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SOCIAL RESEARCH CENTRE

THE CHINESE UNIVERSITY OF HONG KONG

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DIMENSIONS USED IN PERCEIVING PEERS: CROSS-CULTURAL COMPARISONS OF HONG KONG, JAPANESE, AMERICAN, AND FILIPINO UNIVERSITY STUDENTS

By

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Abstract

Twenty bi-polar descriptions from Cattell's (1957) reduced personality sphere were presented to 192 university students in Hong Kong. Each subject used these scales to assess other students who were convened in same-sex groups of from six to ten members. These responses were then scored and factor analyzed using the procedure described by Norman (1963). The resulting factor analysis was compared with that derived from American, Filipino, and Japanese university students using the same materials and procedures. The 20 scales were reliably used by the Hong Kong sample with the factor analysis extracting over 70% of the matrix variance. The composition of the first four factors of person perception was highly similar across the four cultures. These results were then related to those of Triandis (1977) on cross-cultural factors of behavior intention to suggest the importance of perception in guiding fundamental interpersonal behaviors in all cultures.

Dimensions Used in Perceiving Peers: Cross-Cultural Comparisons of Hong Kong, Japanese, American, and Filipino University Students

What is the smallest number of dimensions necessary to describe another person exhaustively? In answering this question most researchers have used the spoken language as a starting point. They have argued with Cattell (1957) that the spoken language will contain all the constructs judged important in a given culture for describing any person's character. A simplification of these linguistic constructs, therefore, should reveal the basic dimensions required to describe anyone's personality exhaustively.

In their exhaustive search of English, Allport and Odbert (1936) discovered 4,504 terms later characterized by Allport (1936) as denoting relatively "consistent and stable" features of personality. Obviously there is extensive overlapping among these terms so that considerable simplification can be achieved by forming synonym groups. Cattell (1957) accomplished this reduction, selecting 171 terms to represent the synonym groups obtained.

Ratings of people were made with these "trait elements". These ratings were inter-correlated and a further reduction was achieved by the method of cluster analysis. The 36 clusters (later increased to 42-46) were

converted into bi-polar descriptions, called by Cattell (1957) the "standard reduced personality sphere". These descriptive scales then served as a measurement tool for unearthing the basic structure or organization of personality. Cattell concluded, "The results of four consecutive and interrelated studies yield twelve very stable and two or three less definite primary personality factors." (p. 73).

Cattell's conclusions have undergone two subsequent modifications. The first concerns the number of factors or dimensions that result from such ratings. A series of studies using Cattell's original polar descriptions revealed "five relatively strong and recurrent factors and nothing more of any consequence." (Tuppes and Christal, 1961, p. 14). Subsequent studies confirmed this five-factor structure of personality ratings for American students (Norman, 1963; Passini and Norman, 1966). American raters thus seem to use five common dimensions to rate one another's personalities rather than the 12 or more proposed by Cattell (1957). These independent dimensions have been labelled extroversion, agreeableness, conscientiousness, emotional stability, and culture by Norman (1963).

A second modification concerns the locus of the dimensions. Cattell (1957) and Norman (1963) assumed that these dimensions represented the structure of "phenotypic attributes of persons" (p. 581). Subsequent research,

however, (Levy and Dugan, 1960; Mulaik, 1964; Passini and Norman, 1966) strongly suggested that the "basic personality structure" results from the rater's conceptual structure rather than the organization of attributes in the ratees. The five dimensional structure appears to represent shared "implicit personality theory" (Bruner and Tagiuri, 1954) of the raters, showing how American judges perceive the inter-relationships among the trait descriptions. In fact the same five factor solution can be produced by random assignment of ratees to scales provided that the inter-correlations among the scales found in previous studies are retained (Norman and Goldberg, 1966).

As implicit personality theory, however, such a structure provides important access to the "subjective culture" (Triandis, 1972) of the raters. That is, the pattern of inter-correlations found for any given culture will show how members of that culture organize and predict the interpersonal behavior of those around them. Cross-cultural comparisons of these shared stereotypes should reveal areas of potential misattribution and unrealized expectations in cross-cultural interactions.

The measuring instrument assembled by Norman (1963) is a useful starting place for such comparisons as it has already been administered to Filipino (Guthrie and Bennett, 1971) and Japanese (Bond, Nakazato, and Shiraishi, 1975)

university students in addition to the original American samples. It contains 20 bi-polar descriptions from Cattell's reduced personality sphere, each pair defining one scale. One such scale summarized by Norman as "cautious-adventurous" is given below:

Avoids the strange and new. Looks at all aspects of a situation over-cautiously. Keeps clear of difficulties. Uninquiring, lacking in desire to try new things.	Rushes in carefree fashion into new experiences, situations, emergencies. Ready to meet anything, happy-go-lucky. Has a great appetite for life.

The descriptions are reasonably concrete elaborations of the original clusters derived from Cattell and Odbert's (1936) collection.

For the purpose of cross-cultural comparisons, this instrument has a number of advantages. First of all, most of the 20 scales contain behavioral items. These items minimize the possibility that members of different cultures will construe the descriptions as applying to different behaviors. Such might be the case with adjectives alone (see Bond et al., 1975 for further discussion). Secondly, these 20 scales represent the distilate of all English words describing people's characteristics. They thus provide a comprehensive backdrop against which other cultures and linguistic traditions can be compared to reveal at least some "universals" in dimensions used to perceive people.

Method

Subjects

One hundred and one females and 91 males were recruited from the author's social psychology and personality classes for undergraduates. They were convened in same-sex groups ranging in size from six to 11 members. The range of acquaintance in any group was wide, including close friends and virtual strangers although most were moderately acquainted. It should be remembered that level of acquaintance has no effect on the resulting factor structure (Passini and Norman, 1966).

The Rating Scales

The polar descriptions of Norman's (1963) 20 scales were typed three scales to a page and assembled in booklet form. The four scales from each of the five factors were separated throughout the booklet and Poles A and B alternated to avoid the possible influence of response sets. The descriptions were typed in English rather than translated into Chinese as all Chinese University students have a high level of skill in decoding written English.

Administration and Scoring

As Norman's (1963) procedure was followed, a direct quotation will be taken from his article:

> The administrative instructions required each person in a rating group to nominate one-third of the other members of his group (that is, excluding self) on Pole "A" and one-third on Pole "B" of each scale. Scores for each person in the group on each scale were determined by summing nominations received by him on Pole A, subtracting the number of nominations received on Pole B, adjusting the score for group size, and adding a constant to eliminate negative values. The actual formula used in all computations of rating scale scores was,
>
> $$RSS = 10 + \frac{10}{N - 1}(X_A - X_B)$$
>
> where N = number of raters in the group, X_A = number of "A" nominations received by the subject from all raters in the group on the given scale, and X_B = number of "B" nominations received on the scale. (PP. 577-578)

The advantage of this scoring procedure is that it precludes any differences between the rating groups in average scores on the rating scales.

Factor Analysis

Scores on the rating scales were intercorrelated for males and females together. A factor analysis was then run using a principal components solution with factors rotated to orthogonal structure using the Varimax method. A minimum eigenvalue of 1.0 was used as criterion in specifying the number of factors to be extracted.

Coefficients of factor congruence were calculated to compare the composition of the factors from the Hong Kong subjects with that from similar research in the United States, the Philippines, and Japan (see Harman, 1960,

pp. 256-260). This coefficient provides an index showing the extent to which the scale items load on the same factor. Its value can range from 1.00 for perfect agreement (or -1.00 for perfect inverse agreement) to zero for no agreement whatsoever. In calculating the coefficients of congruence, the American data was taken from Norman's (1963) Sample C; the Filipino data from Guthrie and Bennett's (1971) results; the Japanese data from the result reported by Bond et al., (1975).

Results

Factor Analysis

Five factors were extracted accounting for 70.2% of the matrix variance.

Table 1

Rotated Factor Loadings On Norman's (1963) Peer Rating Descriptions From 192 Chinese University Psychology Students*

Abbreviated Scale Labels	Item No.	Factor I	II	III	IV	V	Communality
Talkative - Silent	1	[89]	-10	-09	11	-03	82
Frank, Open - Secretive	2	[80]	25	01	02	-08	71
Adventurous - Cautious	3	[67]	-03	-12	49	21	74
Sociable - Reclusive	4	[79]	18	-24	07	-11	74
Goodnatured - Irritable	5	33	[74]	-03	25	11	73
Not Jealous - Jealous	6	15	[80]	16	18	-04	72
Mild, Gentle - Headstrong	7	-15	[84]	16	-07	06	76
Cooperative - Negativistic	8	48	[62]	26	18	14	74
Fussy, Tidy - Careless	9	-31	-18	[68]	-33	-07	71
Responsible - Undependable	10	01	34	[76]	12	03	71
Scrupulous - Unscrupulous	11	-22	34	[66]	00	01	60
Preservering - Quitting, Fickle	12	-11	07	[74]	39	04	71
Poised - Nervous, Tense	13	26	27	19	[61]	14	57
Calm - Anxious	14	-11	16	09	[80]	03	68
Composed - Excitable	15	14	-19	41	[69]	16	73
Not Hypochondriacal - Hypochondriacal	16	27	14	-02	[76]	-08	67
Artistically Sensitive - Artistically Insensitive	17	-24	-22	19	-03	[76]	72
Intellectual - Unreflective, Narrow	18	12	04	70	41	20	71
Polished, Refined - Crude, Boorish	19	36	21	31	33	[49]	62
Imaginative - Simple, Direct	20	04	29	-13	09	[72]	63
Percentage of Accountable Variance Taken by Above Factor		24	22	21	21	11	

* Boxes surround original factor groupings from Norman's (1963) study.

Coefficients of Congruence

There are 6 possible pair-wise comparisons of cultural groups. These data are presented in Table 2

Table 2

Coefficients of Congruence for Japanese, American, Hong Kong, and Filipino University Students on Norman's (1963) Dimensions of Person Perception

Subject Groups	Factor					Average
	I	II	III	IV	V	
Japanese - United States	.90	.88	.87	.93	.72	85.0
Filipino - United States	.84	.97	.88	.79	.47	79.0
Hong Kong - United States	.95	.91	.95	.91	.85	91.4
Hong Kong - Japanese	.94	.92	.91	.91	.81	89.8
Hong Kong - Filipino	.81	.93	.88	.80	.48	78.0
Japanese - Filipino	.79	.90	.88	.79	.41	75.4
Average	87.2	91.8	89.5	85.5	62.3	

Discussion

The Hong Kong Sample

The factor analysis of the present data seems adequate by two criteria. First, the solution to the Hong Kong data extracted 70.2% of the matrix variance. This percentage falls between the 67.5% of Norman's (1963) sample D and the 79.0% of Guthrie and Bennett's (1971) sample. So, by the criterion of extracted variance, the Hong Kong solution is comparable to that from Japanese, American, and Filipino subjects.

Secondly, in terms of individual items, only one scale has a communality less than .60. As the communalities represent the lower limit of the item reliabilities, it would appear that the Hong Kong subjects used these person perception scales reliably despite their having been presented in English. This conclusion is reinforced by comparing this result with Norman's (1963) data. His results showed two scales in sample C and five scales in sample D with communalities less than .60. By the criterion of item communality, then, the Hong Kong results are comparable to those derived from American subjects.

There is no suggestion in the results of a factor of person perception unique to Hong Kong Chinese. Had any of the item communalities been less than, say, .40, such a possibility could be entertained. For such a low communality

could have resulted from an item's unique variance. This item might then correlate with other items outside the present item pool producing an additional factor. This was not the case, however, as the lowest item communality was .57, suggesting that all the descriptions were adequately subsumed by the five factor solution.

Cross-Cultural Comparisons

The coefficients of congruence presented in Table 2 indicate the overall similarity of item loadings for pairs of the cultures sampled. A glance at this table quickly shows the Filipino sample to be the atypical group. The average communality of the Filipino group with the other three cultures is 77.5; the average communality among the Hong Kong, American, and Japanese samples is 89.1. It is no wonder that Guthrie and Bennett (1971) thought that their Filipino data disproved any notions of universality in implicit personality structure.

If we confine our attention to the American, Japanese and Hong Kong groups, the evidence for similarity in the content of the factors is remarkable. The average coefficient of congruence between pairs of these samples exceeds .90 across the first four factors. Despite the fact that the scales were originally derived from the English language and despite the fact that each scale is a

compound description of various behaviors and adjectives, the 20 scales are similarly associated. This similarity might not be surprising between the Hong Kong and Japanese samples, as they share a common cultural heritage (Nakamura, 1964). However the similarity is noteworthy in comparing these cultures with the American where history, language, religion, and social structure are strikingly different (Benedict, 1946; Hsu, 1953; Huang and Yang, 1971; Nakane, 1970). This general similarity in personality structuring may reflect the high levels of modernity in all three societies in contrast to that of the Philippines (Guthrie, 1970).

The one difference between the American and Oriental samples concerns the scale labelled "intellectual - narrow" by Norman (1963). The actual bi-polar description of this scale is printed below:

Has wide interest and knowledge, especially in intellectual matters. Enjoys analytical, penetrating discussions in small groups.	Rather ignorant, Unreflective. Does not read much or enjoy intellectual problems. Narrow, simple interests.

This item is the only one which has a loading on any given factor different from both Norman's samples C and D by .50 or more. Hong Kong Chinese do not see such an "intellectual" person as a person high in Norman's factor of culture as do Americans, but rather as a person high in Norman's factor of conscientiousness. This finding is consistent with an ancient

Chinese saying,

玉不琢不成器，人不學不知理。

> If you don't first polish the jade, you can make nothing of it. If people do not pursue their studies, they cannot know what is morally right.
> (Book of Rites, Han Dynasty, 206 B.C. - A.D. 25)

This assertion has become a fact of perception for these students, so that the "intellectual" scale now clusters together with other scales indicating moral integrity and social responsibility.

In fact for all three non-American societies, the "intellectual" item loads most heavily on this "conscientiousness" factor rather than the independent "culture" factor. This cross-over is one reason why the variance is lowest for the culture factor in the three non-American samples. The implication of this cultural difference, of course, is that a set of moral expectations will be applied to an educated man by Japanese, Hong Kong, and Filipino students that would not be applied by American students.

The reason for this change in factor loading may be related to historical differences in the availability of higher education. Access to such education in these societies has until recently been a privilege accorded to very few. The price of this privilege appears to have been an expectation that society's investment would be repaid in selfless service. The student samples in these three cultures seem to have accepted this relationship between intellectual

development and social responsibility so that the two are perceptually associated. In America education has been regarded as a right for all individuals rather than a privilege for a few. Consequently, there is no widely accepted association between education and moral character.

Despite this particular inconsistency, however, the coefficients of congruence for Factor V are still reasonably high if we exclude the Filipino pairings. Overall, then, four and often five factors of person perception are similarly constituted in these four societies with only occasional exceptions across certain scales. What are the implications of this conclusion for the area of person perception?

First of all, there seems to be considerable convergence between these results and those of Osgoode and his co-workers (e.g., Osgoode, Suci and Tannenbaum, 1957). In his work on the perception of words, shapes, concepts and so forth, Osgoode has repeatedly unearthed the three independent factors of activity, evaluation, and potency. Accepting Norman's (1963) labelling of his five factors for the moment, there seem to be parallels between Osgoode's factors and those derived by Norman from Cattell's (1957) reduced personality sphere. Thus, Osgoode's activity factor corresponds in meaning to Norman's extroversion factor, his evaluation factor to a combination of Norman's goodnaturedness

and emotionality, and his potency factor to a combination of Norman's conscientiousness and culture. The perceptual structure for persons is more differentiated than that for non-human things, but the essential similarity is apparent.

This increased differentiation in perceiving people may result from the wider range of behavioral decisions we must make in dealing with others. Evidence has been mounting recently to show that perceptual constructs are used to guide behavior (see e.g., Snyder, Tanke, and Berscheid, 1977), often in surprising ways (Bond, 1972). If this is the case, what behaviors could be guided by these five factors? Preliminary research by the author suggests that the extroversion factor guides whether the perceiver will include the other in activities requiring high interpersonal give and take. The goodnaturedness factor has an influence on friendship choice or intimacy-related behaviors. The conscientiousness factor affects whether the perceiver will entrust his outcomes to the other, such as by electing the other to office or by lending the other money. The emotionality factor helps determine whether the other person will be included in potentially stressful events. Finally, the culture factor influences decisions about whether the other will be consulted on more sophisticated questions such as etiquette and cultural pursuits.

These tentative findings dovetail with those of Triandis and his co-workers (1972). Using an instrument called the Behavioral Differential (Triandis, 1964), this group has worked to identify the basic dimensions of behavioral intentions towards others across various cultures (see e.g., Triandis, Tanaka, and Shanmugam, 1966). Four factors have emerged from this series of research (Triandis, 1977). The first factor, that of association-dissociation, involves such items as; be interested in, support versus be prejudiced against, exclude from neighbourhood. These behaviors may well be predicted by how a target person is perceived on the emotionality factor. The second factor, that of superordination-subordination, is defined by such items as; command, inspect the work of another versus ask for help of, and be dependent on. These behaviors seem closely tied to where a target person is perceived to lie along the conscientiousness dimension. The intimacy factor involves such behaviors as; accept as close friend, gossip with, and marry. This behavioral factor seems closely tied to the perceptual factor of goodnaturedness. Finally, the covert-overt factor is defined by whether one behaves openly with another versus reacting internally at the level of attributions and feelings. A behavioral decision along this dimension would appear to be guided by the actor's perception of the target's level of extroversion.

The fifth perceptual factor of culture has no direct link to the behavioral factors of Triandis (1977). This lack of overlap may reflect the unique importance of the culture factor to university students. A more general sample of subjects may find less need to make behavioral decisions based on such a factor, and would probably include such perceptual scales in the conscientiousness factor, as do Filipino subjects (Guthrie and Bennett, 1971).

Triandis Vassiliou and Nassiakou (1968) have related their factors of behavior intention to factors of role perception. This data was generated by presenting subjects with a wide variety of role persons and behaviors for judgment. In contrast, the role of the target persons in the present study was identical, i.e., same-sex, university undergraduates. Despite this limitation five factors of person perception emerged. Four of these factors parallel the four factors of role perception found by Triandis et al. and bear apparently similar relations to their factors of behavior. Even when dealing with someone in a role identical to our own, we appear to make behavioral decisions similar to those we make with people occupying a variety of roles. These factors may thus be universal not only across cultures but also across types of judgment situations involving persons.

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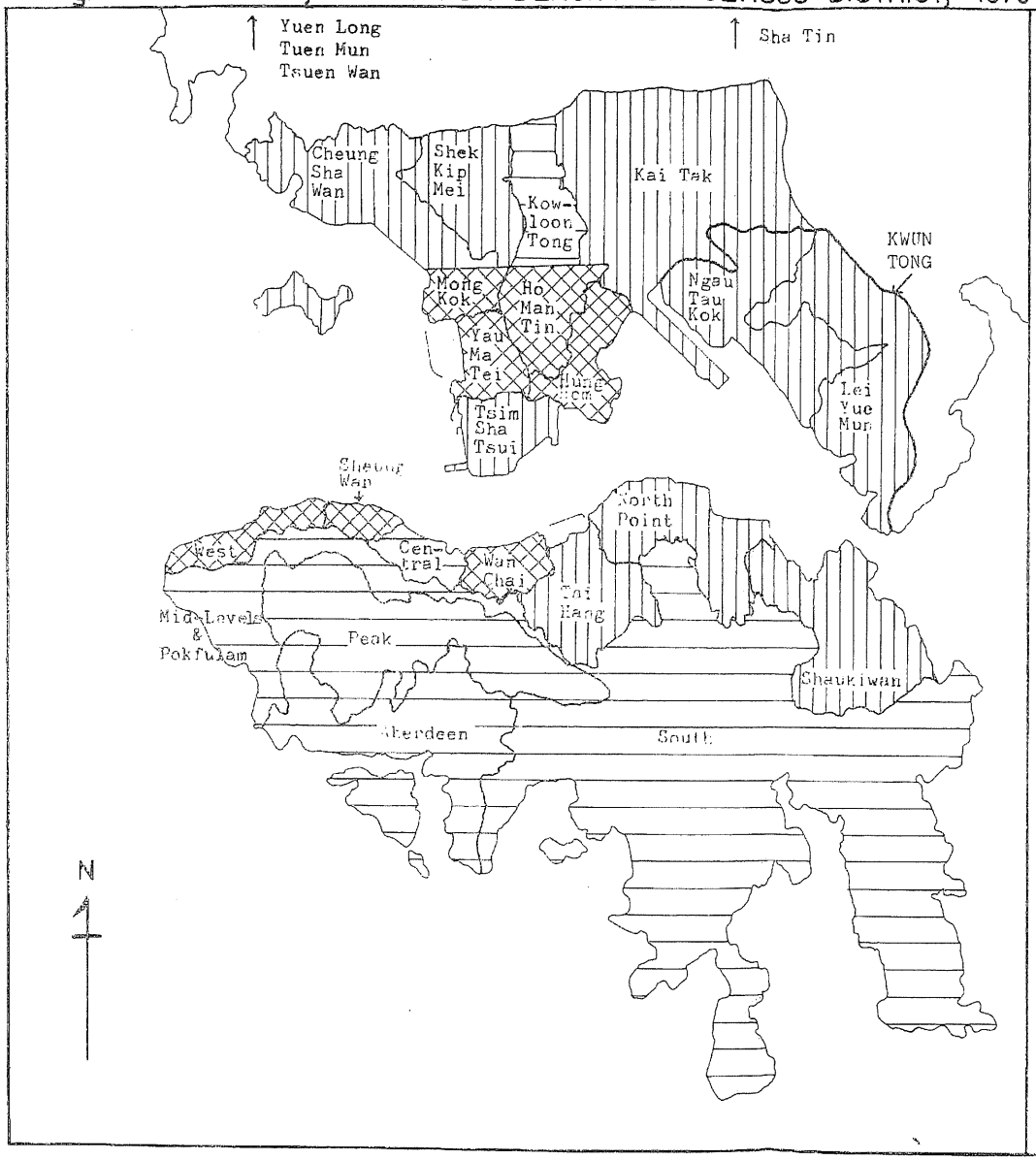
Fig.1 : HONG KONG, POPULATION DENSITY BY CENSUS DISTRICT, 1976.



LEGEND

>50,000 persons/sq. km.	25,000 - 50,000 persons/sq. km.	<25,000 persons/sq. km.

Census Area/District	No. of Persons (in thousands)	Persons per sq. km.
HONG KONG ISLAND		
Central	17	16.3
Sheung Wan	56	80.7
West	146	96.0
Mid-levels & Pokfulam	54	10.7
Peak	8	0.9
Wan Chai	126	99.8
Tai Hang	102	28.7
North Point	193	47.8
Shaukiwan	141	29.5
Aberdeen	141	12.0
South	22	0.6
KOWLOON		
Tsim Sha Tsui	57	29.4
Yau Ma Tei	182	113.6
Mong Kok	160	144.3
Hung Hom	214	110.6
Ho Man Tin	135	55.9
NEW LOWLOON		
Cheung Sha Wan	278	47.6
Shek Kip Mei	173	48.9
Kowloon Tong	27	10.8
Kai Tak	566	40.7
Ngau Tau Kok	244	48.4
Lei Yue Mun	331	32.6
NEW TERRITORIES		
Tsuen Wan New Town	449	18.6
Tuen Mun New Town	33	2.1
Yuen Long Township	39	35.0
Sha Tin New Town	37	2.7

SOURCE

Census & Statistics Department, "1976 By-Census: Basic Facts," Hong Kong, 1976, p.3. (Mimeographed.)

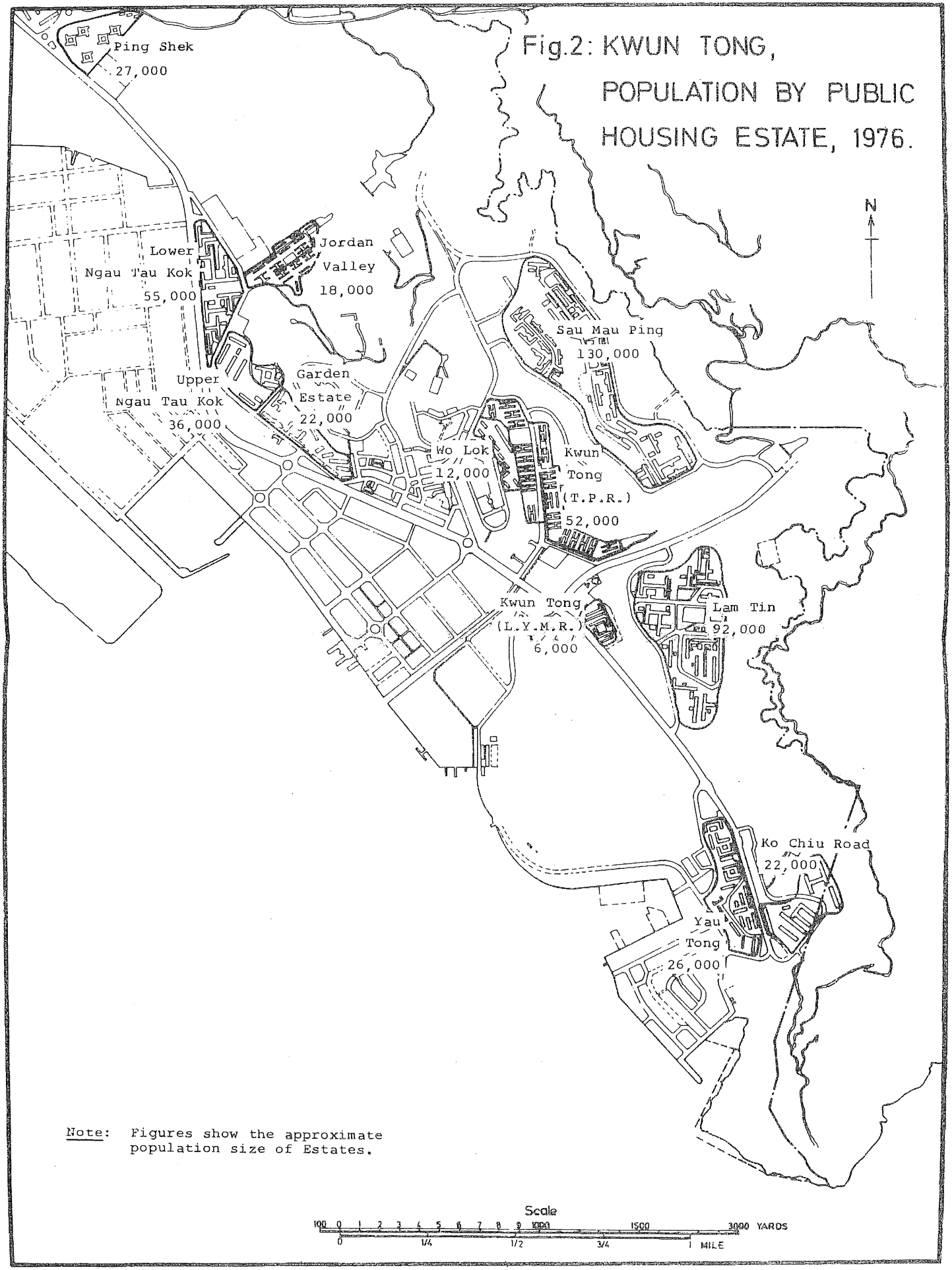


Fig.2: KWUN TONG, POPULATION BY PUBLIC HOUSING ESTATE, 1976.
N
Ping Shek
27,000
Lower
Ngau Tau Kok
55,000
Jordan
Valley
18,000
Sau Mau Ping
130,000
Upper
Ngau Tau Kok
36,000
Garden
Estate
22,000
Wo Lok
12,000
Kwun
Tong
(T.P.R.)
52,000
Kwun Tong
(L.Y.M.R.)
6,000
Lam Tin
92,000
Ko Chiu Road
22,000
Yau
Tong
26,000
Note: Figures show the approximate population size of Estates.
Scale
100 0 1 2 3 4 5 6 7 8 9 KMS
1500
3000 YARDS
0
1/4
1/2
3/4
1 MILE