

# THE CHANGING SAMOANS

## Behavior and Health in Transition

Preface

Edited by

**Paul T. Baker**

*The Pennsylvania State University*

**Joel M. Hanna**

*The University of Hawaii*

**Thelma S. Baker**

*The Pennsylvania State University*

# Questions and Answers: Samoans Talk about Happiness, Distress, and Other Life Experiences

ALAN HOWARD

This chapter presents a report of questionnaire data obtained by various participants in, and associates of, the project. As part of the investigation it was deemed desirable to gain some measure of Samoans' self-perceptions, particularly insofar as these were related to health conditions. In the initial phases of the study a heavy reliance was placed on the Cornell Medical Index (CMI), a relatively standardized measure of well-being believed to be sensitive to stress syndromes. The CMI is composed of 195 yes/no questions (190 for women) concerning a variety of symptoms, health-related habits, moods, and feelings. The protocol was administered to three of the research populations, including the 1976 sample of Samoans in Hawaii and American Samoa, the 1979 sample from Salamumu, Western Samoa, and the 1982 sample from Salea'aumua in Western Samoa. The basic data were analyzed by Jay Pearson and are presented in this chapter.

A second body of questionnaire data was obtained during the summer of 1981 from seven villages in American Samoa: Tula and Amouli, located on the eastern tip of Tutuila; Utulei, Faga'alu, and Laulii, located in or adjacent to the Pago Pago harbor area; and Nu'uuli and Vaitogi to the southwest of Pago Pago. Ninety-nine residents, aged 14 to 32 years old, responded to questions concerning household composition; social support; participation in community affairs; residential, migration, and health histories; and occupational goals and attainment. In addition two protocols addressing coronary-prone behavior (Dembroski et al. 1978) and anger arousal and response (Harburg et al. 1979; Harburg et al. 1973) were administered. A variety of physical measurements were also obtained.

Two more specialized studies utilizing survey instruments are also summarized. One, conducted by Scheder in 1982 (Scheder 1983), focused on stressful life events and their correlates among subjects on Manu'a, in American Samoa. The other concerned attitudes toward obesity. It was conducted by Connelly and Hanna in 1977 (Connelly and Hanna 1978) among Samoans residing on the island of Oahu, in Hawaii.

Finally, we consider questionnaire material deriving from a study by Orans in the village of Salamumu on Upolu in Western Samoa. Orans (1978) is concerned with perceptions of happiness and life-satisfaction, and how these are affected by social hierarchy. His findings are of particular importance for what they reveal about the problematic nature of questionnaire research among Samoans.

### LIMITATIONS OF THE DATA

For years anthropologists have been warning survey researchers about the pitfalls of relying on questionnaires constructed for use with Western populations in non-Western cultures, and the case for wariness is perhaps as great among Samoans as with anyone. To begin with there is the problem of translation and the standardization of language. Although a significant portion of the Samoan population speaks English, it is with varying degrees of fluency. Most are more comfortable with Samoan, which means that questionnaires have to be translated into Samoan if questions are to be properly understood. Although back-translation techniques provide some measure of assurance that Samoan versions do not go too far astray, nuances of meaning are frequently lost. This means that whereas questions concerning socioeconomic background, genealogical information, and other clear-cut phenomena may be readily understood and responded to, inquiries concerning beliefs and feeling states present serious communication problems (see discussion of Orans below). To make the problem of translation more complex, there are now many Samoans, particularly among those who have emigrated, who are more comfortable with English than with Samoan. For this reason it may be necessary to use two versions of a questionnaire, one in English, the other in Samoan. This, of course, raises questions about their comparability. Other factors may also impede comparability, such as the necessity at times to use translators to explain or administer questionnaires, and the fact that in some instances a subject may be responding only to written versions, in other cases to a reading of the questions. When questions are read, voice intonations and other nonverbal cues may strongly influence whatever affective loadings a question might have. On the other hand, many of the more traditional Samoans have had little experience responding to written questions and find answering them confusing or difficult.

Another problem is the so-called *courtesy bias*, or the tendency of

subjects to provide answers that they think will please the interviewer. Related to this is the *social-approval bias*, or the tendency to answer questions in a manner consistent with public norms rather than with private views. As students of Samoa have consistently pointed out, there is a strong emphasis in Samoan culture on the priority of social interests over personal ones (see Shore 1982 for a particularly insightful analysis). Questionnaires, particularly those concerned with attitudes, beliefs, feelings, hypothetical situations, and the like were developed with self-reflective populations in mind, but Samoans, like most other non-Western peoples, are not disposed toward self-reflection. The effect such biases have on response patterns has not been measured among Samoan populations, but there is good reason to presume that they are substantial. One manifestation of the social-approval bias is a reduction in variability among responses, a factor that may have influenced the results found by Scheder in her study of life events (see below).

Despite these limitations, survey research has important contributions to make to studies of the Samoan population. To be of maximum value it needs to be done in conjunction with participant observation, by persons who are fluent in Samoan and familiar with Samoan interactional styles and etiquette. But even under less favorable circumstances it can add important information to broader research programs, such as that reported on in this volume. For one thing it provides important information about variability within study populations, and *despite* the problems involved, the questionnaire data do reveal important aspects of the patterning of variation. The fact is that survey materials complement ethnographic techniques and help to correct what can be misleading impressions that stem from the ethnographic literature. The latter tends to focus on intragroup regularities, on the central tendencies and agreed upon premises for social behavior. Survey materials highlight differences, and therefore raise interesting and important questions, whether or not they provide answers to them. In fact, many of the findings reported on in this chapter are of a provocative nature. Some challenge conventional wisdom and will probably stir debate and stimulate further research. Others make sense in terms of existing theories and appear to add to their consolidation. None of the results should be taken as definitive. Rather they should be looked at as small, often indistinct bits of a large jigsaw puzzle that is continually changing its shape.

## THE CORNELL MEDICAL INDEX

The CMI was employed in this study as a method for exploring the ways sociocultural change has affected the overall health status of Samoans. The questionnaire was translated into Samoan by acculturated Samoans in Hawaii and then back-translated in American Samoa by Samoan

Table 8.1 CMI Study: Comparison of Sample Size and Median Age of the Samples

	Hawaii		Tutuila		Manu'a		Western Samoa		Age differences <sup>a</sup>
Age	N	Age	N	Age	N	Age	N	Age	
Men									
18-35	41	27.0	150	25.2	7	30.4	49	22.5	WS < M
36-50	22	43.1	121	43.8	10	47.0	24	44.4	n.s.
50+	23	56.5	139	60.1	34	62.9	24	57.5	n.s.
Women									
18-35	68	24.9	264	26.0	18	25.5	59	24.3	n.s.
36-50	38	41.4	192	42.7	31	42.3	24	45.2	n.s.
50+	20	59.2	184	59.0	50	56.7	22	62.3	M < WS

<sup>a</sup> WS = Western Samoa; M = Manu'a; n.s. = not significant at alpha of .05. Significance levels are based on Kruskal-Wallis tests (alpha = .05) and nonparametric multiple comparisons (alpha = .005).

medical personnel prior to administration. Conceptual equivalence (Kalimo et al. 1970) was used in the translation in order to produce confidence in the meaning of the terms and the intent of the items. In Western Samoa the questionnaires were left with the subjects and collected later. In American Samoa and Hawaii they were filled out either without supervision or during personal interviews. Some individuals failed to provide complete answers and were dropped from the analysis. In the Western Samoan sample 14 percent of the questionnaires were dropped, while 6 percent were dropped from the Hawaiian and 4 percent from the American Samoan samples.

The remaining samples were divided into three age classes: 18-35 years, 36-50 years, and 50+ years. Age composition was generally homogeneous within age categories, although in the 18- to 35-year age class, Western Samoan men were significantly younger than Manu'an men. In the 50+ age class, Manu'an women were significantly younger than Western Samoan women. The sample sizes and median ages for the samples are given in Table 8.1.

Analysis focused on the total number of symptoms reported and the number of symptoms reported in different sections of the CMI. Thirteen sections were distinguished; twelve of these were combined to form a somatic division, while the remaining section was composed of psychosocial symptoms (see Table 8.2). All of the section scores are significantly correlated with the total score for the thirteen sections, although the correlations should be interpreted with caution since the strength of the correlation is significantly associated with the number of questions in the section (Kendall's rank correlations = .53,  $p < .01$ ). The psychosocial, somatic, and nervous system section scores are highly

**Table 8.2** Kendall's Rank Correlations of CMI Section Scores with CMI Total and Somatic Scores

Section	Subject	Number of questions	Percent of CMI questions	Total	Somatic
A	Eyes and ears	9	5	.50	.54
B	Respiratory system	18	9	.64	.68
C	Cardiovascular system	13	7	.61	.64
D	Digestive Tract	23	12	.68	.71
E	Musculoskeletal system	8	4	.63	.66
F	Skin	7	4	.57	.58
G	Nervous system	18	9	.71	.72
H	Genitourinary system	11 (6) <sup>a</sup>	4	.50	.49
I	Fatigability	7	4	.62	.62
J	Frequency of Illness	9	5	.56	.56
K	Miscellaneous diseases	15	8	.59	.59
L	Habits	6	3	.57	.56
A-L	Somatic	144 (130) <sup>a</sup>	74	.89	1.00
M-R	Psychosocial	51	26	.72	.60

Note: All correlations were significantly different from zero ( $p < .0001$ ).

<sup>a</sup> Section H has fewer questions for women; therefore, men and women answer different numbers of questions for the somatic section and total questionnaire.

correlated with the total score, and the psychosocial section is moderately correlated with the somatic score.

The median number of symptoms reported by category of subject and section of the CMI is shown in Table 8.3. Contrary to most other studies, which have found women to report significantly more symptoms than men (Al-Issa 1982; Kessler and McRae 1981), Samoan men and women responded to the CMI in similar ways (Table 8.4). In Tutuila men aged 18-35 years had lower standardized total scores than women, but this is balanced by the fact that in Western Samoa women aged 36-50 had lower total scores than men. Men tended to report more detrimental habits and miscellaneous diseases than women. Age category differences were most pronounced in Hawaii and Tutuila, where young Samoans reported fewer symptoms than older Samoans, particularly in the somatic section (Table 8.5). These differences were less important in Manu'a and Western Samoa.

The most surprising finding, however, is that Samoans living in the more modernized settings of Hawaii and Tutuila reported significantly fewer symptoms than Samoans residing in Manu'a and Western Samoa. Almost a third of young Samoans in Hawaii did not report any symptoms on the CMI (Table 8.6). Removing all the individuals who did not report any symptoms, however, did not affect the population differences in CMI scores (Table 8.7).

This finding is inconsistent with the cumulative evidence from

Table 8.3 Median Number of Symptoms Reported on the CMI

Section	Age	Men				Significant comparisons	Women				Significant comparisons
		H	T	M	WS		H	T	M	WS	
Total Score	18-35	6	20	71	65	H,T<M,WS H<T	9	29	51.5	65	H,T<M,WS H<T
	36-50	21.5	33	47	77	H,T<WS	23	28	34	63	H,T<WS
	50+	50	30	49	76.5	H,T,M<WS	48	30.5	42	81	H,T,M<WS
Psycho-social (M-R)	18-35	2	5	17	19	H,T<WS H<M	2	9	17.5	20	H<All T<WS
	36-50	6.5	7	12.5	25	H,T<WS	4.5	7	11	19	H,T<WS
	50+	12	6	9.5	18	H,T<WS	13.5	6	11	25	T<M,WS
Somatic (A-L)	18-35	3	14	49	49	H,T<M,WS H<T	6	19	33	45	H,T<M,WS H<T
	36-50	14	24	34.5	55	H,T<WS	17.5	20	25	42	H,T<WS
	50+	34	24	34	59	H,T<M,WS	34	24.5	27	58	H,T,M<WS

Note: H = Hawaii; T = Tutuila; M = Manu'a; WS = Western Samoa.

Table 8.4 Sex Comparisons of CMI Total and Subsection Scores

Age	Comparison of Standardized Total Scores <sup>a</sup>											
	Hawaii			Tutuila			Manu'a			Western Samoa		
	M(%)	F(%)	p	M(%)	F(%)	p	M(%)	F(%)	p	M(%)	F(%)	p
18-35	3	5	n.s.	10	15	.002	36	27	n.s.	33	34	n.s.
36-50	11	12	n.s.	17	15	n.s.	24	18	n.s.	39	33	.03
50+	25	25	n.s.	15	16	n.s.	25	22	n.s.	39	42	n.s.
Comparison of Subsection Scores												
18-35	None			Section B F > M ( $p = .05$ ) Section C F > M ( $p = .02$ ) Section D F > M ( $p = .0005$ ) Section G F > M ( $p = .02$ ) Section J F > M ( $p = .001$ )			Section L M > F ( $p = .01$ )			Section L M > F ( $p = .01$ )		
36-50	Section L M > F ( $p = .05$ )			Section K M > F ( $p = .01$ ) Section L M > F ( $p = .0001$ )			None			Section A M > F ( $p = .005$ ) Section B M > F ( $p = .0005$ ) Section D M > F ( $p = .02$ ) Section L M > F ( $p = .0005$ )		
50+	None			Section K M > F ( $p = .02$ ) Section L M > F ( $p = .05$ )			Section K M > F ( $p = .02$ )			Section L M > F ( $p = .01$ )		

Note: Section H was not tested because men and women answer different numbers of questions; n.s. = not significant at an alpha of .05.

<sup>a</sup> Standardized total score = total number of symptoms reported / total number of questions.



**Table 8.5** Age Comparisons of CMI Total Scores, Psychosocial Scores, and Somatic Scores

Section	Sex	Hawaii	Tutuila	Manu'a	Western Samoa
Psychosocial	Male	1<3	n.s.	n.s.	n.s.
	Female	1,2<3	.02 <sup>a</sup>	n.s.	n.s.
Somatic	Male	1<2,3	1<2,3	n.s.	n.s.
	Female	1<3	1<3	n.s.	.05 <sup>a</sup>
Total	Male	1<3	1<2,3	n.s.	n.s.
	Female	1<3	n.s.	n.s.	n.s.

Note: 1 = 18-35-year age class; 2 = 36-50-age class; 3 = 50+ age class; n.s. = not significant.

<sup>a</sup> The Kruskal-Wallis test was significant at the stated *p* value, but no multiple comparisons were significant at alpha of .01.

physiological studies that indicate health risks are markedly higher in Hawaii and Tutuila than in Western Samoa and Manu'a. It therefore raises serious questions about the meaning of self-reported symptoms among Samoans.<sup>1</sup> A number of possibilities exist, but it is not yet possible to choose between them.

McGarvey (1984b) helps to shed some light on the problem. He used the psychosocial section of the CMI data to explore the effects of psychosocial factors on blood pressure. His sample was confined to American Samoa, which he divided into Manu'a (the least modernized), Pago Pago (the most modernized), and villages on Tutuila (intermediate). In order to increase the precision of correlational analysis he constructed a scale of modernization for individuals based on years of education, occupation, travel from Samoa, and language use (see Chapter 15 for a complete description of the study). Among men he found a trend toward individual modernity paralleling community of residence, but it was not statistically significant. Among women the index increases substantially, due to the significantly higher values in the Pago Pago group. Men have higher modernization indices than women in all groups, although the difference is significant only in the intermediate Tutuila group (McGarvey and Schendel, in this book, Chapter 15).

In both sexes there were trends for lower scores on the psychosocial scales from the Manu'a sample when compared to the Tutuila and Pago Pago samples, again suggesting an inverse relationship between modernization and self-reporting of complaints (Kruskal-Wallis One-Way ANOVA: Males,  $X^2 = 18.4$ ,  $p = .0001$ ; Females,  $X^2 = 46.0$ ,  $p < .0001$ ). A positive association between education and CMI scores was found, however, in all the female groups and among the Tutuila males, thus countering the relationship found at the village level. McGarvey points out that "this finding may reflect greater knowledge of psychological states among educated Samoans, or it may also reflect an

Table 8.6 Percent of Sample not Reporting any Symptoms in the Total CMI, Psychosocial Section, and Somatic Section

Section	Age	Men				Significant comparisons	Women				Significant comparisons
		H	T	M	WS		H	T	M	WS	
Psycho-social	18-35	44	27	0	0	H>T,WS	40	20	6	0	H>T>WS
	36-50	23	13	10	0	n.s.	32	24	6	8	.05 <sup>a</sup>
	50+	9	16	3	0	.05 <sup>a</sup>	5	26	4	0	.05 <sup>a</sup>
Somatic	18-35	24	14	0	0	H>T,WS	25	8	0	0	H>T,WS
	36-50	4	4	10	0	n.s.	16	7	3	0	n.s.
	50+	13	3	3	0	n.s.	5	4	0	0	n.s.
Total	18-35	32	12	0	0	H>T,WS	25	8	0	0	H>T>WS
	36-50	4	3	0	0	n.s.	13	6	3	0	n.s.
	50+	9	1	3	0	n.s.	0	4	0	0	n.s.

Note: H = Hawaii; T = Tutuila; M = Manu'a; WS = Western Samoa; n.s. = not significant at alpha of .05.

<sup>a</sup> No multiple comparisons were significant at alpha of .005, but  $p < .05$  = significant difference at alpha of .05.

Table 8.7 Median CMI Scores after Removing Samoans not Reporting any Symptoms on the Total CMI

Section	Age	Men				Significant comparisons	Women				Significant comparisons
		H	T	M	WS		H	T	M	WS	
Psycho-social	18-35	4	7	17	19	H,T<WS H<M	6	10	18	20	H,T<WS H<M
	36-50	7	8	13	25	H,T<WS	6	8	11	19	H,T<WS
	50+	12	6	10	18	T<M,WS	14	6	11	25	T<M,WS
Somatic	18-35	8	15	49	49	H,T<M,WS	13	21	22	45	H<All T<WS
	36-50	14	25	34	55	H,T<WS	20	22	25	42	H,T<WS
	50+	39	24	34	59	T,M<WS	34	25	27	58	All<WS
Total	18-35	10	23	71	65	H,T<M,WS	19	32	52	65	H<All T<WS
	36-50	22	35	47	77	H,T<WS	26	32	36	63	H,T<WS
	50+	51	31	50	76	T,M<WS	48	32	42	81	All<WS

Note: H = Hawaii; T = Tutuila; M = Manu'a; WS = Western Samoa.

increased proclivity to identify and express moods, feelings and emotions" (McGarvey 1984b:44). He regards the contrast between these results and those based on residence-based measures of modernization as an example of the ecological fallacy in population research (i.e., the failure to consider the internal distribution of traits in a population).

Closer analysis of the CMI scale with individualized indices of modernization yielded mixed results when combined with physiological measures. McGarvey suggests the possibility that status incongruity between education and occupation may be a key factor among more urbanized Samoans and may explain these results. For example, although there was an overall lack of association between education, blood pressure, and the CMI scores with age and adiposity controlled among Pago Pago men, those with low education and managerial jobs showed a significantly positive association between blood pressure and the CMI scores; among those with some secondary education in managerial positions systolic blood pressure was inversely related to complaints (see Chapter 15 for further discussion).

In a prior analysis of the data McGarvey (1980) found an inverse blood pressure and complaint score association among American Samoan females, but his later work strongly suggests that the inverse association may be due to a positive correlation between fatness and the psychosocial scale of the CMI.

In order to clarify the patterns of psychological complaints among Samoans McGarvey factor analyzed the data, deriving four factors accounting for approximately 80 percent of the variance. The four factors he labeled anger, depression, fear, and anxiety. Among men the anger factor had the strongest loadings, followed by depression, fear, and anxiety. Among women depression loaded most heavily on the first factor, followed by anger, fear, and anxiety. This is an interesting finding in itself, although McGarvey does not follow it up. Anger management is clearly one of the major adjustment problems confronting Samoan men (see Chapter 16 of this book). The significance of depression for Samoan women is less clear, but should be followed up.

It seems clear from these results that self-reported complaints are complex and rather subtle phenomena that cannot be taken at face value. A number of variables appear to be at work in patterning responses to the protocol and these remain to be unraveled. One rather obvious possibility is that the circumstances under which data were elicited in the different communities affected the outcomes. It is also possible that rural, communal environments facilitate talk about symptoms (along with other forms of self-disclosure) that tend to be inhibited in urbanized areas. The whole issue of expressing emotion may in fact be involved here, particularly with that section of the scale utilized by McGarvey. He takes note of studies that document a preoccupation among Samoans with controlling the expression of strong emotions, but this in itself does not seem to shed much light on patterns of response. The fact that the

Samoan scores were intermediate between patients in a general U.S. practice and military populations on the one hand, and samples of neurotic and psychiatric patients on the other (McGarvey 1984b:20), does not make them appear particularly inhibited. Whatever the explanation, the meaning of self-reported conditions will have to be determined before future studies utilizing such techniques to measure health status will be credible.

### THE SEVEN VILLAGE STUDY

The sample recruited for the the Seven Village Study was purposefully selected and is limited to youths and young adults.<sup>2</sup> The intent was to obtain a sample of premigrant Samoans. For this reason it was decided to limit the age range of subjects to the 15- to 30-year-old group, the group most likely to migrate in the near future.<sup>3</sup> Originally ten villages were selected with the goal of obtaining a total sample of 200 subjects, approximately 20 from each village. Due to time constraints only seven villages were finally included, and a total of 99 subjects were interviewed. Villages were selected to represent a range from most urban to most rural, and for relatively large population size.

All villages were contacted through the Office of Samoan Affairs (OSA), which handles liaisons with traditional leaders and local governments. The researchers met at the OSA with representatives of the ten villages originally selected, explaining the rationale for the study and some of the mechanics. Five of the ten villages originally contacted participated in the study. Another three were unable to participate due to internal difficulties or conflicting demands on their time. These were replaced by two additional villages whose locations were chosen in order to retain the spatial design of the study. The remaining two of the original ten villages were not included due to time limitations and because there was sufficient representation from villages at similar removes from the Pago Pago area.

In each village the major contact was the village mayor (*pulenu'u*), who typically discussed the research with the village fono. A list of all residents between the ages of 15 and 30 years of age, who were born in American Samoa, was requested.<sup>4</sup> For three villages, and somewhat less adequately for a fourth, lists were obtained that met specifications. In the first village studies, almost all subjects on the list were interviewed without sampling. Upon obtaining lists for the other three villages, numbers were assigned by age and sex groups and subjects were selected by the use of a random number table. In the remaining three villages, the subjects were preselected by village leaders and, with the addition of a number of walk-ins, constituted the sample.

The actual range of ages in the sample is from 14.4 to 32.9 years, with a mean age of 19.0. Fifty-five of the subjects were male, 44 were

female. Only nine subjects were currently married, and no subjects reported prior marriages. All married subjects were age 23 or more, and all reported having children. While the overall sample is not truly representative of the full range of youths and young adults in American Samoa, it can be considered as reasonably representative of those born in the territory

### Health status

The Health Interview comprised a brief personal and family health history and was responded to by 82 subjects. In response to questions

**Table 8.8** Seven Village Study: Frequency of Cigarette Smoking and Alcohol Use

Question	Number of respondents	Percent of respondents
<i>Do you now smoke cigarettes:</i>		
Amount/day:		
2 or more packs	1	7
1½ packs	2	13
1 pack	5	33
½ pack	1	7
less than ½ pack	6	40
Total number of current smokers	15	18
Total number of former smokers	10	13
Number who have never smoked	56	69
<i>Do you now drink any alcoholic beverages:</i>		
Number of drinks/week:		
2 or fewer	10	67
3 to 6	2	13
7 to 24	1	7
25 to 40	1	7
more than 40	1	7
no response	1	
Total number of current drinkers	16	20
Total number of former drinkers	14	18
Non-drinkers	50	62

**Table 8.9** Seven Village Study: Age Associations within the Health Interview Data

Variable	Number of responses	Kendall's tau	Probability
History of high blood pressure	99 <sup>a</sup>	-.16	.02
Smoker	81	-.30	.002
Alcohol user	80	-.37	.0002
Former smoker	77	-.22	.006

<sup>a</sup> Includes missing cases, coded as zero, so that the probability is likely to be greater than .02.

concerning coronary heart disease, diabetes, and pulmonary diseases, high frequencies of disease states were reported, but misreporting (or miscommunication) is a likely factor

The frequency of reported cigarette smoking and alcohol use are presented in Table 8.8. Of the 81 respondents who provided information, 18 percent were current smokers and 13 percent were former smokers. Alcohol use was reported by 20 percent of the respondents, while another 22 percent claimed to be former drinkers. Of those currently using alcohol, the mode was for two or fewer drinks per week, with one subject reporting 40 or more drinks weekly

There were few apparent sex differences in health histories, although males reported more exercise (Kendall's tau = -0.26,  $p < .02$ ) and more alcohol use ( $X^2 = 10.26$ , 1 *df*,  $p < .002$ ). There were, however, several age-related associations and health histories, even within such a constricted age range. Significant negative correlations were found between age and reports of alcohol and cigarette use, and between age and blood pressure (Table 8.9). The negative association of age with blood pressure is unexpected and again raises questions about the validity of the data. It is possible, however, that younger informants felt themselves to be less healthy (see Orans' data, presented below), or that more of them were aware of blood pressure problems. Actual blood pressure measurements, however, contradict the negative relationship with age derived from self-reports. Thus age was positively correlated with systolic and diastolic measurements for the same sample.

### Major life experiences

The Major Life Experiences Questionnaire (MLE) was used to obtain information on social background and life histories, with special emphasis on mobility, decision making, and quality of social interaction. Ninety-three subjects completed the MLE. The background data showed this to be a relatively well-educated, bilingual group. Only one subject over the

age of 18 had completed less than a high school education, while 13 subjects had some post-high-school training. Likewise, only one subject reported speaking Samoan solely; 88 claimed to speak both Samoan and English; and four listed at least one language in addition to Samoan and English.

Only nine subjects reported current employment, six of them in white collar positions. Half of the total sample, however, had been wage earners at some time in the past. Most informants (73.0%) claimed to receive remittances from relatives abroad, although the majority who did (37 of 65) said they received less than \$100 per year.

### Mobility

A number of mobility indicators are included in the MLE. They include subject's birthplace in relation to current residence, parents' birthplaces, number of places lived, reasons for moving from one place to the other, length of time on Tutuila, number of places lived outside of Tutuila, and absences from Tutuila during the past five years. On the whole, responses indicate a home-based, but mobile population.

The large majority of subjects, 81.3 percent ( $N = 91$ ), were currently residing in the village of their birth.<sup>5</sup> Since specific villages were often not reported for parents' birthplaces, it was not possible to determine the percentage currently living in parental villages. The information on parental origins is revealing, however. Approximately one-third of subjects' fathers (30 of 91) were born outside of American Samoa, 26 of them in Western Samoa. Twenty-two mothers ( $N = 93$ ) were from Western Samoa, the rest were all from American Samoa.

The mean number of places lived was 2.3, although 50 percent of the sample had never lived in any other village than that of their birth.<sup>6</sup> Twenty-four subjects (27.3%) reported an absence from Tutuila for at least six months during the past five years. Previous residential moves were primarily to Hawaii (35% of all moves), elsewhere on Tutuila (31% of all moves), and to the U.S. mainland (26% of all moves). Thirty-seven percent of the respondents reported that they would move to improve their education or to live with relatives. Almost all other reasons given were based on family concerns, with only one out of 118 respondents suggesting that a job would be a significant reason for moving.

The powerful pull of Hawaii and the mainland United States as future migration destinations is shown by the fact that 70 subjects (76.9%,  $N = 91$ ) said they intended to move away from Tutuila at some point in the future, with Hawaii and California preferred by 60 percent of the respondents.

### Social involvement

A number of questions were asked on the MLE regarding the amount and quality of interaction with family and community. In light of popular and



ethnographic stereotypes of Samoan village life as being highly communal, the results are extremely revealing. One might expect social pressure on individuals to claim, at least, active participation in such important institutions as the church, the matai system, and other village groups, so the high degree of detachment is surprising. For example, 44.8 percent of those responding ( $N = 87$ ) reported that they did not serve a matai (with females significantly more likely to make such a claim than males,  $r = 5.04$ ,  $p < .05$ ). Interestingly, there was no indication that rural villages differ significantly from urbanized ones in this regard.

Since it was anticipated that everyone would belong to a church subjects were not asked directly about membership, but rather whether they supported their church more, about the same, or less than other people in similar family and financial circumstances. As expected, the most common response was "about the same" (54.4%), but 23.9 percent said "less" and 10.2 percent claimed that they did not support a church at all; only 11.4 percent portrayed themselves as providing more support. While it is possible that canons of modesty are involved here, the results do not seem to confirm the universal depth of involvement in church affairs that is often portrayed in the literature.

With regard to organizational participation (which included village, church, and school groups, among others), the results were even more revealing. Only 28.0 percent of the respondents ( $N = 93$ ) claimed to participate in more than one organization, 36.6 percent were limited to one, and 35.5 percent indicated they did not participate in any

### Correlates of social involvement

The battery of protocols included several sets of questions eliciting information related to social support, in addition to community involvement. These included attitudes toward self-reliance versus other-reliance, attitudes toward accepting or relinquishing responsibility, and feelings about the helpfulness of neighbors and friends.<sup>7</sup> Another set of questions aimed at eliciting self-perceptions about anger arousal and responses to anger. A third set provided information relevant to coronary-prone behavior, and included questions related to time orientation, competitiveness, sense of responsibility, and felt pressure for achievement. The responses were grouped into related sets in order to construct indices, and followed the general procedure for index construction employed by Howard (1974): (1) questions were grouped according to the type of information elicited; (2) frequency distributions of responses to each question were examined and questions not showing any appreciable response variation were dropped; (3) scaled scores were assigned to responses, such that a question score of 0 meant an absence of attribute or no response to the question, whereas a score of 2 or 3 was assigned to strong responses; and (4) component question scores were

equally weighted and summed to yield an index score. All indices are therefore conservative in that a high index score would only result if an individual consistently expressed strong responses. Likewise, all indices are independent in that any given question served as a component of only one index.

As constructed, the indices show a high degree of internal consistency. For example, regarding the components of coronary-prone behavior, many strong intercorrelations were found, suggesting that such a complex exists within contemporary Samoan society, despite contrary stereotypes. In general, there is a moderately high level of work orientation and a high degree of competitiveness in the sample, but there is also a significant degree of felt time compression, not usually considered characteristic of Polynesian societies. Among males time orientation correlates highly with competitiveness (Spearman's  $r = .46, p < .001$ ), feelings of pressure for achievement ( $r = .31, p < .03$ ), and responsiveness to pressure for achievement  $r = .35, p < .02$ ). It also correlates with admissions of experiencing intense anger on occasion ( $r = .36, p < .01$ ). Among females the syndrome is somewhat less pronounced. The only significant correlate with time orientation of women is a strong orientation toward work ( $r = .33, p < .05$ ). Those women who report a positive response to achievement pressures, however, also report experiencing the most felt pressure for achievement ( $r = .48, p < .002$ ), intense anger on occasion ( $r = .43, p < .006$ ), and a tendency to displace their anger ( $r = .34, p < .04$ ). They also are more likely to invest their earnings in self-development rather than in social relations ( $r = .35, p < .03$ ). Whether the coronary-prone syndrome plays a role in the high rates of hypertension and susceptibility to heart disease among Samoans remains to be investigated.<sup>8</sup>

Since ethnographic studies have indicated the importance of social relations and community involvement for Samoans, it is of some interest to look at the individual correlates of such involvement. As pointed out above, more variability exists than one might have expected for Samoan village communities. In urban areas, and in overseas communities, more options exist and almost certainly allow for greater detachment. Since evidence demonstrating the importance of social support systems for mediating the effects of stress has been mounting (Thoits 1983; Broadhead et al. 1981; Gad and Johnson 1980; Andrews et al. 1978) it will be important to monitor the effects of social detachment on individuals as it occurs in the context of change.

The index of community involvement was related to anger patterns for both men and women. The men who were most involved were less likely to report expressing felt anger than their less involved peers ( $r = .29, p = .05$ ), while involved women were more likely to deny having strong affective responses to angering situations ( $r = .43, p < .008$ ). Thus community involvement, as one might expect from the ethnographic

literature, appears to require the inhibition of anger, although there are no indications in the questionnaire data that those who are involved experience less anger.

Another indicator of social involvement that showed interesting correlations was attitudes toward neighbors. Among men, the more positive their attitude toward neighbors, that is the more neighbors were perceived as helpful, the less they were expressive of felt anger ( $r = .32$ ,  $p < .03$ ) and the less they reported antisocial responses to anger ( $r = .32$ ,  $p < .03$ ). Positive attitudes toward neighbors, however, was strongly correlated with competitiveness ( $r = .44$ ,  $p < .002$ ). While this may appear incongruous to Westerners, such a finding is consistent with the Samoan pattern of competing for traditional rewards such as titles, for it involves mobilizing social relations to support one's ambitions. Among women friendly attitudes toward neighbors was negatively correlated with the expression of anger through protests ( $r = .46$ ,  $p < .003$ ); when attitudes toward neighbors and friends were combined, a negative correlation also appeared with overall expressiveness of anger ( $r = .33$ ,  $p < .05$ ). Again, the requirement for inhibiting expressions of anger appears to be prerequisite for maintaining social involvement.

Still another measure of social involvement was the degree to which subjects expressed a desire to take responsibility for their own affairs, or reported wanting others, such as matai, to take responsibility for them. Consistent with the above-reported results, those men who were most other-reliant were most likely to inhibit expressions of anger ( $r = .42$ ,  $p < .003$ ), but they reported discussing the reasons for their anger with others more frequently ( $r = .39$ ,  $p < .008$ ). No significant correlations were found for women.

Differences between men and women were slight, and nonsignificant on all measures of social involvement. If anything, women reported being slightly more involved with their immediate families and less involved with the broader community. They also reported more experiences of intense anger and were somewhat less inhibited in expressing it. Women were also less competitive and showed less concern for taking responsibility, but scored somewhat higher on time and work orientations.

Although there were significant differences between villages on some measures, there was no consistent pattern of differences to correspond with an urban/rural continuum. Our conclusion is therefore that as far as our measures are concerned, Tutuila is relatively homogeneous and does not display variations at the village level corresponding to modernizing influences.

Overall, then, data from the Seven Village Study seem to highlight the presence of stressful experiences for Samoans on Tutuila and their patterning according to degrees of social involvement. That there may be important health implications involved is signaled by the finding, using the same sample, that individuals whose urine showed high levels of

hormone output in the overnight samples were relatively less involved in community affairs and generally did not view their friends and neighbors as helpful (reported in Chapter 9 of this book).

### THE TA'U LIFE EVENTS STUDY

The Ta'u Life Events Study was conducted by Scheder while she was a postdoctoral fellow in medical anthropology at the University of Hawaii.<sup>9</sup> The study site was on the island of Ta'u, in the Manu'a chain, in a village of 500 people, generally regarded as the most traditional village in American Samoa. The sample consisted of 112 subjects (55 males, 57 females). A modified version of the Holmes-Rahe life event scale (Holmes and Rahe 1967), specific to Samoa, was used. Added to the scale were such items as death of the matai; receiving a title; hosting visiting relatives; giving a fiafia (party); moving to another island, Hawaii, or the mainland for work; making the same moves, but to be with relatives; and a change in one's child's church affiliation. Subjects were asked to rate each event according to the strength of their reaction to it. The dates of each event experienced were recorded, and these were later compared to subjects' medical records for association with blood pressure and blood glucose measurements. Data pertaining to cultural stressors and attitudes, social support and social integration, and migration history were also obtained.

Scheder had conducted a similar study among migrant Mexican-American farm workers (Scheder 1981), and her major comparisons were with them. Table 8.10 shows the percentages of Samoans and Mexican-Americans who scored events as causing an "extremely strong reaction," and the comparable rankings of items included on both lists.<sup>10</sup> The most striking difference between the two groups is the lesser degree of variation among Samoans in their responses to the items. Thus the range for Samoans is between 70.9 percent and 45.2 percent, while Mexican-Americans vary between 80.0 percent and 0.0 percent. Whether this indicates that Samoans in fact react more uniformly (and on the whole, more strongly) to events is quite doubtful, but without some comparable contextual anchoring there is no way to tell. The differences in rank ordering are also interesting, although the relative lack of variation among Samoans requires caution with regard to how seriously we can take the rankings. Mexican-American rankings appear to reflect a greater concern for self and immediate family than the Samoan rankings, which reflect a greater concern for maintaining networks of relationship; thus the relatively high ranking among Samoans of argument with relative, serious illness of relative (which Samoans rank higher than serious personal illness), and death of close friend. Mexican-Americans rank serious personal illness just after death of spouse, near the top of the scale. They also rank money and work-related events higher than

Table 8.10 Percent of "Extremely Strong" Reaction and Ranking of Life Events by Samoans and Mexican-Americans

Event description	Samoans		Mexican-Americans		Discrepancy <sup>b</sup>
	Percent	Rank <sup>a</sup>	Percent	Rank <sup>a</sup>	
Death of child	70.9	1	80.0	1	
Death of spouse	69.1	2	74.2	2	
Death of close relative	67.3	3	50.0	4	
Birth of child (for father) <sup>c</sup>	66.0	4	12.5	19	XXX
Birth of child (for mother)			0.00	26	XXX
Miscarriage, stillbirth	65.5	5	33.3	10	
Death of matai	65.5				
Argument with relative	65.0	6	4.8	22	XXX
Child leaves home	64.1	7	25.9	15	
Serious illness of relative	63.6	8	17.9	17	X
Death of close friend	60.0	9	6.9	21	XX
Marriage	59.3	10	16.0	18	X
Son marries with approval	58.8	11	0.0	26	XXX
Argument with sister (1 <sup>st</sup> relative)	58.3	12	26.1	12	
Argument with friend	58.3				
Argument with child	58.3				
Pregnancy	57.9	13	4.5	23	XX
Child married without approval	57.9	13	42.9	6	X
Separation from family	57.7	15	50.0	4	XX
Move from Hawaii to be with relatives	57.5				
Serious personal illness	57.3	16	56.7	3	XX
Move to other island to be with relatives	56.7				
Giving a fiafia (party)	56.2				
Adoption of child	55.9				
Host relatives on malaga (visit)	55.7				
Serious argument with brother	55.3				
Daughter marries with approval	55.3	17	4.5	23	X
Receive a title	53.3				
Marital separation or divorce	52.9	18	38.1	8	XX
Work hours lengthened	52.4				
Argument with parents	52.0				
Argument with spouse	52.0				
Problems with money	52.0	19	42.9	6	XX
Child changes church affiliation	52.0				
Move to Mainland to be with relatives	51.4				
Change jobs	50.0	20	7.4	20	
Menopause	49.5	21	36.8	9	XX
Move to another island for work	49.0				
Work hours shortened	47.1	22	24.1	16	X
Move to Mainland (another state) for work	46.2	23	28.0	11	XX
New boss	46.2	23	4.3	25	
Move to Hawaii for work	45.2				

<sup>a</sup> Only items included on both Samoan and Mexican-American protocols are ranked.<sup>b</sup> Discrepancy of from 6 to 9 places—X, from 10 to 14 places—XX; from 15 to 19 places—XXX.<sup>c</sup> Alternate wording included in Mexican-American protocol are enclosed in parentheses.

Samoans. Of interest, too, is the fact that Samoans, unlike Mexican-Americans and most other populations studied (Rahe 1969), but like their Hawaiian cousins, rank marriage higher than divorce. They also rank a son marrying with approval relatively high—higher, in fact, than a child marrying without approval. This reflects, I believe, the great seriousness with which Polynesians enter into new sets of social obligations. To get married is to take on new social burdens, including new in-laws; to get divorced is to remove oneself from them. For a child to get married with permission implies stronger obligations than without permission. Also, since the nuclear family is less emphasized, the trauma of divorce may be less pronounced.

With regard to migration, Scheder offers an interpretation of Samoan responses consistent with this view:

the largest dichotomy was seen in moving to Hawaii for work, as opposed to the same move to be with relatives. Moving to Hawaii for work was the lowest ranked event. Moving to another island or the mainland for work were also ranked near the bottom. Moving to any of the three places in order to be with relatives was ranked much higher, particularly moving to Hawaii or another Samoan island. It might be interpreted that moving to be with relatives engenders a new set of obligations that are not expected when one migrates for work. At the least, this dichotomy suggests motivations for migration carry different expectations, and are coupled to different emotional responses, but that migration per se does not necessarily provoke a strong reaction.

The differences in subsistence needs of the two populations emerge in the event rankings. Moving for work, loss of property, uncertainty of employment, are givens for migrant farm workers. Samoans, at least in Manu'a, rely on a network of mutual support and effort in providing food and shelter, so that job and monetary changes have less impact. A Samoan who migrates to be with relatives maintains the ties in Samoa, and encounters new obligations among his hosts. The relative ranking of work versus family-based migration by Samoans provides a concise statement of the importance of context. (Scheder 1983:4-7)

To clarify migration expectations Scheder presented her subjects with a protocol eliciting their views of life in the village, Pago Pago, Hawaii, and California. Subjects were asked to state whether a number of conditions would or would not provide difficulties in each of these locations. Results are presented in Table 8.11. The general pattern is for conditions to be perceived as more difficult the further one went from the village. There were two exceptions to the pattern: getting a good job and getting a good education. Getting a good job was viewed as equally difficult regardless of location, while a good education was seen as harder to obtain in Samoa than in California or Hawaii.

The greatest agreement among respondents occurred in relation to



Table 8.11 Views of Life in Samoa, Hawaii, and California: General Patterns

<i>Item Selected by the Greatest Proportion of Respondents</i>				
View of	Difficult	Percent	Not difficult	Percent
Village	Education	70.2	Support family	89.5
Pago Pago	Education	74.2	Acting fa'aSamoa	72.4
Hawaii	Good house	80.7	Education	58.6
California	Good house	87.5	Education	49.4
<i>Top Four Items Selected by the Greatest Proportion of Respondents</i>				
Village	Education	70.2	Support family	89.5
	Good job	53.1	Live in good area	80.5
	Medical care	35.1	Acting fa'aSamoa	85.4
	Enough food	29.2	Being safe	85.3
Pago Pago	Education	74.2	Acting fa'aSamoa	72.4
	Job	49.4	Serving a matai	69.7
	Medical care	42.7	Having friends	69.3
	Being safe	39.8	Good things to eat	68.2
Hawaii	Good house	80.7	Education	58.6
	Good area	70.1	Good job	50.0
	Being safe	69.0	Good things to eat	46.0
	Serve a matai	67.8	Enough food	41.4
California	Good house	87.5	Education	49.4
	Good area	85.1	Good job	47.5
	Being safe	74.7	Good things to eat	41.4
	Fa'aSamoa	73.6	Enough friends	37.2

supporting a family in Samoa, with 89.5 percent judging it as not difficult, while in contrast, having a good house in California was seen as difficult by 87.5 percent of the subjects. It therefore appears that migration to Hawaii or the U.S. mainland is seen as a trade-off with some risk attached.

Scheder established an index of life event reactivity by combining responses to six of the items on the list: death of matai, argument with relative, argument with sister, host relatives on malaga, giving a fiafia, and receiving a title. She then performed a discriminant function analysis using subject groups with the highest and lowest responses to these events ( $N = 58$ ), and tested for relationship to health status. She found blood glucose levels to be significantly higher for the high reactor group, and while none of the low reactors had diabetes, 9.5 percent of the high reactors had the disease. Although the numbers are small, her data are suggestive of future research.

## PERCEPTIONS OF OBESITY STUDY

The main purpose of this study was to examine the perceived relationship between obesity and health, fertility, age, sex, social status, and role performance. The underlying question motivating the research was: What does obesity signify as a visual social marker? Connelly and Hanna note the widespread traditional Polynesian custom of fattening chiefs, a well-fed chief symbolizing prosperity and the beneficence of the gods. The concern was whether the attitudes of migrants to Hawaii, who show an extremely high incidence of obesity (see Pawson, Chapter 11), reflect such positive associations.

Sixty Samoan migrants, ranging from 8 to 89 years old, were interviewed. They had all participated in a previous survey conducted by Hanna and Baker (see Chapter 1) a year earlier, and were contemporaneously participating in a nutritional survey. Each informant was shown a set of three line drawings depicting several individuals participating in an activity. The activities were typical of life in Samoa, for example, cooking, fishing, and making fine mats. There were separate activities involving children. The figures were Polynesian in appearance, but sketchily drawn so as to emphasize differences in body shape.

Subjects were asked to tell a story about the action in the picture and when finished, were asked a series of standardized questions to elicit information concerning their associations between body size and behavior. They were also asked to sort four male and four female somatotypes, ranging from lean to obese, into several categories. In order to gain some measure of cultural familiarity, two knowledge tests were utilized. One was the Middle Class Conceptual Test (described by Howard 1974), which consists of a set of 20 concepts familiar to most middle-class Americans; the other was a comparable instrument consisting of 24 Samoan terms. The tests were in multiple-choice formats, with four options for each item. The mean score for the MCCT was 3.9, less than chance, indicating a population still unfamiliar with middle American culture. The mean score for the Samoan Conceptual Test was 16.8, indicating a moderate knowledge of traditional Samoan culture.

As expected, for both men and women, the obese figures were perceived as being of high status and the lean figures of low status. When asked to select the most effective *ali'i* (high chief), 80 percent selected the most obese somatotype. The main reason given was that a large-bodied man looks more regal and commands more respect. Several informants conjectured that high chiefs and their wives became obese because they command others to work and do not have to work themselves. Talking chiefs (*tulafale*), who are required to be more active, were perceived as intermediate between *ali'i* and untitled men (*taule'ale'a*). The data are presented in Table 8.12.

When asked whether body size was an influential factor in selecting a



**Table 8.12** Reported Perceptual Relationship between Body Size and Social Status in Somatotype Sorting

Body size	Man's status		
	Untitled (percent)	Talking chief (percent)	High chief (percent)
Husband	(42 respondents)	(42 respondents)	(45 respondents)
Thin	62	57	20
Obese	7	43	80
Wife	(30 respondents)	(35 respondents)	(40 respondents)
Thin	87	43	20
Obese	13	57	80

chief, however, the answers were overwhelmingly negative. Rather informants emphasized intelligence, knowledge of and respect for Samoan custom, thus indicating that obesity is considered a consequence of high status rather than a prerequisite for achieving it. Since age was associated with obesity by 77 percent of the subjects, and since chiefs are generally older than untitled men, perceived age may account for part of the association between chieftainship and large body size. That Samoans do not consider obesity to be a generally positive trait was attested by the fact that 93 percent of the subjects associated it with poor health. They saw it as linked to asthma, difficulty in breathing, tiredness, and high blood pressure. Female beauty, on the other hand, was associated with the thinnest somatotype by 86 percent of the men and 84 percent of the women.

These data suggest that the high rates of obesity among Samoan migrants to Hawaii are not the direct result of values that lead them to try to gain weight.

#### ORANS' HIERARCHY AND HAPPINESS STUDY

Orans has been studying the relationship between status, self-reports of happiness, and other aspects of well-being in Western Samoa. In conjunction with his field work in the village of Salamumu, on Upolu, he administered a sequence of three survey questionnaires designed to elicit systematic information on the topic. The first was administered in June of 1978, the second about 9 months later, and the third 3 months after that. Orans was interested in examining the relationship between economic variables and happiness/satisfaction, a correlation that has been reported within countries [but not between countries (see Easterlin 1975)]. He found no such correlation in Salamumu, nor did he find significant sex

differences, but he did find matai status to be positively associated with such measures.

Orans' experience with the survey instruments is highly instructive and should serve to warn researchers who elicit such data without paying careful attention to their limitations. In the first instance his subjects responded to the global happiness question in an overwhelmingly positive way. The question was: Taking all things together, how would you say things are these days—would you say you're *very happy*, *pretty happy*, or *not too happy*? Given the fact that 82 percent of his informants chose "very happy," and that the Salamumu mean (2.74, using a 3, 2, 1 scoring system) was far higher than any sample previously studied [inclusive of eight countries (see Easterlin 1975:107)], Orans concluded that "either Salamumu is the happiest place on earth or the survey question didn't work too well" (Orans 1985:28). On the second questionnaire he obtained a more reasonable spread by changing the alternatives to *very happy* (30%), *happy* (32%), and *not so happy* (20%), placing the Salamumu mean (2.23) very close to U.S. scores obtained between 1957 and 1972 (Campbell et al. 1976:26). Using this same wording on the third questionnaire yielded a greater concentration of happy responses (54%) and a slightly lower mean (2.13; Orans 1985).

Orans also learned a good deal about Samoan terms and what they conveyed in the interim between the first and subsequent administrations. In the first questionnaire, for example, he used the term *fiafia* to denote happiness, but found it to be a stock response to conventional "how are you" questions, and so replaced it in later versions.

The most distressing problem Orans encountered, however, was the lack of cross-questionnaire consistency or reliability. Out of 11 question-and-answer choices that were identical in the second and third questionnaires, only two provided responses that were significantly correlated. Despite this shortcoming, Orans argues for the utility of the instrument on the grounds of reasonable internal consistency, although in the second instance there were some anomalous findings involving the relationship between questions about affect and the happiness scale.

The influence of hierarchy was examined by comparing a group of untitled males with a group of talking chiefs. In general, Orans found support for the proposition that status is positively correlated with various measures of happiness and satisfaction, including the puzzling finding that despite their greater age, the talking chiefs reported better health status (Table 8.13).

Orans is forthright in reporting all the inconsistencies and puzzles presented by his results, which beg for explanation. My own interpretation of the problems he encountered, and this holds for other self-reported data from Samoa, is that responses are patterned far more by the rules of speech behavior and immediate social context than they are reflective of internal states or overall regularities. In addition to a strong courtesy bias and social approval bias, a number of ethnographers

Table 8.13 Reported Health by Social Status

	Very Good		Good		Not So Good	
	N	Percent	N	Percent	N	Percent
<i>Questionnaire II</i>						
Untitled men	9	39	11	48	3	13
Talking chiefs	13	62	7	33	1	5
<i>Questionnaire III</i>						
Untitled men	6	19	18	58	7	23
Talking chiefs	9	50	6	33	2	18

have pointed to the importance of immediate context in the patterning of Samoan experience and behavior. Thus the lack of consistency between Orans' second and third sets of responses may well have been due to individuals responding to questions in terms of their most recent set of experiences, rather than in terms of some longer term trend (even though the questions are structured to elicit the latter).

The influence of the courtesy bias and social desirability shows up, I believe, in the relatively high degree of acceptance of statements in their strong forms, which occurs in both Orans' and Scheder's data. Social desirability may also be what lies behind the anomaly of the older chiefs reporting better health than the younger untitled men. In Polynesia, as in many other parts of the world, the virility of a chief is metaphorically synonymous with the prosperity of his group, including an abundance of crops, the fecundity of women, and other blessings of nature. A chief's health is indicative of his mana, of his support from the gods, or in the modern context, from God. Thus if a chief were to admit to poor health, he would be admitting to ineffectiveness in a most basic way. Since tulafale, as talking chiefs, are particularly expected to demonstrate virility and action, in contrast to the more passive role of ali'i, it would not be surprising if they de-emphasized health problems in their talk to interviewers.

The tantalizing complexities of such data are underscored by James's analysis, using Orans' data in conjunction with physiological measures of the same population by the Penn State research team. James (n.d.) divided the sexes into two age groups, 18-39 years and 40 or more. Among the males he found significant negative associations between measures of fatness and Orans' well-being indices for those under 40, whereas significant positive associations occurred between these indices and measures of fatness in the older group. No such relationship was found among women. One might speculate that obesity in older men

results from inactivity associated with high status, whereas among young men it is a hindrance to high-level performance and symptomatic of ineptitude.

## SUMMARY

Although the data presented in this chapter must be treated with caution, a number of interesting questions have been raised that beg additional research. I conclude by citing those that I see as most important for understanding Samoan adaptation to the processes of "modernization," or as I would prefer to call them, the processes of cultural diversification (see Chapter 16).

Perhaps most pertinent for health-related research are the questions raised about Samoan self-reports of health status. The CMI data, the health interviews from the Seven Village Study on Tutuila, and Orans' questionnaire material all raise questions about the meaning of the information. McGarvey raises the right question when considering the significance of CMI responses. That is, he sees them as a form of complaint behavior, and poses the question of what factors influence the disposition to make complaints. This is a complicated issue and needs to be studied if health researchers are to make headway using self-reported information. As it stands, two anomalies arise from self-reports concerning health. One is the inverse correlation between indices of modernization and CMI complaint scores, the other is the fact that younger men report poorer health than older men. Both findings are contradicted by physiological measures of health status. Also intriguing is the fact that no significant differences appear in the amount of complaint behavior between men and women, since research elsewhere has consistently shown women to report symptoms more readily than men. The finding that anger has the strongest factor loading for men's psychological complaints, while depression has a stronger loading for women, makes ethnographic sense, but until we have a clearer understanding of the meaning of symptoms to Samoans, and of complaints, we will not be in a position to clearly interpret such data.

McGarvey's finding relating complaint behavior to status incongruities (low education, managerial responsibilities) among Pago Pago males, while it must be viewed cautiously in the light of the problem of interpreting CMI data and the relatively small sample size, presents an interesting and potentially important hypothesis for further study. A substantial segment of the Samoan population in urban areas and in enclaves abroad are in socioeconomic positions that involve such incongruities. It would be worthwhile to follow up McGarvey's finding in other settings with larger samples.

Among women McGarvey's data suggest eating and activity patterns may implicate complaint behavior, although why that should be the case

is not clear. Whether or not these particular correlations continue to hold, what is needed most at this juncture in Samoan research are hypotheses, like McGarvey's, that go beyond correlations between gross measures of modernization and health status indicators.

Another important set of issues revolves around the effects of social involvement on Samoan health patterns. The fact that questionnaire data reveal a good deal of variability with regard to community involvement is itself an interesting finding, but it suggests a line of research of special relevance to the Samoan case. While stress studies have placed increasing emphasis in recent years on social support as a mitigating variable, the Samoan data are ambiguous on this issue. The results so far seem to suggest a U-shaped relationship, with stress occurring at both the uninvolved and strongly involved ends of the scale (see Chapter 16 for a more extensive discussion of this issue). Given the overwhelming importance of family obligations and engaging in systems of reciprocal exchange within the Samoan value system this variable would appear to be a crucial one for understanding that population's vulnerability to stress. More refined measures, aimed not only at degree of social involvement but its forms and qualities, are needed if further headway is to be made.

The finding that the coronary-prone syndrome occurs in Samoa also is suggestive of lines of inquiry. On the one hand research aimed at understanding the genesis of type A patterns among Samoans would be enlightening; on the other hand, the health consequences of such a disposition ought to be studied. Even without further elaboration the questionnaire data indicate that the pressures of modern life have seeped down to the village level, at least in American Samoa.

Scheder's use of the life event reactivity index provides yet another research lead. Although her sample is too small to be convincing, the notion that differential vulnerability to life crises implicates health outcomes should be followed up with additional research. Life event protocols, carefully administered and checked against other sources of information, may turn out to be among the more useful data obtainable through questionnaires. Properly adapted to the Samoan context, life event protocols may have the advantage of circumventing some of the more delicate problems involved in eliciting information about beliefs, attitudes, and feeling states.

Finally, there are the more general problems associated with the issues of questionnaire validity and reliability raised by Orans' research. Of particular importance, in my view, is the need to understand the relationship between context and response. As Shore (1982) and others have made clear, context is all important for interpreting social action in Samoa. I believe it is equally important for interpreting questionnaire data. What is needed, perhaps as a top priority research project, are studies of how Samoans interpret questions and construct answers under a variety of interviewing conditions. We might then be in a better

position to relate Samoans' talk about happiness and distress to both their subjective experience and the objective conditions of their physical well-being

## NOTES

1. In other studies the CMI has correlated in the expected way with objectively measured symptoms; see Dutt and Baker 1978, for example.

2. The description of the sample villages was prepared by Hecht. Dr. Hecht also did a preliminary analysis of the health and major life experiences data.

3. The plan is to do a follow-up study comparing migrants with nonmigrants in order to assess the impact of migration on various health measures.

4. The ideal sample was to include only subjects who had not previously resided outside of American Samoa. Since we were told that many residents of American Samoa in the targeted age range were from Western Samoa or Tonga, we restricted our request to those born in American Samoa. A news brief in *Pacific Magazine* (March-April 1982:9) supports this assertion. Citing the *Government News Bulletin*, Pago Pago, it indicates that at least 37 percent, or 12100, resident aliens were included in the territory's population of 32000. Legal aliens numbered 10500 Western Samoans and 1100 Tongans, as well as 500 others. While no age breakdown is presented, the numbers suggest that aliens would probably be well represented in this age group.

5. Despite our request to include only individuals born in American Samoa on lists of eligible subjects, five were born in Hawaii, one on the U.S. mainland, and one in Melanesia. In accordance with our request, however, none were born in Western Samoa.

6. Number of places lived correlates weakly with age, Kendall's tau = .1514,  $p < .035$ .

7. The material presented in this section was analyzed by Martz. Portions of the findings were presented by Martz et al. 1984.

8. As part of their study of Pacific island immigrants to New Zealand, Graves and Graves (1985) included measure of type A attributes. They found these to be present in Samoans, although to a lesser extent than among European New Zealanders. Among all groups, including Samoans, type A attributes correlated significantly with symptoms of poor health. In the Seven Village sample reported on here, however, no correlation was found between hormonal indices of arousal and type A attributes.

9. The results described in this section were originally presented in Scheder 1983.

10. There were some minor differences in the wording of certain items. The event descriptions in Table 8.10 are those used with the Samoan sample, with phrases included in the Mexican-American format in brackets.