37.82

38. PAGLALASING/PAG-INOM
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
5	82.5		
4	95.75	4	65
3	86.67	3	6.66
2	72.30	2	4.44
1	36.15	1	2.22

39. PANANAKIT SA SARILI
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
5	96.78	5	93.64
4	75.59	4	87.27
3	44.71	3	54.4
2	13.24	2	30
1	.81	1	10.71

40. PAGKAMALIKHAIN
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
5	100	5	95.73
4	95.17	4	91.46
3	56.5	3	67.62
2	16.49	2	29.09
1	1.36	1	4.88

41. PAMIMILOSOPO
(Identifier Item)

Female Norms		Male Norms	
Raw Score	Percentile Score	Raw Score	Percentile Score
5	98.33	5	97.92
4	81.00	4	95.83
3	17.33	3	83.75
2	9.00	2	65.66
1	3.61	1	17.67

THE DEVELOPMENT OF THE PANUKAT NG PAGKATAONG PILIPINO (PPP)

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Surveys of psychological measurement practices (Lazo, et al., 1976; Ramos, 1977; Santos, 1984; Anacleto, et al., 1985) and reviews of the steadily growing empirical literature on psychological testing and measurement (Lazo, et al., 1976; Carlota, 1980; Anacleto, et al., 1985) have invariably reported that, in general, there is a marked preference for western-made tests, most of which are American in origin, on the part of both practitioners as well as researchers. The preference for foreign tests seems to have persisted despite expressed misgivings, dating back to the 1960's, regarding their applicability to the Philippine setting. Guthrie and Bulatao (1968) assert that:

> A major problem facing Filipino psychologists is the applicability of western measures and concepts to Filipino behavior . . . .At the applied level, the question becomes whether tests and scales, even if translated, are applicable in this setting. At the theoretical level, there is the question of the appropriateness of concepts and theories developed out of experience with subjects from a markedly different cultural background. (p. 203)

Lazo, et al. (1976) echo this concern. According to them: The main problem in Filipino psychological measurement is the inapplicability of foreign tests and the utter lack of tests developed specifically for the Filipino milieu. (p. 4) In the applied setting, notably the industrial sector, Santos (1984) observes a growing uneasiness about the adequacy of foreign tests which is coupled with a quest for the most logical alternative to them, namely Philippine-developed tests. This is reflected in the questions that practitioners have asked, such as the following:

> Are these (foreign-made) tests applicable? How valid are they? Do we have Filipino-made tests? Where are they? Are they available? (p. 1)

Lazo, et al. (1976) have suggested that the problem of test inapplicability may be remedied in a number of ways. These include the following strategies: the translation of foreign tests, their adaptation to the Philippine setting by way of standardization and validation studies, and, finally and preferably, the construction of indigenous or original tests. It seems widely accepted that the last method mentioned should be given priority and there is an indication that, at

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last, reseachers have begun to meet the challenge of test development. Carlota (1980) pointed out that, in the early 1970's, a marked increase in the number of studies focused on the construction of tests became evident.

Among the efforts at test development worth noting are the Philippine Thematic Apperception Test (PTAT) and the Philippine Children's Apperception Test (PCAT) by Lagmay (1965, 1967), the Panukat ng Ugali't Pagkatao (PUP) by Enriquez (1975), the Self-Concept Scale by Pasao (1979), the Panukat ng Pakikipagkapwa ng Batang Pilipino by Abenojar (1980), and the Self-Concept Scale by Agbing (1985), all of which are personality tests. With respect to the assessment of abilities and aptitudes, the following have been developed: the Philippine Nonverbal Intelligence Test by Guthrie, Tayag and Jacobs, a Non-Verbal Academic Aptitude Test by Lee (1973), the Philippine Aptitude Classification Test (PACT) and the Philippine Occupational Interest Survey (POIS) by the Center for Educational Measurement and the National College Entrance Examination (NCEE). Finally, special mention may be made of two tests which have been specifically designed to assess some form of deviant behavior. These are the Crime Picture Interpretation Test (CPIT) originally developed by R. Zarco and further refined by Lamug (1975) and the Social Adjustment-Maladjustment Inventory by Castiglioni, et al. (1979).

Despite the flurry of researches on test construction, it is obvious that there is more to be accomplished. Apart from the need to develop original tests, what also seems sorely lacking at present is sustained interest in the Philippine tests which have already been developed so that intensive follow-up researches concerning their psychometric adequacy may be undertaken.

The present paper focuses on the development of a Philippine personality inventory, the Panukat ng Pagkataong Pilipino (PPP), a contribution to the growing list of indigenous tests in the area of Philippine psychological measurement. More specifically this paper aims to:

1. describe the procedure employed in developing the ppp;
2. describe some of its psychometric properties;
3. summarize the findings of researches that have been conducted on it to date; and
4. recommend topics that should be given priority by researchers who may choose to do further research on the inventory.

It was in 1978 that the idea of developing an indigenous personality measure first occured to this researcher. Initial impetus for this project was borne out of the researcher's keen interest in the area of personality and the desire to conduct substantive or content-oriented research on the topic. Two threshold questions, however, needed to be answered prior to any substantive research. The first was: What are the salient personality variables that must be examined? The second was: What are the measures that may be used to assess these variables? The available literature at that time provided less than gratifying answers. Many personality variables which had been investigated seemed to have been selected on the basis of the availability of measures of such variables. This situation was further aggravated by the observation that most of the measures which were available then were also foreign in origin, as has been pointed out by the reviews and surveys cited earlier. There were not many Philippine developed measures at that time and only a few that were specifically designed for a general assessment of personality. Among the latter are the PUP by Enriquez, which was then the only indigenous general personality inventory available, and the PTAT and the PCAT by Lagmay. In response to the pressing need for more Philippine tests, the

development of the PPP was undertaken. Work on the PPP began in 1982.

The Construction of the Panukat ng Pagkataong Pilipino (PPP)

In developing the Panukat ng Pagkataong Pilipino, the first step was the construction of an initial pool of items for the inventory. Inevitably, this led the researcher to ask, once more, the following basic question: What are the personality variables that are critical to an examination of the Filipino personality? These variables once identified would serve as a guide in the construction of the item pool. While the available literature allowed for the identification of some personality variables to be included, it was decided that additional helpful information could be obtained by directly asking people to describe others. Thus a questionnaire was developed that asked a respondent to describe the person of three persons, namely:

1. A person he knew and liked,
2. A person he knew and disliked, and
3. Himself.

The respondent was exhorted to be as honest as possible in his descriptions and to include both the positive and negative characteristics of the persons he described. He was also asked to briefly define each characteristic mentioned and/or to describe a behavior that typified the particular characteristic.

The questionnaire was answered by a sample of 267 respondents who were selected primarily on the basis of age. The age criterion was adopted because it was intended and hoped that the inventory which was to be developed would be applicable to high school and college students and to adults as well. The respondents were distributed across eleven (11) age groups from 13 years to over 60 years. The youngest respondent was 13 years old and the oldest, 68 years. All respondents lived in Metro Manila with the majority residing in Quezon City. An attempt was made to equate the various age groups in terms of sex distribution. As it turned out, however, for the overall sample, there were slightly more female than male respondents. With respect to educational attainment, for the age groups 13-15 years, 16-19 and 20-24, many were students as had been expected. Among the adults, most were college graduates.

The responses provided by the participants were subjected to a frequency tally. The traits were ranked according to their frequencies and the final choices made on the basis of these ranks. The personality variables which were identified include the following which are listed alphabetically: Pagkamaalalahanin, Pagkamaayos, Pagkamadaldal, Pagkamagalang, Pagkamahinahon, Pagkamapagkumbaba, Pagkamaramdamin, Pagkamasayahin, Pagkamasunurin, Pagkamatalino, Pagkamatapat, Pagkamatiyaga, Pagkamatulungin, Pagkamaunawain, Pagkapalakaibigan, and Pagkaresponsable. The rop-ranked variable was Pagkaresponsable and the lowest in rank was Pagkamagalang. Three other variables are Pagkamalikhain, Pagkamasikap and Pagkamapagsapalaran.

On the basis of the definitions and behavioral descriptions given by the respondents, items were constructed which were designed to tap the personality variables which had been identified. The items consisted of statements, written in Pilipino, that indicated behavioral manifestations of the personality traits. For each variable or dimension, half of the items were positively stated and half were negatively stated. An example of a positive item for Pagkaresponsable states thus: Iniingatan ko ang mga gamit na hinihiram ko sa iba. A negatively stated item for Pagkamaayos is: Madalas ay iba ang nagliligpit ng aking mga gamit.

For each item, the respondent was asked to indicate, on a 5-point scale, his degree of agreement concerning the applicability of the item to him. The scale points were labeled as follows: Lubos na sumasang-ayon, Sumasang-ayon, Hindi makapagdesisyon o walang masabi, Di-sumasang-ayon, Lubos na di-sumasang-ayon. Positive items were scored 1 to 5 from the disagree to the agree end of the continuum; the scoring was reversed for negatively stated items.

There were 425 items in the initial pool. The number of items per personality variable ranged from 20 for Pagkamapagsapalaran to 31 each for Pagkamaramdamin and Pagkaresponsable. This reflected the relative ease with which items could be written for certain personality variables. All 425 items were included in the pretest version of the inventory and administered to a sample of 245 respondents for the purpose of item-refinement. The pretest sample is described in Table 1 in terms of age, sex, educational attainment, occupation, place of residence and language/s spoken at home.

The respondents were distributed into eight (8) age groups. It may be observed from the table that the bulk of respondents are adults aged 25-49 years. They comprise approximately 45% of the sample. There are slightly more female respondents than males. The table also shows that the sample is a rather well-educated group, on the whole. Most are college graduates and some even have graduate degrees. However, the entire range of educational attainment is represented. As may be expected from the data on educational attainment, the majority of the respondents are either students or professionals. The latter group includes, among others, teachers, lawyers and doctors; those engaged in non-professional or semi-skilled jobs are drivers, salesgirls, secretaries, and the

Table 1. Distribution of respondents according to age, sex, educational attainment, occupation, place of residence and language/s spoken at home (N 245).

Age	f	%
15 and below	26	10.61
16 – 19	20	8.16
20 – 24	25	10.20
25 – 29	24	9.80
30 – 39	39	15.92
40 – 49	47	19.18
50 – 59	39	15.92
60 and above	25	10.20
	245	99.99

Sex	f	%
Males	109	44.49
Females	134	54.69
No Information	2	.82
	245	100.00

Educational Attainment	f	%
Some Elementary	4	1.63
Elementary Graduate	8	3.26
Some High School	1	.41
High School Graduate	17	6.94
Some College	9	3.67
College Graduate	119	48.57
Advanced/Graduate Degree	9	3.67
Vocational Course	1	.41
Students at Present	72	29.39
Elementary 6		
High School 21		
College 30		
Graduate 6		
No Information	5	2.04
	245	99.99

Occupation	f	%
Professional	63	25.71
Non-professional/Semiskilled	23	9.39
Unskilled	3	1.22
"Employees"	31	12.65
Self-employed/Businessmen/women	17	6.94
Students	72	29.39
Housewives (Not employed)	15	6.12
Retirees	8	3.26
No Information	13	5.31
	245	99.99

Place of Residence	f	%
Cain	6	2.45
Cainta	4	1.63
Caloocan	3	1.22
Las Pinas	8	3.26
Makati	5	2.04
Malabon	8	3.26
Mandaluyong	38	15.51
Manila	8	3.26
Marikina	4	1.63
Meycauayan	2	.82
Paranaque	8	3.26
Pasay	4	1.63
Pasig	84	34.28
Quezon City	8	3.26
San Juan	55	22.45
No Information	245	99.96

Language/s	f	%
Bicolano	7	2.86
Chabacano	1	.41
Ilocano	16	6.53
Kapampangan	2	.82
Pangasinense	5	2.04
Pilipino	199	81.22
Visayan	15	6.12
English	77	31.43
German	1	.41
Spanish	3	1.22
No Information	26	10.61

like; the category of unskilled workers includes housemaids and a bodegero. Most of the respondents lived in Quezon City or Manila and a great majority majority indicated that they spoke Pilipino at home.

The data from the pretest sample were item-analyzed by computing item-total correlations using the following procedure. Total scores were obtained for each respondent on each personality variable by summating across all the items tapping a particular variable. Then the distribution of scores for each item in the item-cluster for a personality variable was correlated with the distribution of total scores for that variable. For example, for the variable of Pagkamaalalahanin, the total score across all 23 items was obtained for each respondent. The resulting distribution of total scores was correlated with each of the 23 item-score distributions. Thus, there were 23 item-total correlations for Pagkamaalalahanin. The item-total correlations for each personality variable were then ranked from the highest to lowest. The cut-off correlation criterion for most of the variables was +.20. For four of them, the criterion was lowered to +.15 in order to include more items in the inventory. These variables were Pagkamagalang, Pagkamapagsapalaran, Pagkamasikap and Pagkamatulungin.

The results of the item analysis served as the basis for selecting from the pool the items which would be included in the inventory. Table 2, which presents the relevant findings, shows that 220 items survived the item analysis. It may also be observed that, for some personality variables, the number of items was virtually cut in half or even less after item analysis was completed. Pagkamasikap is the shortest scale with only 6 remaining items.

The number of items retained for each personality subscale was determined on the basis of the computed internal consistency reliabilities for varying subgroups of items. For each personality variable, except for Pagkamasikap, internal consistency reliability was computed three (3) times — first, for the distribution of total scores across the top-ranking 10 items; second, for the top-ranking 12 items; finally, for the top 14 items. The subgroup of items yielding the highest internal consistency reliability was included in the inventory. Thus, for instance, for Pagkamaayos the group of 10 items resulted in the highest internal consistency reliability, even higher than those for 12 and 14 items. The 10 items were, therefore, included in the first edition of the inventory.

The Internal Structure of the Panukat ng Pagkataong Pilipino (PPP)

In order to examine the internal structure of the personality inventory,

information was obtained concerning the PPP's internal consistency reliabilities. In addition, the intercorrelations among the personality subscales were computed.

Table 3 presents the internal consistency reliability of each subscale in the original edition of the PPP. The table also shows the internal consistency reliabilities for an abbreviated form of the personality inventory in which each subscale consisted of only 8 items, again with the exception of the 6-item Pagkamasikap subscale.

It may be seen from Table 3 that the internal consistency reliabilities for the first edition range from .44 for Pagkamadaldal to .94 for Pagkamatalino. The average reliability is .72. These reliabilities are comparable to those of published personality tests and were encouraging enough to justify further research on the inventory.

One common observation about the inventory is concerned with its length. In response to this observation, Marwan (1985) and Baduria, et al. (1985) developed an abbreviated form of each of the personality subscales of the PPP. A subsample of 140 test protocols from the original data was reanalyzed by using the top-ranking 8 items of each personality subscale. The Pagkamasikap subscale was not included. The reduction of the length of each subscale shortened the entire inventory considerably from the 220-item first edition to 150 items. Table 3 shows that, for the shortened form, as expected the reliabilities generally decreased reflecting the more restricted variability of responses as

Table 2. Number of items in pool and number of items retained after item analysis.

Personality Variable	Number of Items in Pool	Number of Retained Items
Pagkamaalalahanin	23	14
Pagkamaayos	24	10
Pagkamadaldal	24	12
Pagkamagalang	23	10
Pagkamahinahon	25	14
Pagkamalikhain	22	14
Pagkamapagkumbaba	23	12
Pagkamapagsapalaran	20	10
Pagkamaramdamin	31	12
Pagkamasayahin	21	14
Pagkamasikap	25	6
Pagkamasunurin	24	14
Pagkamatalino	23	12
Pagkamatapat	27	10
Pagkamatiyaga	24	14
Pagkamatulungin	22	10
Pagkamaunawain	24	10
Pagkapalakaibigan	24	14
Pagkaresponsable	31	10

Table 3. Internal consistency reliabilities of original inventory and of abbreviated form.

Personality Variable	Reliability (Original)	Reliability (Abbreviated)
Pagkamaalalahanin	.84	.52
Pagkamaayos	.76	.78
Pagkamadalda	.44	.65
Pagkamagalang	.75	.59
Pagkamahinahon	.70	.57
Pagkamalikhain	.78	.54
Pagkamapagkumbaba	.73	.52
Pagkamapagsapalaran	.51	.51
Pagkamaramdamin	.61	.49
Pagkamasayahin	.83	.48
Pagkamasikap*	.63	.42
Pagkamasunurin	.56	.28
Pagkamatalino	.94	.63
Pagkamatapat	.89	.33
Pagkamatiyaga	.89	.54
Pagkamatulungin	.67	.43
Pagkamaunawain	.74	.74
Pagkapalakaibigan	.68	.60
Pagkaresponsable	.83	.73
	$\bar{r}$ .72	$\bar{r}$ .54

*This scale was not shortened since it had only 6 items to begin with. Internal consistency reliability, however, was recomputed for the 140 protocols which were reanalyzed.

a consequence of the shortening of each subscale. This is true of 15 of the variables. For two of them, Pagkamapagsapalaran and Pagkamaunawain, the internal consistency reliabilities were unchanged while for another two, Pagkamaayos and Pagkamadaldal, the reliabilities increased. Perhaps, for the latter two, the reduction in test length resulted in the elimination of items appreciably lower in item-total correlations compared to the items which were retained. Therefore, the net effect of those items was a more homogeneous set of items for tapping the two personality variables.

The average internal consistency reliability of the abbreviated form is .54. The data show that for some personality subscales, including the four which either retained or increased their reliabilities, the convenience of shortened test length did not seem to detract significantly from their reliabilities. Undoubtedly, additional research needs to be conducted to determine the ideal test length for the inventory.

With respect to the matter of test length, it must be mentioned that, unless one is specifically conducting a general personality assessment, the entire 220-item inventory need not be administered. Since the PPP is, in reality, a collection

of unidimensional or homogeneous subscales, one is perfectly justified in selecting groups of items from the inventory that will suit his particular purposes. If, for instance, a researcher has decided beforehand that he should like to assess only Pagkamalikhain and Pagkamapagsapalaran, then he picks out the relevant items, with perhaps some buffer items, and administers this shortened form.

Further examination of the internal structure of the PPP was undertaken by examining the intercorrelations among the various personality subscales of the inventory (Balano, et al., 1984). The structure of the instrument that was developed implied that the construct of personality is multidimensional and that idea, of course, is widely accepted. Additionally, it is implied that different personality variables are relatively distinct from one another while each, at the same time, assesses an important aspect of the multidimensional construct of personality. It was expected that the subscale intercorrelations would help clarify the nature of the construct of personality. A summary of the intercorrelations is presented in Table 4.

The data in Table 4 make possible certain observations about the internal structure of the PPP. First, it may be seen that, on the whole, there are more positive intercorrelations than negative ones. Second, for each of the personality subscales, there are more positive than negative intercorrelations, except for Pagkamadaldal and Pagkamaramdamin. This finding is reiterated in the signs of the average intercorrelations which are all positive with the exception of the two variables mentioned earlier. Third, in general the magnitude of the correlations are small to moderate, although majority of them are significant at a probability of .05.

Table 4. Summary of Interscale correlation matrix.

Personality Variable	Average Intercorrelations	Range of Intercorrelations	Number of Intercorrelations	
			Positive	Negative
Pagkamaalalahanin	.26	–.10 to .51	17	1
Pagkamaayos	.19	–.23 to .61	14	4
Pagkamadaldal	–.10	–.05 to .25	4	14
Pagkamagalang	.32	–.26 to .52	16	2
Pagkamahinahon	.24	–.36 to .47	16	2
Pagkamalikhain	.24	–.15 to .42	16	2
Pagkamapagkumbaba	.22	–.39 to .47	16	2
Pagkamapagsapalaran	.29	–.05 to .43	17	1
Pagkamaramdamin	–.09	–.37 to .37	6	12
Pagkamasayahin	.18	–.15 to .40	17	1
Pagkamasikap	.27	–.18 to .52	16	2
Pagkamasunurin	.06	–.15 to .20	12	6
Pagkamatalino	.19	–.30 to .46	16	2
Pagkamatapat	.24	–.26 to .53	16	2
Pagkamatiyaga	.24	–.37 to .54	15	3
Pagkamatulungin	.24	–.25 to .41	16	2
Pagkamaunawain	.33	–.09 to .54	16	2
Pagkapalakaibigan	.17	.03 to .37	18	0
Pagkaresponsable	.24	–.32 to .61	16	2

What are the implications of these findings for the internal structure of the personality inventory? The predominance of positive intercorrelations implies that, on the whole, the different subscales measure a common factor or variable and, presumably, that is the construct of personality. On the other hand, the small to moderate magnitude of the intercorrelations suggest the relative distinctiveness of the personality variables in the set. Highly correlating subscales would imply that supposedly different personality variables may, in fact, be assessing a common personality dimension and that the separation of the items into two or more groups is artificial and is not conceptually justified.

The predominance of negative intercorrelations between Pagkamadaldal and Pagkamaramdamin and the other variables indicate that higher scores on the other variables are accompanied by lower scores on the two variables mentioned. An examination of the scoring scheme for the other variables shows that they are all scored in the direction of the positively or socially valued end of the continua. For instance, it is rather obvious that being "maalalahanin, maayos, magalang, mahinahon," and so forth, are positively valued. Perhaps, the negative correlations for Pagkamadaldal and Pagkamaramdamin indicate that the direction of scoring should be reversed for these dimensions in order to reflect the implied social value that attaches to "being tahimik" or "hindi madaldal" and "hindi maramdamin."

Further Research Work on the Panukat ng Pagkataong Pilipino (PPP)

Additional researches on the PPP have focused on its translation equivalence (Alikpala and de los Reyes, 1984), its concurrent validity (Abaya, et al., 1984; Agana, et al., 1984; Bautista, et al., 1984; Musni, et al., 1984; Feliciano and Mercado, 1984; de Guzman, et al., 1984) and on the development of norms (Capistrano, et al., 1984; Balingit, et al., 1985).

Alikpala and de los Reyes (1984) prepared an English translation of the PPP which was later translated back to Pilipino. The two forms, the original Pilipino and the English versions, were administered to two undergraduate psychology classes. Scores on the two forms were compared using the t test. It was expected that, if the two versions were truly equivalent, the comparisons would not yield significant t values thus indicating that the students' scores were not affected by the language used. For 17 of the variables, the computed values were not statistically significant. The exceptions were Pagkamasunurin and Pagkamaunawain. The authors suggested a restudy of the translation of these two variables be undertaken.

Six (6) studies were conducted to examine the validity of the PPP. Three of them correlated selected subscales of the PPP with supposedly parallel scales of the PUP developed by Enriquez. Table 5 enumerates the PPP and PUP subscales which were correlated by Bautista, et al. (1984), Abaya, et al. (1984) and Agana, et al. (1984). All three studies were conducted in th school setting with high school students as participants. The student-respondents came from a public high school (Bautista, et al., 1984), a private coeducational high school (Abaya, et al., 1984) and a special science high school (Agana, et al., 1984).

Bautista, et al. (1984) obtained 8 correlations ranging from −.09 to +.30. Six (6) of these correlations were significant and were in the predicted direction. The significantly correlating subscales are indicated in Table 5. On the other hand, the studies of Abaya, et al. (1984) and Agana, et al. (1984) found mostly low and non-significant correlations although majority of them were also in the predicted direction. Of the 12 correlations obtained by Abaya, et al. (1984),

Table 5. Parallel scales of the PPP and the PUP.

Authors	PPP	PUP
Bautista, et al.	Pagkamasunurin	Sunud-sunuran
		Tigas ng Ulo*
	Pagkamagalang	Pagkamagalang**
	Pagkamapagkumbaba	Pagkamapagkumbaba**
	Pagkamahinahon	Pagkamapagtimpi*
		Pagkapalaaway**
	Pagkamatapat	Salawahan**
	Pagkamatulungin	Pagkamatulungin
Abaya, et al.	Pagkamalikhain	Pagkamalikhain
	Pagkamasunurin	Tigas ng Ulo
	Pagkamatulungin	Pagkamatulungin
	Pagkamagalang	Pagkamagalang
	Pagkamaramdamin	Pagkamaramdamin
	Pagkamapagsapalaran	Lakas ng Loob
	Pagkamasikap	Ambisyon
	Pagkamaramdamin	Pagkapikon**
	Pagkamapagkumbaba	Pagkamapagkumbaba**
	Pagkamapagsapalaran	Pagkasigurista**
	Pagkaresponsable	Pagkaresponsable**
	Pagkamaalalahanin	Pagkamaalalahanin
Agana, et al.	Pagkamalikhain	Pagkamalikhain
	Pagkamasunurin	Pagkamasunurin
	Pagkamatulungin	Pagkamatulungin
	Pagkamagalang	Pagkamagalang
	Pagkamaramdamin	Pagkamaramdamin
	Pagkamapagkumbaba	Pagkamapagkumbaba
	Pagkaresponsable	Pagkaresponsable
	Pagkamatiyaga	Katiyagaan
	Pagkamapagsapalaran	Lakas ng Loob
	Pagkamahinahon	Pagkamapagtimpi
	Pagkamaalalahanin	Pagkamaalalahanin

*Correlation significant at p = .05.
**Correlation significant at p = .01.

4 were statistically significant. On the other hand, Agana, et al.'s (1984) findings were all non-significant. The data suggest that a more careful examination of the definitions of the personality dimensions of the PPP and the PUP must be accomplished to determine their parallelism. Likewise, a thorough review of the items in the supposedly equivalent subscales must be undertaken.

Three (3) studies chose to correlate selected PPP subscales with a behavioral

task as criterion. Musni, et al. (1984) and Feliciano and Mercado (1984) focused on Pagkamapagsapalaran. In these studies, participants, who were all undergraduate psychology students, were required to bet part of the experimental credit that they would have earned for participation in the researches in a game which was designed to assess level of risk-taking. In the study of Musni, et al. (1984), the participant was asked to guess whether the next card picked from a pile was higher or lower than the preceding one. Each card was assigned a risk score. The amount of experimental credit that a participant bet relative to the magnitude of risk associated with a particular car determined his tendency to take risks in the card game. Feliciano and Mercado (1984), on the other hand, advised a game which had the participant estimate the length of a particular line against a set standard. For both studies, scores on the games were correlated with scores on the scale of Pagkamapagsapalaran. The correlations which were obtained were low and non-significant but positive as had been predicted.

The study by de Guzman, et al. (1984) examined the correlations between scores on the Pagkapalakaibigan subscale and behavioral manifestations of sociability in a contrived situation. Undergraduate psychology students served as participants. The students were asked to wait in the laboratory while the researchers were supposedly preparing the materials for the experiment proper. The participants were observed through a one-way mirror and the extent to which they displayed certain selected behavioral indices of social interaction was noted. The behaviors, which had been previously ranked according to the intensity or degree of friendliness expressed, included the following: touch or physical contact, initiating a conversation, responding to overtures from others, smiling, movement towards others, sustained eye contact, nodding in response to others' actions and listening to others. The correlation between the scores on the subscale for Pagkapalakaibigan and the behavioral responses was +.33 which was significant at a probability of .05.

Capistrano, et al. (1984) developed a preliminary set of norms for the PPP using data from the pretest sample. Balingit, et al. (1985), on the other hand, developed norms specifically for use with high school students. Both sets of norms are in the form of percentiles, standard scores, and standardized scores with a mean of 50 and a standard deviation of 10.

On the basis of the data that have been presented, it is quite clear that more research must be undertaken to further refine the PPP and to evaluate its psychometric adequacy. Some specific topics which should be given priority by future researchers are indicated below.

First, the items may be subjected to a factor analysis. This will allow further examination of the structure of the inventory and of the construct of personality. The focus of the analysis may be the relative distinctiveness of the personality variables subsumed by the construct of personality.

Second, a common observation about personality inventories, in general, is that they are subject to the influence of social desirability. It may thus prove useful to develop additional scales for the PPP which would function as validity or lie scales. Such scales would provide the examiner the means to assess the extent to which social desirability may have influenced an examinee's responses.

Third, translations of the PPP to other dialects is recommended. This should, of course, be accompanied by an examination of evidence for translation equivalence.

Fourth, additional reliability studies must be undertaken for different types of reliability, such as test-retest reliability.

Fifth, more studies must be conducted that will examine the validity of the inventory. Priority should be accorded to those dimensions which have been neglected by earlier validation studies, e.g., Pagkamaayos, Pagkamasayahin, Pagkamatalino.

A final suggestion to future researchers concerns methodology. It is recommended that researchers consider research designs and methods of data analysis other than the correlational, which has been much abused in the area of psychological measurement. Likewise, there should be a conscious, deliberate effort on the part of researchers to involve a more varied population of respondents, e.g., rural respondents, out-of-school youth, in addition to the college student population.

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Development of an Instrument for the Assessment of Rural Filipino Children's Adaptive Competence as an Alternative to Traditional Intelligence Measurement

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The potentialities of rural Filipinos who comprise more than 85% of the nation are largely untapped. Substantial national progress is impossible without the optimum development of this great human resource.

Basic to tapping the potentialities of the rural masses are the exploration of how these potentialities are expressed and the determination of how they can be fairly assessed. This study was an attempt in the direction of investigating the mode of expression of the rural children's potentialities and developing an assessment instrument which is culturally and environmentally relevant to assess such potentialities.

A main assumption which guided the study was that potentialities can be manifested through intelligent functioning in one's own environment or through adaptive competence. Another major assumption was that the construct of adaptive competence can be arrived at through the consensus of indigenous adult conceptions of behavioral exemplars of intelligent functioning or adaptive competence in that environment.

In exploring indigenous conceptions of adaptive competence, 38 adults in Lucsuhin, Silang, Cavite were interviewed. From these interviews emerged the indigenous conceptions of intelligent functioning, on the basis of which the assessment instrument was constructed and termed Adaptive Competencies Rating Form (ACRF). Forty 4-9 year old children in Lucsuhin constituted one final group of subjects and were rated on the ACRF by 80 adults (two raters per child). Another final ACRF administration was done in Bulacnin, Lipa, Batangas using 72 5-7 year old children rated by 72 adults.

Two instruments were developed specifically for the study: the interview questionnaire which tapped indigenous conceptions of intelligence or adaptive competence from three different perspectives, and the Adaptive Competencies Rating Form, which assessed the rural children's adaptive competencies. A third instrument used as a criterion measure was an indigenized Western type of intelligence test (Katigbak, 1984).

Charlesworth (1979) emphasized the survival or adaptive value of intelligence and recognized the environmental conditions which tap the individual's adaptive potential. In his studies and writings (Charlesworth, Kjerguard, Fausch, Daniels, Binger and Spiker, 1976; Charlesworth, 1978; Charlesworth, 1979), he laid stress on intelligent behavior as a mode of adaptation to everyday environmental demands. In a related vein, Biesheuvel (1974) asserted that the expression of intelligence through cognitive activities develop according to the values and requirements of the society where the individual belongs.

Berry (1972) was speculating along similar lines when he presented a model considering individual behavior (including cognition) as a function of ecological

demands, mediated to a large extent by aspects of culture which are themselves adapted to the ecology.

The conception of intelligence as adaptive competence was also supported by McClelland (1973) and Moos (1973) who opted for a reorientation toward the concept of competence which they believe should replace the construct of intelligence.

Other authors also have recognized the role of the environment and adaptation to it in influencing the way intelligence is expressed, and went on further to discuss the implications of this conception on testing and assessment. Anastasi (1976) suggested that cultural influences be reflected in test performance, since psychological tests are but samples of behavior and behavior is affected by culture. Biesheuvel (1974) maintained that tests should be developed and standardized within the framework of particular cultural groups. Berry (1972) stated that the development of cross-culturally valid descriptions and assessments of cognitive capacity is based upon the indigenous notion of what cognitive competence is.

In sum, then, this study was founded on the conception that adaptive competence is a form of intelligence, just as classroom performance is a form of intelligence. The classroom situation is much explored and seems to have the monopoly over what the word "intelligent" consists of. This study dealt with the other, less popular intelligence manifestation involving environments other than the classroom. Adaptive competence, then, was taken to be concerned with learning whatever it is that one's culture/environment requires one to know or do.

The study was also based on the related conception that any form of intelligence measurement/assessment should take into consideration the culture and ecology of the subjects being tested; and that the content of such measurement/assessment should be based upon the consensus of the individual perceptions of functioning adults indigenous to the ecology and culture in question. Hence, this study relied heavily upon the technique of interview of indigenous adults.

Statement of the Problem

This study aimed to develop an instrument assessing adaptive competencies with potential reliability and validity for 4-9 year old rural children.

Specifically, it sought to answer the following questions:

1. Can indigenous (rural) conceptions of intelligent functioning for 4-9 year old children be identified and used to develop an instrument assessing adaptive competencies of 4-9 year old rural children?
2. Can inter-rater and internal consistency reliabilities of the developed instrument (or instrument's scales) be demonstrated?
3. How well do the scales of the instrument intercorrelate? Do they measure a single dimension of adaptive competence or are they independent of each other?
4. Does mean performance on the instrument (or its scales) increase with age? Does it differ meaningfully for males versus females?
5. Does the instrument correlate with the following criteria:
   a. school performance of the school-going children;
   b. an indigenized Western type of traditional intelligence measurement?

METHOD

This study made use of the descriptive-survey to investigate indigenous (rural) conceptions and behavioral exemplars of intelligent functioning for 4-9 year old children. An instrument assessing the intelligent functioning of the children was developed based on these indigenous conceptions and behavioral exemplars.

The descriptive-survey consisted of interviews with 38 adult respondents in Lucsuhin, Silang, Cavite. From the interviews a comprehensive list of adaptive competencies of 4-9 year old children was derived, and this list served as the basis for the construction of an Adaptive Competencies Rating Form (ACRF). The ACRF contains behavior in 23 different areas or sub-areas of living on which a child can be rated. Forty 4-9 year old children in Lucsuhin constituted one final group of subjects and were rated on the ACRF by 80 adults (two raters per child). Another final ACRF administration was done in Bulacnin, Lipa, Batangas using 72 5-7 year old children rated by 72 adults.

The mean and standard deviation of every item as well as the percentage of respondents choosing every response alternative were computed to give an idea of the prevalence and variability of the children's competencies. Average rater discrepancy was used as a gauge of inter-rater reliability of each item in the ACRF, i.e., the mean difference on each item of all pairs of raters was computed (Lucsuhin only).

To reduce the total ACRF item set to a smaller number of relatively homogeneous scales, all items were initially grouped into preliminary scales based on content considerations. After successive trials of dropping and adding items to these groupings, a set of seven fairly homogeneous (internally consistent) scales were obtained. Coefficient α was computed to determine the internal consistency reliability of derived scales and item discrimination of each item in the scales. (Items were dropped from or retained in scales based on their item discrimination values [item correlation with the total score on the remaining items]).

T-test was also used to compare the mean performance of the two age groups (4-6; 7-9) in Lucsuhin and ANOVA for the three age levels (5, 6 and 7) in Bulacnin.

The t-test for independent samples was used to compare the mean performance of the two sexes.

The Pearson r was used to determine the correlation between the different ACRF scales, and between the results on the ACRF and the following: performance on an indigenized Western type of intelligence test; academic grade; "character" grade; and shyness rating of the school-going Bulacnin sample (7 year olds). The Pearson was also computed to test correlations between performance on the ACRF and number of siblings and sibling rank.

As far as scoring is concerned, the items have been reordered such that scores increase by one point from left to right (from worst to best).

RESULTS AND DISCUSSION

Conceptions of Adaptive Competence and the Children's Competencies

Each ACRF item is a direct "translation" of a group of related interview responses into a rating item format. Thus, the indigenous conceptions and behavioral exemplars of intelligent functioning and competent task performance which constitute adaptive competence as conceptualized in this study are

directly encoded or reflected in the ACRF item content. The different competencies derived in this study from the indigenous interview responses and encoded in the ACRF items are best viewed as a rather comprehensive list of behaviors reflecting adaptive functioning across a large number of areas of barrio living, but with firm conclusions about the relative perceived *importance* of the different competencies (if deemed necessary) awaiting further research, perhaps utilizing the list of competencies obtained here is a starting point.

To determine the prevalence in the 4-9 year old sample (N = 112) of the various adaptive competencies, the item mean, standard deviation, and frequency distribution (percentage of children rated at various points on the ACRF item rating scales) were computed for each ACRF item. For a given number of rating scale points, higher item means reflect greater competence (both positive and negative items were scored such that higher scores reflect greater competence). The standard deviations and item frequency distributions provide data on the sample variability in the particular competencies. The competencies are discussed briefly below for each of the 23 subareas covered by the instrument. In the course of summarizing the children's performance level on each of the competencies reflected by the ACRF items, the indigenous competencies derived from the interviews will automatically be revealed simultaneously.

Independent functioning.

1. *Eating* — Though eating with the hands is common, the children are quite adept at using a spoon, with 72% being able to use it well when they choose to. They are much less competent with the fork, which is less commonly used; only 27% can use the fork well when they choose to while 35% do not know how to use a fork at all. Less than 10% of the children in the 4-9 age range ever have to be "spoonfed". According to the raters, the vast majority always wash their hands before eating, and do so on their own initiative without having to be told.

Less competence is evident in the children's "refinement" at the table while eating. About half of them are "never," "rarely," or only "sometimes" refined at the table. Similarly, "rowdy" (*magulo*) behavior is observed at the table in about 45% of the children at least sometimes, but only about one-fourth of them move about the table sometimes or more often when they are supposed to be seated. Making a mess at the table seems to be a minimal problem, however, in terms of both frequency and amount of mess made.

2. *Toilet use* — Of the three items referring to toilet use, the children are most capable in sitting on the toilet bowl or seat by themselves. Ninety-five percent can do this. While 50% of them never need help washing their hands after bowel movement, 23% of the children in this age range always need such help. About three-fourths of those who have toilets that are flushed by pouring water into them are capable of doing so.

3. *Bathing* — Most of the children appear to do better in taking the initiative to bathe than in their actual skill in bathing, based on the ratings. While only about 21% need to be told to take a bath, only 27% can do so without at least a little assistance according to our raters.

4. *Dressing and undressing* — In this area the children are most competent in putting on their footwear and clothes correctly. The majority of them usually choose their everyday clothes, but do not generally choose their clothes for going out. Going out is presumably an important occasion and the

choice of clothes to wear is left to an adult. As opposed to selecting one's clothes, only about 60% usually do the actual changing of clothes by themselves.

5. *Care of clothing* — Putting away clothing properly after wearing, the only item in this subarea, is not a very prevalent competency at this age level. One third of the children just leave the clothes anywhere, another third put away the clothes but not very well, while only a remaining third put them away properly.

6. *Appearance* — About half the children were described as combing their hair by themselves, while personal appearance is most commonly described as being a concern of the child "sometimes". Wide variability is evident in the frequency with which the children are rated as having unruly hair, probably in part because of the diversity of hair lengths found (e.g., some children maintain their hair too short to be unruly). Maintaining their clothes clean is not a strong competency of the children. Fifty percent are able to keep their clothes clean for only half a day or less, forty-five percent for one day. This is not surprising for children in this age range who spend much time in outdoor games, and who do not yet have much aversion to food or dirt sticking on their clothes.

7. *Traveling* — The majority of the children are not capable (or allowed) to travel far on their own; 52% go only as far as near neighbors. Consistent with this, when they do travel, most children (75%) go directly, rarely roaming to out-of-the-way places. Since they infrequently travel far, it is consistent that they do not develop the temerity to roam around when going to a certain place, or this may be a matter of obedience to parents.

Physical development.

1. *Sensory development* — Items in this category may not tap sensory features as well as hoped. The vision and hearing items require the rater to make normative (relative) comparisons against other children and are less observable, two features of items judged less desirable in terms of rater-reliability and probably validity as well (see Inter-Rater Reliability section). Nonetheless, the majority of the children were rated as manifesting average capability in both vision (63%) and hearing (68%), with larger percentages (about 30% being rated better versus worse than average, perhaps indicating socially desirable responding). The "taste" item showed large variability in the frequency with which children express "masarap" or "hindi masarap" with "often" (38%) and "rarely" (26%) being the most frequent ratings. "Rarely" and "sometimes" were more frequent ratings for the "smell" or olfactory item (frequency of expressing "mabaho" or "mabango"). Sensory development or discrimination is probably better measured with objective performance measures than others' ratings.

2. *Motor development* — The only items derived from the indigenous conceptions interviews which could be categorized as motor movement or development all referred to play activities. The majority of children (79%) were rated as being as good as their playmates in games, with a somewhat smaller percentage but still a majority (61%) leading in games as much as other children. Examples of frequently mentioned games that the children are good at include *piko, takbuhan,* "football," Chinese garter, *habulan, gerbase,* touching *ng kitche,* and *pitik ng lastiko.* Interestingly, and perhaps reflecting some rater bias, almost half (48%) of the children were rated as learning games faster than other children, compared to 10% learning slower, and 42% just as fast as other children, a normative impossibility, of course. This once again points up the difficulty, and

probably low quality, of such normative or child-comparative items in the ACRF.

Language development

1. *Speech* — The children are generally rated as quite competent in the area of speech. Most of them usually pronounce words correctly (mean = 4.40, 5 scale points), their speech is rated on the whole grammatically regular (mean = 4.62, 5 scale points), and they rarely have difficulty expressing what they want to say (mean = 4.12, 5 scale points). Difficulty with the letters *l* and *r* was the most commonly mentioned pronunciation problem.

Fifty percent of the children were described as more talkative than their peers, 31% more quiet. The lowest ratings in this category were for the frequency with which the child "talks like an adult", although about 65% were rated as doing so "often" (38%) or "sometimes" (27%).

2. *Comprehension* — Comprehension, in the sense of not having to repeat what one says to the child due to his/her lack of understanding, is described as rather good with 63% of the children rated as "rarely" or "never" needing repetition, 27% requiring it "sometimes." Eighty-five percent of the raters responded that they could recall something that the child had comprehended or learned quickly when being taught while only 31% were able to recall something the child was unable to learn. Similarly, the modal response for how often the child learns things fast was "often" (49%), for not learning "rarely" (54%). The most common examples of things learned fast were "pagsulat ng pangalan" (or "mga salita"), "paglilinis/pag-aayos sa bahay," English terms for fruits and animals like "dog," and "cat," the alphabet, "magbilang," "tamang pamimili sa tindahan," "pagdadasal," and "pagkanta." If valid, the ratings in this section indicate that the children are impressionable and easily imitate or learn what they are taught. These items do not address the degree of retention of learned skills, however.

3. *Social language development* — The majority of the children (55%) are described as "somewhat" respectful to elders. Although a considerable minority (36%) interrupt elders when they are talking "sometimes" (21%) or more often. Forgetting to use "ho" and "po" with elders is somewhat more common with large variability between children; while 20% "often" forget, 58% "rarely" or "never" do. There may be substantial age differences on these latter two speech items, with interrupting and forgetting to use respect terms being more common and forgivable in the younger children, accounting for the large variability on these items.

Socialization

In this area, the children are apparently best at avoiding physical fights and not initiating them. About 80% of the children are described as "rarely" (30%) or "never" (50%) involved in physical fights, and close to 90% rarely or never initiate them, according to the raters. Involvement in verbal fights is more common, with 24% and 29% being so involved "often" or "sometimes," respectively. Interestingly, the raters are much less willing to attribute the *initiation* of verbal quarrels to the children, however, with the modal response being "rarely" (40%). Consistently, the children are generally well-behaved in their dealings with other people (mean = 4.27, 5 scale points), with 57% of them "never" being unruly.

Different manifestations of social shyness versus outgoingness vary in prevalence. Hiding one's face is least frequent; 62% and 51% never do it with

acquaintances and nonacquaintances, respectively. While the children commonly answer acquaintances when spoken to, almost half (47%) "never" or "rarely" answer a visitor or nonacquaintance. Starting a conversarion with a nonacquaintance is even less common (77%) rarely or never do it). These findings are consistent with previous descriptions of Filipino children as being shy.

Domestic activities.

1. *Cleaning* — The cleaning items include sweeping, husking, dusting, mopping, and fixing-up the house. The children in general have low competencies in the cleaning area, with items on both thoroughness in cleaning and initiative in cleaning having relatively low means. The majority of the children either do not do particular cleaning jobs (ranging from 12% for sweeping to 30% for husking and 38% for fixing-up the house, not doing these chores), or they do not do so very thoroughly. All item means are below 3.35 (6 scale points) for the thoroughness items, 3.14 (5 scale points) for the initiative items, corresponding approximately to the labels "rarely thorough" in cleaning and "sometimes" showing initiative.

2. *Kitchen duties* — Kitchen competencies vary considerably between different children and for different duties. Relatively few children cook rice (17%) or fry (9%). On the other hand, about 90% can prepare vegetables with about 56% "often" or "always" preparing them correctly. Between a third to a half of the children do not wash dishes or basin, place dishes in the rack, make a fire, or fetch firewood, but about 30-60 percent are able to do these tasks reasonably well. Given this considerable variability it is of interest to examine age and sex differences on these competencies (see Results section on age and sex differences).

3. *Other domestic activities* — Relatively few children in the 4-9 year old range do the laundry; about 70% never or rarely do so, and if they do, items fairly frequently have to be rewashed. There is considerable variability in the frequency with which different children fetch water and water plants. For those who fetch water, water is not commonly not spilled. For those who do water plants, it is not often that not the correct amount of water is put on the plants. Initiative in performing these tasks is variable, ranging primarily from "rarely" to "often" taking the initiative. Taking food to the parents at the farm is infrequent, in part because many parents do not work on a farm regularly, so that the items become nonapplicable.

The most frequent baby or child care competencies are playing with the child (94%), putting the baby to sleep (71%), carrying the child (63%), feeding the child (63%), and accompanying the child to the toilet (60%). On the other hand, few children are trusted with the responsibility of bathing an infant (14%).

A question followed most of the cleaning, kitchen, and other domestic activities items in which raters of children who do *not* perform the respective chore or task are asked *why* they do not. The common reasons given included: "hindi pa marunong," "ayaw siya," "tamad," "ayaw ng ina," "hindi inuutusan," "maliit pa," "laro lang," and "hindi inaasahan." Importantly, these responses suggest that lack of competence in a given chore may not always be a function of *incapability*, but, rather, other factors such as parental child-rearing policies and opportunity.

Self-direction, perseverance, and responsibility

Many items relating to initiative and thoroughness in chore performance are

relevant here, but were dicusssed above. In addition, most raters described the child they rated as needing to be reminded or encouraged to finish their projects (72%), as opposed to finishing without being told or reminded. With regards to speed of working, the most frequent paces were described as "slow" (29%) and "a little fast" (55%). Volunteering to help others with things they are doing in the house varies considerably with "rarely" (28%), "sometimes (29%), and "often" (37%) being the most frequent ratings.

Overall, the children in this age range appear to be relatively indulged, with demands for initiative, perseverance, and responsibility for various domestic chores and projects not being strongly enforced.

Numbers and time

Being able to say one's age is a common competency (84%); only relatively few indicate their age with their fingers (9%). Almost the entire sample can count higher than 10. Being able to count as high as twenty (29%) or 50 (25%) is fairly common, and about a third of the sample, probably made up of predominantly the school age children, can count over 100. Speed of counting is more often described as fast (67%) than slow. It should be noted that parents fairly frequently had to ask the child or another sibling how high the rated child could count, so that this ability might be better measured with an actual performance test.

A large number of children are unable to read a clock (72%) and very few can do so quickly. Raters had some difficulty differentiating the means by which those who can read the clock do so, for example, directly or through counting or recognizing points or hand configurations on the clock.

Money handling and shopping skills

More of the children were portrayed as "spendthrifts" (74%) than "thrifty". When it comes to care in keeping their money, however, more of them (46%) were rated as keeping their money carefully than as needing to be more careful (33%) or as not knowing how to care for their money (21%). Being capable of buying three or more items at the store is a relatively common competency (36%). However, just over a third of the children either do not know about change at all or do not know how much change they should get. About 30% know small change up to about 5 pesos, and another 30% can count larger amounts of change over 5 pesos.

Livelihood-related behavior/Outdoor chores

More children are able to gather cut grass (89%) than do weeding (77%). Many children fail to pull weads at the root (41%) or gather up all the grass completely (63%). Self-motivation in these areas is also rather infrequent. About four-fifths can pick coffee beans, but about half the children ruin at least a few buds in doing so. The majority of children (61%) are not involved in transporting or piling goods, and only 8% do so well.

The average child in the sample knows how to care for between 1 and 2 animals. By far the most commonly mentioned animals cared for are *aso, pusa,* and *manok,* with larger animals such as *baboy, baka, kalabaw,* and *kabayo* rarely being cared for by the children of this age range. For all the animals very little care beyond feeding is given by the children. Planting knowledge is also not very prevalent, with about one-third not knowing how to plant anything, and with

most the others knowing how to plant between 1 to 4 things, primarily common vegetables such as *sitaw, patani, pipino, sibatse, kamatis, kamote.*

Artistic Expression

The mean score on the sole item asking about artistic talents including reciting a poem, singing, dancing, and playing a musical instrument was 3.63 corresponding, for example, to being capable of 3 or 4 such talents but not very well, or about 2 of these talents performed well.

School-related Behaviors

Rated child interest in school, reading, and writing averages moderate to strong. Somewhat less interest is described in drawing. Raters of school-aged children most commonly described the children as "average" in position in school. More raters were willing to describe the child as "one of the highest" in school than as "needing improvement to catch up." Only one in four raters described their school-aged child as being a leader in school.

In summary, the strongest areas of competence appear to be eating, toilet use, independent clothes selection and dressing for everyday occasions, correctness of speech, control or absence of aggressive behavior, shopping skills, and perhaps interest in school-related activities. Areas of relatively less competence include care and cleanliness of clothing, concern for personal appearance, independent travel to other than neighboring places, social outgoingness, domestic chores and responsibilities, initiative and perseverance, telling time, and outdoor livelihood-related activities. Overall competence in some areas is more uncertain, either because of less certain quality of the items in those areas (e.g., sensory and motor development, language comprehension), or because of substantial variability between different children's competency levels (social language development, kitchen tasks, numbers, and care of money). In some areas, for example, child care and kitchen tasks, the children can perform some tasks well but not others.

Recalling the first hypothesis, then, rural conceptions of intelligent functioning for 4-9 year old children can be identified. Based on these identified dimensions, an instrument can be formulated to assess actual intelligent functioning of specific 4-9 year old children.

Inter-Rater Reliability

Inter-rater reliability was examined at the item level with the Lucsuhin data where two raters rated each child. The average absolute rater discrepancy between each pair of raters was computed as an estimate of inter-rater reliability for each item.

Inspection of the average rater discrepancies for the item set as a whole provides strong evidence that, for the vast majority of the items, raters can reach a close consensus in their judgements. For example, the mean of the average rater discrepancies for the items with 5 and 6 point scales are both about .60, meaning that the average rater pair deviated by just slightly over a half scale point on the five and six point scales. Only a few least reliable items averaged a rater difference as large as one scale point equivalent, for example, to the rating difference between "never" and "rarely" or between "sometimes" and "often". Most of the items with fewer scale points also show comparably small mean rater discrepancies. Some items or adaptive behaviors are more reliably

rated than others, however.

At this point, the second hypothesis on rater reliability can be recalled, concluding that the instrument indeed has a moderately high degree of rater reliability.

Internal Consistency Reliability of Derived Scales

To reduce the total ACRF item set to a smaller number of relatively homogeneous scales, the ACRF items were initially grouped into preliminary scales based on content and rationale considerations. After successive trials of pulling out and inserting items from and into the groupings, seven scales were derived encompassing 110 of the 137 ACRF items. Two trial scales were dropped: Quality Performance, because it overlapped with the Domestic Chores scale; and Judgement/Analytic, because it had a relatively low reliability (.54). The names of the seven scales, their number of items, internal consistency reliabilities (Coefficient α's), and mean item discrimination are shown in Table 1. While several of the scale reliabilities need improvement, for example, by adding more items, they indicate that the items making up each scale are homogeneous or intercorrelated enough to warrant summing them into a total scale score.

Overview of the Scales' Reliabilities

The scales with the highest reliability coefficients — .87 for Domestic Chores and .82 for Intellective Skills — also contain the highest number of items: 27 and 20, respectively. While the two scales which contain the lowest number of items — 9 for Land Production/Outdoor Chores and 10 for Verbal Extroversion — also have the lowest reliability coefficients — .68 and .70, respectively. To improve some of the reliability coefficients, the scales will need to be made longer (more items).

Scale homogeneity is also indexed by the mean item discrimination (or mean item correlation with remaining items in the scale). The higher the mean

Table 1
ACRF Scales

Scale	No. of Items Included	Reliability Coefficient[a]	Mean Item Discrimination
Independent Functioning	13	.72	.33
Domestic Chores	27	.87	.44
Land Production/Outdoor Chores	9	.68	.42
Intellective Skills Scale	20	.82	.41
Verbal Extroversion	10	.70	.36
Initiative/Perseverance	13	.79	.42
Mannerly Behavior	13	.73	.35
Total =	111[b]		

[a] All reliabilities are computed using Cronbachs α.

[b] Only 110 items are included but one item is included in 2 scales (Verbal Extroversion and Intellective Skills).

item discrimination, the more homogeneous the scale is, or the more the items is the scale converge around one dimension.

Based on mean item discriminations, Domestic Chores, Initiative, Outdoor Chores, and Intellective Skills are the most homogeneous scales, and Independent Functioning and Mannerly Behavior the least homogeneous scales. This information can be an aid in improving the homogeneity of the scales, and consequently their inter-item correlations and reliability coefficients.

Based on the content of the seven scales, they can be viewed as providing good coverage of the indigenous conceptions obtained in the study and, hence, the children's adaptive barrio competencies. The primary exceptions are the areas of language expression and sensory and motor development where not enough good items were included in the ACRF to successfully constitute a homogeneous item cluster or scale.

Finally, and in consideration of the internal consistency reliabilities demonstrated by the scales, the second hypothesis is accepted with the conclusion that the instrument scales have moderate levels of internal consistency reliabilities.

Intercorrelations of ACRF Scales: Combined Barrio Sample (N = 112)

Table 2 shows the intercorrelations of the ACRF scales, using the combined barrio sample of 72 ratings in Bulacnin and the 40 composite ratings (mean of two raters) in Lucsuhin.

The independent functioning scale is moderately correlated (p .01) with all the other scales except the one on verbal extroversion. It seems that self-reliance in personal care functions has nothing to do with verbal outgoingness; and this makes sense. It also makes sense that the degree of self-reliance in the performance of personal care functions would be carried over to the kind of performance of domestic and outdoor chores. The three scales (independent functioning, domestic chores, and outdoor chores) seem to measure a broader dimension of organization and methodicalness which applies both to self and to its extensions, i.e., the concerns of the home.

The results also show that those who have initiative in the performance, mostly of chores are also more self-reliant in performing personal care functions. Perhaps, self-motivated behavior in the areas of routine or domestic tasks underlies the more basic self-motivation and consequent competency in personal care tasks.

Another finding is the low but statistically significant correlation between Independent Functioning and Mannerly Behavior. Based on what the two scales measure, it seems that competency in attending to, and awareness of, one's personal needs is related to the propensity to attend to, and awareness of, one's behavior in terms of the barrio's conventions of actions and speech. The common factor is awareness of self, in terms of both its personal demands and how it comes up to external demands.

The highest significant correlation of Independent Functioning is with Intellective Skills. Since the Intellective Skills scale represents the most cognitive of all the instrument's seven scales and Independent Functioning one of the more noncognitive, this finding seems to underscore that the cognitive and noncognitive functions of adaptive competence or intelligence are not independent of each other.

Aside from its statistically significant correlation with the Independent Functioning scale, domestic chores performance also has moderate statistically significant correlations with all the other scales, except again, Verbal Extrover-

TABLE 2

Intercorrelations of ACRF Scales for Combined Barrio Sample and Bulacnin First Graders and Pre-Schoolers

SCALES	Independent Functioning	Domestic Chores	Outdoor Chores	Intellective Skills	Verbal Extroversion	Initiative	Mannerly Behavior	TOTAL
Combined Barrio Sample (N = 112)								
Independent Functioning	—	.55**	.33**	.57**	.14	.34**	.32**	.76**
Domestic Chores	.55**	—	.59**	.46**	.02	.52**	.31**	.87**
Outdoor Chores	.33**	.59**	—	.14	-.02	.23*	.04	.56**
Intellective Skills	.57**	.46**	.14	—	.32**	.26**	.30**	.72**
Verbal Extroversion	.14	.02	-.02	.32**	—	.02	-.13	.24**
Initiative	.34**	.52**	.23*	.26**	.02	—	.36**	.60**
Mannerly Behavior	.32**	.31**	.04	.30**	-.13	.36**	—	.48**
Bulacnin First Graders (N = 28)								
Independent Functioning	—	.64**	.26	.47**	.05	.45*	.46*	.76**
Domestic Chores	.64**	—	.48**	.54**	.04	.51**	.39*	.87**
Outdoor Chores	.26	.48**	—	.15	.00	.02	.07	.48**
Intellective Skills	.47**	.54**	.15	—	.41*	.33	.21	.71**
Verbal Extroversion	.05	.04	.00	.41**	—	.20	.31	.36
Initiative	.45*	.51**	.02	.33	.20	—	.43**	.64**
Mannerly Behavior	.46*	.39*	.07	.21	.31	.43**	—	.59**
Bulacnin Preschoolers (N = 44)								
Independent Functioning	—	.45**	.35**	.43**	.12	.49**	.07	.62**
Domestic Chores	.45**	—	.73**	.40**	.10	.71**	.15	.89**
Outdoor Chores	.35*	.73**	—	.46**	.10	.43**	.02	.75**
Intellective Skills	.43**	.40**	.46**	—	.49**	.48**	.07	.69**
Verbal Extroversion	.12	.10	.10	.49**	—	.12	.20	.32
Initiative	.49**	.71**	.43**	.48**	.12	—	.29	.89**
Mannerly Behavior	.07	.15	.02	.07	-.20	.29	—	.29

*p < .05.
**p < .01.

sion. Again, verbal outgoingness has nothing to do with domestic chores performance.

It is consistent that competency in domestic chores is related to its counterpart performance of outdoor chores. Both require similar abilities and in fact, the highest correlation in the total sample is between the two scales. (.59).

Expectedly, Initiative also statistically significantly correlates with Domestic Chores, because most of the self-motivated behaviors in the Initiative scale are in the area of domestic chores.

Domestic Chores and Intellective Skills present a moderate statistically significant correlation, reiterating the connection between the noncognitive and cognitive aspects of adaptive competence.

It seems that the better the child is at domestic chores, the more mannerly is his behavior. This points to, among other things, the training given by the parents and the child's general tendency to follow all aspects of this training, whether in chores or in behavior.

The scales on Outdoor Chores and Initiative have statistically significant correlations because some of the contents of the initiative scale deal with initiative in outdoor chores. On the other hand, intellective skills, verbal outgoingness, and mannerly behavior, as measured by the scales, have no statistically significant correlation with outdoor chores performance in the total sample.

There are statistically significant correlations of variable size between the scale on intellective skills and all the other scales except outdoor chores. It seems that the kind of cognitive and school-related competency measured by the Intellective Skills scale is not related to the generally physical ability in outdoor chores performance in the total sample.

Verbal extroversion is somewhat correlated ($p < .01$) only with Intellective Skills. It is apparent that the kind of cognitive abilities in the Intellective Skills scale provides the content of verbalizations, or such cognitive abilities find their expression through verbalizations. Hence, the more these cognitive abilities, the more the tendency to be verbally outgoing.

A statistically significant correlation exists between initiative and mannerly behavior. The child who takes the initiative to do certain tasks tends to also be mannerly in his behavior. There is perhaps a broader dimension which subsumes both these behavior; sense of responsibility is the possible dimension.

In toto, the scales are correlated and the third hypothesis is accepted, with the exception of Verbal Extroversion and Outdoor Chores which are not as well-related as the others. This finding indicates that the other five scales may all tap a single broad dimension of adaptive competence.

Intercorrelations of ACRF Scales: Bulacnin Grade I Sample (N = 28) and Bulacnin Pre-School Sample (N = 44)

Table 2 also presents the intercorrelations of ACRF scales using only the school-going sample of Bulacnin, composed of 28 children. On the same table are shown the intercorrelations of the scales using only the pre-school sample of Bulacnin, made up of 44 children.

There are four statistically significant correlations for the pre-school sample which are not found for the school-going sample. These are Independent Functioning with Outdoor Chores, Outdoor Chores with Intellective Skills, Outdoor Chores with Initiative, and Intellective Skills with Initiative. The observed difference is most likely due to the time factor and age differences. For instance, self-reliance in personal care functions is exercised more as the child grows older

while outdoor chores performance may undergo a different scheduling. When the kids were younger, the degree of their independent functioning may be just at par with their competence in outdoor chores. But as they grow older and go to school, the degree of their independence in personal care expectedly rises; while their outdoor chores performance becomes not anymore a matter of competency, but rather of some other factors like opportunity or interest.

Similar cases in point are those between Intellective Skills and Initiative on the one hand, and Outdoor Chores on the other.

One less easily explained change is between Initiative and Intellective Skills. The table shows that these two dimensions become less related when the child goes to school. It is possible that all forms of initiative once devoted to chores (which is what the scale generally measures) may be rechanneled to school-related pursuits. Or, as one starts school, school interest becomes more a function of factors (e.g., performance, friends) other than those contained in the Intellective scale.

There are also three statistically significant correlations in the school-going sample which the pre-schoolers do not have: the Domestic Chores with Mannerly Behavior, Independent Functioning with Mannerly Behavior and Initiative with Mannerly Behavior correlations. The change may also be attributable to time and age factors, but this time compounded by cultural demands and environmental necessity. For instance, domestic chores performance improves with age because it is a necessity, as servants are not available. Mannerly behavior also becomes established over time as the society imposes its cultural conventions and standards of actions and speech upon the child. Another expectation of the maturing child is the increased sense of responsibility shown by taking of initiative in certain tasks. And based upon observation and the literature, these three dimensions — domestic chores, mannerly behavior, and initiative — all make up the basic training that Filipino parents give their children. Hence, the three dimensions converge at some point in time to comprise the broader dimension of that training, so that the child who is relatively well-trained is good in domestic chores, in caring for his personal needs, in initiative, and in mannerly behaviors altogether.

It should be noted that Table 2 shows more correlations for the combined barrio sample than for the pre-schoolers or Grade I sample. The combined barrio sample has more heterogeneity in terms of age, among other factors. The variability makes possible the emergence of several correlations. The age contribution is lost in the homogeneous grouping of the pre-schoolers or of the grade I sample. The grade I sample is an even more homogeneous group because those who cannot financially afford to go to school and those who cannot be accepted for some other reasons are weeded out.

Age and Sex Differences in Adaptive Competencies

Table 3 presents the means and standard deviation for each of the ACRF scales by age and sex for the Bulacnin and Lucsuhin total sample.

Age Differences. There is a statistically significant improvement in the independent functioning (as measured by the scale) of the Bulacnin sample, most probably between the ages of 6 to 7 years. The same holds true for the Lucsuhin sample, this time from the 4-6 age group to the 7-9 age group.

Domestic chores competency apparently improves with age, too. This is only marginally significant ($p < .10$) for the Bulacnin sample, but statistically

TABLE 3

Means and Standard Deviations for ACRF Scales by Age and Sex for Two Barrios (Bulacnin and Lucsuhin) (N = 112)

BULACNIN, LIPA, BATANGAS (N=72)

SCALE		AGE 5 years N=23	AGE 6 years N=21	AGE 7 years N=28	SEX Male N=35	SEX Female N=37
Independent Functioning	Mean	48.00	48.95	52.96**	49.64	50.84
	S.D.	4.92	5.83	6.48	6.11	6.24
Domestic Chores	Mean	56.65	54.95	63.11	56.11	61.08
	S.D.	10.86	17.37	10.98	11.70	14.64
Outdoor Chores	Mean	21.43	20.33	20.36	22.06	19.32
	S.D.	5.32	8.61	6.78	5.55	7.79
Intellective Skills	Mean	60.01	62.72	64.79**	56.06	67.02
	S.D.	6.06	6.00	8.00	9.67	9.51
Verbal Extroversion	Mean	29.87	31.33	30.64	31.17	30.05
	S.D.	6.65	4.00	4.86	5.29	5.22
Initiative	Mean	28.44	27.71	32.75	26.6	33.03**
	S.D.	6.88	11.21	8.78	8.06	9.21
Mannerly Behavior	Mean	46.21	47.62	50.79*	46.94	49.78*
	S.D.	5.72	6.64	5.53	5.95	6.15

*p < .05
**p < .01

LUCSUHIN, SILANG, CAVITE (N=40)

SCALE		AGE 4 & 6 years N=20	AGE 7 & 9 years N=20	SEX Male N=19	SEX Female N=21
Independent Functioning	Mean	45.23	54.70**	49.89	50.02
	S.D.	7.19	7.26	8.78	8.64
Domestic Chores	Mean	50.65	60.90*	52.18	59.02
	S.D.	9.18	16.99	13.99	13.27
Outdoor Chores	Mean	14.23	19.03**	18.84	14.62*
	S.D.	5.11	6.46	6.59	5.29
Intellective Skills	Mean	53.53	64.80**	56.88	61.24
	S.D.	7.63	6.87	7.10	10.43
Verbal Extroversion	Mean	33.70	33.10	34.13	32.74
	S.D.	4.81	3.74	4.55	3.98
Initiative	Mean	25.03	24.60	23.71	25.81
	S.D.	8.67	8.58	7.70	9.26
Mannerly Behavior	Mean	45.38	49.73*	46.16	48.81
	S.D.	5.63	5.29	6.24	5.26

significant for the Lucsuhin sample, between the 4-6 and 7-9 age groups.

A statistically significant difference is observed between the outdoor chores competency of the 4-6 and 7-9 year olds in the Lucsuhin sample. This difference is not observed in Bulacnin, probably because the 4- and the 9-year olds, which the Bulacnin sample does not have, are necessary to make the differences in outdoor chores performance come out.

The 7-year olds have much better intellective skills than the 6-year olds in the Bulacnin sample (the age factor is statistically significant). In Lucsuhin the same statistically significant improvement in intellective skills is observed from the 4-6 age group to the 7-9 age group. These results are probably due to the fact that the core of the scale on intellective skills consists of items about learning ability, proficiency with numbers, and school-related performance which generally improve or become more pronounced when the child starts going to school and become immersed in exactly these types of activities at around 7 years old.

There are no statistically significant differences in verbal extroversion, as measured by the scale, between the age groups for either sample. It seems that the level of verbal outgoingness is more enduring through the years than the other traits/competency.

No statistically significant difference by age is obtained for the scale on initiative. Perhaps this is another trait or competency whose level persists through the years covered in the study.

Mannerly behavior, as measured by the scale, improves with age. This is statistically significant for both the Bulacnin and Lucsuhin samples.

In sum, the results show that three areas where age differences are generally marked are independent functioning, domestic chores, and outdoor chores (Lucsuhin only). Increased competencies in these three areas necessitate improved manual and other psychomotor dexterity and growing familiarity with one's environment and its objects, which are all afforded by time and therefore, age. Hence, the better competency at a latter age.

Age differences are shown, too, in intellective skills, which, in the instrument (ACRF), mainly measures learning abilities, proficiency with numbers and school-related performance, which all develop with age and schooling, especially during the earliest years.

Another competency which improves with age is mannerly behavior, which is actually the kind of behavior in various areas of living desired by adults in the culture studied and which is indeed one of society's major expectations as the child is socialized in the culture.

Two competencies which do not make any difference with age are verbal extroversion and initiative. These two areas of behavior may be formed at a very early stage when the child begins to actively interact with the environment and its people, and consist the more permanent aspects of personality.

It should also be noted that the differences in competencies tend to be more pronounced between the 6th and the 7th year, thus supporting the indigenous preference for the cut-off to be between 6 to 7 years, and corroborating the indigenous reasons such as "the child begins to have a mind of his own when he goes to school at 7," he begins to assume responsibilities at 7," etc. This finding is also akin to the findings of other researchers mentioned in the literature review portion of this report. The fact that the 7-year old school-going sample is a select group should also be considered.

Sex Differences. There are no statistically significant differences or trend

obtained in independent functioning as measured by the scale, of boys and girls in either sample. The same lack of statistically significant difference or trend is observed for intellective skills and verbal extroversion.

As far as domestic chores competency is concerned, there is a trend (though not statistically significant) for girls to score higher than boys in both samples. The reverse is true for outdoor chores competency (which mainly consists of farming activities) wherein boys score higher than girls. This is marginally significant for the Bulacnin sample ($p < .10$) and statistically significant for the Lucsuhin sample.

Bulacnin girls manifest more initiative as measured by the scale, than the boys, and this is statistically significant. Lucsuhin girls tend to also score higher than the boys, but the difference is not large enough to be statistically significant.

When it comes to the scale on mannerly behavior, Bulacnin girls have statistically significant higher scores than the boys. There is a similar trend in Lucsuhin, but again, the difference is not large enough to be statistically significant.

To sum up the highlights of sex differences, the results reveal that the sexes in the sample do not differ on independent functioning, intellective skills, and verbal extroversion, as measured by the scales. Girls tend to have more of the kind of initiative measured by the scale than boys, such as initiative in chores and in caring for one's own bodily needs.

Girls also tend to be more mannerly in their behavior as measured by the scale than boys, thus reiterating the universal observation that the male is the more aggressive member of the species (although this time, not referring to sexual aggressiveness but to literal aggressiveness or unruliness of behavior in different areas of daily living as opposed to refined or gentle behavior), and living up to the Filipino culture expectation of more refinement and gentility in females than in males.

Girls tend to be more competent than boys in domestic chores, while boys tend to perform better in outdoor chores. It seems that at this early age, the difference between the sexes is already spelled out in domestic and outdoor activities, perhaps in anticipation of and preparation for later roles in life wherein the woman tends to the needs of the home while the man seeks the family's livelihood in the farm.

The foregoing comparison of results by age and sex between the Lucsuhin and Bulacnin samples reveals the possible extent of the applicability of the ACRF in different settings. The ACRF was developed in Lucsuhin, but the Bulacnin pattern of age and sex differences has a lot in common with those of Lucsuhin. This indicates that at this point in time, before revisions and modifications, the generalizability of the ACRF is at least satisfactory.

Finally, the fourth hypothesis on age diference on the instrument is accepted for all the instrument scales except verbal extroversion and initiative; that on sex difference is also accepted since the diferences found seem to make sense in terms of the content of the scales.

Correlations Between Adaptive Competence and Selected School Criteria

Table 4 shows the correlations between the ACRF scales and selected school criteria of academic grade average, character grade, and teacher s'shyness rating for Bulacnin first graders, composed of 28 children.

Intellective Skills scale has a rather high statistically significant correlation

TABLE 4

Correlations Between Adaptive Competency Scales and Selected School Criteria for Bulacnin First Graders (N=28)

Adaptive Competency Scales	School Criteria		
	Academic Grade Average	Character Grade	Teacher's Shyness Rating
Independent Functioning	.15	.13	.17
Domestic Chores	.25	.10	-.21
Outdoor Chores	-.11	.13	-.20
Intellective Skills	.65**	.17	-.33
Verbal Extroversion	.44*	.01	-.24
Initiative	.29	.10	-.23
Mannerly Behavior	.24	.14	.01

*$p \leq .05$
**$p \leq .01$

with academic grade average, which makes sense. Those who have higher interest and ability in school-related pursuits (e.g., counting, reading, writing, and others) tend to obtain higher grades.

Verbal Extroversion is also correlated (moderately) with academic grade average. The verbally outgoing may be better in recitations and in other school activities requiring verbal performance, which consequently pull up their grades.

Though not statistically significant, it must also be mentioned that initiative tends to be related to academic grade average. Perhaps, those who have initiative in chores also tend to be diligent in school work, which positively affects their grades.

The character grade does not have any significant relationship with the scales including even Mannerly Behavior. The items included in the Mannerly Behavior scale deal with refinement at the table, verbal and physical quarrels, and so forth, which may be low-frequency behaviors in the school setting. The traits considered in the character grades are different from the Mannerly Behavior scale – honesty, courtesy, helpfulness and cooperation, obedience, consideration for others, sportsmanship, love of country, self-reliance, industry, and cleanliness and orderliness – and the grades assigned of uncertain quality and validity.

Shyness does not have statistically significant correlations with any of the scales, although there seems to be a tendency for it to negatively correlate with Intellective Skills, Verbal Extroversion, Inititiave, and Domestic Outdoor Chores. This implies, quite logically, that the shy child would shun school-related activities (which usually involve mingling with people), verbal encounters, and exposure of himself through initiative-taking and engaging in domestic and outdoor chores.

To summarize, the results lead to the conclusion that with the exception of the scales on Intellective Skills and Verbal Extroversion, adaptive competencies generally do not relate well to school criteria and the fifth hypothesis on this is rejected. At the outset it was mentioned that this study seeks to identify and recognize another form of intelligence which is adaptive competence in one's own environment. Adaptive competence is relatively unexplored compared to academic intelligence. The results of this study suggest that adaptive competence seems to have a dimension which may be distinct from academic intelligence. This finding implies that one who is not doing well in school does not necessarily lack intelligence altogether. It is possible that one's competence is not so much academic as adaptive (in the sense used in this study). Since adaptive competence is more basic to one's existence than the present types of academic pursuits, there is ample reason to hope that academic endeavors be planned in such a way that they enhance, follow-up, develop, and build on the adaptive competence that the children has acquired earlier in their lives before they started school. Thus, it will not be a case of "school intelligence begins where adaptive competence ends;" rather, it becomes a situation where academic activities, at least during the early years, are based upon, and are an enrichment of, already existing adaptive competencies, and the school is not an entirely, abruptly different world.

In as much as the scales on intellective skills and verbal extroversion are able to predict academic performance, appropriate intervention measures can be implemented, based on observation of the preschool child in these areas.

Adaptive Competence Versus Psychometric Intelligence: Total Bulacnin Sample (N = 72)

Table 5 shows the correlations between the ACRF scales and the subtests of the psychometric test (indigenized Western type of intelligence test) for the 72 Bulacnin children in the sample.

It can be seen that the highest correlations of all the subtests are with Intellective Skills, and they are all statistically significant. Both the subtests of the psychometric test and the items in the intellective skills scale require the child to exercise his reasoning ability. And if the child could do well on the school-type activity of taking the subtests, then it is likely that he must also be performing well on the kind of school-related activities included in the intellective skills scale.

Other scales such as Independent Functioning, Domestic Chores, Initiative, and Mannerly Behavior generally show statistically significant correlations with some or other subtests including Picture Identification, Concept Formation, Picture Construction, Vocabulary, and Barrio Information and Comprehension. It is possible that the same parental training component that cultivates the ability and sense of responsibility which enable the child to function independently for his personal care, take the initiative in doing chores, and assume a mannerly behavior also enable him to take the initiative to regard and explore his environment with keenness on his own. Thus, he becomes knowledgeable, not only of what he is going to do with his bodily needs, his behavior, and his home from day to day, but also of other things existing and happening around him. He is able to identify barrio objects in picture identification. Concept Formation, which requires analysis and choosing of the one barrio object that is different from the rest and verbalizing the relevant concept, becomes another of his competencies. His increasing knowledge entails an expanding vocabulary.

TABLE 5

Correlations Between ACRF Scales and Indigenized Subtests for Bulacnin Total Sample, Preschoolers, and First Graders

SCALES	Sub-Tests	Picture Identification	Malie Pictures	Concept Formation	Picture Construction	Vocabulary	Barrio Information	Block Design
Total Sample (N = 72)								
Independent Functioning		.26*	.20	.32**	.13	.35**	35**	.17
Domestic Chores		.31**	.13	.17	.13	.29*	.34**	.12
Outdoor Chores		.09	-.12	-.06	.05	.04	.12	-.02
Intellective Skills		.42**	.56**	.65**	.43**	.55**	.65**	.44**
Verbal Extroversion		.14	.09	.11	.05	.22	.14	.00
Initiative		.18	.10	.23*	.09	.28*	.30**	.02
Mannerly Behavior		.02	.24	.30**	.25*	.24*	.30**	.08
Preschoolers (N = 44)								
Independent Functioning		.18	.01	.05	.04	.06	.03	.15
Domestic Chores		.23	-.04	-.15	.06	.05	.17	-.09
Outdoor Chores		.19	-.03	-.01	.12	.07	.26	.01
Intellective Skills		.21	.15	.26	.07	.13	.27	.07
Verbal Extroversion		.22	.04	.24	-.08	.40**	.25	.00
Initiative		.09	-.08	-.10	.04	-.03	.12	-.11
Mannerly Behavior		-.22	.09	.12	.21	-.03	.08	-.02
Grade I (N = 28)								
Independent Functioning		.11	-.11	.06	-.20	.27	.30	-.31
Domestic Chores		.26	-.02	.05	-.13	.33	.34	.06
Outdoor Chores		.02	-.38*	-.07	.00	.12	.13	.01
Intellective Skills		.26	.50**	.19	.30	.24	.41*	.06
Verbal Extroversion		.06	.31	.05	.37*	.11	.08	-.02
Initiative		.11	-.07	.33	-.20	.41*	.29	-.24
Mannerly Behavior		.03	-.01	.01	-.70	.17	.20	-.33

*$p < .05$.
**$p < .01$.

And generally, his knowledge and comprehension of the barrio environment improves.

Outdoor Chores and Verbal Extroversion, which do not correlate well with the other ACRF scales, also do not correlate with any of the psychometric subtests. However, there seems to be a tendency for Verbal Extroversion and the Vocabulary subtest to correlate. This is to be expected because a wider vocabulary is somehow needed by the verbally extrovert and the verbal extrovert acquires a wider vocabulary through his many verbal encounters.

The psychometric subtest with the least relationship to any of the ACRF scales is Block Design. This subtest is indeed different because it is a direct and unmodified adoption of the Block Design portion of WISC, a Western-made test. It is not indigenized (i.e., based on the indigenous environment), like all the other subtests are.

In general, considering the statistical significance and size of the ACRF scales correlation with the psychometric subtests, it can be seen that the kind of intelligence measured by the indigenized psychometric test correlates moderately with Independent Functioning, Domestic Chores, and Intellective Skills; somewhat less so with Initiative and Mannerly Behavior. The indigenized test does not correlate at all with Outdoor Chores and Verbal Extroversion, which may not be a measure of psychometric intelligence nor of adaptive competence.

Table 5 also presents the correlations between the ACRF scales and the subtests of the indigenized Western type of intelligence test for the 44 Bulacnin pre-schoolers and the 28 Grade I sample.

Intellective Skills scale does not correlate with any of the subtests among the pre-schoolers but it does have a moderate statistically significant correlation with Mali pictures among the school-going sample, who by now must have improved their visual alertness and ability to discriminate and hence can also perform well on the Intellective Skills measured by the scale. There is also a statistically significant correlation between Intellective Skills and Barrio Information and Comprehensión among the school-going children (none for preschoolers), which is in order because the school-going children have increasing experience with the kinds of questions asked in this subtest through school lessons and activities.

Verbal Extroversion has a statistically significant correlation with Vocabulary among the preschoolers but not among the school-going kids. Perhaps, those preschoolers who are verbally outgoing acquire wider vocabulary but when the kids start going to school, vocabulary is not a function anymore of verbal outgoingness alone, but of other factors as well, like different kinds of learning that the child obtains from school lessons and interactions.

Initiative is not correlated with any of the subtests among the pre-schoolers, but is correlated (p .05) with Vocabulary among the school-going sample.

Table 5 demonstrates that again, fewer correlations can be obtained in more homogeneous sampling like the pre-schoolers only or the Grade I children only than in a heterogeneous sample like the combination of the two, owing to the loss of the age variation, among others, in the homogeneous samples.

Correlations of the Scales with Number of Siblings and Sibling Rank

There is only a small statistically significant negative correlation between number of siblings and intellective skills. The greater the number of the child's siblings, the less his intellective skills, as measured by the scale. There may be a small tendency for the development of the intellective skills of the child not to

reach its optimum, owing to the divided attention of the parents or adults among the siblings. The child gets only a fraction of the training and its components (i.e., reinforcements, encouragements, follow-up, and others) that the parents/adults are able to give.

Sibling rank is also slightly negatively correlated with intellective skills. The farther the ordinal position of the child among his siblings, the less his intellective skills. This could result from the first child usually being showered with plenty of attention and getting more training and coaching from adults. As one child comes after another, it is possible that this kind of attention is diminished. It could also be the case that this finding is due to the fact that older children (who have more intellectual skills) are generally more likely to be of elder rank.

However, both of the foregoing correlations are too small (- .20, $p \leq .05$) to be of much practical significance. It is more likely that other factors are operating within the relationship, such as Filipino child-rearing strategies and resulting child personalities.

RECOMMENDATIONS

1. The ACRF can be used on a broader scale after some minor revisions, i.e., the elimination of items which did not show acceptable inter-rater reliability and/or item discrimination.
2. Generally, the ACRF can be of use to individuals and groups working with rural children and can serve as an alternative among their assessment tools.
3. The ACRF is offered as a starting point in the area of exploration of rural children's potentialities through a culturally and ecologically relevant assessment tool and procedure. It is hoped that from here on, similar tools and procedure with greater reliabilities and validities could be developed, with the end in view of harnessing the vast human potentials among rural children.
4. If the investigation done in this study were to be replicated, it is suggested that other validation procedures be considered: (a) performance on the ACRF of children nominated (by peers or adults) to be sharp-thinking can be matched against the performance of those considered average or low; (b) performance on the ACRF can be compared with performance on an adaptability test similar to the ones mentioned by Biesheuvel (1972) which measure potentials to learn the requirements of a particular test situation (pp. 21-22 of this report).

   An entirely different methodology can be employed, using observations of behaviors of children nominated to be sharp-thinking and of those considered average or low and to either match these against their ratings on the ACRF, or to construct a new assessment form
5. It would also be enlightening to study other groups of rural children. This study focused on two groups of children whose lives revolve around some similar aspects like region (Tagalog), major means of livelihood (agriculture), and economic system (tenancy). It would be interesting to find out about other children in completely different situations. Would the larger cultural whole (Eslao, 1962) mentioned in the literature review (p 27 of this paper) despite environmental, geographical and religious differences still hold in terms of the findings in this study? In other words, is the ACRF applicable in the different regions of the country, or are some adjustments necessary? This and similar questions can be addressed by future studies.

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APPENDIX

Grouping and Organization of Items in the ACRF

Item Numbers	Content Category
1 – 33	Independent Functioning
1 – 11	Eating
12 – 15	Toilet Use
16 – 17	Cleanliness/Personal Hygiene
18 – 26	Dressing/Undressing
27	Care of Clothing
28 – 31	Appearance
32 – 33	Traveling
34 – 42	Physical Development
34 – 39	Sensory Development
40 – 42	Motor Development
43 – 57	Language Development
43 – 47	Expression
48 – 53	Comprehension
54 – 57	Social Language Development
58 – 70	Socialization
71 – 102	Domestic Activities
71 – 85	Cleaning
86 – 88	Kitchen Duties
89 – 102	Other Domestic Activities
103 – 105	Self-direction, Perseverance, Responsibility
106 – 113	Numbers and Time
114 – 115	Money Handling
116 – 117	Shopping Skills
118 – 125	Livelihood-related/Outdoor Chores
126	Artistic Expression
127 – 131	School-related Performance

Independent Functioning Scale

ACRF Item No.	Item Content	Item Correlation with Remaining Items in the Scale
1	Gets food from platter by himself	+.21
3 a	Ability in the use of spoon	+.25
3 b	Ability in the use of fork	+.27
6	Washes hands when eating with the hand	+.22
7	Initiative in washing hands before eating	+.32
13	Needs help in washing after bowel movement	+.29
16	Independence/ability in bathing	+.39
18	Who chooses his everyday clothes	+.38
19	Chooses his everyday clothes himself	+.26
20	Who chooses his going-out clothes	+.41
21	Chooses his going-out clothes himself	+.31
22	Who changes his clothes	+.46
23	Changes his clothes himself	+.47
26	Changes his clothes without being told to change	+.39
27	How he disposes of his clothes	+.30
28 a	Who usually combs his hair	+.41
28 b	Combs his hair himself	+.43
32	To what places he can travel by himself	+.22
115	How careful he is in keeping money	+.24

Domestic Chores Scale

ACRF Items No.	Item Content	Item Correlation with Remaining Items in the Scale
72	Quality of child's sweeping	+.64
75	Quality of his floor-husking	+.45
78	Quality of his dusting	+.62
81	Quality of child's floor-mopping	+.56
83	Fixes up the house	+.63
86 a	Quality of child's dishwashing	+.66
86 b	Quality of his washing of basins and big containers	+.54
86 k	Puts dishes on rack	+.42
86 d	Prepares vegetables correctly	+.46
86 e	Cooks rice correctly	+.44
86 g	Fries correctly	+.33
86 h	Builds fire	+.53
89	Does laundry	+.41

Domestic Chores Scale (cont.)

ACRF Item No.	Item Content	Item Correlation with Remaining Items in the Scale
90	Quality of his laundry work	+ .38
94	Takes initiative to fetch water	+ .19
95	Waters plants	+ .32
96	Puts too much water on plants	+ .18
102	Number of baby care behaviors he can do	+ .64
102 a	Changes baby's diapers	+ .22
102 b	Prepares baby's milk	+ .35
102 k	Puts baby to sleep	+ .34
102 d	Changes baby's clothes	+ .45
102 e	Bathes baby	+ .46
102 g	Accompanies child to toilet	+ .42
102 h	Plays with baby/child	+ .32
102 i	Carries baby	+ .44
102 l	Feeds baby/child	+ .42

Land Production/Outdoor Chores Scale

ACRF Item No.	Item Content	Item Correlation with Remaining Items in the Scale
118	Ability in weeding	+ .42
119	Ability in gathering cut grass	+ .45
122	Amount of sepals child destroys in picking coffee berries	+ .47
123	Plants he can plant and how well	+ .52
125	Ability in transporting and piling of crops	+ .38
86	Ability in fetching firewood	+ .52
92	Fetches water	+ .31
93	Spills so much water when fetching water	+ .26
124	Animals he takes care of and how	+ .40

Table 10
Initiative/Perseverance Scale

ACRF Item No.	Item Content	Item Correlation with Remaining Items in the Scale
17	Initiative in bathing	+.19
73	Initiative in sweeping	+.46
76	Initiative in dusting	+.55
82	Initiative in mopping the floor	+.49
85	Initiative in fixing up the house	+.57
91	Initiative in doing the laundry	+.35
94	Initiative in fetching water	+.44
97	Initiative in watering plants	+.55
103	Perseverance in doing a task to its finish	+.38
105	Volunteering to help others in the house when they doing something	+.44
104	Speed of working	+.28
120	Initiative in removing weeds	+.36

Mannerly Behavior Scale

ACRF Item No.	Item Content	Item Correlation with Remaining Items in the Scale
8 a	Is unruly at table	+.44
8 b	Is refined at table	+.38
10	Amount of mess he makes at table	+.31
11	Makes so much mess at table	+.22
54	Interrupt elders' conversation	+.38
55	Forgets to use "ho" or "opo" when talking to elders	+.28
56	How respectful he is to elders	+.34
57	Difficulty in controlling his undesirable acts	+.45
64	Is unruly when with other people	+.54
66	Engages in verbal quarrels	+.36
67	Initiates verbal quarrels	+.42
68	Engages in physical fights	+.18
69	Initiates physical fights	+.24

Intellective Skills Scale

ACRF Item No.	Item Content	Item Correlation with Remaining Items in the Scale
24	Wears his clothes inside out when he changes them	+.34
41	Speed in learning new games	+.22
44	Speaks like an adult	+.24
48	Needs to be told again what has already been said because he does not understand	+.23
51	Learns fast	+.47
52	Does not learn	+.32
70	Teaches other kids what to do	+.35
107	How he indicates his age	+.35
109	How high he can count	+.63
110	Speed of counting	+.43
112	Ability in reading clock	+.53
116	Knows correct change to his money	+.48
117	Number of things he can buy from store at a time	+.44
126	Artistic talents number and quality	+.57
127	Degree of his interest in school	+.48
128	Degree of his interest in reading	+.56
129	Degree of his interest in writing	+.50
130	Degree of his interest in drawing	+.46
131 a	Standing in school	+.30
131 b	Leadership position in school	+.23

Verbal Extroversion Scale

ACRF Item No.	Item Content	Item Correlation with Remaining Items in the Scale
34	Says "masarap" or "hindi masarap"	+.38
53	Asks what and what for are things	+.29
58	Hides face when spoken to by acquaintances	+.42
59	Hides face when spoken to by non-acquaintances	+.36
60	Answers when spoken to by acquaintances	+.48
61	Answers when spoken to by non-acquaintances	+.54
62	Initiates conversation with acquaintances	+.28
63	Initiates conversation with non-acquaintances	+.25
47	Child's talkativeness compared to his age-mates	+.27
44	Speaks like an adult	+.28

THE METRO-MANILA DEVELOPMENTAL SCREENING TEST: A NORMATIVE STUDY*

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This study aimed to establish Metro-Manila (Philippines) norms for the Denver Developmental Screening Test and to determine the characteristics of children whose scores are normal and those whose scores are abnormal or questionable on the test. The subjects were 6,006 children from 4,846 households of Metro-Manila. Probit analysis established the ages at which 25%, 50%, 75%, and 90% of the sample passed each of the 105 test items. Discriminant analysis showed four clusters of factors that were significantly associated with children's performance. These were a substitute-care-giver variable cluster, a mother variable cluster, a child-situational variable cluster, and an age variable cluster.

The Denver Developmental Screening Test (DDST) (Frankenburg, Fandal, & Dodds, 1970) is a simple clinically useful tool used in the screening and early detection of infants and preschool children with developmental delays. The test evaluates four aspects of a child's development: gross motor, fine motor-adaptive, language, and personal-social behavior. It is easy to administer, score, and interpret, and is useful for repeat examination of the same child. The DDST was developed for use by health professionals to help recognize delayed development and so make referrals for in-depth evaluation, diagnosis, and therapy. The test items were standardized by testing more than 1,000 children younger than six and one-half years of age in Denver, Colorado. The ages at which 25%, 50%, 75%, and 90% of the standardization population could perform each of the 105 items appear on the test form. Each item is indicated on a test form with a bar, which represents a time continuum.

In terms of test reliability, Frankenburg, Camp, VanNatta & Demersseman (1971a) reported test-observer agreement per item ranging from 81% to 100% and test-retest agreement per item ranging from 65% to 100%. For concurrent validity, correlations ranging from .86 to .97 were obtained between the mental ages derived from the DDST and four criterion tests – Stanford-Binet, Revised Yale Developmental Schedule, Cattell, and the Revised Bayley Infant Scale (Frankenburg, Camp, & VanNatta, 1971b). Predictive validity of the DDST has also been studied (Camp, van Doorninck, Frankenburg, & Lampe, 1977). Sixty-five children from lower-income families, first evaluated with the DDST and the Stanford-Binet Intelligence Scale, at age four to six years, were studied three years later to determine how well preschool test results could predict later school problems. Children with abnormal, questionable, and normal DDSTs (88%, 66%, and 32%, respectively) exhibited school problems.

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Developmental screening for the early detection of disability in children is a special concern in public health nursing. However, norms of development must first be established. This was determined by pilot studies done in Metro-Manila in which essential observations were made on the DDST. For example, (1) several items and materials were unfamiliar to Metro-Manila children; (2) literal translation of items did not tap the intended responses; and (3) there were additional acceptable answers to a number of items in terms of Filipino way of living. In addition, empirical support for the need to develop Metro-Manila norms for the DDST was obtained in the course of the present normative study in a comparison done on DDST norms of Denver (n = 1,036), the Netherlands (n = 1,260), Tokyo (n = 1,171), Okinawa (n = 615), and preliminary norms for Metro-Manila based on the first 1,680 children of the normative sample (Williams, 1980b). Using the median ages of acquisition of each item as a point of comparison, Metro-Manila children were found to achieve two-thirds of the total 105 items significantly later than Denver children.

The present study was conducted to develop norms for the DDST on Metro-Manila (Philippines) children, hereafter known as the Metro-Manila Developmental Screening Test (MMDST), and to determine the characteristics of low-scoring (i.e., abnormal and questionable) and high-scoring (i.e., normal) children on the test.

Method

Setting and Subjects: The study was done in 6 of the 17 municipalities that comprise Metro-Manila (Quezon City, Manila, Marikina, San Juan, Valenzuela, and Makati). The subjects were 6,006 normal children between the ages of two weeks and six and one-half years of age. The study excluded children who exhibited the following: premature birth and low birthweight; twin, breech, or caesarian-section delivery; handicaps of vision, hearing, walking, speaking, or the central nervous system; present weights less than the 10th percentile or more than 90th percentile of established weight standards. Children who were illegitimate or whose parents were separated were also excluded.

Sample: A combination multistage, cluster (with implicit stratification), systematic, and quota sampling (Babbie, 1974) was used. Multistage sampling included municipality/city, districts, *barangay* ("neighborhood"), households, and, finally, children younger than six and one-half years of age. Cluster sampling of districts and neighborhoods represented low- , middle- , and high-income groups, followed by systematic sampling of every fifth household in the chosen neighborhoods. Quota sampling maintained an even distribution of children according to age, sex, fathers' occupation/education and a prorated sample size based on the total population of children under six and one-half years in the six municipalities. A total of 4,846 households were sampled; no more than three children per household were tested. Informed consents were obtained from all households. Because many upper- and middle-class households refused sampling, however, these were eventually reached through 15 doctors' clinics and 5 preschools (N = 830).

Seventy-five age groups (Frankenburg et al., 1970) and 10 occupational groupings (National Census and Statistics Office, 1975) were used. Fathers' education was categorized into college, high school, and elementary.

The 75-age groupings consisted of 10-day intervals from 2 weeks through 14 months of age; 20 days between 15 and 17 months; 30 days between 18 and 22 months; 45 days between 22 months and 2½ years; 60 days between 2½

and 4½ years; and 3 months at 5 and 6 years. A greater number of children were tested at younger ages, when developmental changes occur faster.

See Table 1 for a profile of the occupational group distribution of the sample children's fathers in comparison with that of Metro-Manila and the entire country. The white-collar-blue-collar occupation (Groups 1–4 and 5–11) dichotomy among the fathers (40.3%: 59.7%) approximates that of the Metro-Manila population (39.2%: 60.8%) but not of the entire country (19.4%: 80.6%). Thus, the norms for the MMDST are only representative of the Metro-Manila population (Williams, 1982).

Table 1. A Profile of the Occupational Group Distributions for the Entire Philippine and Metro-Manila Populations Age 10 Years and Above and the Sample Children's Fathers

OCCUPATIONAL GROUPS	PERCENTAGE DISTRIBUTION		
	PHILIPPINES	METRO-MANILA[a]	SAMPLE
1. Professional and technical workers	5.0	9.5	11.8
2. Proprietors, managers, administrators	0.9	3.3	5.0
3. Clerical workers	3.7	13.5	14.8
4. Sales workers	9.8	12.9	8.7
5. Farmers, fishermen, loggers	55.6	2.0	1.0
6. Transport & communication workers	3.8	8.6	11.2
7. Craftsmen & production process workers	10.8	25.3	25.1
8. Manual workers & laborers	1.8	2.3	16.6
9. Service & related workers	8.2	20.6	1.1
10. Occupation not reported	0.2	2.0	4.7
11. (Workers in mines & quarries)	0.2	–	–
Total	100.0	100.0	100.0

[a]National Census and Statistical Office, 1975.

Tool and Testers: The original materials and 105 items of the DDST were slightly modified. To keep costs low, all the test materials were obtained locally. The materials consisted of the following: bright red wool pom-pom; rattle with narrow handle; eight one-inch colored (red, blue, yellow, green) wooden cubical blocks; small clear glass bottle with a 5/8-inch opening; small bell, 2½-inch diameter at open end; rubber ball, 12½-inch circumference (instead of a tennis ball); pack of cheese curls (instead of raisins, with which Filipino children were unfamiliar); bond paper, pencil, and denim bag container.

Items modified were mostly in the language sector. For example, (1) *pa-pa/ta-ta* and *na-na* were added to *da-da* and *ma-ma* as acceptable equivalents referring to father and mother; (2) the use of the plural form is indicated by the words *mga* or *maraming* instead of the addition of *s;* (3) the Filipino words for *roof, fence, river,* and *road* were used in place of *ceiling, hedge, lake,* and *pavement* because the latter were not common elements in the Filipino child's environment; and (4) since a direct translation of the item. "What is a spoon/shoe/door made of?" during the pilot phase was misinterpreted by most of the children, the item was presented to them in analogy form. For example: "If a table is made of wood, a spoon/shoe/door is made of ---."

Two items in the personal-social sector were modified: (1) slippers, a common footwear of local children, were added to the articles of clothing children wear, and (2) putting on snaps, a common element in local children's clothing, was used as equivalent to buttoning up. The method of test administration was closely patterned after Frankenburg et al. (1970). Four research assistants worked full-time and a research aide helped in a data collection and analysis. Intensive training, reliability testing, and close monitoring of all data collectors were done (Williams, 1980a).

In addition to testing children, data were obtained on 45 variables: age, sex, residence, sibling position, number of children, child spacing, illness history and intensity, English and dialects spoken, birthweight, present weight, type of feeding, vitamin supplementation, supplementary feeding, feeding difficulty, usual care giver, substitute care giver—her education, age, birthplace, length of stay in Metro-Manila, child's playspace, environmental cleanliness, school attendance, kind of school, grade level, father and mother employed, father and mother's occupation, father and mother's education, father and mother's birthplace, father and mother's longest residence, father and mother's ages and length of marriage, mother's age at child's birth, religion, parentage, informant, test interruptions, and locality. These variables are commonly known as "structural" (status)—situational variables (Shipman, 1972) potentially affecting child development.

Test Reliability: Interrater reliability (N = 150), test-retest reliability (N = 130), and mother-tester reliability (N = 160) were carried out. Total agreement on all three ranged between 96% and 97%. Individual item analysis on the three measures of reliability was also done (Williams, 1980c), with satisfactory results comparable to those reported by Frankenburg et al. (1971a, b) and Werner and Bayley (1966). Test-retest agreement on items passed by report (range 75.3%—100%; mean 87.6%) did not vary appreciably from agreement on items not passable by report (range 80%—100%; mean 90.0%). Tester-observer agreement on items passed by report (range 89.7%—100%; mean 98.4%) did not vary appreciably from agreement on items not passable by report (range 88.6%—100 %; mean 97.7%). Finally, mother-tester agreement on items passable by report (range 78.8%—100%; mean 97.1%) varied considerably from items not passable by report (range 64.4%—100%; mean 89.2%).

Test Validity: The test was validated concurrently against the Gesell test (Knoblock & Pasamanick, 1974). The mental ages and developmental quotients of 269 children who were administered the MMDST and the Gesell test were correlated using the Pearson-correlation technique. The 90% pass method (Frankenburg et al., 1971b) was used to determine mental age (MA) on the MMDST. Results showed a very high correlation (.97) between the two tests given within a one-week interval. The four sectors were also highly correlated

(Layug, 1980).

Because the study extended over a two-year period, it was possible to do a small-scale predictive validation on children tested early in the study period. Scores on the MMDST (MMDST-1) of 178 children were correlated with (1) the same children's MMDST scores approximately two years later (MMDST-2) (n = 99), or (2) if they were older than six and one-half years, with their scores on Guthrie, Tayag, & Jacob's (1969) Philippine Nonverbal Intelligence Test (PNIT) (n = 70), or (3) their average school grade (n =36), or both. The Pearson correlation coefficients showed considerable consistency between first and second MMDST testing (r = .77, $p < .001$) after an interval of two years. The 90% pass method was also used to determine MA on the MMDST. Table 2 shows that MMDST-1 and average school grade correlated .28 ($p < .05$); a higher correlation was obtained between MMDST-1 fine motor-adaptive sector and average school grade (r = .40, $p < .01$). MMDST-1 and PNIT correlated .41 ($p < .01$); a higher correlation was also obtained between MMDST-1 fine motor-adaptive sector and the PNIT (r = .42, $p < .01$) (Williams, 1980d). Additional studies on the concurrent and predictive validity of the MMDST need to be done, and on a larger scale than those done thus far.

Table 2. Correlation Between Mental Ages on the MMDST and on Criterion Tests

		PEARSON MMDST1 (MA)				
CRITERION TESTS		OVERALL	PS	FMA	L	GM[a]
1. Philippine Nonverbal Intelligence Test	70	.41***	.31**	.29**	.42**	.41
2. Average school grade	36	.28*	.06	.40**	.16	.008

[a]PS = personal-social; FMA = fine motor-adaptive; L = language; GM = gross motor
*$p < .05$ **$p < .01$ ***$p < .001$

Data Analysis: Probit analysis was used to compute the ages at which 25%, 50%, 75%, and 90% of the children passed each of the 105 test items. This was done overall as well as separately for boys and girls,, and for children of college-, high school-, and elementary-educated fathers. Father's education was used as a gauge of family socio-economic status.

Discriminant analysis was done to determine the characteristics of high-scoring and low-scoring children in the normative population of the MMDST. The analysis of these two groups with discriminant procedures produced standardized discriminant weights, which can be given the same interpretation as standardized regression coefficients (Kelly, 1969). That is, the discriminant functions provided the relative weights of the independent variables on a dichotomous dependent variable. The procedure used in this study included stepwise entry of the 45 independent variables, using the minimization of Wilks' lambda

as an entry criterion. This procedure is equivalent to using the largest multivariate F statistic, and it considers the differences between the two groups centroids and the cohesion within groups. Coefficients above .20 were considered significant.

Descriptive analysis of the normative children's figure drawings was also done to illustrate the principle of individuality among children (Abad Santos, 1980). Results of that analysis, however, are not reported here.

Results

Probit analysis established the overall norms for the MMDST, and a test form was constructed for test administration purposes on the basis of these norms. As in the DDST, the MMDST format was devised to present all the normative data for the total sample in a graphic manner so that the user could quickly compare an individual child's performance with that of the children on whom the items were standardized. The analysis also established separate norms for boys and girls and for children whose fathers' level of education was college, high school, and elementary school. Performance of children of college-educated fathers was significantly better on a majority of the items as compared to those of children of elementary- and high school-educated fathers. Compared to boys, non-significant advances were seen in the performance of girls.

Using the Z statistic to compare the ages at which the DDST items were passed by 50% of the Denver sample and the ages at which the MMDST items were passed by 50% of the Metro-Manila sample, it was found that the majority of the items on all behavior sectors was obtained significantly earlier by the Denver sample (Table 3) (Williams, 1980b). Nine test items that were not passed by 90% of the Metro-Manila normative sample at six and one-half years (the upper age limit of the sample) were (1) moves backward heel-toe, (2) recognizes 3 colors, (3) defines 6 words, (4) defines composition (3 objects), (5) copies square; (6) initiates square, demonstrated, (7-8) draws man 3 & 6 parts, and (9) dresses without supervision.

Discriminant analysis showed 22 variables with significant discriminant function coefficients. These variables indicated four clusters of factors as signi-

Table 3. Number of Items Per Sector That Metro-Manila Children Attained Compared to the Denver Sample

METRO-MANILA CHILDREN	BEHAVIOR SECTOR			
	GROSS MOTOR	FINE MOTOR-ADAPTIVE	LANGUAGE	PERSONAL SOCIAL
A. No. items attained significantly *later* by M-M children	20	22	17	14
B. No. items attained significantly *earlier*	3	1	1	5
C. No difference	6	5	1	2
Total (97)	29	28	19	21

ficantly associated with children's performance (Table 4). Heaviest discriminant coefficents were associated with care giving factors or variables directly related to the care of the child. The results suggested that if the mother-substitute care giver was older, and had resided longer in Metro-Manila, the child was more likely to be normal on the test. Data showed that if the mother was not the care giver of the child, the most common mother-substitute was a maid (nannie) or a grandmother (*lola*). Over 1,000 children were reared by mother-substitutes, half of whom were maids, almost half were grandmothers, and the rest were some other relation.

A second cluster of variables that also emerged as important centered on the mother herself, her level of education, and, to a lesser extent, her birthplace. The higher the mother's level of education, the more likely the child was to have a normal score on the test. There was also a trend indicating that mothers born in an urban area tended to have children with normal scores. A third cluster

Table 4. High -Performing vs Low-Performing [+]Children

Variables	Standard Discriminant Function Coefficients
1. Age	−.16[d]
2. Oldest	−.17d
3. Only	.11[c]
4. Child spacing	.14[c]
5. Illness intensity	−.10
6. Present weight	.10
7. Breastfeeding	.07
8. Vitamin supplementation	.08
9. Mother substitute, education	.09
10. Mother substitute, age	.25a
11. Mother substitute, birthplace	.43[a]
12. Mother substitute, length of stay in M-M	.37[a]
13. Environmental sanitation	.08
14. School attendance	.12
15. Private schooling	.09
16. Grade level	.37[d]
17. Mother's education	.24[b]
18. Mother's birthplace	.10[b]
19. Length, parents, marriage	−.29[c]
20. Informant	−.10
21. Interruptions	−.21[d]
22. Locale	.16

[a]Mother-substitute caregiver variable cluster
[b]Mother variable cluster
[c]Child and situational variables cluster
[d]Age factor cluster
[+]Analysis results on children with "questionable" performance (n=346) are reported. Only 25 children had "abnormal" performance, which was too small to yield meaningful results.

of variables that was important centered on the child and certain situational factors. Altogether, the variables seemed to favor a younger family with fewer children and greater spacing between children.

A fourth cluster of variables that received substantial discriminant weights pointed to the fact that the test was more sensitive to the performance of the older child. For example: (1) the older child (variables grade level and age) tends to be classified as low performing, and (2) the number of interruptions (common with older children, in the form of coaxing attempts by the adult care giver who was with the child) is positively associated with a low-performance classification. This test artifact merits further investigation. On the other hand, Knoblock and Pasamanick (1974) noted that there is increased subnormality and increasing socioeconomic disparity in mental functioning with increasing age, at least during school age. Two epidemiologic surveys were cited by these authors. First, an Onondaga Country, New York, survey revealed subnormal labeling at less than 1% in the preschool years, 3% to 4% at the 5- to 10-year range, a peak of 8% in the 10- to 15-year range (greater for boys than girls), and a return to 4% in the 15- to 20-year-old group. The second survey cited was done in the Eastern Health District of Baltimore, Maryland. Similar age patterns were obtained, with somewhat lower rates: less than 1% before 5 years, 1% at 5 years, 4% at 10 years, 3% at 15 years, 1% to 2% at 20 to 25 years, and again less than 1% over 60 years of age. The lower rates occurred because "more objective measures were used for identification of subnormality" (Knoblock & Passamanick, 1974, p. 79). Unfortunately, similar studies have not been done in the Philippines.

Finally, Table 5 shows that the 22 variables are good predictors of MMDST performance (73% of grouped cases were correctly classified), comparable to previously reported findings: For example, the data compares well with van Doorninck and Frankenburg's (1977) observation that most sociodemographic and socioeconomic variables, such as parental IQ, education, and income, correlate about .50 (range .30 to .60) with later test scores. Williams and Williams (1983) also obtained 73% of grouped cases correctly classified in similar analysis of data from zero to six-and-one-half-year-old children who were excluded from the normative study for reasons of unfavorable perinatal histories (n = 911).

Table 5. Prediction Results on the Basis of Selected Variables

ACTUAL GROUPS	No. of Cases	PREDICTED GROUP MEMBERSHIP Group I	Group 2
1 (High-performing)	5635	4090(72.6%)	1545(27.4%)
2 (Low-performing)[a]	346	68(19.7%)	278(80.3%)

Percent of grouped cases correctly classified: 73.03%

[a]The children with "questionable" performance.

Implications

Considering the clusters of factors found to correlate with low or high performance on the MMDST, the clear implications in general point to the home environment. The provisions of classes for mothers and mother-substitutes that include aspects on child health, growth, and development are particularly useful. It should be pointed out that when one talks about care givers in the Philippines, there is an extended family context. Care givers include relatives and older female children who may be given childcare responsibilities when the mother is engaged in economic activities. Therefore, improvement in the training of mother-substitutes must be directed toward high- and middle-income families that hire helpers as well as lower-income households that operate within an extended family system. In this regard, a program like FEED (Anastasiow, Grimmett, Eggleston, & Brown, 1977) might be worked out in school curricula, such as in a home economics course, to target older female children and other substitute care givers who may eventually be assigned child care-giving responsibilities.

In addition, the importance of keeping family size small with greater spacing between children must be emphasized. Making preschool education more accessible to the *poorer* segments of society would be helpful. As yet, with a few exceptions preschools are privately run and available only to those with higher socioeconomic status.

Developmental screening by health care workers serves an additional purpose besides early identification. The act of screening states to the parent that the health care worker's role includes knowledge of, and interest in, the child's development and behavior. Even normal findings are a natural introduction to individualized anticipatory guidance (Kaminer & Jedrysek, 1982). In fact, with severe resource constraints in a country like the Philippines, this value of screening may be paramount at the present time (Williams & Madrazo, 1983).

In cases in which the child has been identified as developmentally delayed, the most realisitc intervention in the Philippine well child-care context is that of pointing out to the mother or her substitute ways of ameliorating the situation. For example, in cases of language delays, the importance of verbal stimulation in the form of naming objects should be emphasized, describing how things work and function, answering the child's questions, and verbal responsiveness in general. At the present, early cognitive and language stimulation is not considered too important by many Filipino mothers.

Expectations about school performance in Grade 1, which begins at age seven in the Philippines, include the ability to read and write. Without some intervention during the preschool period, such as the above examples, this expectation is difficult to fulfill. In the Philippines, this is seen as a priority area. Programs on preschool education and early identification of growth and developmental disabilities are to be launched. At the same time, efforts will be continued toward population control and the improvement of nutrition among preschool children (RP, 1979).

In the Philippines, as in most developing countries, the primary problem is stringent resource constraints. Some of the information and ideas presented in this study suggest changes in the focus of health care delivery that do not necessarily require huge increases in expenditures. For example, an increased emphasis on mother and mother-substitute training could be done within existing community health centers with little increase in cost. Developmental screen-

ing could be done by nurses and midwives as part of their regular activities, thereby enlarging both the number of persons who conduct screening and the number of children screened. Such efforts would greatly help very young children in need.

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APPENDIX A

Estimated Age (in Months) at which Stated Proportion of Population Pass Items (N = 6006).

Gross Motor Items	25%	50%	75%	90%
Prone lifts head	–	.4	1.2	1.8
Prone head up 45°	1.2	1.8	2.4	3.0
Prone head up 90°	2.0	2.6	3.2	3.7
Prone, chest up, arm support	2.8	3.4	4.0	4.6
Sit head steady	2.3	2.8	3.3	3.8
Rolls over	3.2	4.0	4.9	5.6
Bears some weight on legs	3.0	3.8	4.6	5.4
Pull to sit, no head lag	3.2	4.1	5.0	5.8
Sits without support	6.5	7.6	8.8	9.8

APPENDIX A cont'd.

Stands holding on	6.8	7.8	9.0	10.0
Pulls self to stand	7.6	8.8	9.9	10.9
Gets to sitting	7.5	9.0	10.4	11.7
Stands momentarily	9.4	10.7	12.1	13.3
Walks holding onto furniture	7.9	9.1	10.3	11.4
Stands alone well	10.9	12.0	13.0	14.0
Stoops and recovers	12.2	13.2	14.2	15.9
Walks well	11.9	13.2	14.4	16.6
Walks backwards	13.0	14.3	16.6	20.0
Walks up steps	13.8	15.6	19.0	22.5
Kicks ball forward	14.6	17.4	21.2	25.8
Throws ball overhand	17.4	22.0	29.2	37.6
Balance on 1 ft 1 sec.	23.0	30.2	38.8	46.4
Jumps in place	20.2	24.6	31.3	38.0
Pedals trike	25.0	32.4	40.5	47.8
Broad jump	29.7	34.3	38.8	43.0
Balance on 1 ft. 5 sec.	38.0	42.8	47.8	52.2
Balance on 1 ft. 10 sec.	45.2	51.4	58.0	66.7
Hops on 1 foot	38.8	44.0	49.4	54.2
Catches bounced ball	46.3	51.9	57.7	65.2
Heel to toe walk	47.7	53.1	59.3	66.8
Backward heel toe	54.1	61.5	71.8	(82.5)*
Language				
Items				
Responds to bell	—	—	.68	1.1
Vocalizes not crying	0.5	1.0	1.6	2.1
Laughs	1.7	2.3	2.9	3.4
Squeals	2.0	2.6	3.2	3.8
da-da or ma-ma, non-specific	5.6	6.8	8.1	9.2
Turns to voice	3.4	4.5	5.6	6.5
Imitates speech sounds	6.4	8.2	9.9	11.4
Da-da or ma-ma, specific	9.2	11.2	13.1	15.2
3 words other than ma-ma & da-da	13.4	15.4	19.4	24.2
Combines 2 different words	19.0	22.6	28.2	34.6
Points to 1 named body part	13.6	16.8	23.1	32.9
Names 1 picture	21.2	25.4	31.3	37.1
Follows 2 of 3 directions	19.6	23.7	30.0	36.7
Uses plurals	25.3	33.9	43.1	51.4
Gives first and last name	31.0	40.0	49.0	57.0
Comprehends cold, tired, hungry	40.5	47.6	54.6	63.0
Comprehends 3 prepositions	34.0	41.8	49.6	56.6
Recognizes 3 colors	53.4	64.6	(81.7)	(97.4)
Opposite analogies, 2 of 3	45.0	51.1	57.4	65.7
Defines 6 words	60.8	75.1	(91.2)	(105.8)
Composition of —	67.2	(79.2)	(91.2)	(101.9)

*Figures in parentheses are projected ages: i.e. the normative sample would pass the task beyond 78 months (6 1/2 years), the upper age limit of subjects included in the study.
—Indicates that item was passed earlier than 15 days, the lower age limit.

APPENDIX A cont'd.

Find Motor Adaptive Items				
Follows to midline	.8	1.2	1.7	2.1
Symmetrical movements	—	—	—	.66
Follows past midline	1.6	2.1	2.6	3.2
Follows 180°	2.2	2.8	3.4	3.9
Hands together	2.0	2.5	3.0	3.5
Grasps rattle	2.7	3.3	3.9	4.4
Regards raisins	3.1	3.8	4.4	5.0
Reaches object	3.4	4.1	4.8	5.4
Sit, looks for yarn	4.7	5.5	6.2	6.9
Sit, takes 2 cubes	5.6	6.4	7.1	7.7
Rakes raisins, attains	5.1	5.8	6.6	7.2
Transfers cube hand to hand	5.5	6.3	7.2	8.0
Bangs 2 cubes hold in hand	7.0	8.2	9.5	10.6
Thumb finger grasp	6.4	7.7	8.9	10.1
Neat pincer grasp of raisin	8.6	10.2	11.7	13.1
Scribbles spontaneously	12.0	13.4	15.1	18.2
Tower of 2 cubes	13.8	15.2	17.7	20.4
Dumps raisin from bottle demonstrated	13.8	16.0	20.0	24.6
Dumps raisin from bottle spontaneously	16.6	21.5	28.8	37.6
Tower of 4 cubes	16.0	18.4	21.2	24.2
Imitates vertical line w/in 30°	24.5	28.8	33.9	38.6
Tower of 8 cubes	25.6	31.2	37.0	42.4
Copies circle	38.1	44.2	50.4	56.0
Imitates bridge	30.0	35.2	40.4	45.0
Copies +	40.7	45.5	50.3	54.6
Copies square	56.2	67.4	(82.3)	(95.8)
Imitates square demonstrated	51.0	58.4	69.8	(82.4)
Draws man, 3 parts	47.3	54.9	65.4	(78.9)
Draws man, 6 parts	53.2	61.9	75.8	(87.9)
Picks longer line, 3 of 3	37.5	45.2	53.0	61.6

Personal-Social Items				
Regards face	—	.6	1.0	1.4
Smiles responsively	.88	1.2	1.5	1.8
Smiles spontaneously	1.6	2.1	2.6	3.1
Initially shy with strangers	5.8	7.0	8.2	9.2
Feeds self cracker	4.6	5.2	5.9	6.4
Resists toy pull	4.1	4.8	5.6	6.3
Plays peek a boo	5.1	6.1	7.2	8.0