

## THE GAVINO WORD ASSOCIATION NORMS\*

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Norms for word associations to one hundred stimulus words from 1,000 University of the Philippines students are listed in this article. Essentially the Philippine norms were significantly different from the Russel and Jenkins and the Palermo and Jenkins list but was not significantly different from the Kent and Rosanoff list.

As early as 1910 Kent and Rosanoff published norms for word associations. From then on at least three others have been widely known: Russel and Jenkins (1954), Palermo and Jenkins (1964), and Riegel (1965). Without these norms a variety of researches would have been extremely difficult, if not completely impossible. Previous use include the construction of association inventories for deviant ideation,<sup>1</sup> the analysis of the psychological structure of meaning,<sup>2</sup> the discovery of developmental trends in children's associations<sup>3</sup> and its implications for verbal learning as well as verbal behavior.

In an earlier paper<sup>4</sup> on responses of Filipino students to personality test items with a forced-choice word association format, students revealed a significant tendency to change their responses on the two forms of the tests that are

\*A complete word list is available at the U.P. Main Library, Education Library and Science Teaching Center Library. This study was partially supported by a research grant from the SSRC in the year 1969-70.

<sup>1</sup>Personality tests like the Association Adjustment Inventory, (Martin Bruce, 1959).

<sup>2</sup>J. Deese, *The structure of associations in language and thought*, (Baltimore: Johns Hopkins Press, 1965).

<sup>3</sup>D. Entwisle, *Word Associations of Young Children*, (Baltimore: Johns Hopkins Press, 1967).

<sup>4</sup>J. Gavino, "A Comparison of Responses to Personality Test Items of English-speaking Filipinos in English and in Pilipino", *Philippine Journal of Psychology*, 1968, 1, 68-69.

supposed to be equivalent. While a variety of possible explanations were raised then, one of the simplest is that the associations to translations of the stimuli are not the same, even if they were given by the same bilingual subject. The necessity for establishing Filipino norms to the Kent and Rosanoff stimuli and their translations in Pilipino was recognized. Hence, the Gavino Association Norms.

The present compilation of free association responses utilized the original one hundred stimulus words from the Kent and Rosanoff word list. Theoretically any set of words could have been used for the purpose, but the Kent and Rosanoff list was used because it has been the basis for personality tests such as the Maller's Controlled Association Test and Bruce's Association Adjustment Inventory. It is hoped that in the future similar adjustment inventories would be constructed for use in the Philippines.

Associations of homosexuals, maladjusted students with disciplinary problems, and children in high school (1st and 2nd years) and the grade school (grade 5 and 6) are being compiled to constitute a homosexual scale, a simple maladjustment scale, and a juvenile scale, respectively. The purpose of this paper, therefore, is primarily to provide association norms in a form that is comparable to existing word lists and to raise the question of linguistic equivalence on an associational task.

## METHOD

## RESULTS AND DISCUSSION

*Subjects*

One thousand freshmen and sophomore students at the University of the Philippines were given the hundred stimulus words in partial fulfillment of the laboratory requirement in Elementary Psychology. The task was given in groups of forty to fifty subjects at a time with 3 to 4 proctors in attendance.

*Procedure*

The directions were read and the proctors checked if they were followed correctly. The directions are: "Write the first word that comes to your mind when you read the word on the left hand column. Do not skip any of the words and answer them in the order that they are presented to you. You do not have to hurry, but if you take too long you are not following the directions." There was of course no time limit and usually students completed the task within 20-30 minutes.

The tally of responses to the 100 words yielded a voluminous amount of data only part of which is analyzed here. Appendix A shows the most frequently associated words to the different stimuli. These are ranked according to frequency of occurrence. Generally the highest ten words have been listed, but there were instances when the tenth rank was shared by several words so that more than ten response words appear in the list.

The first comparison is on thirty randomly chosen words and their associates. Appendix B presents the three most frequent responses on these 30 stimuli. Table 1 compares the primary

TABLE 1  
A COMPARISON OF THE 3 LISTS WITH THE GAVINO DATA  
ON PRIMARY RESPONSES TO 30 WORDS

Stimulus Word	Gavino n = 1000	Kent-Rosanoff n = 1000	Russel-Jenkins n = 1000	Palermo-Jenkins n = 1000
1. Bitter	Sweet - 12.2	Sweet - 30.5	Sweet - 65.2	Sweet - 54.5
2. Black	White - 22.5	White - 33.9	White - 75.1	White - 58.5
3. Butterfly	Insect - 14.9	Insect - 26.1	Moth - 14.4	Moth - 12.4
4. Chair	Table - 23.7	Table - 19.1	Table - 49.8	Table - 32.8
5.* Cold	Ice - 15.3	Warm - 16.6	Hot - 34.8	Hot - 32.9
6. Dark	Light - 23.3	Light - 42.7	Light - 82.9	Light - 61.9
7. Fruit	Apple - 14.7	Apple - 15.7	Apple - 37.8	Apple - 44.9
8. Hand	Fingers - 10.1	Foot - 20.4	Foot - 25.5	Foot - 22.8
9. Hard	Soft - 18.7	Soft - 36.7	Soft - 67.4	Soft - 58.5
10. High	Low - 23.0	Low - 32.8	Low - 67.5	Low - 56.4
11. Long	Short - 29.4	Short - 41.3	Short - 75.8	Short - 63.4
12. Loud	Noise - 20.5	Noise - 20.5	Soft - 54.1	Soft - 42.3
13. Man	Woman - 38.2	Woman - 39.4	Woman - 76.7	Woman - 62.4
14.* Music	Sweet - 7.8	Piano - 18.0	Song - 18.3	Song - 16.4
15.* Needle	Thread - 40.1	Thread - 16.0	Thread - 46.4	Thread - 45.7
16.* Ocean	Deep - 16.1	Water - 42.7	Water - 31.4	Water - 36.2
17.* Quiet	Noise - 22.2	Still - 13.6	Loud - 34.8	Loud - 26.3
18. River	Water - 20.9	Water - 36.3	Water - 24.6	Water - 28.6
19. Rough	Smooth - 16.2	Smooth - 34.6	Smooth - 43.9	Smooth - 30.4
20. Salt	Pepper - 11.1	Pepper - 14.2	Pepper - 43.0	Pepper - 30.8
21. Sheep	Wool - 14.4	Animal - 22.5	Wool - 20.1	Wool - 18.7
22. Short	Long - 15.7	Long - 27.9	Tall - 39.7	Tall - 41.1
23.* Slow	Turtle - 23.7	Fast - 31.6	Fast - 75.2	Fast - 63.4
24. Smooth	Rough - 18.8	Rough - 27.7	Rough - 32.8	Rough - 24.3
25. Sour	Sweet - 18.7	Sweet - 34.9	Sweet - 56.8	Sweet - 48.7
26. Square	Round - 11.0	Round - 25.0	Round - 37.2	Round - 31.5
27. Swift	Fast - 32.3	Fast - 22.2	Fast - 36.9	Fast - 45.2
28. Table	Chair - 31.6	Chair - 26.7	Chair - 84.0	Chair - 69.1
29. Thirsty	Water - 61.6	Water - 34.1	Water - 34.8	Water - 43.2
30. Yellow	Color - 14.4	Color - 30.1	Blue - 15.6	Color - 9.2

\*Excluded from the computations given in Table 2

TABLE 2  
TESTS FOR SIGNIFICANCE OF DIFFERENCE AMONG THE MEAN  
PERCENTAGE OF THE 4 WORD LISTS GIVEN IN TABLE 1

Gavino n = 23	Kent-Rosanoff n = 23	Russel-Jenkins n = 23	Palermo-Jenkins n = 23
Means $\bar{X}_A = 21.1$	$\bar{X}_B = 29.3$	$\bar{X}_C = 49.4$	$\bar{X}_D = 42.1$
Variance $\sigma^2 = 119.6$	$\sigma^2 = 62.5$	$\sigma^2 = 449.9$	$\sigma^2 = 279.9$

	B	C	D
A	.85	1.75*	1.95*
B		1.35	1.06
C			.41

responses to the four word lists. Eighteen of the 30 stimuli have the same primary response. For 6 of the 30 stimuli, the primary response to the Gavino list is similar to that of at least one other word list. Therefore, on 23 out of 30 items the primary responses were similar. This is a large ratio (77%) and it would seem that the distributions are comparable. However, when the means were compared for significant differences, the Gavino list was significantly different from two (Russell and Jenkins and Palermo and Jenkins) of the three word lists. The difference between the mean percentages could be accounted for by the higher dominance of the S-R parts in the American norms. Table 2 summarizes the results. It was also noted that the three American lists were not significantly different from each other.

The next comparison was on 39 primary responses to the stimuli in English and their equivalent in Pilipino. Table 3 presents the pairs of words that are most frequently associated. Twenty-four out of 39 (61.5%) primary responses in English was not the same as the primary response to the Pilipino translation. This indicates that Pilipino-English bilinguals have different associations to words depending on the language in which the stimuli is presented.

On the 15 items where the primary response to English and Pilipino were equivalent the mean percentages of the primary responses were compared but this was not found to be significantly different. Since the sample for the Pilipino stimuli was less than a thousand ( $n = 500$ ), to make the frequencies comparable they were multiplied by two. It was assumed that if the sample were doubled the probability of subjects responding in a similar fashion is very high. This seemed to be a valid assumption, since a clustering of responses in the Pilipino task was more marked than in English. It also seemed that the S-R pairs were more strongly associated if the frequency index was taken as a measure of the strength of association. (Refer to Appendix C for the three most frequently associated words to the Pilipino stimuli.) The compilation of norms for Pilipino stimuli is warranted and necessary, and the adoption of the English norms will not suffice.

Local use of word association inventories, such as the Controlled Association Test and the Association Adjustment Inventory is open to question, since they are based on word association norms that are not comparable to Philippine norms. The construction of a new association inventory with empirically valid scales for Fili-

pino groups is under preparation. This should be more meaningful for selection and clinical purposes.

Other studies can be conducted using the Association Norms. For example, the differences

in the structure of psychological meaning between concepts in English and in Pilipino can be explored or the systematic developmental changes in association can provide information regarding the acquisition of concepts.

TABLE 3  
A COMPARISON OF PRIMARY RESPONSES TO 39 ENGLISH WORDS  
AND THEIR CORRESPONDING FREQUENCIES

1.* Takot	multo	85	Afraid	dark	152
2. Namumukadkad	bulaklak	368	Blossom	flowers	590
3. Keso	tinapay	133	Cheese	bread	237
4. Hari	reyna	125	King	queen	331
5.* Kalye	daan	40	Street	cars	108
6.* Asin	maalat	262	Salt	pepper	111
7. Luntian	damo	90	Green	grass	292
8.* Tahimik	gabi	82	Quiet	noise	222
9.* Gunting	papel	76	Scissors	cut	345
10.* Buwan	bilog	138	Moon	night	81
11.* Batang munti	maliit	39	Baby	cute	100
12.* Tabako	sigarillo	111	Tobacco	smoke	323
13.* Mabigat	bato	78	Heavy	light	163
14.* Higaan	kama	171	Bed	sleep	410
15. Ligaya	masaya	36	Happiness	joy	187
16. Leon	mabangis	102	Lion	fierce	108
17.* Magnanakaw	masama	91	Thief	robber	165
18.* Malakas	mahina	54	Loud	noise	205
19.* Manggagamot	sakit	115	Doctor	sick	109
20.* Mantikilya	tinapay	232	Butter	bread	508
21. Lungsod	Maynila	168	City	Manila	181
22. Nauuhaw	tubig	367	thirsty	water	616
23. Martilyo	pako	244	Hammer	nail	405
24.* Mapait	ampalaya	214	Bitter	sweet	122
25.* Dagat	malawak	95	Ocean	deep	161
26. pare	simbahan	95	Priest	church	172
27. Gutom	pagkain	175	Hungry	food	392
28. Azul	langit	145	Blue	sky	337
29.* Kalusugan	mataba	86	Health	good	94
30.* Ilaw	maliwanag	141	Light	dark	157
31.* Batang lalaki	malikot	72	Boy	cute	100
32.* Matigas	bato	164	Hard	soft	187
33. Repolyo	gulay	170	Cabbage	vegetable	340
34.* Kawal	sundalo	81	Soldier	war	212
35. Gulo	away	107	Trouble	fight	65
36. Mundo	bilog	199	Earth	round	219
37.* Maasim	mangga	243	Sour	sweet	187
38.* Nagtratrabaho	masipag	97	Working	hand	76
39.* Mataas	puno	54	High	low	230

\*Excluded from computations  
(n = 500)

(n = 1000)

## APPENDIX A

TEN MOST FREQUENTLY ASSOCIATED WORDS WITH THEIR CORRESPONDING  
FREQUENCIES – ADULT NORMS (N = 1000)

Stimulus Word	Responses F
1. Afraid	dark 152, fear 149, ghosts 75, coward 33, brave 25, death 23, scared 21, frightened 19, darkness 12, dog 12.
2. Anger	hate 75, hatred 59, mad 44, emotion 39, rage 32, fury 28, temper 28, shout 25, red 24, fear 19.
3. Baby	cute 100, child 73, cry 57, mother 46, infant 34, boy 33, small 33, cradle 25, sweet 22, soft 21.
4. Bath	water 213, soap 120, clean 119, cold 40, cleanliness 39, tub 35, refreshing 34, cool 26, shower 23, warm 21.
5. Beautiful	girl 149, woman 91, lady 87, pretty 71, ugly 65, flower 33, lovely 25, nice 25, nature 17, face 16.
6. Bed	sleep 410, comfort 82, rest 80, pillow 78, soft 73, sex 22, room 16, sleeping 16, love 11, night 9.
7. Bible	God 213, book 131, religion 128, holy 70, church 30, Jesus 23, Christ 23, story 22, sacred 19, Word of God 15.
8. Bitter	sweet 122, ampalaya 72, sour 58, taste 46, amargoso 33, medicine 30, memories 18, gall 16, fruit 14, pepper 12.
9. Black	white 225, darkness 120, color 65, death 50, Negro 37, cat 33, night 32, mourning 27, sorrow 23, dress 18.
10. Blossom	flowers 590, cherry 81, rose 37, Japan 24, Spring 23, beautiful 19, sweet 11, bloom 10, beauty 9, apple 9.
11. Blue	sky 337, color 75, sad 44, Eagles 32, red 29, sea 26, peace 23, lonely 22, dresses 18, Ateneo 16, boy 16, eyes 16.
12. Boy	girl 299, naughty 44, cute 36, small 31, brother 22, man 22, youth 22, handsome 21, child 18, friend 18.
13. Bread	butter 322, food 144, breakfast 52, eat 48, sandwich 34, cheese 21, tasty 17, coffee 16, jam 12, toast 12.
14. Butter	bread 508, cheese 56, yellow 46, Anchor 26, milk 26, fat 18, food 18, cookies 16, melt 16, delicious 13.
15. Butterfly	insect 149, flower 129, yellow 60, beautiful 59, color 41, fly 41, colorful 39, wing 34, restaurant 27.
16. Cabbage	vegetable 340, green 110, salad 71, food 56, eat 26, delicious 21, soup 13, round 13, Baguio 12, crisp 11.
17. Carpet	soft 150, red 148, floor 67, rug 52, smooth 27, luxury 23, bagger 19, thick 17, comfort 16, beautiful 14, flying 14, magic 14.
18. Chair	table 237, sit 200, seat 53, comfort 44, rest 37, wood 30, rocking 18, sitting 18, furniture 12, brown 10, relax 10.
19. Cheese	bread 237, butter 84, mice 65, rats 46, food 44, smile 38, sandwich 36, delicious 35, milk 28, yellow 18.
20. Child	a baby 133, innocent 102, mother 69, cute 42, boy 39, small 32, lone 24, young 19, play 17, naughty 16.
21. Citizen	Filipino 204, people 101, country 81, good 77, man 64, person 31, note 18, loyal 15, law abiding 12, Chinese 11, me 11.
22. City	Manila 181, town 38, building 33, people 33, big 32, busy 28, lights 28, noise 28, New York 26, Quezon 25, urban 25.
23. Cold	ice 153, hot 112, snow 109, sweater 46, winter 43, warm 37, weather 37, December 34, night 23, shiver 20.

## Appendix A (continued)

Stimulus Word	Responses F
24. Comfort	bed 151, room 67, ease 64, rest 47, sleep 40, luxury 39, home 36, chair 30, relax 27, mother 23.
25. Command	order 167, obey 71, officer 50, army 38, R.O.T.C. 36, father 32, soldier 24, authority 22, shout 21, mother 20.
26. Cottage	house 209, small 60, home 56, hut 47, cozy 45, cheese 44, industries 33, shelter 23, rest 21, beach 19, wood 19.
27. Dark	light 233, night 233, room 72, black 67, ghost 48, fear 25, bright 21, dim 16, gloomy 16, afraid 10.
28. Deep	scary 178, shallow 128, well 84, ocean 75, water 70, dark 51, hole 29, river 22, dangerous 13, fear 12.
29. Doctor	sick 109, nurse 103, sickness 63, patient 54, cure 36, hospital 32, white 29, stethoscope 28, health 26, injection 23.
30. Dream	sleep 233, wishes 68, sweet 39, night 36, girl 24, nice 23, fantasy 21, nightmare 21, illusion 18, imagination 18.
31. Eagle	bird 277, Ateneo 83, fly 46, blue 24, big 24, wings 21, America 18, clan 17, U.S. 17, fierce 16, nest 16, sky 16.
32. Earth	round 219, soil 197, world 83, planet 62, moon 57, brown 28, ground 21, people 19, big 17, land 16, life 13.
33. Eating	food 264, drinking 50, hungry 33, satisfaction 24, habit 20, sleeping 20, candy 17, fat 16, hunger 15, fruits 12, good 12, peanut 12.
34. Foot	shoes 258, walk 81, hand 68, walking 38, leg 32, toes 31, big 27, corns 14, feet 14, ball 12, long 12.
35. Fruit	apple 147, mango 133, sweet 103, delicious 71, banana 51, eat 35, food 33, grapes 29, vegetables 28, juice 25.
36. Girl	boy 240, beautiful 51, pretty 41, friend 28, lovely 27, nice 22, love 18, cute 18, dress 17.
37. Green	grass 292, leaves 90, color 59, jokes 26, hope 23, trees 22, plants 21, yellow 21, field 18, blue 16, apple 16, pastures 16, vegetables 16.
38. Hammer	nail 405, carpenter 83, head 51, hard 44, pound 34, tool 31, wood 25, saw 15, house 14, heavy 14, iron 12.
39. Hand	fingers 101, soft 79, foot 75, work 61, ring 38, write 35, writing 34, clean 28, nails 25, arm 18, shake 18.
40. Hard	soft 187, stone 167, wood 83, rock 28, difficult 26, work 24, easy 22, steel 21, headed 20, head 19.
41. Head	hair 143, brain 120, big 38, intelligence 34, aches 31, think 30, face 28, round 27, hard 24, intelligent 23, body 23.
42. Health	good 94, wealth 80, sickness 72, body 62, strong 31, doctor 28, fat 25, happiness 22, sick 22.
43. Heavy	light 163, load 78, weight 48, book 44, burden 42, stone 38, iron 27, bag 25, hard 21, steel 19.
44. High	low 230, mountain 145, building 60, tall 55, sky 50, tower 19, grade 18, school 16, ambition 14, tree 14.
45. House	home 160, big 63, family 57, shelter 42, beautiful 39, bungalow 36, people 26, mansion 23, building 18, comfort 17.
46. Hungry	food 392, stomach 153, eat 57, thirsty 23, poor 21, pain 15, me 14, beggar 12, child 9, dog 9.
47. Joy	happiness 187, happy 140, christmas 116, love 44, sorrow 36, laughter 17, peace 16, sad 16, sadness 15, heaven 12.

## Appendix A (continued)

Stimulus Word	Responses F
48. Justice	courts 140, law 82, peace 64, judge 60, equality 54, injustice 27, right 26, fair 23, good 19, freedom 18.
49. King	queen 331, crown 75, power 36, ruler 33, God 24, palace 23, royalty 17, throne 17, kong 16, powerful 13.
50. Lamp	light 603, shade 69, bright 23, bulb 18, night 13, table 13, study 10, oil 9, pink 8, lighted 8, dim 8.
51. Light	dark 157, bright 112, sun 102, lamp 65, day 33, shadow 27, hope 26, bulb 24, heavy 21, night 13.
52. Lion	fierce 108, tiger 100, animal 80, roar 61, king 51, zoo 46, jungle 38, ferocious 17, growl 15, anger 14, angry 14.
53. Long	short 294, hair 92, read 36, distance 25, line 23, gun 18, sticks 18, life 16, journey 15, far 14.
54. Loud	noise 205, soft 166, voice 92, sound 55, shout 41, clear 37, speaker 30, noisy 29, music 27, ear 15.
55. Man	woman 382, father 40, strong 35, tall 29, handsome 26, human being 21, boy 17, animal 16, good 14, human 12.
56. Memory	mind 129, pact 51, brain 50, good 41, poor 28, remember 25, dream 19, retentive 18, remembrance 17, study 15, test 15.
57. Moon	night 81, light 76, round 74, stars 61, Apollo 42, bright 41, romance 34, astronauts 31, shine 30, sun 30.
58. Mountain	high 245, trees 83, hill 77, green 37, climb 22, height 20, forest 19, steep 19, tall 16, big 13, climbing 13, valley 13.
59. Music	sweet 78, song 66, sound 58, dance 53, notes 52, Beatles 34, classical 27, piano 27, melody 25, guitar 24.
60. Mutton	meat 236, sheep 130, food 74, delicious 37, lamb 34, soft 23, animal 17, eat 17, cotton 14.
61. Needle	thread 401, sew 84, sewing 62, prick 54, sharp 43, pin 31, pointed 20, small 20, pain 15, thin 15.
62. Ocean	deep 161, water 129, wide 88, blue 86, sea 80, ship 58, vast 56, Pacific 54, waves 27, fish 20.
63. Priest	church 172, Mass 84, nun 50, man 39, holy 35, religion 35, sermon 34, God 33, goddamned 22, minister 21.
64. Quiet	noise 222, night 103, noisy 92, peace 80, silent 44, calm 42, library 38, silence 35, peaceful 32, room 32.
65. Red	blood 182, color 110, rose 73, blue 46, white 36, dress 29, apple 29, communist 21, green 16, courage 14.
66. Religion	Catholic 246, God 156, church 56, priest 33, faith 29, bible 26, christianity 23, belief 19, Catholicism 15, christian 15.
67. River	water 209, flowing 48, deep 46, Pasig 38, swim 34, flow 33, stream 32, fishes 24, long 23, wide 23.
68. Rough	smooth 162, road 115, stones 50, surface 34, hard 24, wood 22, sandpaper 21, rugged 21, coarse 19, edge 16, rock 16.
69. Salt	pepper 111, sea 94, salty 69, food 53, mango 48, white 44, taste 43, ocean 37, sour 32, sugar 32, water 29.
70. Scissors	cut 345, papers 143, sharp 81, cloth 71, cutting 61, dresses 33, hair 23, hair cut 15, sewing 10, blade 10, barber 10.
71. Short	long 157, tall 121, small 50, hair 49, pants 48, dress 40, dwarf 31, skirt 27, stout 18, hand 14.

## Appendix A (continued)

Stimulus Word	Responses F
72. Sheep	wool 144, animal 119, white 89, lamb 83, meek 45, mutton 31, goat 29, shepherd 23, black 22, fur 21.
73. Sickness	boring 232, bed 100, pain 77, health 55, disease 52, death 50, medicine 43, fever 39, ill 30, flu 29.
74. Sleep	rest 241, bed 151, dream 80, dreams 53, night 52, comfort 48, awake 24, sound 22, peace 19, tight 16.
75. Slow	turtle 237, fast 208, car 33, traffic 31, down 21, motion 18, carabao 15, lazy 14, walk 13, bus 11, drag 11.
76. Smooth	rough 188, skin 102, soft 46, glass 28, silk 23, surface 23, hand 22, complexion 22, paper 21, nice 20.
77. Soft	hard 131, cotton 117, pillow 90, bed 58, cushion 31, smooth 29, drink 26, music 24, sponge 22, voice 21.
78. Soldier	war 212, bravery 102, gun 80, army 38, man 38, Vietnam 33, uniform 31, fight 21, pity 15, courage 15, battle 15.
79. Sour	sweet 187, mangoes 179, vinegar 123, grapes 88, fruit 38, taste 32, bitter 31, lemon 29, green mangoes 21, acid 13, tamarind 13.
80. Spider	web 444, insect 137, black 38, cobwebs 37, leg 16, bites 13, dirty 13, poison 12, animal 10, big 9, fly 9.
81. Square	round 110, circle 83, box 77, figure 44, geometry 35, table 30, rectangle 25, triangle 21, equal 19, dance 18, math 17, plaza 17.
82. Stem	flower 196, plant 188, leaves 133, tree 110, branch 44, long 39, green 31, roots 21, rose 20, trunk 17.
83. Stomach	food 249, hungry 141, ache 101, hunger 71, full 37, intestines 34, digestion 22, eat 21, empty 21, big 20.
84. Stove	cook 163, fire 159, hot 137, cooking 109, heat 70, food 62, oven 27, gas 24, kitchen 21, pot 16.
85. Street	cars 108, road 73, narrow 52, wide 40, people 32, walk 30, busy 26, long 22, lamp 21.
86. Sweet	candy 281, sour 141, sugar 132, girl 27, delicious 24, smile 20, honey 19, fruits 19, music 18, love 15.
87. Swift	fast 323, bird 97, slow 51, river 38, current 33, wind 24, car 21, jet 18, deep 16, swallow 14.
88. Table	chair 316, tool 221, wood 78, brown 40, eat 27, books 27, desk 19, furniture 15, round 14, study 12.
89. Thief	robber 165, bad 73, night 50, police 49, burglar 48, money 47, steal 41, robbery 27, man 24, mask 19.
90. Thirsty	water 616, drink 83, hungry 34, coke 24, seven-up 15, decent 15, pepsi 14, soft drink 10, quench 8, throat 8, cold water 8.
91. Tobacco	smoke 323, cigarette 122, cigar 102, smoking 32, smell 32, pipe 25, cancer 24, nicotine 20, leaf 20, Virginia 20.
92. Trouble	fight 65, problem 53, quarrel 44, worried 33, rumble 31, peace 29, problems 28, maker 25, shooter 19, bad 18, police 18.
93. Whiskey	wine 185, drink 122, drunk 74, alcohol 41, drunkards 39, liquor 36, rum 21, bottle 20, beer 19, brandy 19.
94. Whistle	policeman 89, police 78, sound 76, tune 48, boy 46, loud 38, dog 35, blow 32, noise 32, train 28.
95. White	black 144, pure 125, snow 82, purity 55, clean 52, color 36, clouds 34, paper 28, blue 18, house 14.



## Appendix A (continued)

Stimulus Word	Responses F
96. Window	glass 122, open 68, door 67, panes 58, curtain 47, view 45, air 35, house 28, light 21, scenery 21.
97. Wish	dream 132, star 110, desire 94, hope 57, car 26, happiness 23, wealth 23, money 21, success 18, true 16.
98. Woman	man 258, beautiful 90, mother 71, lady 27, love 26, girl 25, pretty 22, child 20, sex 19, lovely 18.
99. Working	hand 76, man 64, laborer 44, industrious 40, tired 38, sweat 33, father 33, job 28, student 26, hours 25, labor 25.
100. Yellow	color 144, jealousy 83, bird 75, dress 62, sun 62, bright 43, flower 32, coward 28, jealous 25, green 17.

## APPENDIX B

## COMPARISON OF RESPONSES

Stimulus Word Sample	Gavino		Kent-Rosanoff		Russel and Jenkins		Palermo and Jenkins	
	n = 1000	f	n = 1000		n = 1000		n = 1000	
1. Bitter	Sweet	122	Sweet	30.5	Sweet	65.2	Sweet	54.4
	Ampalaya	72	Sour	22.5	Sour	12.5	Sour	15.2
	Sour	58	Taste	6.6	Taste	4.3	Taste	4.3
2. Black	White	225	White	33.9	White	75.1	White	58.5
	Darkness	120	Dark	17.2	Dark	5.4	Dark	9.4
	Color	65	Color	12.9	Cat	2.6	Night	5.0
3. Butterfly	Insect	149	Insect	26.1	Moth	14.4	Moth	12.4
	Flower	129	Bird	6.4	Insect	11.7	Insect	9.6
	Yellow	60	Fly	4.4	Wing	10.4	Yellow	7.3
4. Chair	Table	237	Table	19.1	Table	49.8	Table	32.8
	Sit	200	Seat	12.7	Sit	20.5	Sit	22.4
	Seat	53	Sit	10.7	Leg	4.5	Seat	4.8
5. Cold	Ice	153	Warm	16.6	Hot	34.8	Hot	32.9
	Hot	112	Hot	15.1	Snow	21.8	Snow	20.9
	Snow	109	Winter	12.0	Warm	16.8	Warm	16.5
6. Dark	Light	233	Light	42.7	Light	82.9	Light	61.8
	Night	223	Night	22.1	Night	5.5	Night	17.9
	Room	72	Black	7.6	Room	3.3	Black	5.0
7. Fruit	Apple	147	Apple	15.7	Apple	37.8	Apple	44.9
	Mango	133	Apples	10.2	Vegetable	11.4	Fly	9.1
	Sweet	103	Vegetable	7.5	Orange	9.4	Orange	6.2
8. Hand	Fingers	101	Foot	20.4	Foot	25.5	Foot	22.8
	Soft	79	Fingers	8.3	Fingers	23.7	Arm	14.8
	Foot	75	Arm	6.8	Arm	13.1	Finger	12.4

## Appendix B (continued)

Stimulus Word	Gavino		Kent-Rosanoff		Russel and Jenkins		Palermo and Jenkins	
	Sample	n = 1000	f	n = 1000	n = 1000	n = 1000	n = 1000	n = 1000
9. Hard	Soft	187	Soft	36.7	Soft	67.4	Soft	58.5
	Stone	167	Stone	10.2	Rock	4.8	Rock	6.3
	Wood	93	Wood	6.6	Easy	2.4	Egg	4.6
10. High	Low	230	Low	32.8	Low	67.5	Low	56.4
	Mountain	145	Mountain	15.7	School	4.9	Mountain	6.8
	Building	60	Tall	5.7	Mountain	3.2	Tall	4.4
11. Long	Short	294	Short	41.3	Short	75.8	Short	63.4
	Hair	92	Distance	8.1	Fellow	1.1	Road	2.4
	Road	36	Length	5.0	Narrow	1.0	Tall	1.9
12. Loud	Noise	205	Noise	20.5	Soft	54.1	Soft	42.3
	Soft	166	Soft	16.5	Noise	21.0	Noise	23.1
	Voice	92	Noisy	11.2	Quiet	6.8	Quiet	4.3
13. Man	Woman	382	Woman	39.4	Woman	76.7	Woman	62.4
	Father	40	Male	9.9	Boy	6.5	Boy	8.1
	Strong	35	Boy	4.4	Girl	3.1	Women	4.8
14. Music	Sweet	78	Piano	18.0	Song	18.3	Song	16.4
	Song	66	Sound	9.5	Note	16.8	Sound	16.1
	Sound	58	Song	6.8	Sound	12.4	Note	9.4
15. Needle	Threading	401	Thread	16.0	Thread	46.4	Thread	45.7
	Sew	84	Sharp	15.2	Pin	14.0	Sharp	12.1
	Sewing	62	Pin	14.7	Eye	7.2	Sew	8.7
16. Ocean	Deep	161	Water	42.7	Water	31.4	Water	36.2
	Water	129	Deep	8.7	Sea	23.3	Sea	15.5
	Wide	88	Sea	7.5	Blue	11.1	Blue	10.1
17. Quiet	Noise	222	Still	13.6	Loud	34.8	Loud	26.3
	Night	103	Noisy	11.3	Noisy	11.3	Noise	8.7
	Noisy	92	Rest	6.8	Noise	9.8	Noisy	8.7
18. River	Water	209	Water	36.3	Water	24.6	Water	28.6
	Flowing	48	Stream	11.7	Stream	21.1	Stream	15.4
	Deep	46	Lake	6.5	Lake	10.5	Mississippi	8.9
19. Rough	Smooth	162	Smooth	34.6	Smooth	43.9	Smooth	30.4
	Road	115	Hard	3.8	Hard	6.9	Hard	7.0
	Stones	50	Uneven	3.8	Road	4.4	Sandpaper	6.9
20. Salt	Pepper	111	Pepper	14.2	Pepper	43.0	Pepper	30.8
	Sea	94	Sugar	8.8	Sugar	8.3	Taste	5.9
	Salty	69	Taste	8.7	Water	7.6	Sugar	5.3
21. Sheep	Wool	144	Animal	22.5	Wool	20.1	Wool	18.7
	Animal	119	Lamb	15.1	Lamb	19.8	Lamb	18.0
	White	89	Wool	14.3	Animal	7.5	Animal	10.5
22. Short	Long	157	Long	27.9	Tall	39.7	Tall	41.1
	Tall	121	Tall	16.8	Long	33.6	Long	20.5
	Small	50	Small	13.6	Fat	7.6	Fat	13.5

## Appendix B (continued)

Stimulus Word	Gavino		Kent-Rosanoff		Russel and Jenkins		Palermo and Jenkins	
	Sample	n = 1000	f	n = 1000	n = 1000	n = 1000	n = 1000	n = 1000
23. Slow	Turtle	237	Fast	31.6	Fast	75.2	Fast	63.4
	Fast	208	Easy	6.3	Car	2.3	Turtle	3.6
	Car	33	Snail	6.2	Stop	2.2	Car	2.7
24. Smooth	Rough	188	Rough	27.7	Rough	32.8	Rough	24.3
	Skin	102	Soft	7.9	Soft	20.6	Soft	23.7
	Soft	46	Glass	5.6	Hard	13.6	Hard	10.8
25. Sour	Sweet	187	Sweet	34.9	Sweet	56.8	Sweet	48.7
	Mangoes	179	Vinegar	9.1	Grapes	9.1	Lemon	10.5
	Vinegar	123	Lemon	7.8	Lemon	6.3	Cream	7.7
26. Square	Round	110	Round	25.0	Round	37.2	Round	31.5
	Circle	83	Block	7.1	Circle	21.1	Circle	14.3
	Box	77	Table	4.7	Block	6.5	Block	9.4
27. Swift	Fast	323	Fast	22.2	Fast	36.9	Fast	45.2
	Bird	97	Slow	19.0	Slow	23.8	Slow	15.5
	Slow	51	Quick	11.7	River	3.3	River	3.9
28. Table	Chair	316	Chair	26.7	Chair	84.0	Chair	69.1
	Food	221	Wood	7.6	Food	4.1	Food	5.9
	Wood	78	Furniture	7.5	Deck	2.1	Desk	3.3
29. Thirsty	Water	616	Water	34.1	Water	34.8	Water	43.2
	Drink	83	Dry	21.8	Drink	29.6	Drink	24.9
	Hungry	34	Drink	20.6	Dry	12.1	Dry	10.5
30. Yellow	Color	144	Color	30.1	Blue	15.6	Color	9.2
	Jealousy	83	Water	7.0	Red	11.5	Blue	7.5
	Bird	75	Orange	4.7	Color	10.6	Red	6.9

## APPENDIX C

PRIMARY RESPONSES AND THEIR CORRESPONDING  
FREQUENCIES (N = 1000)

1. Afraid	dark	152	16. Cabbage	vegetable	340
2. Anger	hate	75	17. Carpet	soft	150
3. Baby	cute	100	18. Chair	table	237
4. Bath	water	213	19. Cheese	bread	237
5. Beautiful	girl	149	20. Child	baby	133
6. Bed	sleep	410	21. Citizen	Filipino	204
7. Bible	God	213	22. City	Manila	181
8. Bitter	sweet	122	23. Cold	Ice	153
9. Black	white	225	24. Comfort	bed	151
10. Blossom	flowers	590	25. Command	order	167
11. Blue	sky	337	26. Cottage	house	207
12. Boy	girl	299	27. Dark	light	233
13. Bread	butter	322	28. Deep	Scary	178
14. Butter	bread	508	29. Doctor	sick	109
15. Butterfly	insect	149	30. Dream	sleep	233

## Appendix C (continued)

31. Eagle	bird	277	66. Religion	Catholic	246
32. Earth	round	219	67. River	water	209
33. Eating	food	264	68. Rough	smooth	162
34. Foot	shoes	258	69. Salt	pepper	111
35. Fruit	apple	147	70. Scissors	cut	345
36. Girl	boy	240	71. Short	long	157
37. Green	grass	292	72. Sheep	wool	144
38. Hammer	nail	405	73. Sickness	boring	232
39. Hand	fingers	101	74. Sleep	rest	241
40. Hard	soft	187	75. Slow	turtle	237
41. Head	hair	143	76. Smooth	rough	188
42. Health	good	94	77. Soft	hard	131
43. Heavy	light	163	78. Soldier	war	212
44. High	low	230	79. Sour	sweet	187
45. House	home	160	80. Spider	web	444
46. Hungry	food	392	81. Square	round	110
47. Joy	happiness	187	82. Stem	flower	196
48. Justice	courts	140	83. Stomach	food	249
49. King	queen	331	84. Stove	cook	163
50. Lamp	light	603	85. Street	cars	108
51. Light	dark	157	86. Sweet	candy	281
52. Lion	fierce	108	87. Swift	fast	323
53. Long	short	294	88. table	chair	316
54. Loud	noise	205	89. Thief	robber	165
55. Man	woman	382	90. Thirsty	water	616
56. Memory	mind	129	91. Tobacco	smoke	323
57. Moon	night	81	92. Trouble	fight	65
58. Mountain	high	245	93. Whiskey	wine	185
59. Music	sweet	78	94. Whistle	policeman	89
60. Mutton	meat	236	95. White	black	144
61. Needle	thread	401	96. Window	glass	122
62. Ocean	deep	161	97. Wish	dream	132
63. Priest	church	172	98. Woman	man	258
64. Quiet	noise	222	99. Working	hand	76
65. Red	blood	182	100. Yellow	color	144

## APPENDIX D

## PILIPINO RESPONSES TO 40 STIMULUS WORDS

1. Takot	multo	85	dilim	61	duwag	22
2. Namukadkad	bulaklak	368	dalaga	12	rosas	12
3. Keso	tinapay	133	masarap	75	daga	35
4. Hari	reyna	125	korona	40	palasyo	20
5. Kalye	daan	40	sasakyan	38	kotse	34
6. Asin	maalat	262	alat	38	mangga	33
7. Luntian	damo	90	dahon	71	kulay	33
8. Tahimik	gabi	82	maingay	19	magulo	16
9. Gunting	papel	76	matalas	67	tela	53
10. Buwan	bilang	138	maliwanag	64	gabi	43
11. Batang munti	maliit	39	sanggol	32	malikot	25
12. Tabako	sigarillo	111	mabaho	100	usok	57
13. Mabigat	bato	78	bakal	68	magaan	52
14. Higaan	kama	171	tulog	80	malambot	77
15. Ligaya	masaya	36	buhay	34	lungkot	29
16. Leon	mabangis	102	tigre	82	matapang	81
17. Magnanakaw	masama	91	pulis	39	pera	24
18. Malakas	mahina	54	lalaki	46	malusog	34
19. Manggagamot	sakit	115	doctor	68	gamot	40
20. Mantikilya	tinapay	232	masarap	34	palaman	28
21. Kuwadro	larawan	89	litrato	70	kahon	52

*Appendix D (continued)*

22. Lungsod	Maynila	168	magulo	82	Quezon City	25
23. Nauuhaw	tubig	367	disierto	9	pagod	8
24. Martilyo	pako	244	Karpintero	42	pamukpok	41
					(pukpok)	41)
25. Mapait	ampalaya	214	apdo	34	matamis	25
26. Dagat	malawak	95	malalim	74	tubig	64
27. Pare	simbahan	95	madre	44	misa	28
28. Gutom	pagkain	175	tiyan	73	busog	24
29. Azul	langit	145	kulay	37	ulap	27
30. Kalusugan	mataba	86	bata	32	gatas	21
31. Ilaw	maliwanag	141	liwanag	83	gabi	33
32. Batang lalaki	malikot	72	kapatid	30	batang babae	27
33. Matigas	bato	164	bakal	59	malambot	48
34. Repolyo	gulay	170	masarap	37	pagkain	34
35. Kawal	sundalo	81	matapang	71	giyera	49
36. Gulo	away	107	tahimik	14	tao	12
					(patayan	12)
					(maingay	12)
37. Mundo	bilog	199	magulo	48	malaki	35
38. Maasim	mangga	243	santol	47	matamis	44
39. Nagtratrabaho	masipag	97	tatay	40	ama	39
40. Mataas	puno	54	mababa	53	bundok	38
					(gusali	38)

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