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HAWAIIAN SUPERNATURAL AND NATURAL  
STRATEGIES FOR GOAL ATTAINMENT

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## PREFACE

Many anthropological theories concerning the supernatural have been generated. Testing of those theories, however, seems generally to have been from secondary sources. Few attempts have been made in the fieldwork situation to conduct any systematic testing of the theories when conflicts or discrepancies appear in the explanations they offer.

Study of the Hawaiian people of Nanakuli reveals that the use of the supernatural is very important in their lives, especially in illness crises. This dissertation attempts to explore and to submit to controlled testing an anthropological theory which has been proposed to account for the use of the supernatural.

I wish to thank the people of Nanakuli who have trusted and accepted me and have excused all of my "bad manners" in being nīele (snoopy). They made this study possible, and I beg them to forgive any unintentional misunderstandings which I might have caused. I have only aloha for them in my heart.

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HAWAIIAN SUPERNATURAL AND NATURAL

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by Robert Herbert Heighton, Jr.

A dissertation submitted to the Graduate Division of the University  
of Hawaii in partial fulfillment of the requirements for the  
degree of Doctor of Philosophy

ABSTRACT

This study was made in the context of a Hawaiian community. The problem was to understand why some individuals use the supernatural as an adjustive mechanism in illness situations. This dissertation topic arose from an apparent conflict within anthropological literature concerning two possible explanations of differences among individuals and among cultures in the use of the supernatural. One of them explained that the individual when faced with a problem uses the supernatural to bridge gaps in his empirical knowledge. The other explained that the amount of individual use of the supernatural is determined by the particular orientation of the culture in which the individual participates.

A research hypothesis was framed for the study of these possible explanations. The hypothesis states that within a culture the use of supernatural tactics to solve the problem of illness will be greater among those individuals who, compared with other individuals, possess significantly less natural (empirical) knowledge which they can effectively use to overcome illness.

The investigation of this hypothesis consisted of two phases. The first phase involved participant observation within the community, and the use of the resulting data in the second phase. This second phase involved the development of questionnaires and the administration of a formal schedule of these questionnaires to a randomly selected test population of seventy-two individuals. The interview schedule contained items designed to measure the respondent's tendency to use the supernatural, his level of both Western health and Hawaiian therapeutic knowledge, and basic demographic data.

Analysis of the answers to the questionnaires indicated a negative relationship between use of the supernatural and Western health knowledge and a positive relationship between use of the supernatural and Hawaiian therapeutic knowledge.

The question arose whether these results might be due to differential acculturation. To examine this question, the individuals of the sample were divided into four categories based on the type and amount of knowledge they used in handling illnesses. This division grouped the individuals according to whether their scores were on or above the median (high) or below the median (low) on each of the two tests of knowledge, the Health Information Test (Western) and the Hawaiian Therapeutic Test.

From a comparison of the four categories of amount and type of knowledge, two relationships evolved. First, individuals who had high Hawaiian therapeutic knowledge used the supernatural significantly more often than individuals who possessed high Western, but low Hawaiian,

health knowledge; this difference might have been due to differential acculturation. Second, the group of individuals who possessed little knowledge of either type used the supernatural significantly more than the other three categories of individuals who had a large amount of knowledge of either or both types.

These test results supported both possible explanations presented in the reviewed literature. However, this study tried to synthesize these seemingly different explanations through an underlying principle. This principle states that the supernatural will be used as an adjustive mechanism when the extent and effectiveness of empirical knowledge and techniques are found to be insufficient for solving a problem. A culture may differ from another in amount and effectiveness of empirical knowledge and techniques for handling illnesses, just as individuals within a given culture may differ from one another in amount of effective knowledge. Thus in a community undergoing acculturation, such as the Hawaiian community of this study, individuals differ in the use of the supernatural because of both the amount of knowledge and the types of knowledge they possess.

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## CHAPTER I

### SUPERNATURAL AND NATURAL KNOWLEDGE: SOME UNANSWERED QUESTIONS

Man as an individual may be viewed as a problem solver. He is a culture-bearing animal who uses his culture as a problem-solving device for coping with the basic problems he encounters in his daily life (Thompson 1969:6; White 1959:8-12). Physical illness is one such problem which all men experience at various times in their life histories. Man uses many strategies in his attempts to solve the problems of illness. Some of these strategies are based on a natural, or empirical and rational, understanding of health and illness; other strategies are based on an appeal to, and an attempted manipulation of, some kind of supernatural power, spirit, or deity beyond that present in the natural world.

This dissertation is concerned with the use of the supernatural as an adjustive mechanism by some individuals in illness situations. Specifically, this study examines the differential reliance upon the supernatural among Hawaiians who face illness problems while they are in a situation of rapid acculturation. Thus, the research to be reported here reflects a concern of Firth (1963:227) and Evans-Pritchard (1965:iii) that the anthropological study of religion or the supernatural should provide hypotheses which account for the use of the supernatural in different human situations and describe the relationship in a particular culture between the supernatural and other aspects of the culture.

The central hypothesis of this study asserts that the use of supernatural tactics to solve the problem of illness will be greater among those individuals within a culture who, compared with other individuals in the culture, possess significantly less natural (empirical) knowledge which they can effectively use to overcome illness. In addition, there will be an attempt to establish the relationship between an individual's use of the supernatural and his uncertainty about obtaining the desired outcome of health. Although the dissertation focuses on the use by certain Hawaiians of supernatural strategy to combat illness, it also discusses the natural strategy which involves empirical knowledge, in order to provide a contrast with, and further explanation of, the use of the supernatural.

For the purpose of this research, supernatural strategy is defined as a set of active tactics. Natural (empirical) strategy, on the other hand, consists of both active and divergent tactics. Both the terms tactics and strategy are used very generally as defined in Webster's New World Dictionary: tactic refers to any skillful method used to gain an end; strategy is skill in managing or planning and is viewed here as an overall plan which employs a number of tactics. Active tactics are direct or indirect attempts to solve illness problems. In contrast, divergent tactics are those in which no real attempt is made by the subject to solve illness problems. They include inactive tactics in which there is complete withdrawal from, or avoidance of, the problem situation. The description of the methods by which these distinctions were made operational will be found in later chapters.

The remainder of this chapter does two things. First, it presents

a review of previous research and theory concerning the relationship between use of the supernatural and the amount and effectiveness of natural knowledge. Second, it discusses the contribution of this study.

#### The Distinction between Natural and Supernatural Beliefs and Practices

Scholars have long debated the question whether man's reliance on the supernatural occurs at the psychological (individual) level or at the social (cultural) level.

Malinowski is especially noteworthy for his contribution to the understanding of the distinction made by people between natural (empirical) practices and supernatural practices. He argued that all people, including those of primitive societies, make this distinction, and he further claimed that magic with its rituals and beliefs serves to bridge the gaps in knowledge existing in both the individual and the society and to control the uncertainties and dangers of life that produce fear in man (1965:104; 1948:87,90). Frank W. Young viewed Malinowski's explanation as "a group-level interpretation" which emphasized nonindividual factors (1965:33). In contrast, S. F. Nadel argued that Malinowski emphasized an undefined individual mind or psychological interpretation (1957:203).

While Malinowski referred to the function of magic (the supernatural) as integrative in society and to magical techniques as a heritage passed from generation to generation (1965:109), he apparently did emphasize the individual instead of the culture in a relationship with magic. Religion is not entirely social, he said, but "arises to a great

extent from purely individual sources" (1948:59) and cannot be understood "without the analysis of the individual mind" (1948:69).

Malinowski stated that the individual uses magic (the supernatural) when he is engaged in some practical activity and comes to a gap in his empirical or natural knowledge. If the magical ritual does not exist, the individual will create one.

Magic is to be expected and generally to be found whenever man comes to an unbridgeable gap, a hiatus in his knowledge or in his powers of practical control, and yet has to continue in his pursuit. Forsaken by knowledge, baffled by the results of his experience, unable to apply any effective technical skill, he realizes his impotence. Yet his desire grips him only the more strongly. His fears and hopes, his general anxiety, produce a state of unstable equilibrium in his organism, by which he is driven to some sort of vicarious activity (1965:108).

Whether he be savage or civilized, whether in possession of magic or entirely ignorant of its existence, passive inaction . . . is the last thing in which he can acquiesce (1948:79).

In the above passages Malinowski not only states that magic (the supernatural) is used by man to bridge the gaps in his knowledge, but he also implies that an individual will follow a certain sequence of actions in handling a problem. First, an individual when faced with a problem will use his natural (empirical) knowledge. Second, if this knowledge fails him or is lacking, the individual will engage in a vicarious activity (the supernatural) in his attempt to obtain his goals. In the third and last step, if all else fails, the individual will resort to passive inaction.

Paul Radin's views on the relationship between the lack of knowledge and the use of the supernatural are similar to those of Malinowski. Radin also believes that the resort to the supernatural arises in

response to the individual's uncertainty in his physical and social environment, especially when economic situations are involved (1937:5). Radin is concerned more with the origins of the concept of the supernatural than with the relationship of knowledge to the supernatural. However, he does examine the relationship between an individual's crisis and the intensity of his "religious susceptibility" (use of the supernatural) at the time of crisis (1937:10).

Radin postulates three types of individuals whose responses to uncertainty vary according to the extent of their "religious susceptibility." These types are ". . . the truly religious, the intermittently religious, and the indifferently religious. The intermittently religious really fall into two groups--those who may be weakly religious at almost any moment; and those who may be strongly religious at certain moments, such as at temperamental upheavals and crises" (1937:9-10). All individuals use the supernatural spontaneously at crisis times and in situations of uncertainty (1937:23), for example, during puberty, sickness, death, and famine. Radin argues that most people are normally not religious except during such crises, but that within a culture a few individuals are "spontaneously religious on numerous other occasions as well" (1937:11). These few individuals belong to the "philosopher-thinker-artist" type, and they are neurotic individuals who habitually turn to the supernatural in the effort to adjust to the uncertainty of their lives (1937:105-111). They may be contrasted with the majority of persons who are the "layman" type. Because individuals vary in the frequency of their use of the supernatural to solve problems, Radin's theory suggests that the degree to

which the supernatural is used will not be distributed equally throughout a population. Rather, there is a negative linear relationship extending from the majority of individuals who use the supernatural only in crisis situations to a few individuals who use the supernatural for most occasions in their lives.

Additional support for the view that use of the supernatural arises in response to a lack of knowledge or to uncertainty is provided by Talcott Parsons (1965:128-133), Lionel S. Lewis (1963a:7-12; 1963b:235-239) and Lionel S. Lewis and Joseph Lopreato (1962:508-514). Parsons also distinguishes between natural (empirical) beliefs or behavior and supernatural beliefs or behavior. He too believes that an individual uses the supernatural as a psychological mechanism to adjust to situations where his knowledge has failed or where he is faced with uncertainty (1965:132).

The research reported by Lewis and by Lewis and Lopreato was specifically concerned with the use of the supernatural by an individual who confronts illness. In their studies Lewis and Lopreato hypothesize that "Arationality<sup>1</sup> in the prevention or treatment of an illness stands in (a) direct relation to the perceived chance of danger inherent in

---

<sup>1</sup> These authors name three types of arational behavior: "Remissive magico-religion" which involves the ". . . use of, or belief in the efficacy of, theologically accepted religious practices for the treatment of illness"; "operative magico-religion" which includes behavior resembling the first type and involves in addition nonreligious charms and trinkets as well as other "superstitious" acts considered theologically extraneous; and "oral-internal medication" which involves ingestion or application to the body of items that are medically ineffective or harmful (Lewis and Lopreato 1962:509). Arational behavior for the purpose of this dissertation may be viewed as the use of supernatural tactics.

that illness, and (b) in inverse relation to medical knowledge about that illness" (1962:508). Based on a sample of 104 lower class mothers whose children had suffered from one of four illnesses--poliomyelitis, measles, viral pneumonia, or tuberculosis--the investigators reported evidence to support the conclusion that mothers who lack medical knowledge and who feel uncertain<sup>2</sup> over the type of illness and the danger to the child will suffer from psychological stress or anxiety<sup>3</sup> and will resort to arational behavior (the supernatural) in trying to handle the problem of illness.

The theoretical perspective shared by Malinowski, Radin, Parsons, and Lewis and Lopreato thus indicates that individuals will turn to the supernatural to insure the outcome of situations in which their natural knowledge is insufficient to provide them the certainty they would like to possess. Scholars have disagreed over the manner in which use of the supernatural serves to alleviate individual anxiety and fear.

As indicated earlier, Malinowski believed that magic functions to relieve the individual's feelings of anxiety and fear. In contrast to this view, A. R. Radcliffe-Brown offered an alternative explanation:

I think that for certain rites it would be easy to maintain with equal plausibility an exactly contrary theory, namely, that if it were not for the existence of the rite and beliefs

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<sup>2</sup> Uncertainty is an aspect of knowledge; rather, it reflects a lack of knowledge. It is a "lack of certainty; doubt" (Webster's New World Dictionary 1960:1582).

<sup>3</sup> This dissertation will employ a working definition of anxiety as found in Webster's: "a state of being uneasy, apprehensive, or worried about what may happen; misgiving" (1960:66).

associated with it the individual would feel no anxiety, and that the psychological effect of the rite is to create in him a sense of insecurity or danger. . . . Thus, while one anthropological theory is that magic and religion give men confidence, comfort, and sense of security, it could equally well be argued that they give men fears and anxieties from which they would otherwise be free--the fear of black magic or of spirits, fear of God, of the Devil, of Hell (1965:121).

While the theories of Radcliffe-Brown and Malinowski appear to oppose each other, George C. Homans has suggested that they are instead parts of the same theory (1965:123-128). Homans distinguished between "primary anxiety and ritual" and "secondary anxiety and ritual," but he believed that these two types of anxiety and ritual must be examined together. "Primary anxiety" arises when an individual lacks the knowledge to secure his desired goal and as a result suffers anxiety. Since a culture often has a definite tradition, including rituals, for handling this type of problem, the individual engages in "primary ritual" to relieve his anxiety. "There is, however, evidence from our own society that when ritual tradition is weak, men will invent ritual when they feel anxiety" (1965:128).

In many cultures an individual will handle his problems by utilizing natural knowledge in addition to performing traditional rituals of the supernatural. The traditional rituals supposedly give him confidence and prevent the uncertainty which results in anxiety. According to Homans, anxiety arises in this circumstance only when the individual fails to perform the traditional rituals properly. Homans refers to this as "secondary anxiety." To dispel "secondary anxiety," the individual engages in "secondary ritual" which may be either generated by the individual or determined by the culture. The process is the same

in both primary and secondary anxiety, ritual is performed to give confidence to the members of a society and to dispel anxieties.

An illustration of traditional ritual which may give confidence to the individual was reported by Evon Vogt in a study on water-witching (1965:364-377). Here the ritual was used in an area in which "rational-technological" (natural) knowledge was lacking, and uncertainty was present. Vogt concluded that ". . . water witching is a ritual pattern which fills the gap between sound rational-technological techniques for coping with the ground-water problem and the type of control which rural American farmers feel the need to achieve. The best geological knowledge of ground-water resources that is currently available still leaves an area of uncertainty in the task of predicting the exact depth of water at a given location in a region with a variable ground-water table. The water-witching pattern provides a reassuring mode of response in this uncertain situation" (1965:377).

In The Evolution of Culture (1959) Leslie White discussed a similar relationship between use of the supernatural and technological knowledge. He was concerned with the study of cultures and their evolutionary patterns and not with the psychology of the individual. White viewed the supernatural element as a cultural device which gives man a sense of power and confidence in the face of uncertainty and frustration (1959:9). The myriad differences among cultures result from a basic difference among them on the level of technological development and a corresponding control over the total environment. This naturalistic control is dependent upon the level of technology, and the use of the supernatural varies with that control.

In the following statement White stresses the view that in "the course of cultural development, as control has increased, supernaturalism has waned" (1959:23).

The philosophies of primitive peoples are composed of both supernaturalistic and naturalistic elements. In some situations the knowledge and techniques of supernaturalism are uppermost; in others naturalism predominates. And in many instances both are mingled in varying degrees, and in accordance with the following rule: supernaturalism varies inversely with the extent and effectiveness of naturalistic control [italics added]. In activities where man has little actual control, or where chance and circumstances play a prominent part, such as hunting, fishing, warfare, horticulture, curing sickness, or identifying persons guilty of offenses, recourse to supernaturalism will be great. In activities where man's control is extensive and effective, such as making a bow or chipping an arrowhead, making buckskin or pottery, resort to supernaturalism will tend to be meager and perhaps only perfunctory. The supernaturalistic and naturalistic components of primitive philosophies do not, therefore, stand separate and apart from each other or constitute distinct layers or strata. Rather, they intermingle with each other as gases might in a chamber, and together they embrace and envelop the entire life of primitive man (1959:273-274).

#### The Contribution of This Study

In the body of literature reviewed above, there is support for a view that a relationship exists between an individual's use of the supernatural and his level of natural knowledge. Moreover, this relationship may explain not only individual differences in the use of the supernatural, but also differences among cultures in their respective reliance upon the supernatural.

Although past research has contributed to our understanding of the relationship between the supernatural and individual or cultural levels of natural knowledge, that research has not paid enough attention to the ways in which this relationship is expressed in different

life situations and how much it reflects other aspects of culture. The purpose of this dissertation is to make a contribution to knowledge in these areas. For this reason persons in a process of acculturation were chosen for this study. Moreover, their use of the supernatural was investigated within the specific context of physical illness.

The study was undertaken in the community of Nanakuli, located approximately thirty miles from Honolulu. This community is comprised of people whose culture has been undergoing a process of acculturation for nearly two hundred years. The very fact that the study is one in which the acculturation process is a factor raises the important question whether the differences observed in individual use of the supernatural were caused by differing levels of knowledge or by differential acculturation. This question is made more complex by the nature of the acculturation process itself.

First, the process of acculturation is not smooth. "Change under contact conditions, like change under internal stimulation, seems to proceed at uneven rates in different areas of culture regardless of the nature of the intercultural system" (Barnett et al. 1954:990). Objects, specific and isolated ideas, and behaviors of a people in a contact situation may change faster than more general and integrated aspects of the culture. If a culture is in the process of acculturation, there is no reason to assume that its individuals are becoming acculturated at the same rate or to assume that they are all borrowing the same material at the same time from the foreign culture.

Second, acculturation cannot properly be viewed as a continuum. To do so is to raise serious questions about the definition of the two

poles of such a continuum. For example, what was the Hawaiian culture, the unchanged pole, before contact? This will never be known. What is the opposite pole? Is it Western culture which is itself under rapid change, or is it a variant form of Western culture?

Joan Metge (1964) offered additional criticism of the unilineal view of acculturation in her comments about the Maori urban migration. The Maori had "played a far from purely passive role in the process of acculturation. They had not simply abandoned their customary values and institutions to replace them with Pakeha ones. They had retained certain elements of their traditional culture, adapting them to changing conditions . . ." (1964:259). Through the processes of reinterpretation and syncretism (Herskovits 1948:553), it is possible that ". . . the basic premises of a people regarding the nature of man and the universe can go unchanged . . ." despite considerable modification in other aspects of their culture (Barnett et al. 1954:991).

It is also possible that some Hawaiians have become highly bicultural individuals. They have learned Western culture and still retain much of the knowledge and skills of the more traditional Hawaiian culture. It may be erroneous to view an individual as a "container" from which the elements of one culture are lost as the elements of a new one are learned. Individuals in a culture undergoing acculturation would not then necessarily be expected to reflect a single continuum of change from the traditional culture form to the new contact culture form (McFee 1968:1096:1107).

Like the Maori but perhaps less obviously, Hawaiians have

maintained a portion of the framework of their traditional culture and with it have mixed foreign elements to produce what might be called the "Modern Hawaiian Culture."

The potential importance of differential acculturation for this study is well documented by Francis L. K. Hsu's study of a crisis situation, a cholera epidemic among the Chinese villagers in West Town (pseudonym) in 1942 (Religion, Science and Human Crisis, 1952). This village was somewhat acculturated to Western medical techniques (74-84), but when the cholera epidemic struck the villagers, instead of using ". . . readily available efficacious scientific measures, they clung to the obviously ineffective magico-religious means" (90). Thus in contrast to Malinowski's emphasis on the individual as being the creator of supernatural techniques to handle a problem where (natural) knowledge fails, Hsu believed that the proportion of natural and supernatural knowledge used by the individual was determined by the culture:

Since the culture and not the individual is the determining factor, and since the individual acquires the culture by living in it and not by rationally analysing its scientific or logical acceptability at every step, it becomes clear that the question of logical or pre-logical or illogical mentality does not arise. In either case there is logic, but in either case the premises and the contents of the logic are supplied by the specific culture. . . . In each case it is a culture and not the individual that has a magico-religious bias, or a leaning toward the scientific. In each case, the individual merely acts according to his conditioning by the traditional material of his culture (1952:92-94).

Hsu says that in cases where acculturation is taking place, the individual in distress will take comfort in and use those elements of culture--either natural or supernatural--with which he is most familiar. If the acculturated person's traditional culture emphasizes

the supernatural, he will use that element to handle his problem; if his traditional culture does not emphasize the supernatural but emphasizes natural tactics and interpretation, he will use those elements (1952:131-132). Thus the reaching of a gap in an individual's knowledge does not automatically result in the use of supernatural techniques as Malinowski would argue, but results in a turning to whichever techniques--natural or supernatural--are emphasized by the acculturated individual's traditional culture.

#### Summary and a Look Ahead

This chapter has included a description of the purpose of this research, the theoretical issues with which it is concerned, and the potential contribution of the research to a greater understanding of man's use of the supernatural. Scholars do not agree about the relationship between the supernatural and man's natural knowledge.

If Malinowski's theoretical viewpoint is correct, we would expect that in the study reported here those individuals who have high levels of knowledge in both Hawaiian and Western therapeutic practices would use the supernatural less than those individuals who are low in both these areas of knowledge. This relationship supposedly is universal and any community of man would suffice as an object of study. On the other hand, if Hsu's viewpoint is correct, the differences in the use of the supernatural would depend on the cultural knowledge of the individual and the relative emphasis on the use of the supernatural contained within that body of knowledge. In addition, Hawaiian culture is not as technologically advanced as Western culture in the handling

of illness. Consequently Nanakuli also provides an apt community in which to test Leslie White's theory. If he is correct, more use of the supernatural should be associated with Hawaiian therapeutic practices than with Western therapeutic practices.

An additional question to be examined in a later chapter is the interpretation of Malinowski's view that inaction is the last possible choice that an individual will make when faced with a problem. It seems logically possible that an individual might decide to remain inactive (passive inaction) when first faced with a problem he feels is not serious enough to warrant action. He might be forced into action eventually if the illness proves severe.

The following chapters present the details of data collection, analysis, and the findings of the study. Chapter II provides an ethnographic sketch of the people of Nanakuli. It reflects the general premises and values of their world view and illustrates how some of these general premises are manifested in the supernatural and natural aspects of their culture. Chapter III describes the methodology and instruments used in this study of the relationship between use of the supernatural and the extent of therapeutic knowledge. Chapter IV presents the findings about the relationship between the supernatural and therapeutic knowledge. This chapter also discusses the inactive tactic (passive inaction). Chapter V summarizes the dissertation and gives its conclusions, with some evaluation of this research and the possibilities for future research.

## CHAPTER II

### ETHNOGRAPHIC SKETCH OF A HAWAIIAN COMMUNITY

A people's world view pervades many aspects of its culture. An individual's relationship to the supernatural reflects the generalized premises and values of his culture concerning the nature of man, his society, and the universe. If we are to understand individual or general variations within a culture, we must understand the main themes of that culture. An individual's attitude toward illness and the treatment of illnesses, is an expression of the premises and values present within his culture with respect to the relationship between man and the natural and supernatural.

The purpose of this chapter is to explore what the Hawaiians within the community of Nanakuli believe to be the appropriate relationships between themselves and the natural and supernatural aspects of their universe. An attempt will be made to answer such questions as the following:

1. Do these people distinguish the supernatural from the everyday world?
2. How much do such social groups as the household, family, the larger descent group, and peer groups affect the individual's treatment of illness and his use of the supernatural in its treatment?
3. What is the conception of illness, and how are illnesses treated?

A physical description of Nanakuli, a general description of both the sample and the research methodology precede examination of the

above questions.

### The Physical Setting

The Hawaiians who are the source of data for this study live on the Hawaiian Homestead in Nanakuli. Nanakuli is located in a valley that faces the ocean approximately thirty miles from Honolulu, Hawaii, on the leeward side of the island of Oahu.

Nanakuli is generally a "bedroom" type of community, with most of the men employed outside, either on the Waianae coast or in Honolulu. Of the men of working age, 14 percent are retired and about 10 percent are unemployed (Boggs and Gallimore 1968:17). Some families maintain a small amount of livestock--a pig or two, a calf, some chickens--on their houselots. Except for fruit and flower trees and a total of one or two small wet-land taro plots in the entire community, very little agriculture is carried out. Some of the men fish to supplement the family diet. Housing ranges from very dilapidated structures to small new homes. Regardless of condition or age, most of the homes have well-groomed lawns and other surroundings.

Traditionally Nanakuli was an area with limited food and water. The climate was, and is, very dry, warm, and dusty. The soil, generally poor, is a thin layer over a coral base. According to some respondents, the term Nanakuli meant in the past "to look at one's knees and act as if one is hard of hearing." This saying referred to the inhabitants' being so poor they were unable to offer hospitality to strangers. Presumably they had to pretend deafness because of the short supply of water and food. According to some of the older or original

settlers on the Homestead, this attitude has changed considerably since the introduction of a water system and the practice of working for a wage instead of farming for a living.

#### Background of the Research and the Sample

Three reasons led to the selection for this study of the people of the community of Nanakuli. First, basic demographic data, ethnographic data, and specific test results had been collected and made available by a larger study of the community. In May 1965 the three-year Hawaiian Community Research Project began work in Nanakuli under the direction of Dr. Alan Howard.<sup>1</sup> After collecting information by participant observation and informal interviews in the summer of 1967, the members of the project systematically and intensively interviewed 88 households out of a sample of 98 in the Nanakuli Homestead. The project randomly selected this 1967 sample from 391 households. The 88 households contained 536 individuals whose ages ranged from infancy to eighty-eight years. The smaller random sample used in the present study covered 42 households which contained 76 adults. Thirty-seven of the sub-sample were males, and 39 were females. The lower age limit was set at eighteen, and the total age range ran from eighteen to eighty-eight years.

The second reason for studying this particular population came from the fact that the people living on the Homestead could be operationally defined as Hawaiian. The Homestead area in Nanakuli,

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<sup>1</sup> For a more detailed discussion of this project, see Gallimore and Howard 1968:3-4.

created by the Hawaiian Homes Commission Act of 1920, is divided into household lots. These lots are leased by the Department of Hawaiian Home Lands only to those individuals who can demonstrate that they are at least 50 percent native Hawaiians. The lessee of the property must meet this standard, though not all individuals living on a given lot need do so. Because of the imposed standard, the community is generally considered to be composed of Hawaiians.

The third reason arose from the situation wherein the people living on the Homestead originally came from all the major islands of the Hawaiian chain and also came from both rural and urban areas. Because of this broad composition, those items of Hawaiian culture which might be idiosyncratic for a particular island or location would appear in Nanakuli as variations, while those items of Hawaiian behavior which might be termed Pan-Hawaiian would reinforce each other there and stand out as distinctly shared patterns of culture. Of course, no one individual or family necessarily shares in all the patterns of culture, but a model constructed from this population with such widespread origins might serve as a comparison for other groups of the Hawaiian population.

#### Stages of the Research and Methods Used

Data were collected for this study by various methods. These methods included participant observations, informal interviews to obtain additional ethnographic information, and the application of formal test instruments (see Chapter III for the description of these instruments). There were four distinct stages of data collection.

The first stage consisted of a series of extensive participant

observations carried on in twelve households which were not to be part of the final test sample. The second stage was the examination of the ethnographic data and the creation of a group of instruments for testing the major hypothesis and related problems. The third stage involved the pre-testing of these instruments on eleven women and nine men chosen from the twelve households investigated in the first stage. Examination of the test instruments after this practical experience resulted in the elimination of those items which did not seem to distinguish between individuals. The remaining items and instructions were clarified wherever respondents had expressed any misunderstanding. And finally the fourth stage was the administering of the set of formal test instruments to the test sample and, where necessary, the gathering of additional ethnographic data.

Data were analyzed throughout the period of formal and informal data collection. Feedback of the findings into the on-going research provided some check on the validity and reliability of data from one respondent to another. During this period and continuing partly into the final analysis of test data, much information was collected and verified through eleven primary informants. These eleven were characterized by availability, willingness to be interviewed, and extent of their traditional knowledge. Nine of these primary informants, five women and four men, lived in the Nanakuli Homestead. Of this group, two of the women were between eighteen and twenty years old; two of the men were between twenty-three and twenty-eight years old; the remainder were all over the age of forty. The two primary informants living outside Nanakuli were both older women with

extensive knowledge of Hawaiian culture and historical traditions. These two were interviewed periodically in order to cross-check generalizations and assumptions generated from information obtained within the community. If conflict existed between information obtained within the community and that obtained without, the areas of discrepancy were re-examined. If the discrepancy then still remained, information from the community was accepted as the final statement on the problem.

#### The Supernatural

While Hawaiians do distinguish between the natural and the supernatural worlds, the distinction is neither clearcut nor do inflexible boundaries exist between the two worlds. Hawaiian explanations of the observable natural world tend to mix that world with the supernatural.

The majority of people interviewed envisioned every object as having life, and many respondents in the sample did not distinguish between man and nature, between one's own body and the rest of the environment, or between things living and things non-living. For example, an individual is not limited to his body; his 'uhane (spirit) may leave his body at night and walk around. After a stranger visits and then leaves, a person of the household may sit in the chair where the stranger sat in order to tell what kind of person the visitor was, because "part of him remains in that place." According to one respondent, "A person is not supposed to sit on Tutu's [grandmother's] quilt; part of Tutu went into it, and it would be like sitting on Tutu with your dirty seat." Other respondents said that one reason they feared going to the hospital was that people have died there. They are

afraid to put on hospital gowns, sleep on sheets, or use other articles because someone may have died while using or wearing these articles. As one informant stated, "That dead person might still be in them and get mad because I'm in his place and kill me."

The living world envisioned by Hawaiians is a form of animism which seems to determine to a great extent how Hawaiians act or do not act. Traditionally termed mauli-ola, meaning that the essence of life is present in every part of the world, the principle still seems to form a basis for understanding Hawaiian behavior. Each part of nature is considered to have a personality which operates under its own will and is related in some way to human beings. Older individuals were frequently observed talking to trees and plants while working in their gardens and yards. Sometimes the respondents would praise the trees and plants and encourage them to grow and bear fruit. At other times they would scold and threaten them with some form of punishment.

In another illustration of this living world, stones are not to be moved or used unless they are first asked if they are willing. According to respondents, for a person to bring a stone home from the beach without its wanting to come may cause trouble within the person's family. Certain stones are even considered able to give birth to smaller stones. Mary Pukui has written about 'ili 'ili hānau. This term refers to "the birth pebbles of Kō-loa (a small section of the beach at Puna-lu'u, Ka'ū, Hawai'i) which were believed to reproduce themselves . . ." (Pukui and Elbert 1957:92). Some individuals in Nanakuli referred to a similar type of stone as Pele-stones. One informant related, "My grandmother keeps these two stones hidden. One

large smooth one and a small one with holes are kept in a special piece of cloth. She says they have special powers. You get a pan of salt water and put these two stones in it and cover the pan. When you go back later, there are little stones around them." Stories of stones which do not want to be moved by construction equipment are numerous in the community.

Although my viewpoint is that of an outsider, I believe that the Hawaiians in Nanakuli conceive of distinctions more in terms of degree than kind when dealing with the supernatural. An object may be natural with some supernatural elements present in it, as some people related, but the supernatural is only potential until some extraordinary<sup>2</sup> event occurs to activate it. For instance, a stone may have potential power (mana)<sup>3</sup> which normally remains completely inactive. The power can

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<sup>2</sup> The dichotomy stated here is between the ordinary and the extraordinary which is very similar to the profane and sacred dichotomy proposed by Emile Durkheim (1915:52-63).

<sup>3</sup> E. S. Craighill Handy described mana as a generalized spiritual force or power which he likened by analogy to electricity (1927:28-30). While some individuals still used the term mana, younger informants did not know that term and instead used the word power when referring to situations where mana would be used. Power is the ability to do things, and I believe mana can be said to be the ability to do something beyond the range of the normal or ordinary for objects and people. Kapu or tapu was said by Handy to ". . . signify that which was psychically dangerous, hence restricted, forbidden, set apart, to be avoided because: (a) divine, therefore requiring isolation for its own sake from both the common and the corrupt; (b) corrupt, hence dangerous to the common and the divine, therefore requiring isolation from both for their sakes" (1927:43). The kapu is a prohibition (traditionally more formal) which acts to protect the object or person with mana and also to protect the person without it from being harmed by the object or person with mana.

Also connected with the idea of mana even today is the belief that things which are hidden, like kaona (hidden meaning), have more power

become active and possibly dangerous when something in this world causes something in the other world (lani) to motivate that stone to show its mana. Lani means sky or spirit world. Generally the respondents used the word to refer to the normally unseen world which is the abode of the 'aumākua (ancestor spirit, plural form). Thus an object such as a stone is potentially harmful. The individual through careful use of a set of kapu (prohibitions) and of active rituals may either use the power, redirect it, or return the object to its original state. Mana itself can be good or bad depending on the circumstances, according to some respondents.

My observations in Nanakuli suggest that the dualism of such concepts as mana and kapu appears as a generalized premise throughout Hawaiian culture.<sup>4</sup> As far as I have been able to determine, if an

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than things which are ahuwale (exposed) and are common knowledge. Hidden knowledge is more valuable than common knowledge because to hide something is to care for it and protect it. This applies to other things than knowledge. One person, when questioned whether he had the family 'aumakua (ancestor spirit) around the house, said, "See that kawila [a very dark wood] cane. We take good care of it. When my grandfather was going to die, our 'aumakua asked to be placed next to the cane so that he could hide in it from the Christians. After he had gone into the cane, he told Tutu to hide his old body, a stone, so no one could find it. The 'aumakua said he would hide in the cane out in the open because no one would ever expect that."

<sup>4</sup> E. S. Craighill Handy states that the principle of dualism was very important in ancient Polynesian beliefs. "The Polynesian dualism placed on the positive side nature superior, the sacred and divine, the psychic, superior power (mana), the male principle, light, life, occult knowledge, the east and day (ao), and the strong right side of man; while on the negative side were included nature inferior, the common and unsacred, the physical, the passive, the receptive female principle, darkness, destructive influences and death, ignorance, the west and night (po), and the left or weak side" (1927:37).

individual speaks Hawaiian, he recognizes no neuters in his universe. A division exists between males and females. Young boys are separated from girls and participate in gangs of the same sex; older men tend to sit together and away from the women. Words of the language, kinship terms, and all the objects of the natural and supernatural world are distinguished by sexual characteristics. For example, stones are considered to be male if they are smooth and to be female if they have holes in them. Dark red shades of color are male; light red or yellow shades are female. This difference is illustrated in the distinction between dark red 'alaea (an "ocherous earth, used for coloring salt, for medicine, for dye" [Pukui and Elbert 1957:16]) which is male, and light red 'alaea which is female. Some older informants say the day is divided into a time of the male--from midnight to noon--and a time of the female--from noon to midnight. The right side of the body is associated with the male, the left side with the female. The inside of the body is male, the outside female. Male items are considered strong, powerful, and hot; female items are considered weaker and colder in character.

The concern with power and with location inside or outside the body is reflected in the dualism of ma'ema'e (purity) and haumia (pollution). Hawaiians make much effort to prevent pollution or to reattain a state of purity (though not all respondents called it this) if a person is polluted. Salt, saltwater, ti leaves, and turmeric are still used for purification in the everyday lives of the Hawaiians in Nanakuli. I believe that they use a yellow oil called "sweet oil" and containing turmeric for purification. Some informants

said that the oil purified the stomach; all the respondents had used sweet oil or had seen it used for the treatment of 'ōpū huli (turned stomach).<sup>5</sup>

Some Hawaiians still believed that anything which came from inside the human body was highly charged with mana and with the personality of the individual. Such things as feces, urine, spittle, discharges from the nose, and menses are polluting. Traditionally people disposed of them carefully because they were the best bait for sorcerers to use. Several times in Nanakuli I heard that a woman who was menstruating felt it her duty to warn the men in her family. One person said that when a woman was visiting and sightseeing and had her period, she would not go near a heiau (religious stone structure) or near the volcano. Another woman said that when she was menstruating, she would not touch or wash the religious garments she usually laundered for the church. Some actions are polluting because of the association of the buttocks with urine and feces: to sit on a pillow which is meant to be used for the head (considered sacred), and to step over containers in which food is prepared or stored. A dead body is still thought to be polluting by some Hawaiians. In Nanakuli several of the informants said they used saltwater and ti leaves for purifying themselves and the household after attending a funeral. They used ti leaves to bless the house and to sweep the house clean when an evil spirit had invaded it.

Spirits populate the world of many Hawaiians in Nanakuli. I heard

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<sup>5</sup> This illness will be explained below in the section "Avoidance of Doctors."

frequent reports of someone in the community seeing a lapu (ghost). In general a lapu is just an apparition considered neither good nor evil. The term 'unihipili' refers to a dead person's spirit which remains present in the bones or hair of the deceased. To increase their mana, these relics of the dead are prayed to and fed daily with the essence of liquor and food. People expect the spirits to do the biddings of their kahu (caretaker); they are supposedly sent to cause death and illness among the kahu's enemies. But the kahu must take care with his 'unihipili' because they are dangerous and may turn on the kahu if they are offended in any way. Respondents in Nanakuli said that the spirits could take the form of kites during the day or fireballs (akualele) at night, and that the only way to destroy them was to pollute the spirits by yelling, "I will urinate on you!" Traditionally these concepts of akualele and 'unihipili' referred to two separate spirits (Pukui, personal communication). The akualele was a god belonging to the family of poison gods said to have originated on Molokai and to have entered the trees on Mauna-loa. Images made from this wood contained the spirit of the gods. Traditionally the spirits were sent by a sorcerer to kill.

Hawaiian spirits and gods in general are able to assume physical form. A spirit may take a number of shapes which are called kino lau.<sup>6</sup>

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<sup>6</sup> See E. S. Craighill Handy, "Traces of Totemisms in Polynesia: Theories of Embodiment of Tutelary Spirits in Animate and Inanimate Forms" (1968:43-56), for a discussion of kino lau.

For instance, a particular god may assume the physical form of, or be symbolized in ritual as, a pig, a particular cloud shape, a certain type of fish, or a taro leaf. According to some older Hawaiians, an individual's 'aumakua may in a dream take the form of a specific animal or human shape. It is also said that an 'aumakua may take the form of a human being at night and mate with a woman of the family. The child born from such a union supposedly would have unusual markings or behavior, indicating that he was from a certain 'aumakua.

There are many stories of children with certain birthmark shapes which indicate that they have been born from an 'aumakua union. Several respondents, including some in their twenties, talked about certain people in the community having special powers because they were so born. One respondent stated, "\_\_\_\_ wears a shirt all the time, but I saw him in the locker room at the high school when he wasn't looking. He got a mark that looks like the fin of a shark on his back. You better not go near him when he's at the beach." Sometimes 'aumakua-human unions supposedly result in oddly shaped miscarriages or stillborn children. Informants said that such an infant should be taken to the favorite place of the 'aumakua (ocean, stream, a tree) and be buried or left there, because the death of the unborn infant indicates that the 'aumakua wants to raise the child.

Traditionally each 'ohana was supposed to have specific 'aumākua (plural form) and its members to have certain shapes, coloring, and markings associated with the 'aumākua. An individual was taught the genealogy of his family and the genealogy of the 'aumākua associated with the family. Some of the older Hawaiians still know their 'aumākua.

### The 'Ohana

To understand the concept of the 'aumākua, it is necessary to understand that traditionally the 'ohana<sup>7</sup> (a descent group) has been one of the most important aspects of Hawaiian life. This basic descent group still has importance for the older Nanakuli individuals who emphasize their Hawaiian identity. Most individuals in the community still know the meaning of the word and its concept.<sup>8</sup> Although more of the older people knew what the word meant, some individuals in their early twenties indicated in interviews that they understood the concept even if they did not know the Hawaiian word. I doubt whether a traditional 'ohana structure now operates in Nanakuli; today the term is restricted more to the hale, the group living in the household plus a few close relatives outside the hale. Some of the 'ohana relationships with their obligations and rights are still recognized within the community and between that community and other individuals on Oahu and other islands.

The term 'ohana comes from the Hawaiian folk model in which an analogy is drawn between the relationships within a human kin group

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<sup>7</sup> The basic information on the structure and functions of the 'ohana came from seven primary informants, all over forty years old. Five of them (three women and two men) were from different households within the community, and two (both women) were from outside the community. Additional material was collected by observation and from chance statements by nine other individuals.

<sup>8</sup> The Hawaiian Language Test was used in the 1967 sample to test knowledge of the Hawaiian language; out of 97 individuals who were tested, 61 (62.9%) identified the correct meaning of the word 'ohana; 24 gave wrong answers; and 12 did not answer at all. For an explanation of this test, see Appendix H.

and those between a taro plant and its offspring. 'Oha is a term for the offshoot or bud which grows from a taro corm to form another taro plant. The term na is a substantive suffix (Handy and Pukui 1958:3-4). Drawing this analogy, an older respondent said, "Just as the keiki [term here meaning 'offspring'] taro plant is connected and can be traced back to the root of the parent taro plant, so can kinsmen trace their membership in the 'ohana back to their common ancestors." The term 'ohana has traditionally referred to an extended cognatic descent group whose members were all descendants of a founding ancestor. An individual was not completely restricted to a particular position within the society; he could select his line of descent. He could trace his genealogy to a founding ancestor through either or both of his parents' sides of the 'ohana, his choice depending on the type of claim he might be trying to justify. Today in Nanakuli most people do not usually trace kin more than three generations back.

I believe that such flexibility still exists in determining the line of descent, because an individual can make a deliberate shift in those relatives through whom he traces descent. This may be done to justify a claim such as landownership, as is the case of several individuals presently living in the community. They have actually shifted the line through which they trace their genealogies in order to justify claims to land being sold by relatives of their 'ohana, land in which the individuals feel they deserve a share. Apparently this method of tracing descent offers the individual a large number of people who may be included in his kindred and of claims he might make. According to several older informants, however, the individual's

claims were limited in the traditional 'ohana. An individual could not live with all the possible relatives at the same moment; he had to choose which segment he would affiliate with at any given time.

In Nanakuli today some of the older people still know relatives of their 'ohana living in the community or nearby. When I asked where their 'ohana was located, they named some territorial reference on Oahu or another island. Traditionally the 'ohana and its segments had certain land on which the main body of relatives lived and had historical claims. A female informant, going to another island to visit members of her 'ohana, stated that all her relatives came originally from that specific area on the other island.

The 'ohana traditionally was composed of a "senior" and a "junior" line of descent. The seniority given to a line of descent depended upon the closeness of its relationship to the main stem (kua) or spine (iwikuamo'o), which was composed of the succession of firstborn children (see Fig. 1).

Personal names are frequently the important means by which an individual in Nanakuli traces descent. Upon being asked his name, an individual usually gives a fairly short combination of a Christian name with a Hawaiian surname--for example, John Ii. However, the name used in tracing descent is a much longer Hawaiian "kapu name," such

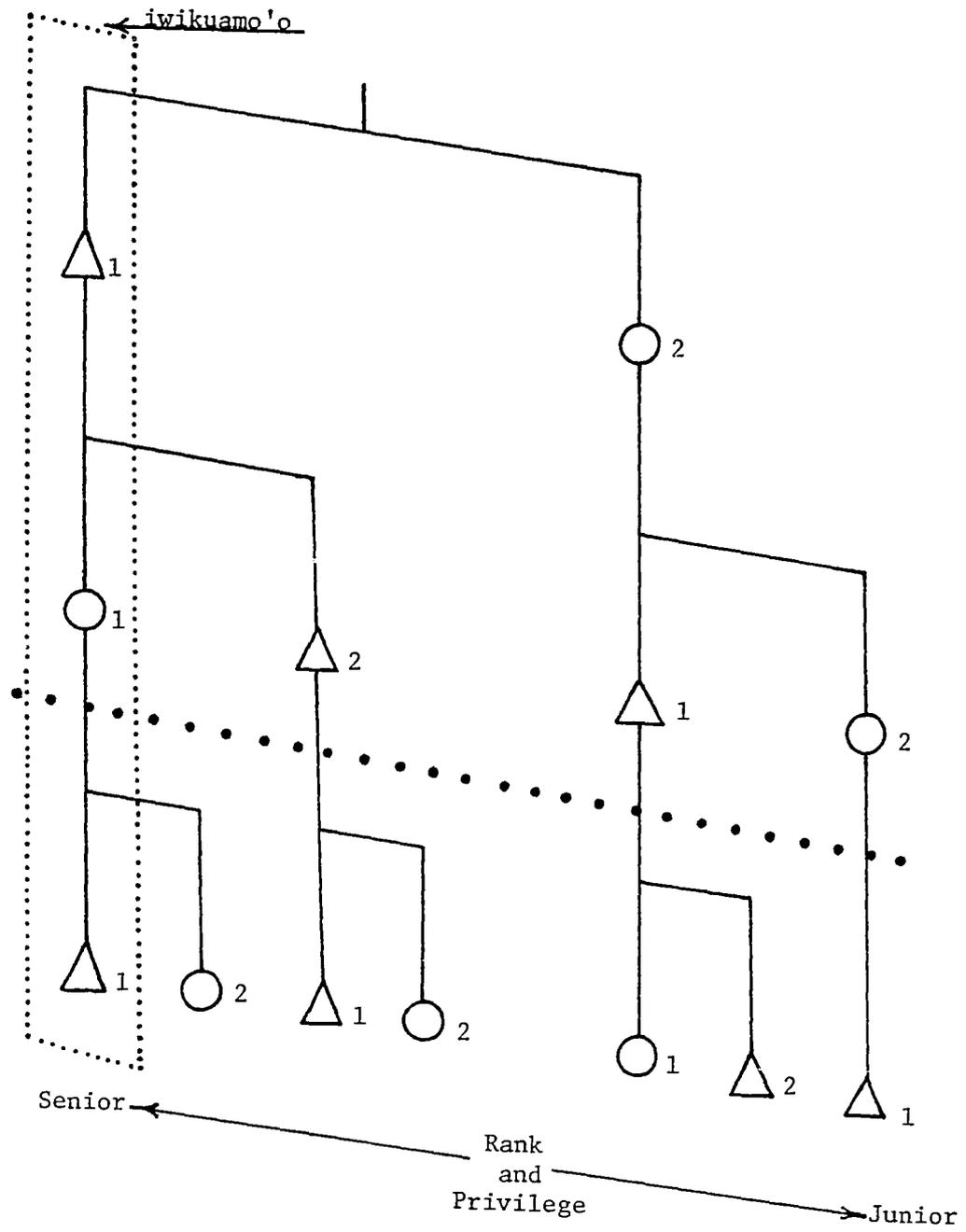


FIG. 1. TRADITIONAL RANKING OF INDIVIDUALS IN THE 'OHANA

KEY:  $\triangle$  male;  $\circ$  female; 1, 2 - birth order;  $\bullet \bullet \bullet$  boundary between living and non-living members;  $\dots\dots$  boundary of iwikuamo'o (the spine of the 'ohana).

as Keoua Kupuapaikalani. "Your secret name<sup>9</sup> which is used only by your close family," as one Hawaiian stated, is jealously guarded because names belong to a particular 'ohana and descent line.

Customs concerning secret names are still practiced by some people in Nanakuli, especially the older ones. But many of the younger people do not know or refuse to follow the traditions; they often said

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<sup>9</sup> Many times the name is called an inoa pō, a dream name from the spirit realm of the ancestors (ao 'aumākua) (Kamakau 1964:47), which has been revealed in the dream of a senior relative and given to an infant. As related by Mary Kawena Pukui (personal communication), the inoa pō was traditionally believed to have been sent by the god who would be guardian over the child. A refusal to use that name or an attempt to use the name for any other child than the one specified would cause the anger of the 'aumākua to be manifested in the illness and death of that child. Sometimes the inoa pō did not consist of the actual name of the god, but rather was a symbolic reference to that 'aumakua, such as "the flame" or "Great-fire-pit" (which would point to the Goddess Pele as the source of the name) (Pukui 1942:364).

This name from the 'aumakua was traditionally located in the genealogy of the 'aumakua which belonged to the 'ohana. The human genealogy and the genealogy of the 'aumakua were both used to place the person's relationship and rank within the 'ohana. "Many times you can tell if a person is a relative by the 'aumakua his family holds in reverence. 'Aumākua have genealogies like humans. You do not eat the body forms of the 'aumakua from which your 'aumakua was descended. Your 'aumakua is not just any old shark or owl. He is a particular guardian spirit in a specific locale whom you can recognize by his markings and who is related to your 'ohana. A person can tell if his descent line is 'junior' or 'senior' by the name of your 'aumakua and his relationship to the original 'aumakua. Take for instance the fact that Pele had two sisters. One of these sisters was older and the other younger. Normally one would think those related to the older sister would be senior in descent. But in this case the younger sister of Pele was the favorite of Pele because Pele raised her younger sister, pālaulau, next to her bosom, from the form of an egg. The people who have this younger sister as their 'aumakua would be 'senior' in descent and of the ali'i, chief class" (Pukui, personal communication).

they did not believe in the 'aumākua because the 'aumākua were the "work of the devil." They called the naming practices "old-fashioned." While these people may decry the old traditions, many of them combine belief in the old with practice of the new. This mixing may be seen in the people's relationship with organized Western religion.

#### Old Traditions--Lost or Reinterpreted?

Most Hawaiians will not talk about their present beliefs in the supernatural with people outside the family. They have been very successful in presenting the picture of a people whose old traditions have disappeared, who have completely accepted Western religious doctrine. Informants offered the following reasons for not openly stating their beliefs: (1) they were afraid of being judged on whether or not they are good Christians, or were afraid of being ridiculed; (2) they were afraid the outsider was there to find out about the family so he could harm them through sorcery or by telling the family's secret beliefs to other people; (3) they were afraid that if an outsider learned of the family's sorcery and learned how to perform the family's rituals, he might use the sorcery to harm someone, or he might by using it draw the wrath of an 'aumakua down on himself and on the family that told him; and (4) they were afraid because they said that practicing the art of a kahuna was forbidden by state law and the Bible (kahuna formerly referred to an expert craftsman and teacher; the term has come to mean a sorcerer).

Hawaiians thus show reluctance to talk about their traditional religious beliefs, and their stated motivations for attending established churches (see Table I) are often ambiguous. Not all members of

a family go to church, not all members attend the same church. Many times different church affiliations are represented within one family, with the father belonging to one church, the mother to a second, and the children to a third. This causes no apparent disharmony within the household, as the feeling seems to be that each person may belong to whichever church he wants or not belong at all if he does not want

TABLE I. CHURCHES ATTENDED BY INFORMANTS  
(N=76)

Type of Church <sup>a</sup>	Number of Informants Attending
Protestant	10
Roman Catholic	12
Mormon	1
Jehovah's Witnesses	1
Churches with Hawaiian Names	3
Pentecostal	7
Small Home Groups	1
No Church Affiliation	18
Unknown	23

<sup>a</sup> "Protestant" refers to churches of established national organizations or to the answer of "Protestant" without a specific denomination being named. The "Churches with Hawaiian Names" stress the use of Hawaiian language and cultural patterns in their services. "Small Home Groups" are home Bible study groups and small home churches without formal or established names. Although the number of respondents attending the latter two churches is only four, many people in Nanakuli apparently emphasize their being Hawaiian. In these Hawaiian churches (see Darrow L. Aiona 1959) emphasis is on the "Hawaiian way" as opposed to the "haole way" (haole generally refers to a Caucasian and more specifically to someone from the mainland United States).

to. Except for members of a few proselytizing fundamentalist sects, one family member does not try to convert another family member who might have a different set of beliefs, although some individuals do go to more than one church to please another person. Some respondents who go to church still believe in sorcery, 'aumākua, and other older Hawaiian beliefs; they see no conflict between the two systems. Other respondents have blended together and reinterpreted the two systems of belief: the god Ku (a major Hawaiian god) has become synonymous with God or Jesus Christ; the goddess Hina is now Mary, the Mother of God; and the 'aumakua is either the Devil or some of his work.<sup>10</sup>

Several of the ministers interviewed in Nanakuli apparently did not realize that a number of people in their congregations had hybrid beliefs or still believed in some of the old traditions. The ministers did comment, however, that the only time they saw many members of the congregation coming to church or talking to the minister was when a

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<sup>10</sup> Even though many informants recognized a difference between Western and Hawaiian beliefs in the supernatural, it was very difficult to find any two people with the same combination of beliefs. Each family, each individual has a slightly different way of combining beliefs and coming out with one blend which they think is Hawaiian and another which they think is Christian. For this reason, I make no attempt in this dissertation to separate beliefs in the testing and findings. I have tried only to determine (1) whether an individual who seems to know the Hawaiian language will use the supernatural more (blend or purity of beliefs not in question) than an individual who does not really know the Hawaiian language; and (2) whether an individual who has less knowledge about health and medicine will use the supernatural more (again, purity of beliefs not in question) than an individual who has more knowledge of health and medicine.

family had a serious problem. "Sometimes when they come to see me," said one minister, "a family may be moving into a house and want it blessed. I do a lot of blessing of houses in Nanakuli." When I asked why the Hawaiians wanted their houses blessed, the minister did not know the answer. When I asked some respondents the same question, they usually gave a short answer, such as "to make the family happy" or "to get luck." Only later did I learn that they had the house blessed to drive out evil spirits, spirits of people who had died there, and to prevent ghosts and sorcery from entering the house.

When the members of a family have problems which they feel their regular church is not helping solve, they may go for help to a church other than their regular one. Several respondents from established churches told of occasions of serious illness or family trouble when they went to a Pentecostal church or attended a small home Bible study group.

Church attendance for the purpose of obtaining solutions to specific problems led one minister to tell me in a joking manner, "My church could almost be viewed as a clinic." But before the individual turns to the church as a "clinic," he may try to solve his problems, specifically illnesses, with traditional treatments.

#### Illness and Medicine

Concepts involving illnesses and their treatments are closely associated with use of the supernatural among the Hawaiians in

Nanakuli.<sup>11</sup> Older respondents in the community said that illnesses traditionally were of two major types: (1) the native illnesses, ma'i kama'aina, and (2) the introduced illnesses, ma'i haole or ma'i malihini. They further divided the native illnesses, or ma'i kama'aina, into (1) supernaturally caused illnesses, ma'i 'aumākua, and (2) illnesses arising from natural physical causes, ma'i kino.  
Ma'i 'Aumākua

Ma'i 'aumākua are supernaturally caused illnesses which are still present in Nanakuli; they can be caused by an angry 'aumakua, a ghost, or an evil spirit sent against a person. When someone becomes ill unexplainably, that illness is assumed to be a form of ma'i 'aumākua. I was told of several methods available for treating it.

One such method is to take the sick person to a haka (a medium). In and around the community some of the fundamentalist churches which emphasize Hawaiian tradition have people who operate in a manner similar to that of a haka. Reports of spirit possession are still very common in the Hawaiian community.<sup>12</sup>

In one instance a sick infant was brought to a haka, who prayed to God to give her strength and help in finding out what was wrong with the child. She asked the mother to hold out the infant, then passed her hands over the child's body. The haka said an evil spirit was

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<sup>11</sup> Most of the information in this section was obtained from five older women and one older man from the community.

<sup>12</sup> I personally observed the following two instances in the community, one involving the use of a haka and the other being a situation of ho'oponopono.

attacking the child. She explained to me later that if she felt gooseflesh ('ōkala) on her arm as she passed her hands down the child from head to feet, she would know it was a good spirit who was possessing the body and wanting the family to right some wrong. If she felt gooseflesh as she passed her hands upward from feet to head, she would know it was an evil spirit sent by the devil or some evil person because, as she stated, "That's the way the devil comes in, through the feet." She had an assistant who helped her prepare herself for the noho, the actual possession in which the spirit will sit (noho) on his self or perch (haka). The assistant began to chant and the woman closed her eyes. The haka's body swayed to the chant; she breathed heavily, groaned, and suddenly began to speak rapidly "in tongues." Then more slowly in Hawaiian the spirit began to talk. The chanter asked what it wanted, and it answered, "the child." The spirit turned out to be that of a grandmother of the child; she had not been able to see the baby because of a family quarrel. The chanter rebuked the spirit and told it to go back where it came from, that it was not wanted here. A relative of the haka grasped my hand at that instant. Later I was told that the relative had sweet oil on his hands; the oil was supposed to prevent any other person from being possessed and made ill by the spirit. After the possession the young mother was asked to forgive (kala) her mother and to apologize for the wrong (hewa) so that the grandmother's spirit would remain quiet and not bother her grandchild again. Numerous stories are told about the possession of individuals who are not regular haka and about the attempts to subdue them and prevent them from harming themselves until

the spirit can be driven out.

Another form of remedy for ma'i 'aumākua is the ho'oponopono,<sup>13</sup> which means "setting aright" or attempting to bring harmony (lokahi) to the family. A wrong must be forgiven, or the anger and jealousy of one family member for another will cause an attack on some innocent person who is valuable to both members, for instance a child. When an unexplained illness, accident, or persistent trouble happens, all family members are called together for ho'oponopono. This gathering is different from 'ohana, which (besides referring to a kinship grouping) is a period of the day, morning or evening, when a family gathers together for a small prayer service. Ho'oponopono, however, is a major event. Usually the oldest relative or a minister friend of the family conducts the ritual. In an opening prayer the leader asks for guidance and for people to open their hearts and forgive those who they feel have wronged them. The leader then rubs sweet oil on his hands and takes up his Bible. After another short prayer, he opens the Bible at random and looks on the right side, continuing down the page until he finds a chapter beginning. He reads the chapter and generally interprets it in view of the trouble he suspects. Each person is then asked to speak, and each asks forgiveness for any anger or jealousy he has in his heart. Rarely does anyone get down to any specific conflict or trouble. After everybody has spoken, a prayer is offered to close (pani) the ritual. Now the subject is closed, and no one is to talk

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<sup>13</sup> For further discussion of the ho'oponopono, see Handy and Pukui 1958:143; and Aiona 1959:68-69.

about it or bring it up again for fear of causing the trouble to recur.

While spirit possession and ho'oponopono are used to treat ma'i 'aumākua, not all illnesses in Nanakuli are supernaturally caused. The illnesses resulting from natural causes are handled slightly differently.

#### Ma'i Kino

Ma'i kino are illnesses which Hawaiians believe to have natural causes and which are treated with Hawaiian home remedies. Even so, many of the treatments involve some aspect of the supernatural. An informant named the two types of medicine that could be used. The first, ki'i kapu, must be gathered and administered with prayer. Some individuals told me that although an individual is required to pray and ask God and the Virgin Mary (or Ku and Hina) for the medicine in ki'i kapu, one normally prays anyway when giving any Hawaiian medicine. The second type, ki'i noa, is free medicine which an individual can gather directly without ritual, such as pōpolo<sup>14</sup> and 'uha-loa.<sup>15</sup> Ki'i noa medicines also require use of the supernatural, but not as much as the ki'i kapu medicines. I asked one individual if the ki'i noa medicines would work if she did not pray. She replied, "I

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<sup>14</sup> Pōpolo: the black nightshade (Solanum nigrum) that is taken today for colds and other minor ailments. For further discussion on specific illnesses and medicines, see Outline of Hawaiian Physical Therapeutics (Handy, Pukui, and Livermore, 1934).

<sup>15</sup> 'Uha-loa: a small weed (Waltheria americana) that is used today for sore throats; it is either chewed or taken as a tea.

don't know. Probably not. But I never have not prayed. It's been a habit. Even before we leave the house and go to the doctor, we hold a devotion."

The medicines in the ki'i kapu category must be gathered according to ritual. Traditionally the remedy and its associated ritual were prescribed in a dream, and the dreamer gathered the medicine at a time of day determined by whether the nature of the illness was male (internal) or female (external). For an especially serious illness when the power of both gods was needed, the individual gathered the medicine at noon or at midnight, because Ku and Hina were supposed to be together at those times (Pukui, personal communication).<sup>16</sup> In Nanakuli an individual was, and sometimes still is, instructed in a dream to look for a special plant which had only one leaf on one stem. Such a plant was believed to contain more mana. It is still believed by some older respondents in the community that a boy or girl who has not yet reached puberty (that is, is still in a state of purity) must gather the medicine. Even if a special plant is not required, the individual must still offer prayers. For example, he may pray first to God or Ku in the east while with his right hand he gathers five leaves from those facing east; he may then pray to the Mother of God or Hina in the west while with his left hand he gathers five leaves from those

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<sup>16</sup> Although I have not heard from people in Nanakuli about Ku and Hina being together at noon and midnight, I have heard from them that individuals in that community do sometimes gather special medicines at noon and midnight.

facing west.

The dual concept of pollution and purity is clearly present in the treatment of an illness. To purify the heart, the thoughts, and the na'au (intestines), one must first open the body with an "opening medicine" (a laxative). According to several Hawaiians, the na'au has traditionally been associated with thought. In Nanakuli the use of laxatives for "opening" is very prevalent for any illness and also as a preventative measure (a "spring cleaning"). Several medical professionals complained to me about this extensive use of laxatives and the great number of ruptured appendixes these doctors had to treat because Hawaiian patients took so many laxatives when they had appendicitis. According to a number of older informants, one must treat both the inside and the outside of the body for five days with the specified medicine, then give a special food to be eaten as a pani or "closing medicine." Usually the medicines are mixed with Hawaiian salt (salt stained with 'alaea) to help purify them. Any leftover medicines must be thrown into a stream or the ocean so that they will not be polluted, offend the 'aumākua, and undo the healing.

Also evident in the treatment of an illness is a concern for completeness. For example, Hawaiians often employ the number five in medicine because, as one person from outside the community stated, "It is complete. Complete as the hand is." They may give a medicine five times each day for five days, as noted above. This concern for completeness seems to underlie much Hawaiian behavior. To be perfect, a ritual must be whole and complete. To make a mistake in a prayer will ruin its perfection, destroy its power, and risk offending the

'aumakua or god to whom it was offered. Once a task is begun, it must be completed. An individual does not start a project unless he has all the resources available to complete it, nor does he give information about things he knows only partially.<sup>17</sup>

Hawaiian medical plants are important in the treatment of ma'i kino illnesses. These plants are said to have a will of their own. Most Hawaiians in Nanakuli felt that it was almost impossible to cultivate them; if a person was able to raise them or was "lucky enough" to have some of them growing on his property, he would be very careful in his treatment of them. Some Hawaiians believe that any medical plant must be bought and paid for outright. Because such a purchase of something is out of the ordinary in the context of the Hawaiian reciprocity system (to be discussed below), we can see the special nature of the occasion. One informant from outside the community commented, "The medicine has to be completely yours. The gods must know that you own it and it comes only from you or it doesn't work." Another informant said, "When this woman needed some of my medical plants for a very sick friend of hers, I gave her all she needed. It was only a short time before the plants died and I have never been able to raise them again. My plants were mad at me for thinking so little of them by giving them away. If she had just given me a quarter, I'm sure they wouldn't have died."

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<sup>17</sup> This trait was a problem all through the study. Respondents would refuse to talk about something if they felt their knowledge of the subject was only partial.

### Reciprocity and the Emphasis on Equality

Reciprocity appears as a generalized value everywhere in the natural and supernatural world view of Hawaiian culture. It seems essential in friendship and kinship ties. Aloha has been defined as "love, affection, compassion, mercy, pity, kindness, charity" (Pukui and Elbert 1957:19), and the spirit of aloha very much involves reciprocity. Traditionally a person gave freely of aloha and hospitality (ho'okipa or pāheaha) with the understanding that he would in turn receive aloha and hospitality wherever he went. When a relative came from the seashore area to visit upland relatives, he customarily brought fish, limu (seaweed), and salt because his relatives could not get them. When he left, his relatives gave him 'uala (sweet potato), kalo (taro) and other products he was unable to get where he lived. "A visit to a relative was always accompanied by gifts of food, whatever one had that he thought that the other might like. It was not proper to ask a relative, 'Would you like some taro?' The proper way was to say, 'Take some taro, take all you need.' My grandmother used to say, 'Don't ask questions, give!'" (Pukui, personal communication).

This reciprocity between relatives and friends continues in Nana-kuli. Even though the distinction between upland and shore products does not appear today, whenever an individual visits a household, whether of relatives, friends, or strangers, he brings some such gift as mangoes, fish, or cake. The reverse is also true: whenever an individual visits other households, he is offered food and drink. Reciprocity is required. Informants said that refusal of this

hospitality would be a form of insult; the person who did not accept hospitality presumably would not offer it. If the individual does not want to eat at that moment, he should express appreciation and say, "I am not hungry, but I will take a drink of water," or "One banana is plenty enough" (Pukui, personal communication). One's failure to participate in the reciprocity system hinders the development of a friendship or cools previously warm relations between friends or relatives. "One must give [hā'awi] with aloha," said one individual, "and not expect to be paid back. One gives what one can and what things are most needed by another person. This way a person knows that in time of need his relatives and friends will help him." Another Hawaiian told me, "When a person gives you something in a bowl, wait a few days and return the bowl with something in it. Never return the bowl empty."

In the reciprocity system an individual does not return a favor immediately; such an action would be viewed as kuapo (swap or barter). Kuapo places more emphasis on the material goods than on the development of the personal relationship. To keep the exchange open, an individual should never return goods of like kind or in equal amounts; rather, he should return something valued a little more or a little less than the items received. To return a similar item of equal value would indicate that the relationship between the two persons is being broken off. The original recipient is saying that he does not want to become involved.

Reciprocity is not limited to material goods, but can encompass services or the teaching of skills. Services can be exchanged for

material goods and goods for services.<sup>18</sup> One individual never asks what another needs; he observes what is needed and gives that. "A man used to bring us fish all the time," an individual from outside the community told me. "My mother wanted to do something for him so bought him two shirts and a pair of pants because his were so worn. When we went by his house, we dropped them off for him." When accepting or giving goods, the individual never says or expects a "thank you." The person who does expect this, as I did when I first arrived in the community, makes the Hawaiian feel very uncomfortable.

Informants stated that in Nanakuli the system of reciprocity should never be operated in such a way as to make a profit. An individual must not manipulate the system by giving and giving and then expect to call in the debt. If this does happen or is suspected of

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<sup>18</sup> While Hawaiians give of themselves and their goods quite freely, there are limits, especially in knowledge and in the teaching of skills. Unlike material goods which the Hawaiian feels can be replaced, an individual never gives all his knowledge. He will 'au'a, withhold some of it, because the knowledge in its complete form contains mana. To share all one's medical knowledge or fishing technique is to lose the mana. By keeping something back, the teacher has that bit in reserve if the pupil should turn against him. As one fisherman told me, "I will show you how to use limu (seaweed) to catch fish, but I will not tell you all of it, I will be out of luck. It won't work for me anymore. I might as well die because there is nothing left." Knowledge is considered power because the final complete bit of knowledge in any area is obtained from one's 'aumakua.

Everyone in the community seems to consider himself an expert in some area. I believe that an individual who does not consider himself expert feels as if he has no purpose and nothing to offer which could express his individuality. What one strives for is hana no'eau which means perfection in work, singing, art, and so on. Many informants said that this is one of the most important values of Hawaiian life.

happening, the relationship is terminated and the individual who is cut off begins to fear that something might be done to his family or himself. As one person declared, "A person will return [pana'i] good for good and bad for bad." The reciprocity system and the personal relationship are terminated if (1) a person continually receives goods and services but fails to reciprocate, (2) a person asks for goods and services which he does not need, or (3) a person presumes on another's hospitality before he is invited. These actions all involve operating the system for profit at the expense of the giver.

The principle of equality is repeatedly stressed within the community. To draw for profit from the system of reciprocity and hospitality would be to place oneself above other individuals. Unless rights and privileges of seniority are exercised, the relationship is supposed to be between two equals (pa'i a pa'i). One informant said, "You should not act ha'anui [make oneself big or brag]. It brings only misery." Field observations indicated much concern that one should not place oneself above others. A Hawaiian of the community feels very uncomfortable if someone singles him out for individual praise; he will try to minimize this praise by saying the work was a team effort. Someone who does not act as a team member but only for himself is considered ha'anui. His companions regard him with suspicion and believe him to be potentially dangerous. As one individual warned, "He must have some power from some devil god which makes him stand above us. You watch out for that person."

If an individual strives for personal achievement, the community usually brings him back into line by ridiculing, scorning, and

ostracizing him and his family. I saw one man in the community receive a special honor for his accomplishment. Friends quickly became cool to him. Then he went around to his friends and his fellow church members, greeting all of them, running down his accomplishment, and saying the success was due mainly to their help. Another person wryly quoted the local saying, "We are all crabs in a bucket in this community. If one of the crabs tries to climb up and over the edge, we all grab hold of his legs and pull him back."

One also sees this principle of equality at work in Nanakuli in the tendency of individuals to de-emphasize their ali'i ancestry. When asked if there is anybody within the community who was of ali'i descent, the Hawaiians usually answered, "I don't know" or "I don't think so. We are all equal here." A person who claims ali'i (chiefly) descent will be viewed as trying to claim a higher rank and as placing himself above the other people in the community. Thus he puts himself in an untenable position and becomes the target for suspicions; he risks being personally ostracized or having sorcery committed against him and his family.

I believe that knowledge of ali'i ancestry, if known, is probably a family affair now hidden from the community at large. The person who is of ali'i rank tends to exhibit a sense of shame in connection with this knowledge.<sup>19</sup> Traditionally the ali'i took care of his

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<sup>19</sup> This tendency is illustrated by two cases. In the first a man was very proud of his ali'i ancestry and told me about it, but acted ashamed when I accidentally let the fact slip out in public; the individual was doubted and ridiculed by the other people present. In the second case a woman eating with a group of her friends was honored

people. However, since contact with foreign cultures has undermined the traditional Hawaiian social organization and its resources, a claim to ali'i rank has become empty today because it cannot be supported by the chiefly duties connected with the granting of land and resources. Former traditional rights of the ali'i--such as respect--are interpreted by nonranking persons as "trying to place oneself over the other people of the community at their expense." Occasionally individuals learn of some close friend being of ali'i rank. As long as the knowledge of rank seems to have been revealed by accident rather than by a deliberate attempt to publicize the fact, and as long as the person of ali'i descent does not try to exercise some special claim, the personal relationships between community members are not affected. Informants even claim they show that individual more respect than they do others. However, even in the case of accidental disclosure, an individual with ali'i ancestry is usually made the target of some mild ridicule.

In addition to the principles of reciprocity and equality, the structure of the household is important to the understanding of relationships between Hawaiians.

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by a distant relative who happened to be at the same restaurant and recognized her. The relative came over to her table and told her friends to treat her with respect because she was related to a particular ali'i family. Her friends ridiculed her. One said, "You mean I've been riding with high muckety-muck all these years and didn't know it. She should be treated like a queen." This statement brought loud laughter from the friends.

### The Hawaiian Household

To understand how a Hawaiian deals with illness, one must understand the structure of the Hawaiian household and know what individuals are closely associated with it.<sup>20</sup>

Upon being asked where a young couple goes to live when they want to marry or live together, individuals usually said they went with one or the other set of parents (ambilocal), depending on the conditions and emotions involved. Once a couple feels established, they may want to set up a new independent household (neolocal). The informants believed the latter arrangement to be the most desirable settlement pattern. Interviews with respondents in forty-two households showed that approximately 89 percent of the couples lived in their own homes, 7 percent lived with the female's parents, and 4 percent lived with the male's parents.

Until they have their own homes, couples show a slightly greater tendency to live with the female's parents. The following reasons were given by informants for this tendency: (1) the home was the domain of women, and a girl felt more comfortable in the household in which she had been an actively participating member; (2) mother-in-law and daughter-in-law did not get along because of conflict over household duties; (3) a girl should be at home among her relatives when she is going to have a baby, the boy's home would be strange to her; (4) girls took care of their parents and their households as they

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<sup>20</sup> For additional material on the household family, see "A Qualitative Analysis of Family Development" (Mays *et al.* 1968:80-86).

grew older, since many of the boys would go out of the community to get jobs and then set up households elsewhere.<sup>21</sup>

#### Roles

In this section we will describe the roles of mother, wife, father, husband, children, and friend as observed in Nanakuli.

The growing Hawaiian female progresses from the role of "child" to that of "mother-in-training" or "practicing mother" and on finally to that of "mother." Most young girls look forward to becoming mothers, and their first ambition is to attain that role. A girl's elders encourage and teach her from a very early age to care for her

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<sup>21</sup> In the total number of homestead lots, lessees were 33.7% males and 66.3% females, with a trend in recent years which favors the males slightly (Marion Kelly, personal communication).

If a female rather than male inherited the lease, the informants believed this was usually the younger girl because she had been living in the household and taking care of her parents, who then passed the lease on to her. Sometimes the term noho 'āina was used in reference to the person living on the land. The term means literally "to sit on the land." Every child supposedly shared equally in the inheritance, but unless a homestead lot was divided, only one person could inherit the title. Mary Pukui stated that traditionally the noho 'āina stayed permanently on the property when the parents died and usually was the child with the greatest need. However, all the children had the right to go back to the property to live if necessary. Some individuals felt that even today real disputes could occur when no one was designated the lessee or there was no noho 'āina, and the children themselves had to decide who would live on the land. Again "pragmatic restriction" was seen. As one person said, "Sure, everyone can live on the land, but how much space are you going to have if twenty people and their families want to live on one acre and in one house? If someone is already living there on the property, usually we let it go and there is not much dispute. We can go there to live if we really need to, but if we don't have to, the noho 'āina lives there and cares for the land."

younger brothers and sisters.<sup>22</sup> An older girl exercises almost complete jurisdiction over the younger children she is assigned to care for; she disciplines them, nurses them, plays with them, and carries out all the household duties connected with them. Thus, she is primarily trained to perform the duties of a mother.

The role of mother with its duties and rights was very clearly defined in the community's ideal statements, and these statements proved to be fairly consistent with actual behavior. One middle-aged woman described the role of a mother: "She cares for the people in her house, cooks for them, and is responsible for bringing up the child." In theory a mother is expected to maintain the household and everyone or everything within it; but in practice some of her tasks actually extend beyond the territory of the house. I questioned individuals about these outside tasks and was told that they were judged to be part of her duties in maintaining the household. For example, the mother handles the relations between her children and the school.

The Hawaiian female is also expected to treat illness in the household. As a girl she learns from her mother and other female relatives about Hawaiian medicines and illnesses. Whenever she has doubts about some aspect of an illness or the treatment of it, she should turn to her "senior" relatives for advice. Thus the Hawaiian woman first tries to treat illnesses herself, then she turns for help to her

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<sup>22</sup> I have observed five- and six-year-old girls being encouraged to hold and to care for babies and to accept such other household duties as sweeping floors and carrying food to the supper table.

relatives, and finally she may resort to a doctor.

Ideally the mother acts as the financial center of the household. The man or working sons and daughters should bring the money home and give it to her. She may give each of them an allowance and keep the rest to maintain the family. She doles out money for the teenage daughter to go marketing, she goes to the post office herself to buy money orders and then either walks or drives to pay the family's bills. She may initiate action with agencies or loan offices to get aid for the family, bringing her husband along only when he is needed.

While the mother's role is clearly defined in Nanakuli, the role of wife remains quite vague. The only elements which clearly differentiate it from the role of mother are companionship and sex. Both men and women have trouble separating the role of mother from wife. One woman said, "I'm a wife to my husband, but I'm a mother to everyone, including my husband."

This apparent primacy of mother over wife was emphasized by a male informant: "Actually in order to be a mother, she should be a wife first. That's like the old problem, if you in a boat with your mother and your wife and the boat sinks, who you going to save?" He paused. "Your mother, of course. Blood is thicker than water, after all. Human sense say you gonna save your mother. You only got one mother, but you can catch a wife anytime. Even if your wife is gone and you have children, your mother can take care of them. Besides, your mother is always right" (from ethnographic reports on summer 1967 sample). The same sentiment is expressed from the female viewpoint in a traditional Hawaiian admonition by a woman's parents when she

marries: "Take care of the parent, for he is not replaceable, but a husband can be found in a day" (Handy and Pukui 1958:175).

While a young girl is trained from a very early age to assume the social role of a mother, a young boy is more free in his activities. Generally a very young boy is supposed to stay around the house and in the immediate area. From eight to ten he begins to move away from the household over an expanded activity radius. He becomes part of a "gang" and spends much of his adolescent life with his peer group, going to school, "riding around together," going to parties, surfing and fishing, going to the show, going to the park to drink, or participating in sports. The teenage boy may come home just to eat, to change his clothes, and sometimes to sleep. Occasionally the young man introduces his sister to one of his close friends who may eventually marry the girl. The peer group continues to be very important to the young man even as he marries and matures. He may obtain jobs and seek emotional support from his friends, taking jobs mainly to earn money for activities within the peer group. Individuals have told me that a man usually does not work for the purpose of being a provider until after he has children.

The difference between male roles was less distinct to my informants than the difference between female roles. The major role of the husband proved really to be that of "provider" for the family; both men and women expressed this attitude. The husband's domain is supposed to be outside the house; he has his job, he takes care of the yard, he repairs the family car, and he acts as the general handyman for the house. He must also help cook, babysit in case of emergency, and help

his wife decide upon the major household purchases. According to several females, a less important but still noteworthy element in the husband's role is his ability to talk to his wife and to demonstrate some degree of respect and love for her.

The role of father is less clear in Nanakuli. In addition to those elements included in the role of husband, according to several women and one older man, the father should express some interest in his children and affection for them. While he is expected to support his wife in her role of mother, he should defer to her judgment in the area of discipline, offering verbal support only. The mother usually disciplines the children, except in those cases of extreme misbehavior which she feels are beyond her control. Only then does she call in the father. Most women said they were afraid to have the children's father administer punishment because he tended to be too harsh on them.

Generally the emphasis in the role of father is on the concept of the man as a "provider." This extreme emphasis seems to make many Hawaiian men almost compulsive about their work. One woman commented that when her husband had a broken shoulder and was forced to stay home from his job as a heavy equipment operator, he became very disturbed and argumentative. He worked hard around the house, went fishing, and after only a few weeks was visiting the doctor frequently to get a release for return to work. He finally resumed his job before the shoulder was completely healed, but his wife said he seemed happier and stopped arguing with her. The strength of the man's desire to work was reflected, his wife said, in his visits to the doctor whom he usually avoided.

The desire to work was vividly brought out in a number of statements by other males explaining why they refused to see a doctor for an illness. Many of the men's jobs involve manual labor, and a worker's job status apparently depends on his being in good physical condition. One man was unemployed and wanted to return to work, but he had heart trouble. He had a friend take the physical examination in his name so that he could obtain work and once again become a provider. Another man had a physical condition which forced his early retirement. He continually apologized for not working. To keep himself busy during the day, he would use the telephone to arrange favors for his friends or would pick up building material and equipment for them while they were at work.

One must understand the role of children in a Hawaiian household to be able to understand personal relationships in general. Senior and junior relationships are indeed very important in Hawaiian culture. The younger individual is expected always to defer to the older. Kinship terms are accompanied by specific social behavior which mirrors the senior-junior relationship between siblings and cousins of the same sex, and the senior-junior relationship between generations. The more senior an individual is, the more status and privileges he has because he is closer to the backbone of the 'ohana and thus nearer to the ancestors (see Fig. 1).

The hiapo (first-born of a group of siblings) is thus very important in the households of Nanakuli. Traditionally, if the first-born

was male, he usually became a hānai<sup>23</sup> (foster child) to his paternal grandparents, and they taught him the 'ohana genealogy and customs. A first-born female usually became a hānai to her material grandparents, and they taught her the genealogy and customs. The hiapo was and still is responsible for the care of his younger siblings if anything happens to the parents. Even now he is the one who settles disputes between siblings because he is the senior sibling. The parents themselves consult the hiapo when any major plans are made which would involve the entire household. If the hiapo should die, the sibling next in age takes over the position and its rights and duties.

As soon as children are able to get around on their own, they begin to play in groups of their own sex. The older children watch over the younger ones and teach them what they should or should not do, most frequently the latter. A child is taught that he must listen to what a senior relative tells him to do, or else he must be quiet and observant and imitate his "seniors." The only time he may ask questions is when his senior asks whether he understands. The child is not encouraged to offer new and unique activities, but rather is supposed to do only what is expected of him and no more. He must be akahai, or very careful in what he does, to observe "proper behavior." One hears repeatedly in Nanakuli the phrase hilahila, meaning to be ashamed or humiliated; a child is instructed from an early age never to bring shame upon the family.

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<sup>23</sup> For further discussion of hānai, see Howard 1968:85-101; and Howard et al. 1970.

The best illustration of Hawaiian child-rearing is the situation described to me by a man in his mid-twenties. Being asked why he was afraid to go to a doctor, the young man answered, "Because I'm scared of pain."

I responded, "Yeah, I've heard that from a lot of people down here. What if the doctor didn't hurt you? Would you go?"

He asked, "You mean if he didn't poke me with needle?"

"Yes."

"No, I still wouldn't go!" he said.

"Why not?"

The man waved his hand back and forth; he seemed a little exasperated, as if he could not find the words to express what he was thinking. Finally he said, "Let me give you an example. When I went to visit \_\_\_\_\_ at their home, I felt scared. I didn't know what to do. His daughter and wife knew about Hawaiians and said, 'No ashame, \_\_\_\_\_. Go ahead. Eat!' I just waited to see what they did first. Then I did what they did. Like when you go out with a girl to eat in restaurant. I go for the dark corner where no one can see me and how I eat. Once we were forced to sit in the middle with everyone around. I was scared and didn't know what to do. So when the food comes, I'm so hungry I dig in. Before I get the spoon in my mouth, I can feel the eyes on me." The respondent acted out the situation as he related it.

He continued, "I look up slowly and then cut up everything in small portions. My girl get mad at me because she finished first and I was so slow. That's why I don't go to doctor. I don't know what to do. Anyone [everyone] know, you watch until you know. You don't want

to make mistake. You hang in the middle."

When I asked the individual what he meant by "hang in the middle," he replied, "One of the first things you learn when you are a kid is to do what you are told and don't hurt feelings. But you can't. Aunties tell you this, Mommy and Papa tell you something else, friend and old people all tell you something different. One says that what the other said is junk! You don't know what to do, so you hang in the middle. You don't do nothing, or you get real lickin'. My dad has a big belt with a buckle he uses on us when we don't mind. Mom used to slap us around too. You don't want to get hurt, so you don't do nothing. You hang in the middle. Don't do something unless it is perfect, because if you fail it is misery. Hang in the middle."

I asked him whether he believed that other people felt the same way. He answered yes. When I asked how he knew, the young man replied that when kids get together, they sometimes talk about how "it's best to do nothing rather than get into trouble."

Thus siblings are socializing and supportive factors in the Hawaiian individual's life. But friends are also very important to the individual. Generally both men and women have a group of friends with whom they interact. Men drink, fish, and work together; in fact, working on a job not only fulfills a man's urge to be a provider, but also satisfies his need to associate with his friends. Women get together to sew, to have "hen parties," and to make various articles for the house.

Hawaiians in Nanakuli classify friends according to the degree of personal involvement that exists between the individuals and between

their respective households. Respondents who speak Hawaiian use the following four terms for friends.

A kama'āina, "child of the land," is an individual who is just an acquaintance; he may simply live in the community or be connected with some organization to which a person of Nanakuli belongs. Little interaction is involved. The tie can be made a little stronger by using a possessive with the term.

The term aikāne applies to someone who is more than an acquaintance, but still is no more than a casual friend or, as some informants have said, "just a friend." More interaction is involved than with a kama'āina.

Hoaloha refers to "a treasured or devoted companion." In this case the friends extend hospitality to the point that either one of them may live within the household of the other. The terms aikāne and hoaloha have reverse order and meaning in Nanakuli when compared with the usage reported in Ka'u, Hawaii (see Handy and Pukui, The Polynesian Family System in Ka'u, Hawai'i 1958:73-74).

The fourth term ho'okama means the process of fostering a greatly treasured friend into the family either as a sibling (kaikua'ana or kaikaina relationship) or as a child (kama kāne or kaikamahine relationship). Friends of this class are treated as members of the family with all rights and obligations.

Both men and women usually have one friend who is hoaloha or ho'okama and who acts very much like a sibling and helps out when needed. One woman stated, "Oh, I go up to her house and she comes down here all the time. We sew, talk, play cards, and babysit for

each other. If I have a fight with my husband, I go up to her house and stay for the night. We are just like sisters."

However, generally women in Nanakuli seem to have fewer very close friends than men do, and the women are less emotionally dependent on their friends than men are. Thus while one hears many women in the community complain about their husbands' spending so much time fishing and drinking with their friends, one rarely hears a similar complaint about a wife and her friends, even given the "just like sisters" relationship noted above.

Unlike friends, strangers (malihini) and enemies in Nanakuli are not further subdivided into categories. A member of the community tends to regard as enemies those people who he fears may be secretly trying to do harm to him or to his family and sometimes those people who have purposely broken a personal relationship. In Nanakuli two people may break a personal relationship because one of them has been affronted by the other's actions, but rarely do the two then become enemies. They usually renew the relationship after a period of avoidance; they make the overture of friendship by quietly renewing their previous behavior as if nothing has happened.

#### Avoidance of Doctors

I believe that among Hawaiians emphasis is placed on harmony between people and their environment. An individual will avoid trouble if at all possible. Thus individuals apparently prefer following previously established behavior to doing something new, because initiating new behavior will produce a situation where the outcome is uncertain. This behavior is reflected in the avoidance of doctors.

A situation will illustrate one of the reasons an individual may avoid doctors. A woman took her baby to the doctor for treatment of 'ōpū huli and was made to feel extremely uncomfortable because of her supposed lack of knowledge.

'ōpū huli<sup>24</sup> is a ma'i malihini which most respondents recognized as an introduced illness attributed to the Portuguese and not an old Hawaiian illness. In this particular illness a child's stomach supposedly turns over and has severe cramps; the child spits up food, and one leg is said to be shorter than the other. Informants consider the illness very serious because it is inside the body, and they believe the chance of death to be fairly high. In fact, most informants are sure the baby will die unless treated. In the situation at point the woman related the following:

The doctor said, 'There's nothing wrong with baby.' You could see the baby was sick, and he acted as if I was stupid. So I asked my family about what to do and Auntie told me to go to this old Hawaiian lady in \_\_\_\_\_ who knew Hawaiian medicines and could cure 'ōpū huli. So I took baby to her and she gave my baby a lomi [massage] with sweet oil and turned his stomach around. She then told me to give him an opening [laxative] and wrapped a bandage around his middle to hold his stomach in the right position. That haole [white mainland], he didn't know nothing. He would have let my baby die but Tutu \_\_\_\_\_ made him well.

Friends or relatives usually recommend these folk practitioners.

Because of cases like the above, most informants feel that 'ōpū huli

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<sup>24</sup> One doctor as well as two female respondents said that it might be the "colic." The symptoms resemble the description given by James Frazer of an illness among peasants in France; in the French illness the stomach supposedly came unhooked (Frazer 1965:303).

cannot be treated by Western doctors. A Hawaiian man said, "If that haole doctor can't treat 'ōpū huli, I bet he can't do anything else."

I believe that Hawaiians generally avoid confrontations; as the young man quoted earlier said, "you hang in the middle" to avoid getting hurt. An important point in the case reported above lay in the fact that the doctor made a confrontation experience out of the situation. Although the mother believed her baby was ill, the doctor denied this and implied that she was acting irrationally. Unless the physician is considered a personal friend of the family, he is viewed as a stranger and an unknown factor who might hurt the individual. As a result people try to avoid the doctor. Apparently those people in Nanakuli who go to the doctor more than others have had a family doctor for a long time or have been introduced by an old friend to their present doctor.

Generally individuals who must go to the hospital fear they are going to die. Frequently this may indeed be the result because the family has delayed the case by trying all the traditional remedies which have failed. By then the vital early treatment of an illness is no longer possible. When I interviewed them, several physicians complained that the Hawaiians seem to avoid coming in at all, or making return visits, until they are in very serious condition and the illness has become an absolute emergency. In regard to the hospital, one respondent said, "If I'm going to die, I want my family around me, and that can only be at home. They don't allow your family to stay with you, and they don't feed you or treat you like you are used to."

Some problems between doctors and their Hawaiian patients may

possibly arise from differences in judging the severity of an illness. According to people from the sample, the severity of an illness seems to be judged by five factors. One, they believe that illnesses range in degree from non-fatal to fatal, and there is more chance of dying from certain illnesses than from others. Two, they regard the length of an illness as very important since the longer an illness continues, the more the respondents worry about it and the more they question what it actually is. An illness they may have diagnosed as ma'i kino is re-examined to see if it possibly is ma'i 'aumākua. Three, they judge disfiguring illnesses, such as smallpox, leprosy, and similar types, to be more serious than illnesses which do not disfigure. Four, they also judge the seriousness of an illness by its interference with an individual's normal activities; the more restricted the patient's activities, the more serious the illness. And five, they judge an illness according to its location inside or outside the body. Ma'i puho, an ulcer that slowly eats through the flesh until it reaches the bone, they do not consider serious in its beginning stage, but only after it gets inside the body.

Income also seems to determine how soon and how often an individual in Nanakuli will visit a doctor. Individuals who would go to the doctor if they could, but are limited in income, point out that such items as food or car payments (so the husband can get to work) are more important than going to the doctor. A family limited in income will try to treat illnesses at home; if anybody must go to the doctor, children have priority over adults.

### Summary

In this ethnographic sketch of the Hawaiian community in Nanakuli, I have tried to illustrate how the pattern of beliefs and practices involving the supernatural and illness reflects a number of general premises and values of the world view present in other aspects of this culture. Hawaiians view all parts of their universe as living. They distinguish between the natural world and the supernatural world. The distinction is not of type, but rather of amount; all parts of the world may be more or less active and powerful at different times. According to respondents, the supernatural is extraordinary behavior or action as distinguished from ordinary behavior or action.

The division between the natural and supernatural also appears in the Hawaiians' conceptualization of illnesses. They believe that illness is caused either by supernatural causes (ma'i 'aumākua) or by natural causes (ma'i kino).

The Hawaiian world view is composed of dualities. Hawaiians in Nanakuli divide the world into male or female, natural or supernatural, powerful or weak; in addition, they make distinctions between mana and kapu, purity and pollution, junior and senior relationships, and native and introduced categories of illness.

Treatment of illnesses depends upon the members of the 'ohana, the hale, and an individual's close friends and upon the rights and duties connected with the male and female roles. Hospitality based on reciprocity and equality is very important in Hawaiian life and appears in beliefs about the supernatural and therapeutic practices.

While it is impossible here to describe this Hawaiian community

fully, the sketch will serve as a background for understanding the findings of this dissertation. The following chapter describes the instruments I generated to measure the use of the supernatural and the amount of knowledge held by individuals.

## CHAPTER III

### MEASUREMENT OF THE SUPERNATURAL STRATEGY

The previous chapter has described the central attributes of Hawaiian society and culture. In the present chapter we turn to an examination of the relationship in that culture between use of the supernatural and amount and type of natural knowledge. This chapter will describe the test instruments used to measure the supernatural strategy. As described in the previous chapter, there were four distinct stages of data collection. The first stage was the extensive ethnographic data collection. The second stage involved the creation of a group of instruments for testing of the hypotheses generated from the ethnographic data. The third stage was the pre-testing of these instruments. And the fourth stage was the administering of the formal test instruments.<sup>1</sup>

Two high-school seniors, a male and a female, were trained for a one-week period to help administer the formal test schedules. These

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<sup>1</sup> The test instruments were administered in the following order:

- \*1. Health Questionnaire
2. Hawaiian Therapeutic Test
3. Tactics Questionnaire
- \*4. Personal Opinions
5. Health Information Test
- \*6. Body Organs and Their Functions
- \*7. Feelings and Experiences
8. Illness Rating Test
- \*9. Perceptions and the Problem Solving Test

\* The data from these 5 instruments will not be discussed in this dissertation.

students interviewed thirty-four of the seventy-two individuals whose data make up the evidence in this dissertation. Generally the two assistants interviewed respondents who were young to middle-aged adults of the same sex as the assistant. The other thirty-eight respondents were generally middle-aged and elderly adults who might have been reluctant to meet with the young interviewers. In follow-up interviews for random checks on the results given to the two assistants, no gross discrepancies turned up. Nor did there appear any significant correlation between the person conducting the interview and the test results.

In the periods of the pre-testing and the formal testing, basic statistical tests such as a Chi-square and Student's  $t$  test provided checks on the major hypothesis and on several related ones. As discrepancies appeared among test results, recorded observations, and respondent statements, further participant observation and informal interviewing were conducted in the community. This method of checking for discrepancies attempted to insure that the information from tests, observations, and respondent statements would not be a chance product or an artifact of a particular bias. In the stage of final analysis when apparent discrepancies appeared between statistical results and the ethnographic material gathered from observation and respondent statements, the ethnographic material was taken to be the more valid and powerful. Because the statistical results from the formal tests might have been biased despite attempts to insure otherwise, such results were used only for support or illustration and never as conclusive proof.

### Test Instruments

Four test instruments were used in this study:<sup>2</sup> (1) the Tactics Questionnaire, which measured the amount of supernatural and natural tactics used by an individual to overcome illness; (2) the Illness Rating Test, which measured the seriousness or severity of specific illnesses and the degree of uncertainty connected with them in the individual's mind; (3) the Hawaiian Therapeutic Test, which measured the degree of knowledge held by an individual of Hawaiian illnesses and folk remedies; (4) the Health Information Test, which measured the degree of knowledge held by an individual of Western health concepts and practices. All the test instruments were specifically designed for this study.

#### The Tactics Questionnaire

The Tactics Questionnaire<sup>3</sup> (see Appendix B) measured the amount of supernatural and natural tactics used by an individual in response to various illnesses. This test instrument consisted of questions about ten illnesses and was administered by the interviewer. The ten illnesses were as follows:

1. maūi (mild sprain)
2. maka 'ula'ula (pinkeye)

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<sup>2</sup> Material concerning the validity and reliability of the test instruments is presented in Appendix H.

<sup>3</sup> Of the 76 individuals interviewed originally, only 72 (36 men and 36 women) finally took the Tactics Questionnaire. The data from the 72 are used throughout this chapter and the results; the 4 individuals who did not take the Tactics Questionnaire were dropped from consideration.

3. 'auwae-pahāha (mumps)
4. 'ulāli'i (measles)
5. 'ōpū huli (turned stomach)
6. pu'uilele (rupture)
7. hānō (asthma)
8. ma'i pūhō (a very deep sore that eats into  
the bone)
9. ma'i-'ai-ake (tuberculosis)
10. kauhola (fatal heart attack)

The interviewer determined what kind of action the respondent would take and who besides the respondent might be involved in it. The possible tactics that an individual with an illness might refer to in dealing with the problem were listed on four cards. The cards were to be shown to the respondent only when he had trouble thinking of an action to take.

The list included a total of twenty-five possible tactics. These twenty-five were classified according to (1) whether the action was natural or supernatural, (2) whether the action was active or divergent, and (3) the type of person or persons from whom the individual would seek help (see Table II for a listing of the tactics and the ways in which they were classified). As the twenty-five tactics appeared on the four cards, some were specific and some were very general. The general categories included more remedies than were actually listed. For example, the taking of a pill, herbal tea, or swallowed leaf would all be included under "Home remedy: medicines taken inside the body."

To begin the test, the interviewer asked what the respondent would do first for the first illness. The respondent might reply by saying, for example, "I go to my brother's house and we drink beer." The tactic is to "Drink beer or liquor," the type of tactic is natural-divergent, and the type of outside help sought is that of a family

TABLE II. THE CLASSIFICATION OF TACTICS USED TO COPE WITH ILLNESS

Tactic	Type of Tactic			Source of Tactic or Help <sup>a</sup>			
	Natural Divergent	Natural Active	Super-natural Active	Self	Family	Friend	Stranger
Do nothing <sup>b</sup>	x			1 <sup>c</sup>			
Drink beer or liquor	x			2	8	14	
Take your mind off it by working	x			3	9	15	
Take your mind off it with entertainment and play (e.g., movies, sports)	x			4	10	16	
Home remedy: medicines taken inside the body		x		5	11	17	
Home remedy: treatment outside body, with or without medicine		x		6	12	18	
Medical person: Hawaiian kind		x					20
Medical person: <u>Haole</u> kind		x					21
Medical person: Other		x					22
Religion: prayers, reading Bible, <u>ho'oponopono</u>			x	7	13	19	
Religion: Hawaiian kind			x				23
Religion: Churches			x				24
Religion: Other			x				25

<sup>a</sup> Primary individual who suggests or is involved in a particular tactic with the respondent.

<sup>b</sup> Tactic number one, "Do nothing," is an inactive tactic.

<sup>c</sup> The numbers here refer to the numbered tactics as they are listed on the four cards used in the Tactics Questionnaire (see Appendix B).

member. The response therefore corresponds to the tactic numbered eight in the list (see Table II under the "Family" heading). The interviewer would write that number in blank A on the first illness (see page 124).

After the first response had been given and recorded, the interviewer would ask, "If that doesn't work, what do you do next?" Again the respondent might reply in various ways, but here a restriction was placed on him. For each specific illness he was required to state four separate and different actions he might try. If he happened to repeat, "I go over and drink beer with my brother," the interviewer would not accept this response but would require the respondent to name another action. The respondent might reply that he would lay concrete with his brother. This response corresponded to tactic number nine and was acceptable, since it did not duplicate the first response. The interviewer would then elicit and record the third and fourth actions. In the care of maūi, for example, the respondent might answer as follows:

- A. "I go drink beer with my brother."
- B. "My brother and I lay concrete together."
- C. "Have wife lomi lomi the sprain."
- D. "Play guitar and sing."

The interviewer would record these replies with the appropriate tactic numbers:

$\frac{A}{(8)}$     $\frac{B}{(9)}$     $\frac{C}{(12)}$     $\frac{D}{(4)}$    maūi (mild sprain)

On the first response of the second illness, the respondent was again allowed the full range of tactic possibilities. He might repeat

the same actions as on the first illness, choose different ones, or a combination. Thus within any one illness once the respondent had stated a particular action, he was not allowed to duplicate that action on that illness. If the respondent answered, "Do nothing" (tactic number one) for either his first, second, or third choice (blanks A, B, or C), this response was recorded in the appropriate blank. Like all other responses, this one was acceptable only once for each illness. Therefore the interviewer would still require the respondent to continue stating possible actions until all four blanks for a given illness were filled.

#### Scoring the Use of the Supernatural

The use of the supernatural is operationally defined as the occurrence on the Tactics Questionnaire of a respondent's statement that he had used a similar supernatural tactic in a similar illness situation in the past, or that he believed he would use such a supernatural tactic if ever faced with the particular illnesses as they appeared on the questionnaire.

This test instrument contained within its basic structure two measures of severity or gravity for particular illness situations. The first measure of severity was present in the ordinal ranking of the ten illnesses. The pre-test sample population had ranked the ten illnesses from the least severe illness (maūi) to the most severe (kauhola). The second measure was related to the failure of an individual's first actions to cure a specific illness. Since an individual was required to give four responses for each illness, each attempt that failed would define the situation as being more serious. Table VIII and

Figure 5 in Appendix H demonstrate that more individuals stated supernatural responses when the situation was more serious, as defined here.

The scoring of the supernatural was weighted to take into account both these measures of severity.<sup>4</sup> Each choice was given a different weight depending upon how quickly an individual might be assumed to turn to the use of the supernatural. It was assumed that an individual who turned normally to supernatural tactics and not just in crisis situations would use the supernatural sooner and more frequently on the test instrument than an individual who was forced into the choice as a last resort.<sup>5</sup> Thus the first response to the first illness was

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<sup>4</sup> See Appendix H for a presentation of the relationship between the two measures of severity and the use of the supernatural.

<sup>5</sup> After the data were analyzed according to this method of scoring, a test was made of the unidimensionality of the supernatural variable in the Tactics Questionnaire by scaling the responses. As an indicator of consistency of response on the second measure of seriousness, failure of previous action, responses in blanks A and B were scaled separately from those in blanks C and D on the Tactics Questionnaire.

While not perfect, the coefficient of reproducibility on the Guttman Scale for the responses in blanks A and B was sufficient (Rep.=.906) to be scalable without removing quasi-scales. The attempt to scale the responses in blanks C and D was not as acceptable (Rep.=.830). It appeared that some of the subjects were not as consistent on their third and fourth responses; this lack of consistency could be caused by forcing four responses when these people might be limited in the number of tactics available to them. Any respondent with more than three errors in scaling was closely re-examined; 18 respondents were removed from the scaling. Due to the original small size of the sample, as few as possible of the respondents were removed so that the sample size could be as large as possible and still be scalable. The remaining 54 respondents' third and fourth responses (in blanks C and D) were sufficiently scalable (Rep.=.905). I found the 54 respondents' replies in blanks A, B, C, and D to be scalable (Rep.=.919).

A few spot checks using Guttman scale scores produced very little difference from the previous results. The few tests where some differences existed are noted in Chapter IV.

given the highest weight of forty, with the succeeding responses decreasing progressively in value through the fourth response to the tenth illness, which was given the least weight of one (see page 123). The weights for all supernatural responses by an individual were then totaled. This total score of the use of supernatural tactics allowed individuals to be ranked by their propensity to use the supernatural (see Appendix B for an example of this scoring).

In the case of duplicate total scores for the use of the supernatural, a higher ordinal ranking was given to the individual who used supernatural tactics more frequently. For example, responses weighted twenty-three, nineteen, sixteen, and eleven totaled sixty-nine and were compared to responses weighted forty and twenty-nine which also totaled sixty-nine. The former total score with its frequency of four responses would give that individual an ordinal rank higher than the rank of the second individual, whose total score had a frequency of only two responses, even though one of those two occurs first on the first illness.

#### Scoring the Natural-Inactive Tactic

While the use of the supernatural was the major concern of the research, one natural tactic proved to be relevant to the major hypothesis. Nineteen of the twenty-five possible tactics on the Tactics Questionnaire were classified as natural (see Table II and Appendix B). One of these was a divergent response (see Chapter I, page 2): the individual took absolutely no action and sought no other help. This was called the natural-inactive tactic, and it was found to be analogous to Malinowski's "passive inaction" (1948:79) which he viewed as the last

resort of an individual.<sup>6</sup> In the fieldwork in Nanakuli, there occurred instances of such inaction in place of the expected reliance on the supernatural when natural knowledge was lacking.

An illustration of this inaction can be given. An individual about forty years old failed to recognize a number of symptoms indicating stomach cancer. This individual had had only an eighth-grade education; his knowledge of Hawaiian therapeutic and Western health practices proved to be below the average. When asked about his condition, the respondent replied, "Illness just happen and there is nothing you can do about it." He was pressed further about his health problem, and it was suggested that he ought to do something about it. The individual shrugged his shoulders and said, "I don't do nothing. If it gets too bad, I'll go drink with my friends and forget it." He apparently did not recognize the severity of the illness and thus did not think it necessary to take any action.

Two patterns of natural-inaction appeared in the fieldwork as a first response (not as Malinowski's last resort): (1) the individual recognized the illness as minor and did not feel it was serious enough to require action; (2) the individual failed to recognize the illness at all and so did not respond--he might be forced into action later if the illness should turn severe. This initial response of inaction

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<sup>6</sup> As discussed in Chapter I, p.4, I have interpreted Malinowski's material to include a three-step sequence of actions by which an individual will handle a problem. He will first use his natural knowledge; if this fails or is lacking, he will engage in a vicarious activity (the supernatural); if all else fails, then he will resort to inaction.

seemed to challenge the major hypothesis that individuals having little or no natural knowledge would turn to the supernatural. Therefore it had become necessary to measure the frequency of the occurrence of the tactic.

The scoring of the natural-inactive tactic on the Tactics Questionnaire was weighted to take into account the initial inactive responses to illnesses. Thus, the first response to the first (the least serious) illness was given the weight of four, the second response to it three, the third response two, and the fourth response one (blanks A through D). The succeeding responses to other illnesses increased progressively in value through the four responses to the tenth (the most serious) illness, which were given the highest weights of forty, thirty-nine, thirty-eight, and thirty-seven, respectively. The weights for all natural-inactive responses by each respondent were then totaled. This total score allowed individuals to be ranked according to their propensity to respond with inaction when first faced with an illness and also by their propensity to respond with inaction to the more severe illnesses. A high natural-inactive score indicated an individual whose first response to an illness was inaction and/or who also responded with inaction to the more serious as well as to the minor illnesses. A low score indicated an individual who resorted to inaction only as the last response to an illness and/or only to the less serious illnesses.

#### The Illness Rating Test

The Illness Rating Test contained several five-point scales for measuring the severity or seriousness of twenty-five illnesses as viewed

by the respondents, and for measuring the degree of uncertainty respondents felt about each illness. Uncertainty had previously been defined as an attitude reflecting doubt or a lack of knowledge or a lack of certainty (see page 7).

The test consisted of three items (see Appendix C): (1) twenty-five cards each bearing the name of an illness (shuffling the cards for each new respondent produced random order); (2) a chart of probabilities (a five-point scale) for rating respondents' ideas of the degree or amount of seriousness of illnesses and the chances of death; and (3) a coding sheet on which the interviewer would record the respondents' answers.

To begin the test, the interviewer read and showed to the respondent the first card from the shuffled deck and asked him to rank that illness on a five-point scale according to his idea of the degree or amount of seriousness (see Fig. 2).<sup>7</sup>

Seriousness of Illness	Amount of Seriousness (%)	Scale Value <sup>a</sup>
Very serious	100	5
Fairly serious	75	4
In-between	50	3
Fairly minor	25	2
Very minor	0	1

FIG. 2. SCALE VALUES OF ILLNESS SEVERITY

<sup>a</sup> The five-point scale values were not shown to respondents.

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<sup>7</sup> See Chapter II, p. 65 and Appendix H for the five factors by which respondents seemed to judge illness severity.

The interviewer then asked the respondent if anything could be done for the illness. If the answer was yes, the interviewer asked the respondent to state what he would actually do to care for the illness. Either a negative answer or a failure of the respondent to name a remedy was used on this test as one measure of the degree of uncertainty or of lack of knowledge.

A second measure of uncertainty contained in the Illness Rating Test involved the probability of recovery from an illness. The interviewer forced the respondent to judge the effectiveness of his remedies for the illness by asking him, "Now if the four people who have \_\_\_\_ do all the things you say they should do, how many of the four people might be expected to get well?" The respondent had to decide according to a chart of five probabilities (see Appendix C) the recovery rate of four people with a particular illness (see Fig. 3).

How Many People Would Get Well?	Recovery Rate (%)	Non-Recovery Rate <sup>a</sup>
0 out of 4	0	100
1 out of 4	25	75
2 out of 4	50	50
3 out of 4	75	25
4 out of 4	100	0

FIG. 3. RATES OF RECOVERY AND NON-RECOVERY

<sup>a</sup> The five-point non-recovery rates were not shown to respondents.

To reflect uncertainty, the responses were scored in negative terms of not getting well, or failing to recover, although the responses were given in positive terms of getting well or recovering. For example, as shown in Figure 3, an answer of three out of four people

getting well, or a 75 percent recovery rate, was scored as one out of four not getting well, or a 25 percent non-recovery rate. This score measured an individual's feeling of uncertainty or lack of ability to control the situation completely after doing everything possible.

After the respondent had stated the chances of an individual's getting well, the interviewer asked him how long the recovery would take. He forced the respondent to make some numerical approximation of time and recorded this time in terms of (1) hours, (2) days, (3) weeks, (4) months, (5) years, or (6) never or a lifetime. The response served as a third measure of uncertainty. It also measured severity, since the people in Nanakuli, as indicated in Chapter II, judged the severity of an illness according to its duration. This statement of time seemed to involve some degree of uncertainty as well.

The interviewer then asked the respondent if an individual could die from the particular illness. If the answer was yes, the interviewer asked what in general was the chance of dying from the illness, or what was the amount of risk involving death for this illness. The interviewer read the five choices and the amount of risk each verbal statement might equal. The respondent's reply was assigned scale value as shown in Figure 4. This response was a fourth measure of uncertainty and also involved a measure of severity (see Chapter II, page 65).

Still another measure of uncertainty resided in the respondent's answer to the question, "Now if the four people who have \_\_\_\_ do all the things you say they should do, how many of the four might be expected to die?" An answer, for example, of none out of four dying

General Chances of Death	Amount of Risk (%)	Scale Value <sup>a</sup>
Almost none	0	1
Little	25	2
In-between	50	3
Some	75	4
A lot	100	5

FIG. 4. SCALE VALUES FOR CHANCES OF DEATH

<sup>a</sup> The five-point scale values were not shown to respondents.

would reflect a 100 percent recovery rate or a non-recovery rate of zero. The non-recovery rate indicated certainty.

The responses to the Illness Rating Test questions on chances of getting well, chances of dying, duration of illness, and lack of remedies thus served as crude measures of the uncertainty involved in illness. These measures reflected the individual's mastery or non-mastery of his illness problem and were used in testing the major hypothesis on use of the supernatural (see Chapter IV). In addition, the Illness Rating Test ranking of illnesses according to degree of severity allowed a cross-check on the validity of the Tactics Questionnaire's order of illnesses (see Appendix H).

#### Measuring Western Health Knowledge

The Health Information Test (see Appendix D) measured the individual's extent of Western health knowledge. The test required multiple-choice answers to twenty-five questions involving disease concepts, dental care, first aid, proper diet, and other general health knowledge. The pre-test instrument consisted of fifty-five items taken

from three seventh-grade health books<sup>8</sup> in current or previous use at Nanaikapono Elementary School in Nanakuli. The items included in the final questionnaire were selected to form a normal curve of difficulty and were arranged in random order to minimize a halo effect on responses.

#### Measuring Hawaiian Therapeutic Knowledge

The Hawaiian Therapeutic Test<sup>9</sup> (see Appendix E) measured the individual's knowledge of Hawaiian illnesses and folk remedies. This test instrument consisted of thirty-five Hawaiian items to be identified: (1) five filler items (items not related to the testing of therapeutic knowledge), (2) ten items referring to Hawaiian medicines, (3) ten items referring to Hawaiian illnesses, and (4) ten items referring to Hawaiian religious beliefs. The filler items and items referring to Hawaiian religious beliefs prevented the respondent from recognizing the test as one concerned only with his therapeutic knowledge. In this way respondents would not be able to go through the questionnaire and select only those questions having a therapeutic

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<sup>8</sup> The three health books used are as follows: W. W. Bauer, M.D., G. G. Jenkins, H. S. Shacter, Ph.D., and E. T. Pounds, Growing and Changing: Book Seven in Health and Safety, Chicago: Scott, Foresman and Company, 1962; O. E. Byrd, M.D., E. Jones, P. E. Landis, E. Morgan, Growing in Health, River Forest, Ill.: Laidlaw Brothers, 1960; O. E. Byrd, M.D., E. A. Neilson, V. D. Moore, Health-7, River Forest, Ill.: Laidlaw Brothers, 1966.

<sup>9</sup> Because one individual did not take the Hawaiian Therapeutic Test, one score was missing. The value of the median of the Hawaiian Therapeutic Test scores was assigned to that individual.

emphasis. The pre-test instrument contained seventy-eight items chosen from the ethnographic material. The items in the final questionnaire formed a normal curve of difficulty in a random-order arrangement that would minimize a halo effect on responses. Only the items referring to Hawaiian medicines and illnesses were used in measuring the individual's level of Hawaiian therapeutic knowledge.

#### Summary

This chapter has described the test instruments used in the research. The major formal instruments were (1) the Tactics Questionnaire, which measured the amount of supernatural tactics and the amount of the natural-inactive tactic used by an individual to overcome illness; (2) the Illness Rating Test, which measured the seriousness or severity of specific illnesses and the degree of uncertainty connected in the respondent's mind with those illnesses; (3) the Hawaiian Therapeutic Test, which measured the degree of knowledge held by the individual of Hawaiian illnesses and folk remedies; and (4) the Health Information Test, which measured the degree of knowledge of Western health concepts and practices.

## CHAPTER IV

### THE USE OF SUPERNATURAL AND NATURAL TACTICS

This chapter will examine the major hypothesis of this study, namely, that within a culture the use of supernatural tactics to solve the problem of illness will be greater among those individuals who, compared with other individuals, possess significantly less natural knowledge which they can effectively use to overcome illness. The chapter will also examine a secondary hypothesis concerning the relationship between use of the supernatural and use of the inactive tactic.

Three observed illustrations of the hypothesized relationship between use of the supernatural and the amount of natural knowledge possessed by an individual will serve to introduce the general topic and the report of the data thereon gathered by the application of formal test instruments. In the three examples the individuals had limited knowledge for solving their respective problems and faced considerable uncertainty about the outcome of those problems. Their uncertainty manifested itself in their use of the supernatural. The degree of their reliance on the supernatural increased sharply with the severity of the crisis and decreased almost as rapidly after the crisis was over.

In the first illustration a woman in the community was apparently not very religious but quickly became so when her husband fell seriously ill. She had less than a high-school education and was on welfare. She did not know what to do for her husband. Consulting

her family and then her friends, she tried all the home remedies that they could tell her about. When her husband's condition did not improve, she took him to a doctor, and the doctor told her he did not think her husband would get well. At that time she began praying and going to church to ask God for help. Eventually, however, her husband died. Although the woman remained very religious for several months, her religiosity steadily decreased, and after approximately a year she resumed the pattern of living she had followed before her husband's illness crisis.

In the second illustration another woman in Nanakuli became very religious when a young grandson under her care was seriously injured. She too was quite limited in income and had had less than a high-school education. After trying Hawaiian medicines which failed to work, she took the child to a doctor. The doctor placed the child in the hospital and told the grandmother that even if her grandson lived, which was doubtful, he would be mentally retarded. The woman became frantic and told her friends and relatives she did not know what to do. One relative suggested that she have a faith-healer go to the hospital and take care of the child. The entire household began praying. The members also performed a ho'oponopono ceremony to find out why the child had had the accident. When the child recovered several months later, the religiosity of the grandmother and the household dropped off dramatically and became what it had been before the accident crisis.

The use of the supernatural following marital discord was illustrated in the third case. A man in the community separated from

his wife after a fight. He had come to Nanakuli four years earlier from a small fishing village on one of the outer islands. He had had only a second-grade education, and at the time of the separation he was out of work. His friends and relatives avoided him after the incident because he made excessive demands on them. He had never been faced with a similar situation and could not decide what he ought to do. On a Sunday morning, approximately one week after the separation, he suddenly became very religious when he learned that his wife had said she was going to divorce him. He went around the neighborhood singing hymns and telling the neighbors that he had heard God and was going to be saved, that his wife would return to him, and that he was going to become rich.

The religious behavior continued for several days before I visited him. At the time of my visit he told me about his new beliefs and said that he did not need to worry anymore. When I asked him what he was going to do, he replied that God would take care of everything. But when I asked him what he was going to do if God did not take care of everything, he replied that he did not know--that he would be lost. I suggested that he go to the welfare office to see if he could obtain legal aid. During our discussion of this plan of action, he broke down and cried and explained that until then he had not known where to turn and had not known that anyone cared about him. That afternoon he went to the state agency for help, and by the next day his extremely religious behavior had ceased.

These three illustrations indicated that at least some individuals who placed the most reliance on the supernatural possessed limited

knowledge for handling illness and other serious problems. Because of their limited knowledge, such persons also possessed a high degree of uncertainty about possible solutions to the serious problems they encountered. The question to be asked now is, how does knowledge or the lack of it relate to the use of the supernatural among the respondents in this study?

#### Health Knowledge and Use of the Supernatural

As stated in the major hypothesis, an individual's use of the supernatural in solving illness problems should vary inversely with the amount of natural knowledge he possesses with which he can deal with the problems. The Health Information Test (Western knowledge) and the Hawaiian Therapeutic Test were used as measures of natural knowledge (health and therapeutic).<sup>1</sup>

From the major hypothesis came the theorem that an individual with a high level of either type of natural knowledge--Western or Hawaiian--should depend less on the supernatural during an illness crisis than an individual with a low level of either type of knowledge.

The Kendall rank correlation coefficient was used to analyze the relationship between the scores of the sample's seventy-two respondents on the Tactics Questionnaire, the index of dependence on, and use of, the supernatural, and their scores on the Health Information Test and

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<sup>1</sup> Both the Health Information Test and the Hawaiian Therapeutic Test were scored for the 72 individuals in the test population.

the Hawaiian Therapeutic Test. The analysis revealed a significant inverse relationship between use of the supernatural and the amount of Western health knowledge ( $\tau = -.258$   $p \leq .001$ ). However, the analysis of the relationship between the use of the supernatural and amount of Hawaiian therapeutic knowledge revealed no significant correlation ( $\tau = .111$   $p \leq .15$ ).

The results of these analyses only partially supported the major hypothesis. The higher an individual's score was on the Health Information Test, the lower his total supernatural score would be on the Tactics Questionnaire. For the scores on the Hawaiian Therapeutic Test, however, the relationship proved to be the opposite of the expected one, that a high level of Hawaiian knowledge would also be accompanied by a lesser use of the supernatural.<sup>2</sup>

One possible explanation for these test results could be that they reflected a difference between Hawaiian and Western cultures in their respective emphases on the use of the supernatural. Specifically, Hawaiian therapeutic knowledge might be associated with the use of the supernatural because of a particular Hawaiian cultural emphasis. This relationship would agree with the ethnographic observations reported in

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<sup>2</sup> When 54 respondents were scored, using the Guttman Scale and then applying the Kendall rank correlation coefficient, the results showed a significant relationship between the supernatural scores from the Tactics Questionnaire and those from the Health Information Test ( $\tau = -.210$   $p \leq .01$ ). The results of the Guttman Scaling of the Tactics Questionnaire scores with those of the Hawaiian Therapeutic Test also showed a significant relationship ( $\tau = .238$   $p \leq .01$ ).

Chapter II that illnesses and their treatments are closely associated with use of the supernatural among the Hawaiians in Nanakuli. If Hawaiian knowledge was associated with the use of the supernatural, then the possibility arose that any individual differences among Hawaiians in the use of the supernatural might not be the result of differences in amounts of health knowledge, but might be accounted for by variations in the process of differential acculturation. An individual with a high score on the Hawaiian Therapeutic Test and a low score on the Health Information Test could be less acculturated than someone whose scores showed the opposite results.

To try to resolve this question of how the use of the supernatural was related to the amount and/or kind of health knowledge, the sample population was divided into four classes. This division grouped the responses on both the Health Information Test (HIT) and the Hawaiian Therapeutic Test (HTT) according to whether the individuals' test scores for each measure fell on or above the median score (high) for that measure or below the median score (low).

Class A--high HIT, low HTT  
 Class B--low HIT, high HTT  
 Class C--high HIT, high HTT  
 Class D--low HIT, low HTT<sup>3</sup>

This classification made it possible to assess the combined effects of the two types of knowledge on the use of the supernatural (see Fig. 5).

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<sup>3</sup> High HIT,  $\geq 14$ ; low HIT,  $\leq 13$ ; high HTT,  $\geq 8$ ; low HTT,  $\leq 7$ .

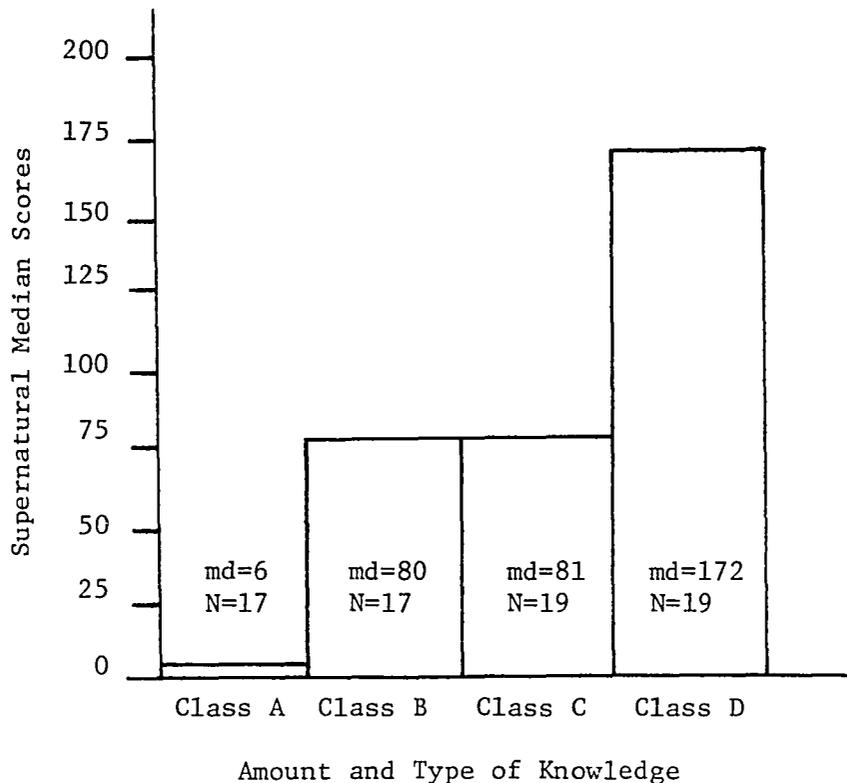


FIG. 5. RELATIONSHIP BETWEEN THE SUPERNATURAL AND AMOUNT AND TYPE OF KNOWLEDGE (N=72)

From the major hypothesis presented in this study, an individual who had a high level of both types of natural knowledge--Western and Hawaiian--should depend on the supernatural to a less degree than an individual who had a low level of both types of knowledge. To test this theorem, two of the four classes were compared for differences in dependence on the supernatural as measured by the Tactics Questionnaire: first, those individuals who had high scores on both tests of knowledge (Class C), and, second, those individuals who had low scores on both tests (Class D). Those individuals whose scores placed them in Class D used the supernatural significantly more than those whose scores placed

them in Class C (see Table III). This result was the one expected from the major hypothesis.

TABLE III. COMPARISON OF DIFFERENCES IN USE OF THE SUPERNATURAL BETWEEN GROUPS VARYING IN KNOWLEDGE

Amount and Types of Knowledge	Values of $z^a$
Class C <u>to</u> Class D	2.21*
Class A <u>to</u> Class D	4.46***
Class B <u>to</u> Class D	2.78**
Class C <u>to</u> Class A	2.21*
Class C <u>to</u> Class B	.16
Class A <u>to</u> Class B	2.27*

<sup>a</sup> The values of  $z$  refer to those derived from the Mann-Whitney U Test for large samples (see Siegel 1956:120-126).

\*  $p \leq .05$  level

\*\*  $p \leq .01$  level

\*\*\*  $p \leq .001$  level

Similarly the major hypothesis would predict that an individual who had a high level of knowledge of either the Hawaiian or Western practices for handling illnesses (Class A or Class B) would use the supernatural less than a person who lacked both types of knowledge. The group of individuals in Class D (low levels in both types of knowledge) was compared first with Class A (high HIT) and then with Class B (high HTT). The results were significant in both comparisons (see Table III). The individuals in Class D used the supernatural more than those in either of the other two classes where individuals

had in one a high level of Western health knowledge and in the other a high level of Hawaiian therapeutic knowledge.

A further prediction derived from the major hypothesis would say that individuals who had a high level of health knowledge in the two cultures (Class C) should use the supernatural less than individuals who had a high level of knowledge in only one of the cultures (either Class A or Class B). No significant difference developed in the comparison between the individuals in Class C and those in Class B in the use of the supernatural. Those in Class C differed significantly from those in Class A (see Table III). However, this last difference was the opposite of that postulated in the major hypothesis. The individuals in Class C used the supernatural more than those in Class A. A possible explanation of these results would be the presence of an emphasis on the supernatural in Hawaiian culture which would lead those individuals with high HTT scores to use the supernatural. The presence of high HTT knowledge in both classes might also have explained why Class C did not differ significantly from Class B, because Hawaiian therapeutic knowledge would be directly related to the use of the supernatural.

To examine the problem further, the next sets of individuals examined were Class A and Class B. The relationship derived from the major hypothesis would indicate no difference between them. However, if there is a supernatural emphasis in Hawaiian culture, the individuals in Class B (high HTT) should use the supernatural more. The results showed that those in Class B did use the supernatural significantly more than those in Class A (see Table III).

Further examination of these data by using the Guttman Scaling<sup>4</sup> confirmed the results just presented and did not change any of the

<sup>4</sup> The results from the Guttman Scaling differed slightly from those presented in Figure 5 and Table III. The following are the median supernatural scores and number of cases for each group as defined by type of knowledge:

Amount and Type of Knowledge	Number of Cases	Median of Supernatural
Class A	15	5
Class B	12	88
Class C	15	81
Class D	12	149

The following is the comparison of differences in the use of the supernatural between categories varying in knowledge:

Amount and Type of Knowledge	Values of z <sup>a</sup>
Class C <u>to</u> Class D	2.00*
Class A <u>to</u> Class D	3.61***
Class B <u>to</u> Class D	2.08*
Class C <u>to</u> Class A	2.94**
Class C <u>to</u> Class B	.29
Class A <u>to</u> Class B	2.39*

<sup>a</sup> The values of z refer to those derived from the Mann-Whitney U Test for large samples (see Siegel 1956:120-126).

\* p $\leq$ .05 level \*\* p $\leq$ .01 level \*\*\* p $\leq$ .001 level

relationships between the classes compared.

The results shown in Figure 5 and Table III have been interpreted as showing that in order to determine the degree of use of the supernatural by individuals in Nanakuli, both the amount and the type of knowledge possessed by those individuals must be taken into account. The results show that the variable of differential acculturation must be added to those postulated in the major hypothesis. Those who possess a high amount of Hawaiian therapeutic knowledge use the supernatural more than those who possess high Western health knowledge but low Hawaiian. However, those individuals who have a low amount of both Western health and Hawaiian therapeutic knowledge use the supernatural to a much greater extent than do those who possess only high Western or only high Hawaiian or both. Thus, the evidence found in the sample population does support the major hypothesis, and adds to it the condition that in a population undergoing acculturation, the more traditional knowledge an individual possesses, the more he will use the supernatural if that traditional knowledge is derived from a culture (e.g., Hawaiian) where the use of the supernatural is emphasized more than in the outside culture (e.g., Western).

#### A Further Examination of the Four Categories

Of the four categories of knowledge, Class C had the highest amount of variation in the use of the supernatural (see Table IV). Some of the variation in Class C can be explained by the fact that two of the respondents in this class who made the highest scores were two (a minister and a missionary) of the three members (the third was also a missionary) of the total sample who were highly

TABLE IV. VARIATION OF SUPERNATURAL  
SCORES IN KNOWLEDGE CATEGORIES  
(N=72)

Amount and Type of Knowledge	Values of d <sup>a</sup>
Class A	40
Class B	32
Class C	51
Class D	36

<sup>a</sup> The values of d refer to the decile range and the amount of variation for the whole range of ordinal observations for each knowledge category.

active in their churches. These two respondents were women who used a large amount of both types of knowledge in treating illness problems brought to them. Class C also had a significantly greater number of women than either Class D ( $\chi^2=6.76$   $p \leq .05$ ) or Class B ( $\chi^2=3.90$   $p \leq .05$ ).

There was no significant relationship between the amount of use of the supernatural and an individual's sex in the sample as a whole. However, there were several significant differences between the amount of use of the supernatural and the respondent's sex in the four knowledge categories. Women used the supernatural significantly more often than did men in both Class C ( $p \leq .05$ ) and Class A ( $p \leq .02$ ). But in Class A the use of the supernatural was extremely limited compared with its use in the other categories (see Fig. 5).

Class C contained more respondents whose origins were rural than did Class D. This rural origin might help explain why those

individuals in Class C had higher scores in Hawaiian therapeutic knowledge, but it would fail to account for the presence in the class of the high level of Western knowledge. These respondents in the high-high category of knowledge did not have any more education than did those in Class D and Class B. However, those in Class A had significantly more education and were younger than the respondents in the other categories (see Table V).

TABLE V. COMPARISON OF CLASS A CATEGORY TO OTHER KNOWLEDGE CATEGORIES IN THE AREAS OF AGE AND EDUCATION

Category of Knowledge	Age $\chi^2$ a	Education $\chi^2$
Class B	6.58*	14.17***
Class C	11.85***	6.44*
Class D	6.74**	7.77**

a  $\chi^2$  refers to chi square values.

\*  $p \leq .05$  level

\*\*  $p \leq .01$  level

\*\*\*  $p \leq .001$  level

The only explanation for the presence of the high Western health knowledge in Class C came from the life-history information gathered from the sample. Eight of the respondents in Class C had been connected with jobs where they had to learn about Western health knowledge (e.g., nurses' aide, health inspector, pre-school teachers' aide, minister, missionary). These individuals seemed to have learned

Western health knowledge, yet in the process they had not lost or replaced their Hawaiian therapeutic practices.

Class D had a high proportion of men (13 men, 6 women). As pointed out above, they were more urban in origin than were those individuals in Class C. Fifteen of the nineteen respondents in Class D lived in households where the average income per person was less than eight hundred dollars a year. Many of those in this category of very limited knowledge felt sorely limited and even powerless in their ability to handle illness problems. Fourteen of them gave one or more responses of "nothing can be done" to the questions on the Illness Rating Test. This number of negative responses was significantly greater than the number given by those individuals in Class C ( $\chi^2=5.22$   $p\leq.05$ ). The individuals in Class D seemed to be uncertain of the outcome of illness problems and used the supernatural more than those in any of the other knowledge categories (see Fig. 5).

#### Uncertainty and Use of the Supernatural

Uncertainty has been generally defined herein as doubt or lack of certainty (see page 7), or as lack of knowledge through which an individual might affect, or be certain of, the outcome of a problem. In the review of the literature on use of the supernatural (see Chapter I), it was pointed out that Malinowski, Parsons, Vogt, Lewis, and Lopreato believed that use of the supernatural was related to the degree of uncertainty the individual experiences in his problem situation. The greater the uncertainty (or lack of knowledge of the outcome), the greater the use the individual would make of the supernatural.

The effect of uncertainty upon use of the supernatural in the treatment of illness was illustrated by the examples in Chapter II of individuals who turned to the use of ho'oponopono when an illness seemed unexplainable or had an unusually long duration. In addition, the more serious an illness and the less control individuals felt they had over the outcome, the more they seemed to rely on praying, ho'oponopono, use of a faith healer, or going to church (i.e., the supernatural).

A significant correlation existed between use of the supernatural and each of the five indices for measuring uncertainty. As indicated in Chapter III, these five indices reflecting uncertainty were generated from the Illness Rating Test. To examine the relationship, the mean of the responses for use of the supernatural on each of the ten illnesses from the Tactics Questionnaire was ranked from low to high. The mean of the responses for each of the five indices of uncertainty was similarly ranked from low to high. The result of comparing the rankings for the same ten illnesses<sup>5</sup> is shown in Table VI.

The data thus supported the hypothesized relationship between use of the supernatural and lack of knowledge--i.e., uncertainty--about the outcome of an illness problem.

The analysis to this point has focused on the use of the supernatural which is composed of active tactics. It was apparent from the interviews, however, that not all individuals will actively try

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<sup>5</sup> The approximation presented in Appendix H for the eighth illness, ma'i pūhō, was used in these rankings.

TABLE VI. COMPARISON OF THE USE OF THE SUPERNATURAL TO FIVE INDICES OF UNCERTAINTY, USING KENDALL'S TAU (N=72)

Indices	Tau Value $\tau$
Seriousness of the illnesses	.527**
"Doing everything and not getting well" from the illnesses	.400*
Duration of the illnesses	.654***
Chances of dying from the illnesses	.600***
"Doing everything and still having a chance of dying" from the illnesses	.527**

\*  $p \leq .05$  level

\*\*  $p \leq .01$  level

\*\*\*  $p \leq .001$  level

to solve their problems. Therefore, a clear need developed to formulate and test the secondary hypothesis concerning inaction in the face of illness problems.

#### The Natural Inactive Tactic

An individual may engage in some form of natural divergent tactics when faced with a problem. While an active tactic is any direct or indirect attempt to solve an illness problem, a divergent tactic involves an avoidance or withdrawal response, such as drinking or just plain inaction (see Chapter I, page 2 for definitions).

Malinowski's statements on the relationship of magic to knowledge have been interpreted here as implying a theoretical sequence of possible actions an individual will use when he tries to handle a problem. First, an individual will use his natural (empirical) knowledge when faced with a problem. Second, if this knowledge should fail or be

lacking, the individual will engage in a vicarious activity (the supernatural) in his attempt to obtain his goals. In the third and last step, if all else should fail, the individual will resort to inaction (see page 4).

However, observations and data from the Tactics Questionnaire suggested that the resort to inaction might come as the first rather than the final step when an individual faced a problem. Some individuals responded initially with the answer "I do nothing" when asked how they would treat a particular illness. These initial "do nothing" responses were defined as initial inactive tactics and were recorded in blanks A or B of the questionnaire. The later "do nothing" responses were defined as final inactive tactics and were recorded in blanks C or D.

Three different variations of the inactive tactic appeared in the fieldwork. In the first variation the individual was inactive initially (gave "do nothing" as his first response) because he recognized the illness as minor and not serious enough to justify action. In the second variation the individual was inactive initially because he failed to recognize the illness at all (he might be forced into action later if the illness should become severe). Many of the respondents were ignorant of the symptoms of various severe illnesses. In the third variation the individual was inactive as a final response after having unsuccessfully tried to solve the problem any way he could. This third variation has here been interpreted as probably being the type of response Malinowski referred to in his statement that passive inaction was the last logical resort of an individual

after both natural and supernatural tactics had been tried.

Data from the Tactics Questionnaire thus suggested that the inactive tactic was not always preceded by a use of the supernatural, as Malinowski implied. Of seventy-two respondents, eighteen gave a total of eighty-two final inactive responses. Sixty-five of the eighty-two were immediately preceded by active responses; seventeen were preceded by divergent responses. Of the sixty-five active responses, only thirty-nine named supernatural tactics to be recorded in blanks A, B, or C. Thus, in contrast to the three-step Malinowski sequence described above, approximately two-fifths of these individuals became inactive without having previously used the supernatural.

For the more serious illnesses, however, the supernatural more frequently preceded the inactive tactic. Twenty-two supernatural responses preceded twenty-eight final inactive responses to the "more serious" illnesses on the Tactics Questionnaire, while only seventeen supernatural responses preceded fifty-four final inactive responses to the "less serious" illnesses ( $\chi^2=4.73$   $p\leq.03$ ).<sup>6</sup> Thus it developed that the theoretical course of actions derived from Malinowski's material was not consistently valid when the responses concerned minor illnesses, but was much more nearly consistently valid when the responses concerned serious illnesses.

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<sup>6</sup> The "less serious" illnesses on the Tactics Questionnaire were the first five (1-5), and the "more serious" illnesses were the last five (6-10).

Of the respondents who named the inactive tactic as an initial rather than a final response for handling an illness, men more often than women indicated that they would remain inactive. Responses to the Tactics Questionnaire thus showed an apparent difference between the sexes as to what type of tactic would be selected for handling the ten illnesses on the questionnaire. Men more frequently than women tended to say they would "do nothing" as one of their first two responses to an illness ( $\chi^2=5.30$   $p \leq .05$ ).

Two possible reasons could be deduced from the data for this sex difference in response to illness problems. First, as stated in Chapter II, women had more knowledge about medicines and the care of illnesses than men did (page 53). Second, men showed they would rather have some relative or friend help them with their illness than handle the problem themselves. If the help of friends or relatives was not immediately available, men preferred waiting for this help to helping themselves. As a female respondent commented, "Husbands or sons, there's no difference. All the same. My sons will marry when they can find another mother to take care of them. They all want to be taken care of like children." The use of the inactive tactic by men might also have been connected with the concept of the male role. As stated in Chapter II, the role of the male was intimately connected with the image of his being a "provider" for his wife and family. Generally Hawaiian men seemed to feel very uncomfortable staying home from their jobs. According to one informant, "A man is the provider for his family. You got to work so the family doesn't get misery because there isn't any money from my not working. So I get doctored

up at home or go to a friend who knows how to treat the illness so I can keep working. A doctor might make me quit my job, and the family can't afford that." Thus, Hawaiian men have a very strong fear of having an illness discovered and possibly being unable to fulfill the expected role of provider.

Some of the men said that a job supervisor's policy was, fire any man who is ill. They believed that the supervisor could get into trouble for allowing a sick person to work and become involved in an accident where the company would be held responsible. Whether or not the policy existed, the fear of it did. This fear was illustrated by the case of a young man who almost cut off his finger while working for a construction company. He tried to stem the flow of blood, and then hid his hand behind his back when the supervisor came by. Suspecting that something was wrong and then seeing the blood drip, the supervisor forced the young man to show him the injured hand. Over a vehement protest that his hand was all right and he was able to keep working, the young man was sent to the dispensary and then home. He remained off the job for several days. Although I know that the young man is no longer employed by that company, by my oversight I do not know whether his injury directly caused his job loss. The man's belief in this possibility, however, may be related to the inactive tactic.

Use of the inactive tactic by men might also have been connected with the fact that their work mates were frequently the major part of their peer group. When a man was cut off from his job, he was also cut off from his male friends. This situation was very uncomfortable for the man who derived much emotional support from his peer group.

Still another explanation for the initial inactive response in some Hawaiian men could be the child-rearing pattern. As noted from the young man's statement in Chapter II (see pages 59-60), "you hang in the middle" when you do not know what to do to avoid feeling shame or hurting yourself or hurting someone else. Data were not collected to substantiate this possibility, however.

#### Summary of Findings

The field observations and questionnaire responses analyzed in this chapter supported the major hypothesis: within a culture the use of supernatural tactics to solve the problem of illness will be greater among those individuals who, compared with other individuals, possess significantly less natural knowledge which they can use effectively to overcome illness. However, the relationship between use of the supernatural and amount of therapeutic knowledge possessed by an individual proved to be not a simple one. To demonstrate this relationship fully, it was necessary to control for differential acculturation. Strong Hawaiian therapeutic knowledge and Hawaiian identification seemed to be associated with use of the supernatural. An individual who had Western health knowledge and lacked Hawaiian therapeutic knowledge depended less upon the use of the supernatural.

To examine the major hypothesis in connection with the problem of differential acculturation, the individuals' responses were divided into a four-fold classification according to amount and type of health or therapeutic knowledge. The four categories were as follows:

- (1) High Health Information Test and Low Hawaiian Therapeutic Test (Class A),
- (2) Low Health Information Test and High Hawaiian

Therapeutic Test (Class B), (3) High Health Information Test and High Hawaiian Therapeutic Test (Class C), and (4) Low Health Information Test and Low Hawaiian Therapeutic Test (Class D).

Comparison of these categories in their use of the supernatural produced the following conclusions. First, individuals who had Hawaiian therapeutic knowledge used the supernatural more than those who had Western health knowledge. If the therapeutic knowledge of the Hawaiians is supernaturally oriented, then in the time of an illness crisis an individual with low Western health knowledge and high Hawaiian therapeutic knowledge will tend to use the supernatural. An acculturated individual with Western health and Hawaiian therapeutic knowledge has a higher use of the supernatural than an individual with only Western health knowledge. This higher use of the supernatural may be the result of his mixture of Western and Hawaiian practices, or of his regression to Hawaiian therapeutic practices, the most familiar to him, in times of crisis. This finding on the higher use of the supernatural with Hawaiian therapeutic knowledge as compared to the negative relationship between Western health knowledge and the use of the supernatural supported the theoretical viewpoints of White and Hsu.

Second, individuals who lack both Hawaiian therapeutic and Western health knowledge tended to use the supernatural more than any other category of respondents. This finding supported the major hypothesis of this study as reflected in the theoretical viewpoint of Malinowski in regard to the relationship between use of magic and gaps in knowledge.

Malinowski not only stated that individuals would rely on the supernatural, but also implied a possible three-step sequence in problem-solving by an individual: first natural action, then supernatural action, and finally passive inaction. However, the results of this study suggested that the sequence of actions must be modified by including as part of the data an individual's judgment of the seriousness of the situation. For illnesses judged to be minor, some individuals might choose inaction as a first response before having tried either a natural or a supernatural tactic. For illnesses judged to be serious, however, individuals more predictably followed the hypothetical sequence of actions, with passive inaction being the last rather than the first choice.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

The main objective of this dissertation has been to examine the use of the supernatural as an adjustive mechanism in situations involving illness. The focus has specifically been on the differential reliance upon the supernatural by individuals within a culture undergoing acculturation--the Hawaiians in Nanakuli.

Cultural factors which appear to affect reliance on the supernatural are varied. For example, Hawaiians seem to view every part of nature as living; they make no rigid distinction between man and nature, nor between one's own body and the rest of the environment. Though a blurring of boundaries results, Hawaiians in Nanakuli do recognize a difference between natural and supernatural aspects of their world, a difference not so much of type as of amount or degree. A stone or a plant, for example, each with its own personality, may have potential mana which can become more or less active if circumstances change; but kapu (prohibitions) are also present to control or direct the activated mana.

Dualism as in the concept of mana and kapu (power and restraint of power) is evident throughout the Hawaiians' world view. They distinguish between purity and pollution, between human sex roles, and between male and female qualities in inanimate objects. Within the realm of illnesses and their treatment the same type of dualism is very much present. Illnesses may be either naturally or supernaturally caused; treatment of them may involve either natural or supernatural

elements, although some use of the supernatural usually appears even in the treatment of naturally caused illnesses.

The principles of reciprocity and equality among human beings are also important to these Hawaiians. The reciprocity system acts to solidify personal relationships, whether through the exchange of gifts, of knowledge, or of aid. Abuse of the system may indicate an individual who considers himself better than those around him; the desire for mutual equality implies that this attitude will not be acceptable to the individual's associates.

Knowledge of the structure of the 'ohana (the descent group) and of the household is also necessary to the understanding of relationships among Hawaiians and between Hawaiians and their universe. The dualism of junior and senior relationships among kin is a very prominent aspect of Hawaiian life. The 'aumakua (ancestral spirits) are not only important in the tracing of an individual's descent, they also play a large part in the Hawaiian's concept of the causes and treatments of some illnesses.

Except for very serious illnesses, and sometimes too late even then, individuals tend to avoid professional doctors. Hawaiian women learn from an early age to treat their own and their families' illnesses. Men, however, take very seriously their role as the family's provider, and to keep their jobs they learn not to show need for illness treatment. And when treatment does become necessary, they tend to depend on women or on close friends. In either case, both natural and supernatural tactics, or either one, may be used.

A review of anthropological literature indicated two possible

explanations for individual differences within a culture in use of the supernatural. First, individuals will turn to the use of the supernatural to insure the outcome of uncertain situations when their natural (empirical) knowledge is deficient. This viewpoint is shared by Malinowski (1948 and 1965), Homans (1965), Radin (1937), Parsons (1965), and Lewis and Lopreato (1962). Second, the use of the supernatural depends not on individual differences, but on the particular orientation of the culture in which the individual participates. Individuals who possess a technologically advanced culture will use the supernatural less than those individuals from a less technologically advanced culture (White 1959). The proportion of natural and supernatural knowledge used by an individual is determined by his culture (Hsu 1952). Whether an individual undergoing acculturation turns to natural or supernatural tactics when faced with a crisis will depend upon the orientation of the individual's traditional culture. In times of crisis the individual will use the cultural practices most familiar (the traditional culture) and whether these practices are natural or supernatural depends upon the orientation of the traditional culture (Hsu 1952).

I examined the relationship between the individual's level of natural knowledge (high or low), kinds of knowledge (Western or Hawaiian), and his use of the supernatural. The major hypothesis held that within a culture the use of supernatural tactics to solve a problem of illness would be greater among those individuals who, compared with other individuals, possessed significantly less natural knowledge which they could use effectively to overcome illness.

Three instruments were created to test this hypothesis. The Tactics Questionnaire was designed specifically to measure the individual's reliance upon the supernatural in several illness situations. The other instruments measured the individual's level of knowledge concerning illnesses and health practices. The Health Information Test measured Western health knowledge, and the Hawaiian Therapeutic Test measured Hawaiian health knowledge.

A strongly negative relationship existed between the amount of use of the supernatural and the extent of knowledge revealed by the Health Information Test; a positive relationship existed between the amount of use of the supernatural and the extent of knowledge revealed by the Hawaiian Therapeutic Test.

The positive relationship between the Hawaiian therapeutic knowledge and the use of the supernatural, and the negative relationship between Western health knowledge and the supernatural raised a question whether these test-revealed differences might be due to a differential acculturation among the Hawaiians involved. Hawaiian culture has indeed been undergoing acculturative change for almost two hundred years. The respondents who were highly dependent on the use of supernatural tactics might have been individuals who had not yet acculturated to Western health practices. Conversely a respondent with a low score on the use of the supernatural might have only been an individual who had already acculturated to Western health practices.

To examine this question of whether the increased use of the supernatural by an individual was the result of limited natural knowledge or an effect of differential acculturation, the sample

population was divided into four categories. The dimensions for the four-fold classification were amount and type of knowledge. Using the scores of the Health Information Test and the Hawaiian Therapeutic Test, respondents were first classified according to whether their scores were on or above the median for each test or whether they were below the median for each test. Then these respondents were grouped into those predominantly having knowledge of one type, having knowledge of both types, or lacking both types of knowledge. Each respondent was placed into one of the following categories: (1) High Health Information Test and Low Hawaiian Therapeutic Test (Class A), (2) Low Health Information Test and High Hawaiian Therapeutic Test (Class B), (3) High Health Information Test and High Hawaiian Therapeutic Test (Class C), or (4) Low Health Information Test and Low Hawaiian Therapeutic Test (Class D).

Comparison of the four categories of respondents produced the following results. First, as expected from the major hypothesis, the amount of natural knowledge possessed by an individual for handling a problem of illness was related to the amount of supernatural tactics the individual used. Those respondents who had a high level of knowledge either of Western health practices or of Hawaiian therapeutic practices, or of both, used the supernatural significantly less than those individuals who were limited in both types of knowledge. These results supported the theoretical perspective that individuals use the supernatural to bridge gaps in their natural (empirical) knowledge.

Second, those individuals who possessed a high level of Hawaiian therapeutic knowledge used the supernatural significantly more than

the group of individuals who had high Western health knowledge and low Hawaiian therapeutic scores. This relationship meant that some of the differences between individuals in the use of the supernatural could be explained by the type of knowledge they possessed. The relationship between the type of knowledge and the use of the supernatural supported the theoretical perspective that the use of the supernatural is determined by a particular cultural orientation.

These two theoretical positions may not be as distant from each other as they at first appear. The use of the supernatural in both cases can possibly be derived from the same principle. The principle is: the supernatural is used as an adjustive mechanism when the extent and effectiveness of natural (empirical) knowledge and techniques are found to be insufficient for solving a problem. This principle can explain the use of the supernatural and the amount of its use on the level of a culture as well as on the level of the individual. Individuals in cultures which possess limited knowledge and techniques for combatting physical illness will use the supernatural more than individuals in cultures which possess greater technological development in the area of illness. The use of the supernatural in customary treatment of illness might reflect the standardization of individuals' attempts through time to cope with the limited naturalistic knowledge present within their cultural repertory for handling illnesses. Once this means of handling the problem becomes part of the culture's repertory, future individuals have a means by which to bridge the gap in their knowledge and to relieve their anxiety.

If the Hawaiian culture is assumed to be less technologically

advanced than Western culture in the area of illness, then individuals having high Hawaiian therapeutic knowledge will be expected to use the supernatural more than those individuals having high Western health knowledge. This study's results indicate that they do use it more. Individuals who have a high level of both kinds of knowledge also will be expected to use the supernatural more than those who have only a high level of Western knowledge. The former may use a combination of the practices of the two cultures or they may regress to the more familiar (Hawaiian) way of handling an illness when faced with a crisis situation. Individuals who are limited in knowledge in both cultures will be expected to use the supernatural the most because they do not have a culturally set repertory of behavior to handle a problem and thus must create a solution of their own. The results of this study show that they do use the supernatural more often than any other group.

A secondary hypothesis that was examined in this study arose from Malinowski's statement that for an individual faced with a problem, ". . . passive inaction, the only thing dictated by reason, is the last thing in which he can acquiesce" (1948:79). This statement implied a possible three-step sequence of actions. First the individual will use his empirical knowledge to try to solve his problem, then he will use the supernatural if the first attempt failed, and only last will he choose inaction.

The data from Nanakuli (see Chapter IV) indicated that the individual would not necessarily turn to use of the supernatural if he did not judge the problem to be very serious. However, when the individual judged the situation to be serious, he seemed to proceed as

expected from natural to supernatural tactics and then to passive inaction if the natural and supernatural tactics had failed him. Thus a person must first recognize something to be a problem and then to be a problem serious enough to merit action; only then does Malinowski's statement seem to be consistently valid.

#### Possibilities for Future Research

We need additional confirmation of the principle that the supernatural will be used as an adjustive mechanism when the extent and effectiveness of natural knowledge and techniques for solving problems are found insufficient. A two-step validation procedure will be necessary for this further confirmation. The first step will require the re-examination of the research reported in this dissertation. Not only the subsystem of therapeutic practices, but also other cultural subsystems and problems in Nanakuli and in communities in other cultures undergoing acculturation must be examined. The second step will require a selection from cultures around the world of ethnographic samples ordered along the dimension of ability of cultures to control their environments; through this wide sampling it should be possible to determine whether use of the supernatural among cultures and within cultures is a product of the available amount of knowledge which can be used to solve the problems facing these cultures. This confirmation process will support, though not prove, the proposition that lack or insufficiency of knowledge is a sufficient cause for the use of the supernatural, because the phenomena concerning the use of the supernatural could be the result of other variables, such as those involving an individual's feeling of control

over the problem facing him.

We also need further research in Nanakuli to study the use of the inactive tactic. This tactic seemed in this study to be used when a person felt a problem was not very serious, or when everything else that had been tried had failed. Men in the test sample seemed more inactive than women in the face of illness. The question is, why are men initially more inactive than women? Is there some aspect in the raising of a Hawaiian male that produces a form of fatalism? Is there a relationship between the male's giving an inactive response and his having a problem with his role as a provider? The whole area of inactive responses in Hawaiian culture needs much more intensive examination than this dissertation has been able to offer. If medical programs are to be successful in this community, then the cause for inactive responses must be discovered and some method instituted of modifying the responses.

While no description can ever be complete nor any theory ever proven, the problem has here been examined and an attempt has been made to clarify the ways in which the supernatural is used as a mechanism of adjustment. Even though this vast, presently existing area of Hawaiian culture still remains to be more fully explored, I believe that the results of this examination illuminate to some extent why the Hawaiians in Nanakuli differ in the use of the supernatural in illness crises.

APPENDIX A

GLOSSARY OF HAWAIIAN WORDS

Reference: Pukui, Mary Kawena and Samuel H. Elbert  
1965 Hawaiian-English Dictionary. Honolulu:  
University of Hawaii Press.

Terms noted with an asterisk are either not found in the dictionary, or have different meanings for the respondents than the dictionary definitions.

<u>ahuwale</u>	exposed, common knowledge, in plain sight
<u>aikāne</u>	a casual friend
<u>akahai</u>	proper behavior, modest, meek, gentle, unassuming
<u>akualele</u>	a fireball which is thought to be a flying god
<u>'alaea</u>	ocherous earth used for coloring salt and used in medicine
<u>ali'i</u>	royalty, chief or chiefess
<u>aloha</u>	a greeting, love, charity, pity, kindness
<u>ao</u>	day, light, dawn, world
* <u>ac 'aumākua</u>	world or realm of the spirits of the ancestors
<u>'au'a</u>	to withhold, be stingy, greedy
<u>'aumakua</u>	ancestor or guardian spirit of a person or family (the plural form is <u>'aumākua</u> )
<u>'auwae-pahāha</u>	mumps
<u>ha'anui</u>	to brag, boast, exaggerate, "to make oneself big"
<u>hā'awi</u>	to give
<u>haka</u>	a medium, "one who serves as a perch for the spirits" (a possessed person)
<u>hale</u>	house, household
<u>hānai</u>	a foster child, to adopt

<u>*hana no'eau</u>	work which is done wisely, skillfully, or with perfection
<u>hānō</u>	asthma
<u>haole</u>	white person, American, Englishman, foreigner
<u>haumia</u>	pollution, uncleanliness, defilement
<u>heiau</u>	a temple platform used in the old Hawaiian religion
<u>hewa</u>	a wrong, mistake, sin
<u>hiapo</u>	the first-born child
<u>hilahila</u>	to be ashamed, bashful, shy
<u>hoaloha</u>	a dear or beloved friend
<u>ho'okama</u>	to adopt a child or adult as friend to make him as a relative
<u>ho'okipa</u>	hospitality, to entertain
<u>ho'oponopono</u>	a ceremony to put personal problems right, "a family mental cleanup"
<u>'ili 'ili hānau</u>	the birth pebbles of Kō-loa, Hawaii which were believed to reproduce themselves; they are called "Pele stones" in Nanakuli
<u>inoa pō</u>	a name which appear to a senior relative in a dream; the name comes from the realm of the <u>'aumākua</u> and is to be given to the newly born infant in the family; this name is sometimes referred to as a " <u>kapu</u> name"
<u>iwikuamo'o</u>	spine, backbone, or direct line of descent of the <u>'ohana</u>
<u>kahu</u>	caretaker, keeper, guardian
<u>kahuna</u>	expert, craftsman, priest, sorcerer
<u>kaikaina</u>	younger sibling or cousin of the same sex as ego
<u>kaikamahine</u>	girl, daughter, niece
<u>kaikua'ana</u>	older sibling or cousin of the same sex as ego
<u>kala</u>	forgiveness, pardon, release

<u>kalo</u> or <u>taro</u>	starchy root ( <u>Colocasia esculenta</u> ) from which <u>poi</u> is produced; a plant with long stems and heart-shaped leaves
<u>kama'āina</u>	an acquaintance, a native-born person, familiar
<u>kama kāne</u>	son, boy, a male child
<u>kaona</u>	hidden meaning such as in Hawaiian poetry and songs; concealed references as to people, places, and things
<u>kapu</u>	taboo, prohibition, forbidden
<u>kauhola</u>	severe heart attack, stroke
* <u>kawila</u>	source of this wood is not clear, but it is a very dark brown, almost black heavy wood used in making canes
<u>keiki</u>	offspring, child, descendant
* <u>ki'i kapu</u>	medicines gathered under restrictions of dreams and taboos
* <u>ki'i noa</u>	medicines which can be gathered without restrictions of taboos
<u>kino lau</u>	a spirit's many physical body forms
<u>kua</u>	stem, back
<u>kuapo</u>	to trade, swap, barter
<u>lani</u>	spirit abode, sky, heaven
<u>lapu</u>	ghost, apparition
<u>limu</u>	seaweed, a general name for plants growing under water
<u>lōkāhi</u>	harmony, peace
<u>lomi</u>	to massage, rub, press
<u>ma'ema'e</u>	purity, chaste, clean
<u>ma'i-ai-ake</u>	tuberculosis
* <u>ma'i 'aumākuā</u>	illnesses caused by the supernatural
* <u>ma'i haole</u>	introduced illnesses (see also <u>ma'i malihini</u> )

<u>*ma'i kama'āina</u>	refers to illnesses present in Hawaii before historical contact
<u>*ma'i kino</u>	refers to illnesses which are considered to be natural and not supernaturally caused
<u>ma'i malihini</u>	introduced illnesses (see also <u>ma'i haole</u> )
<u>*ma'i pūhō</u>	a very deep sore or ulcer that supposedly eats into the bone
<u>malihini</u>	stranger, newcomer, guest
<u>maka 'ula'ula</u>	inflamed eye, pinkeye
<u>mana</u>	supernatural or divine power
<u>*ma na kapuna</u>	being related in the distant past, but not able to trace links
<u>maūi</u>	sprain, bruise
<u>mauli-ola</u>	breath of life, power of healing
<u>mōhai</u>	sacrifice, offering
<u>na'au</u>	intestines, mind, heart
<u>nīele</u>	to be snooty
<u>noho</u>	to sit, a possession of a medium by a spirit or god
<u>*noho 'āina</u>	person who lives on the land and has usufruct rights
<u>'ohana</u>	family, kin group, relatives, to gather for family prayers
<u>'ōkala</u>	gooseflesh, creeping sensation
<u>'ōpū huli</u>	a "turned stomach," a state in which the stomach is said to be out of position
<u>pāheahea</u>	hospitality, invitation to eat
<u>pa'i a pa'i</u>	to be equal, as two people
<u>pālaulau</u>	a skirt or broad apron
<u>pāna'i</u>	to pay back, reciprocity, reward, revenge

<u>pani</u>	to close with a final bit of food after a medical treatment
<u>papa hana</u>	ceremony for the gods
<u>pili</u>	a close relationship
<u>pō</u>	night, darkness
<u>pōpolo</u>	a black nightshade ( <u>Solanum nigrum</u> ) which has white flowers and black edible berries, used as a medical remedy by the Hawaiians
<u>pu'uulele</u>	rupture, hernia
<u>tūtū</u> or <u>kūkū</u>	an endearment term such as "auntie" or "granny" used for older relatives of both sexes
<u>'uala</u>	the sweet potato
<u>'uhane</u>	soul, spirit
<u>ulāli'i</u>	measles
<u>*'ula-loa</u>	a small weed ( <u>Waltheria americana</u> ) used as a medical remedy by the Hawaiians
<u>unihipili</u>	the spirit of a dead person which resides in bits of hair and bone; it is prayed to and sent by sorcerers to do harm or "eat" its victim

APPENDIX B

TACTICS QUESTIONNAIRE

To the Interviewer:

Shuffle the four cards with the titles across the top--"Individual Himself," "Family Member or Relative," "Friend," and "Stranger"--and hand them to the respondent. Read to him the twenty-five choices listed on the four cards. If an example is needed, include one (e.g., broken leg: What would I do? I could do any one of these twenty-five things listed. It all depends on which you would like to do).

Emphasis: "No. 20. Medical person: Hawaiian kind" (if one was available for people to go to). Some years ago there was a "Hawaiian kind doctor" in town, but he died. I want to know if they would go to him if they could. Item No. 23 refers to the old, old kind of Hawaiian religion which some Hawaiians have carried on since before the missionaries came.

After you have read the twenty-five choices aloud, read the instructions on the test. Ask if there are any questions. You may only explain the twenty-five choices or interpret the instructions for them if they don't understand. Some will say "it's hard" and refuse to go on. Force them to. Tell them you took it and say, "Yes, it was hard" but that you finished it. This test is very important. After they finish, check to see that all the spaces are filled. After you show the cards, pick them up and only show them if the respondent can't think of anything. Code his answers on the questionnaire.

## Key (Weighted Scores)

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
1.	( 40 )	( 39 )	( 38 )	( 37 )
2.	( 36 )	( 35 )	( 34 )	( 33 )
3.	( 32 )	( 31 )	( 30 )	( 29 )
4.	( 28 )	( 27 )	( 26 )	( 25 )
5.	( 24 )	( 23 )	( 22 )	( 21 )
6.	( 20 )	( 19 )	( 18 )	( 17 )
7.	( 16 )	( 15 )	( 14 )	( 13 )
8.	( 12 )	( 11 )	( 10 )	( 09 )
9.	( 08 )	( 07 )	( 06 )	( 05 )
10.	( 04 )	( 03 )	( 02 )	( 01 )

## Instructions to the Respondent:

Below are ten conditions and illnesses of the body. These are supposed to be "end developments"--which means they cannot develop into another type of illness; however, some might or do result in death. The columns labeled A, B, C, D are to indicate the order of your choices (1, 2, 3, 4). The choices from which you select your answers are on the four cards in front of you. There are twenty-five choices from which any four can be chosen for each illness. Once you have used a choice for one illness, you cannot use it over again for that same illness. You must give four different answers for any one illness. However, when you go to the next illness, you can choose from all twenty-five again.

The choices you make for each of the ten illnesses or conditions should be those you have actually done before or would actually do if the illness happens. Fill in all the spaces in all the columns with the numbers of your choices taken from the four cards of choices.

DO NOT LEAVE ANY SPACE BLANK. FORCE YOURSELF TO MAKE A CHOICE.  
IT MAY BE HARD TO CHOOSE, BUT MAKE A CHOICE.

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	
( )	( )	( )	( )	<u>maūi</u> (mild sprain)
( )	( )	( )	( )	<u>maka 'ula'ula</u> (pinkeye)
( )	( )	( )	( )	<u>'auwae-pahāha</u> (mumps)
( )	( )	( )	( )	<u>'ulāli'i</u> (measles)
( )	( )	( )	( )	<u>'ōpū huli</u> (turned stomach)
( )	( )	( )	( )	<u>pu'uulele</u> (rupture)
( )	( )	( )	( )	<u>hano</u> (asthma)
( )	( )	( )	( )	<u>ma'i pūhō</u> (a very deep sore that eats into the bone)
( )	( )	( )	( )	<u>ma'i-'ai-ake</u> (T.B.)
( )	( )	( )	( )	<u>kauhola</u> (fatal heart attack, you know person is dying)

Twenty-five Tactic Choices as Shown on Four Cards

Individual Himself

1. Do nothing
2. Drink beer or liquor
3. Take your mind off it by working
4. Take your mind off it with entertainment and play (e.g.,  
movies, sports)
5. Home remedy: medicines taken inside the body
6. Home remedy: treatment outside body, with or without medicine  
(steam bath, lomi lomi, etc.)
7. Religion (prayers, reading Bible, etc.)

Family Member or Relative

8. Drink beer or liquor
9. Take your mind off it by working
10. Take your mind off it with entertainment and play (e.g.,  
movies, sports)
11. Home remedy: medicines taken inside the body
12. Home remedy: treatment outside body, with or without medicine  
(steam bath, lomi lomi, etc.)
13. Religion (prayer, ho'oponopono, etc.)

Friend

14. Drink beer or liquor
15. Take your mind off it by working
16. Take your mind off it with entertainment and play (e.g.,  
movies, sports)
17. Home remedy: medicines taken inside the body
18. Home remedy: treatment outside body, with or without medicine  
(steam bath, lomi lomi, etc.)
19. Religion (prayer, Bible meeting, etc.)

Stranger

20. Medical person: Hawaiian kind (if one was available for

- you to go to)
21. Medical person: Haole kind (regular doctors, hospitals, etc.)
  22. Medical person: Other (Japanese, Chinese, etc.)
  23. Religion: Hawaiian kind (e.g., 'aumakua, papa hana, mōhai, real "old Hawaiian" kind)
  24. Religion: Churches (e.g., Protestant, Catholic)
  25. Religion: Other (e.g., Buddhist, Shinto)

Type of Tactic by Number as Listed Above  
(This Section Not Shown to Respondent)

Supernatural--Active: 7, 13, 19, 23, 24, and 25

Natural--Active: 5, 6, 11, 12, 17, 18, 20, 21, and 22

Divergent: 2, 3, 4, 8, 9, 10, 14, 15, and 16

Inactive: 1

AN EXAMPLE OF THE TACTICS QUESTIONNAIRE WITH A TOTAL SCORE OF SEVENTY-FOUR FOR THE USE OF SUPERNATURAL TACTICS

A	B	C	D	Illnesses
(21) <sup>a</sup>	( 3)	(10)	( 6)	<u>maūi</u> (mild sprain)
40 <sup>b</sup>	39	38	37	
(21)	( 3)	( 6)	( 4)	<u>maka 'ula'ula</u> (pinkeye)
36	35	34	33	
(21)	( 5)	( 6)	( 1)	<u>'auwae-pahāha</u> (mumps)
32	31	30	29	
(21)	( 5)	( 6)	( 1)	<u>'ulāli'i</u> (measles)
28	27	26	25	
(20)	( 6)	( 4)	( 1)	<u>'ōpū huli</u> (turned stomach)
24	23	22	21	
(21)	(7)	(24)	( 5)	<u>pu'uulele</u> (rupture)
20	19	18	17	
(21)	( 6)	( 5)	(7)	<u>hānō</u> (asthma)
16	15	14	13	
(21)	(7)	( 6)	( 5)	<u>ma'i pūhō</u> (a very deep sore that eats into the bone)
12	11	10	09	
(21)	(7)	( 5)	( 4)	<u>ma'i-'ai-ake</u> (T.B.)
08	07	06	05	
(21)	(7)	(24)	(13)	<u>kauhola</u> (fatal heart attack, you know person is dying)
04	03	02	01	

<sup>a</sup> The figures in parentheses are examples of the numbered tactics a subject might choose. Blanks which are circled contain numbers corresponding to supernatural tactics.

<sup>b</sup> The figures below the parentheses are the weights per blank for the first through tenth illnesses. The weights for each of the circled blanks are added to determine the total score for use of the supernatural.

APPENDIX C

ILLNESS RATING TEST

To the Interviewer:

You have a pack of twenty-five cards with illness names (in English and Hawaiian) on them. The pack of cards should be shuffled each time you begin your interview, so that the cards will be in random order. Leave the four cards of the Tactics Questionnaire out and visible so if later the respondents have a hard time thinking up two things they should do, they can pick two things out of the choices on the four cards if they want to.

Next give them the sheet of paper with the numbers "0 out of 4" through "4 out of 4" on it. (See "Respondent's Chart Used in Judging Probabilities" below.)

Say: "This is a list of answers from which I will ask you to pick which answer you think best answers some of my questions."

Make sure you have ready your sheet for recording their answers. Now record the number from the back of the top card, in column marked Illness Card number. After you have done that, turn the card over. Read the English and Hawaiian names of the illness to the respondent.

Questions Follow:

Ask: 1. "In general, how serious or minor is \_\_\_?" (Show them large Card A.)

Read:	<u>How Serious</u>	=	<u>Amount of Seriousness (%)</u>
	Very Serious	=	100
	Fairly Serious	=	75
	In-between	=	50
	Fairly Minor	=	25
	Very Minor	=	0

(Note answer in the appropriate column on your interview sheet.)

(Only if the question of what stage the illness is in or how bad it is comes up, tell them, "That all depends--what do you think?")

Ask: 2(a). "Is there anything that can be done for\_\_\_\_? Yes or No?" (Circle Y or N on the interview sheet.)

If Yes go to 2(b).

If No skip 2(b) and 4; ask 3 and 5:

2(b). "Name two things that can be done for\_\_\_\_. Please tell two things you have actually done for\_\_\_\_ or what you actually would do for\_\_\_\_."

(If "medicine" is offered as an answer, ask, "What is it called?")

(Write down answers on (a) and (b) blanks on interview sheet.)

Ask: 3. "Now if 4 people had\_\_\_\_ and nothing was done to try to cure it, nothing at all, how many out of the 4 who have\_\_\_\_ might be expected to get well?"

(Point out the 5 possible choices the respondent has on the page of numbers you gave him earlier. Interviewer marks "X" in the appropriate column.)

Ask: 4. "Now if the 4 people who have\_\_\_\_ do all the things you say they should do, how many of the 4 people might be expected to get well?"

(Have them choose from their sheet of numbers; you put an "X" in the appropriate column.)

Ask: 5. "About how long do you think it would take to get well from \_\_\_?" Hours? Days? Weeks? Months? Years? Never (Lifetime)?

(If the respondent doesn't know, have him guess. If a number of \_\_\_ is not given, ask for an amount.)

(Mark down amount of time in the Time blank on interview sheet.)

Ask: 6. "Can a person die from \_\_\_?"

If Yes put a circle around A (death).

If No put a circle around B (non-death).

If Don't Know put a circle around C (don't know) but try to force them to decide between A & B if possible. If they really don't have any idea, then put C.

If Yes go on to question 7.

If No or Don't Know, STOP. Start another illness card.

Ask: 7. "In general, what is the chance of dying from \_\_\_?"

(Show them large Card B; turn over Card A, and B is on the back.)

Read:	<u>How Much Chance of Dying?</u>	=	<u>Amount of Risk (%)</u>
	A lot of chance	=	100
	Some chance	=	75
	In-between	=	50
	Little chance	=	25
	Almost no chance	=	0

(Interviewer marks an "X" in the appropriate column.)

Ask: 8. "Now if 4 people have \_\_\_ and do nothing to try to cure it, nothing at all, how many out of the 4 people who have \_\_\_ might be expected to die?"

(Interviewer marks an "X" in the appropriate column.)

Ask: 9. "Now if 4 people who have \_\_\_ do all the things you say they should do to treat \_\_\_ (the 2 things listed in 2b.) how many out of

the 4 people might die?"

(Interviewer marks an "X" in the appropriate column.)

#### List of Illnesses

1. mild sprain (maūi)
2. pinkeye (maka 'ula'ula)
3. turned stomach ('ōpū huli)
4. impetigo (kāki'o)
5. varicose veins (a'a kūkūkū)
6. ringworm (hā'uke'uke)
7. infected ear (pepeiao pilau)
8. hemorrhoids (uha-hemo)
9. measles ('ulāli'i)
10. mumps ('auwae-pahāha)
11. hernia or rupture (pu'ulele)
12. hives (laina)
13. asthma (hānō)
14. high blood pressure (koko pi'i)
15. gallbladder trouble (pōhaku au)
16. stomach ulcer ('ōpū pūhā)
17. diabetes (mimi-kō)
18. tuberculosis (ma'i-āi-ake)
19. mental illness (pupule)
20. epilepsy (ma'i-huki)
21. pneumonia (numonia)
22. skin cancer (ma'i-'a'ai 'ili)
23. stomach cancer (ma'i-'a'ai 'ōpū)
24. heart attack (ma'i-pu'uwai)
25. stroke (kūhewa)

#### Respondent's Chart Used in Judging Probabilities

0 out of 4 0%	1 out of 4 25%
2 out of 4 50%	
3 out of 4 75%	4 out of 4 100%

## Sample of Illness Rating--Interview Sheet

Key numbers 1 through 9 refer to question numbers 1 through 9, with the entire series of questions to be completed in a similar box form for each illness.

Illness Card No.			Q. No.	0% 0-4	25% 1-4	50% 2-4	75% 3-4	100% 4-4
	2. Y N	5. Time	1.					
	(a) _____		3.					
			4.					
	(b) _____	6. A B C	7.					
		If A, go to 7	8.					
			9.					

APPENDIX D

HEALTH INFORMATION TEST

To the Interviewer:

1. Read instructions to respondent.
2. Ask if there are any questions on the instructions.
3. Then read the questions and answers along with the respondent.

Watch out that you don't give away the answer by a change of tone in the voice. If the respondent asks, "What does that word mean?" or "Can you explain this to me?" say, "I can't explain that" or "Do what you think is best."

4. Afterwards ask the respondent to check and see if he has filled out each question.

5. Then the interviewer must check to see if all questions were done.

Instructions to the Respondent:

Here are twenty-five unfinished statements on health, diet, and first aid. Following each incomplete statement are four answers which can be used to complete the unfinished statement. Only one answer out of the four best fits the statement. Some of the statements ask definitions and you are to pick the best meaning or word to answer that definition. When you have determined your answer, circle the letter in front of it. Some of these questions are hard, so don't worry.

1. It is generally understood that foods cooked only a little:
  - a. are easier to digest than cooked foods.
  - b. are not as good for you as cooked foods.
  - c. supply all your daily vitamins and needs.
  - d. are better for you than cooked foods.

2. Among the noncommunicable (not catchable) diseases are:
  - a. tuberculosis, chickenpox, whooping cough.
  - b. mumps, polio, measles.
  - c. typhoid, scarlet fever, diphtheria.
  - d. diabetes, arthritis, heart disease.
  
3. Overweight problems are usually caused by:
  - a. family heredity (body type passed from parents to children).
  - b. faulty glands.
  - c. eating too much.
  - d. not being able to lose weight.
  
4. To stop a deep bleeding cut, a person should first:
  - a. wash out the wound.
  - b. apply direct pressure to the wound.
  - c. wait because it will stop itself.
  - d. use an antiseptic.
  
5. Immunity is:
  - a. wastes thrown off by germs.
  - b. liquid part of the blood.
  - c. resistance to germs.
  - d. antibiotics, like penicillin.
  
6. Compared to non-smokers, it has been proved smokers have:
  - a. more colds.
  - b. less emotional problems.
  - c. more fun.
  - d. less skin troubles.
  
7. The four basic foods that make up a balanced diet are:
  - a. milk, sugar-starches, meats, and bread-cereals.
  - b. milk, bread-cereals, meats, and vegetable-fruits.
  - c. vegetable-fruits, meats, fats, and bread-cereals.
  - d. sugar-starches, meats, milk, and vegetable-fruits.
  
8. If a person doesn't have a bowel movement every day:
  - a. give a laxative or he will get sick.
  - b. see a doctor right away.
  - c. he should not worry about it, because not everyone does.
  - d. he must be sick or getting sick.
  
9. The Patch Test is used to identify the presence of:
  - a. diphtheria.
  - b. tuberculosis.
  - c. tetanus (lock-jaw).
  - d. smallpox.

10. When a person has a bad stomach ache, one should:
  - a. never take an antacid medicine.
  - b. never go to the doctor.
  - c. never drink any soda-pop.
  - d. never take a laxative.
11. A communicable (catchable) disease is one that:
  - a. has a cause from within the body.
  - b. is not caused by germs.
  - c. is caused by an immunity.
  - d. is caused by germs.
12. A term that means a collection of pus at the roots of a tooth is:
  - a. periodontal disease.
  - b. chronic cuspid.
  - c. impacted tooth.
  - d. abscessed tooth.
13. The purpose of antitoxins and vaccines is:
  - a. to prevent the rejection of body tissues.
  - b. to provide resistance to various diseases.
  - c. to stop the development of antibodies.
  - d. to fight noncommunicable diseases.
14. Usually infected ears are the result of blowing one's nose too hard and:
  - a. rapid changes in the weather which chills the ears.
  - b. not eating the right foods.
  - c. getting water inside the ear from swimming.
  - d. too loud noises.
15. Visit your dentist:
  - a. at least every other month.
  - b. only when you have a toothache.
  - c. as often as he recommends.
  - d. every two or three years.
16. Brush your teeth:
  - a. after lunch and dinner.
  - b. as soon after each meal and snack as possible.
  - c. after dinner and at bedtime.
  - d. before breakfast and at bedtime.
17. Never remove earwax with:
  - a. a toothpick or hairpin.
  - b. a weak solution of hydrogen-peroxide or water and vinegar.
  - c. warm sweet oil.
  - d. a cotton swab.

18. The best way to cut down tooth decay is to:
  - a. avoid sweets.
  - b. use fluoride toothpaste.
  - c. eat a lot of proteins and carbohydrates.
  - d. rinse your mouth out with water.
  
19. To treat a nosebleed:
  - a. apply hot towels to the face.
  - b. put the head down between the knees.
  - c. pinch the nostrils together.
  - d. apply hot towels to the back of the neck.
  
20. Conditions that favor the growth of bacteria are:
  - a. dryness and cold.
  - b. extreme heat and cold.
  - c. warmth and moisture.
  - d. dryness and sunlight.
  
21. If you feel faint:
  - a. drink a little liquor.
  - b. sit in a chair with head lower than knees.
  - c. exercise to get blood circulating better.
  - d. drink either coffee or tea.
  
22. Smoking:
  - a. does not affect the heartbeat.
  - b. is not a major factor in lung cancer.
  - c. slows down the heartbeat.
  - d. speeds up the heartbeat.
  
23. If something gets in your eye:
  - a. see a doctor if tears don't soon wash it out.
  - b. use a corner of a clean handkerchief to wipe out the speck.
  - c. splash the eye with soap and water.
  - d. rub the eye to get it out.
  
24. A person has swallowed poison and you have sent for a doctor. Generally what should you do while waiting for the doctor?
  - a. give artificial respiration to help him breathe.
  - b. give him a laxative or enema.
  - c. don't bother him until the doctor comes.
  - d. have him drink large amounts of water.
  
25. Tuberculosis is a disease that:
  - a. can attack the bones and brain as well as the lungs.
  - b. is not curable.
  - c. is not catchable.
  - d. is caused by a cold.

APPENDIX E

HAWAIIAN THERAPEUTIC TEST

To the Interviewer:

Say, "Let's please read the instructions together." After reading the instructions, ask, "Any questions?" Then pronounce the Hawaiian words.

All the interviewer is allowed to do is rephrase the instructions if necessary, and repronounce the Hawaiian words for the respondent or pronounce an English word if the respondent has trouble. If the respondent says, "I know this word, but the meaning is not here," or "The right meaning isn't here," the interviewer should say, "Some of these words have two or more meanings. Pick one meaning you think is most right or the best."

If the respondent says, "I don't know any Hawaiian," or "I only understand a little bit of Hawaiian and that is spoken," the interviewer says, "Go ahead and try anyway. Do what you can." If any other questions are asked, say, "Do what you think best," or "I don't know."

Instructions to the Respondent:

I have here a list of thirty-five Hawaiian words. Following each word are four possible meanings, and only one of these meanings exactly matches that word. Place an "X" in front of the meaning you think is most correct. Some words will appear not to have the meaning you know. These words have a second meaning which is in the group of meanings. Some are very difficult words of "old Hawaiian." How many do you recognize?

1. paepae wāwae ( ) a disease of the ear  
 ( ) a mat  
 ( ) a plant  
 ( ) a stool
2. koali-'awa ( ) a disease of the eye  
 ( ) a type of tree  
 ( ) a morning glory  
 ( ) a ceremonial drinking bowl
3. nānā ao ( ) to talk to ancestors  
 ( ) to watch the clouds for omens  
 ( ) to read the future in water reflections  
 ( ) to be weak
4. kāhoaka ( ) to pray to death  
 ( ) a remedy  
 ( ) spirit of a living person  
 ( ) to anoint
5. kahawai ( ) a name of a type of prayer  
 ( ) a river  
 ( ) a medicine  
 ( ) a mountain
6. hae ( ) a ghostly form  
 ( ) to bark like a dog  
 ( ) a poison tree of Molokai  
 ( ) to peep
7. ma'i-pu'uwai ( ) smallpox  
 ( ) love sick  
 ( ) a running sore  
 ( ) heart disease
8. hānō ( ) sour stomach  
 ( ) to work  
 ( ) asthma  
 ( ) a habit
9. 'a'ma ( ) shortness of breath  
 ( ) a crab  
 ( ) evil sorcery  
 ( ) a fish
10. kaha pe'a ( ) a remedy for sore throats  
 ( ) dropsy  
 ( ) a magical sign  
 ( ) a special servant to a chief

11. kiko ( ) a ti leaf wrapper  
 ( ) to be lame  
 ( ) a spirit of the dead  
 ( ) a spot
12. 'ana ( ) evil sorcery  
 ( ) a medicine  
 ( ) fear of the supernatural  
 ( ) power of the gods
13. ha'uoi ( ) a growth  
 ( ) a medical remedy  
 ( ) to be feverish  
 ( ) to be sickly
14. akepau ( ) to sacrifice  
 ( ) tuberculosis  
 ( ) a liver disease  
 ( ) a skin disease
15. kī-nehe ( ) a medical plant  
 ( ) a spirit of a living person  
 ( ) convulsions  
 ( ) disaster
16. 'aila pale-pīwa ( ) eucalyptus oil  
 ( ) turpentine  
 ( ) a prayer to cure a fever  
 ( ) a breakwater
17. palahī ( ) loose bowel movements  
 ( ) a fern  
 ( ) an altar  
 ( ) to be overripe
18. makani nohō ( ) a possession by a spirit  
 ( ) a temple  
 ( ) a wind after the death of  
 an ali'i  
 ( ) to live alone
19. huaka'i pō ( ) a sign of coming disaster  
 ( ) a procession of ghosts  
 ( ) black magic  
 ( ) a vision
20. kūkapihe ( ) to faint  
 ( ) a strong medicine  
 ( ) a birth mark  
 ( ) to drive off evil spirits

21. pala he'e ( ) a running sore  
 ( ) a surf board  
 ( ) to make riddles  
 ( ) to catch squid
22. ho'okā'ililolilo ( ) to restore a friendship  
 ( ) to massage a baby's body  
 ( ) to release a person from evil  
 ( ) point of life or death
23. hā'uke'uke ( ) ringworm  
 ( ) pinworm  
 ( ) a scar  
 ( ) mange
24. kahuna 'anā 'anā ( ) a high priest  
 ( ) priest who prays people to death  
 ( ) priest who is expert on farming  
 ( ) a medical priest
25. akualele ( ) a medical plant  
 ( ) a fire ball  
 ( ) a fish  
 ( ) a nightmare dream
26. 'ōkohekohe ( ) pitted skin  
 ( ) ringworm  
 ( ) swollen tonsils  
 ( ) tired all the time
27. 'ahu 'awa ( ) a skin disease  
 ( ) an offering to the gods  
 ( ) a feather cloak  
 ( ) a medical remedy
28. le'ale'a ( ) kidneys  
 ( ) to frighten  
 ( ) a type of prayer  
 ( ) an asthma medicine
29. hahano ( ) an opening remedy  
 ( ) a medical plant  
 ( ) ringworm  
 ( ) severe cramps
30. laina ( ) to lay a taboo  
 ( ) hives  
 ( ) a ti leaf  
 ( ) an eye disease

31. molowā ( ) to throw nets  
( ) lazy  
( ) a cold remedy  
( ) dirty
32. kahuna kilokilo ( ) caretaker of temple images  
( ) expert on sky omens  
( ) expert on medicine  
( ) expert on carving canoes
33. ho'ohiki 'ino ( ) a sacred song  
( ) a dream name  
( ) to make a garden  
( ) a curse
34. ka'i ( ) a type of boil  
( ) a scar  
( ) a taboo place  
( ) a decayed tooth
35. 'alaea ( ) red earth  
( ) sickly  
( ) a type of crab  
( ) to be happy

## APPENDIX F

### STATISTICAL ANALYSIS OF DATA AND TEST EXAMPLES

In general, nonparametric statistics were used in the analysis of test data. The major tests were the Chi-Square test ( $\chi^2$ ), the median test, the Mann-Whitney U test, Kendall rank correlation coefficient ( $\tau$ ), Kendall rank partial correlation coefficient ( $\tau_{xy.z}$ ), and the Kendall coefficient of concordance (W) (Siegel 1956). The majority of the statistical tests were nonparametric because the distribution of the dependent variable--use of the supernatural--was very skewed, similar to the distribution suggested by Radin (see Chapter I). Moreover, some of the results of the test instruments might be questioned because the type of scale could be considered to be ordinal rather than interval in character. The Pearson product-moment correlation ( $r$ ) and partial correlation ( $r_{xy.z}$ ) were used in several instances when the assumptions of parametric statistics would not be grossly violated.

The accepted level of significance for the statistical tests was .05 or less. Any correlation that produced a probability of .10 or less was viewed as expressing a possible trend in the data and was referred to as a trend.

In testing hypotheses, the two-tailed test was used. An example of the partial correlation techniques referred in the body of this study are found as follows:

Kendall Partial Rank Correlation Coefficient (Siegel 1956:223-229)

## 1. General Formula:

$$r_{xy.z} = \frac{r_{xy} - r_{zy} r_{zx}}{\sqrt{(1 - r_{zy}^2)(1 - r_{zx}^2)}}$$

z = Hawaiian therapeutic knowledge variable being controlled or held constant

## 2. The Variables:

x = the independent variable of Western health knowledge  
y = the dependent variable of the use of the supernatural

## 3. The Raw Correlations:

- A. The correlation between Hawaiian therapeutic knowledge and Western health knowledge is  $r_{zx} = .102$  (N=72).
- B. The correlation between Hawaiian therapeutic knowledge and the use of the supernatural is  $r_{zy} = .111$  (N=72).
- C. The correlation between Western health knowledge and the use of the supernatural is  $r_{xy} = -.258$  (N=72).

## 4. Calculation:

$$r_{xy.z} = \frac{-.258 - (.111)(.102)}{\sqrt{[1 - (.111)^2][1 - (.102)^2]}}$$

$$r_{xy.z} = -.270$$

## 5. Interpretation:

The correlation between Western health knowledge and the use of the supernatural when controlling for Hawaiian therapeutic knowledge ( $r_{xy.z}$ ) was higher than the original correlation in which no

control was used. It seems that in the presence of Hawaiian therapeutic knowledge, the correlation of Western health knowledge and the use of the supernatural was suppressed. No test of significance could be made due to the unknown sampling distribution of the Kendall partial rank correlation (Siegel 1956:228). The only statement that can be made is the correlation coefficient was larger or smaller in the uncontrolled situation.

APPENDIX G

DISTRIBUTION OF INDEPENDENT VARIABLES

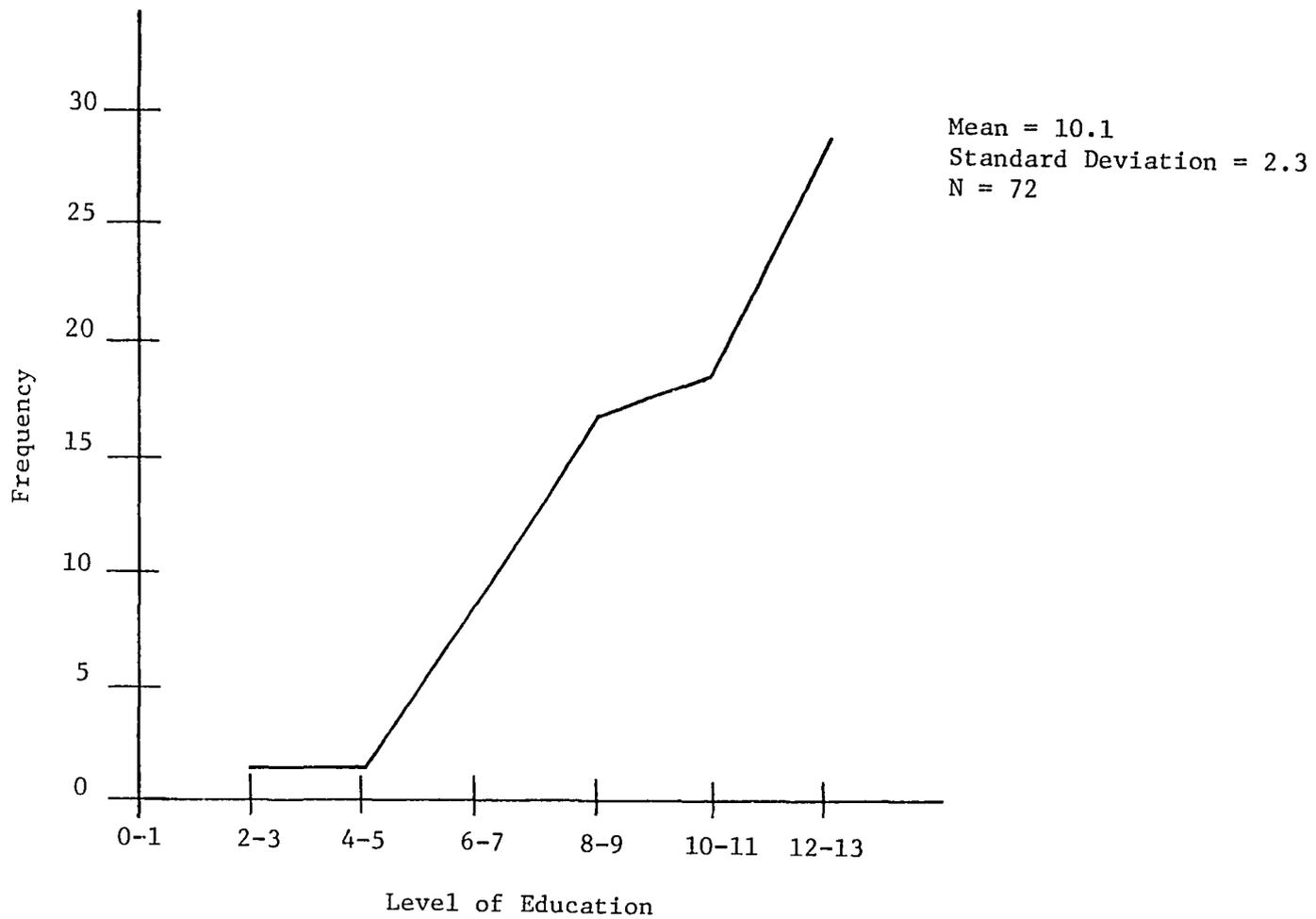


FIG. 6. FREQUENCY DISTRIBUTION OF THE LEVEL OF EDUCATION FOR THE SAMPLE

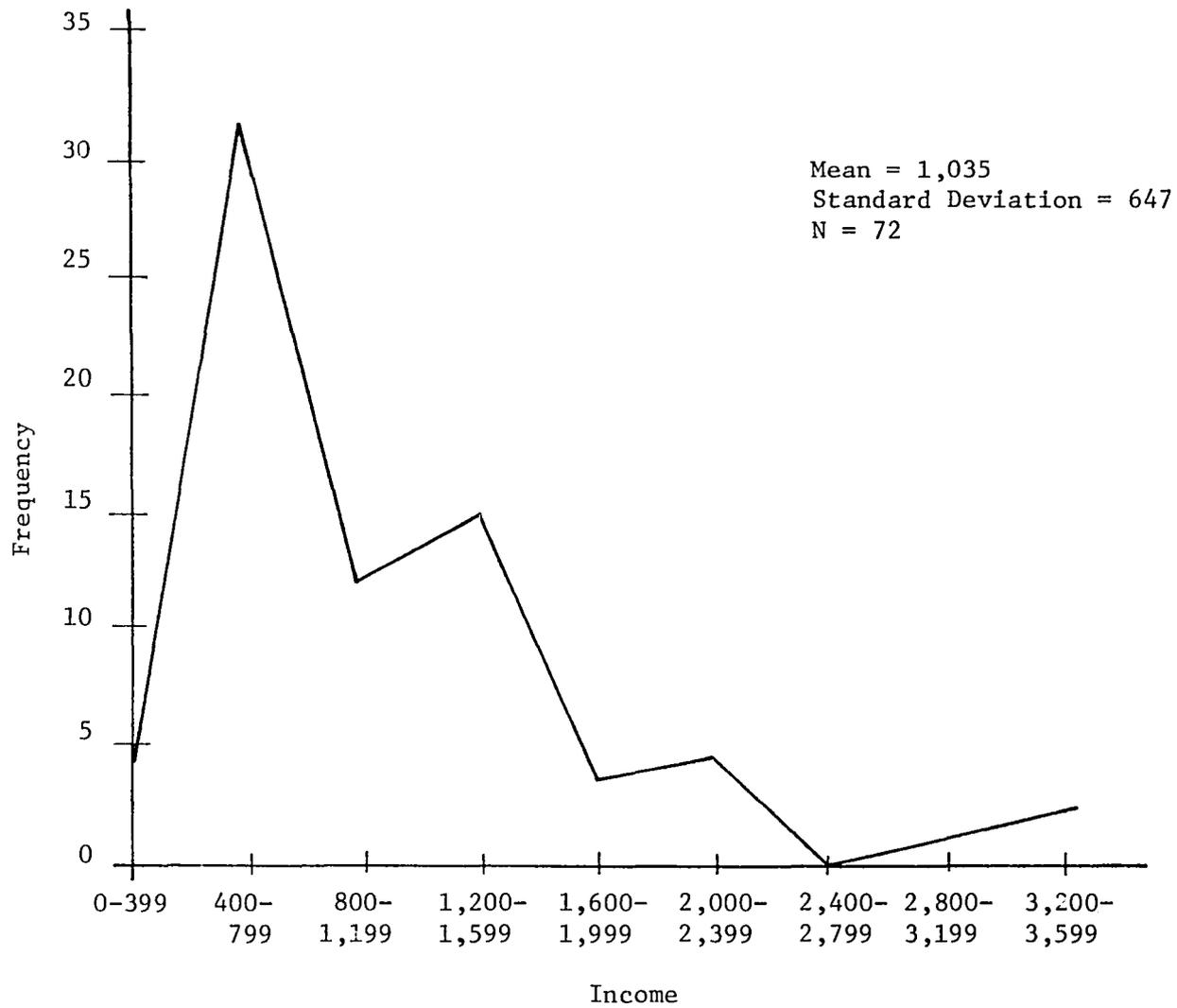


FIG. 7. FREQUENCY DISTRIBUTION OF INCOME PER CAPITA PER YEAR FOR THE SAMPLE

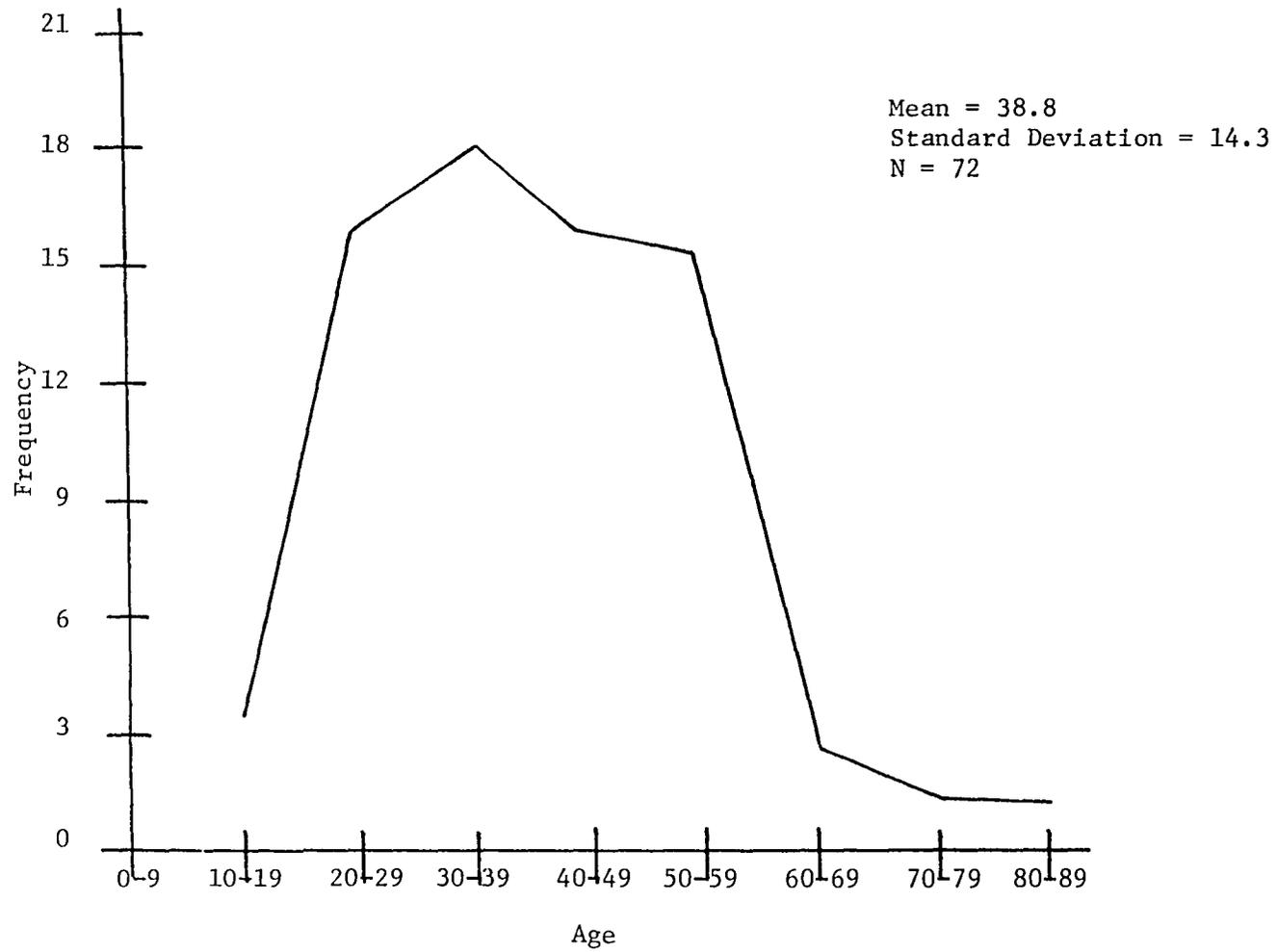


FIG. 8. FREQUENCY OF DISTRIBUTION OF THE AGES OF THE SAMPLE

## APPENDIX H

### RELIABILITY AND VALIDITY OF TEST INSTRUMENTS

This appendix discusses the reliability and validity of the test instruments presented in Chapter III.

#### Health Information Test

After pretesting, the items on this test were selected to follow a normal curve reflecting difficulty and then were placed in a random order. Test-retest reliability was not examined.

A test of convergent validity, demonstrated "by a substantial correlation between two (or more) tests alleged to measure a single attribute" (Scott and Wertheimer 1962:137), was performed by correlating the Health Information Test with the Word Information Test. The latter had been created by Alan Howard et al. for use in the 1967 Nanakuli test population to measure a respondent's knowledge of United States middle-class culture. Scores were available for fifty-seven individuals for both the Health Information Test and the Word Information Test. These two tests were significantly correlated ( $z=3.35$   $p\leq.001$ ).<sup>1</sup>

A test of discriminant validity was performed to determine whether the Health Information Test was eliciting Western health data and not Hawaiian therapeutic data. No significant correlation

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<sup>1</sup> In this Appendix many of the statistical results are in the form of a standard score, or z-score, which appears as a small z in the text.

appeared between the Health Information Test and the Hawaiian Therapeutic Test (designed to measure Hawaiian therapeutic knowledge) ( $z=.75$   $p\leq.45$ ). The two tests did not elicit responses from the same body of knowledge.

#### Hawaiian Therapeutic Test

This test was created to measure the level of a respondent's knowledge of Hawaiian therapeutic practices. Test-retest reliability was not examined.

A test of convergent validity was performed by correlating the results of the Hawaiian Therapeutic Test with the results of the Hawaiian Language Test created by Alan Howard and Mary Pukui for the 1967 sample. The latter test consisted of twenty Hawaiian words to be identified by the respondent to measure his level of knowledge of the Hawaiian language. Fifty-seven respondents took both tests, and their scores were highly correlated ( $z=3.32$   $p\leq.001$ ).

The scores of fifty-seven respondents on the Hawaiian Therapeutic Test were also correlated with the self-estimate rankings of the same respondents as to how well they spoke or understood Hawaiian (measured on a five-point scale). The scores from the self-estimate rankings and the Hawaiian Therapeutic Test were highly correlated ( $z=4.70$   $p\leq.001$ ). It seems that the Hawaiian Therapeutic Test did elicit Hawaiian knowledge. The test of discriminant validity was performed as stated above in regard to the Health Information Test. The Hawaiian Therapeutic Test did not measure the same body of knowledge that the Health Information Test measured.

### Summary of Characteristics on the Two Knowledge Tests

Differences appeared between respondents in sex, income, age, and education (see Table VII). Women differed significantly from men on both tests. Women apparently know more than men about Hawaiian medicines and treatment of the sick in their households (see Chapter II, page 53); women scored significantly higher than men on both knowledge tests (see Table VII below).

As noted in Chapter II, page 65, respondents with limited income attempt to treat illnesses at home rather than go to the doctor. However, as shown in Table VII, no significant difference appeared between level of income and the type of health or therapeutic knowledge.

Older respondents in Nanakuli tend to know more than younger respondents about Hawaiian medicine, while younger adult respondents tend to know more than older adults about Western health practices (see Chapter II). This may be due to the availability or lack of health-education courses in the Nanakuli area schools. Because age and education were highly correlated, the results shown in Table VII are not clear.

TABLE VII. RESPONDENT CHARACTERISTICS COMPARED TO  
HAWAIIAN THERAPEUTIC AND WESTERN HEALTH KNOWLEDGE  
(N=72)

Respondent Characteristics	Type of Health Knowledge	
	Hawaiian	Western
	z score	z score
Sex	-2.10*	-3.12**
Income	.48	1.90
Age	4.00***	-1.90
Education	-2.25*	4.25***

\*  $p \leq .05$  level

\*\*  $p \leq .01$  level

\*\*\*  $p \leq .001$  level

To clarify the relationships between age and education on the one hand, and Hawaiian therapeutic and Western health knowledge on the other, partial correlations were calculated (Blalock 1960:333-336 and 355-356).<sup>2</sup> As shown in Table VIII, Hawaiian therapeutic knowledge correlated significantly only with age, and Western health knowledge correlated significantly only with education.

Since both knowledge tests apparently distinguished the differences which had also been observed in fieldwork, the extent of reliability and validity ascribed to the two tests was increased.

<sup>2</sup> The formula as well as procedure is the same as that of the Kendall partial rank correlation coefficient found in Appendix F.

TABLE VIII. PARTIAL CORRELATION OF AGE AND EDUCATION,  
WITH HAWAIIAN THERAPEUTIC AND WESTERN HEALTH KNOWLEDGE  
(N=72)

Type of Health Knowledge	Respondent Characteristic	
	Age	Education
	$r_{xy.z}$	$r_{xy.z}$
Hawaiian (controlling first for education, then age)	.40*	-.06
Western (controlling first for education, then age)	.01	.46*

\*  $p \leq .01$  level

The Tactics Questionnaire and the Illness Rating Test

Because of the interrelation of their subject matter--illnesses--the Tactics Questionnaire and the Illness Rating Test will be examined together.

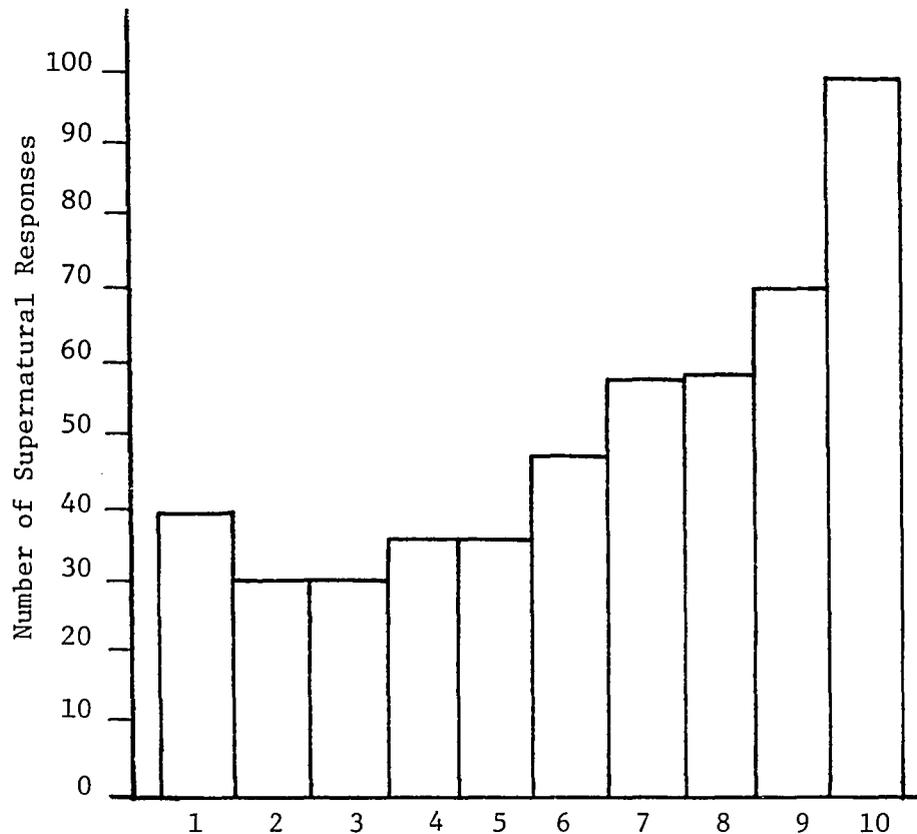
Since there exists in Nanakuli a mixture of Christianity, Hawaiian beliefs, and professed non-believers, an instrument to measure the supernatural could not depend on discriminations within a specific set of beliefs or of belief systems. Thus, the instrument was designed to measure the use of any supernatural tactics and not the use of specific beliefs. Indications from fieldwork were that the presence of illness and use of the supernatural were related. For this reason the Tactics Questionnaire focused on the illness situation and the tactics an individual would use to handle an illness.

The Tactics Questionnaire had two dimensions of severity built into it (see Chapter III for a discussion of these measures of severity). For most of the ten illnesses, use of the supernatural generally increased in frequency from the first response recorded in blank A through the fourth response recorded in blank D; as an individual's previous responses to a particular illness failed to cure the illness, he increasingly used the supernatural (see Table IX).

TABLE IX. NUMBER OF RESPONDENTS GIVING SUPERNATURAL RESPONSES AT EACH STEP ON THE TACTICS QUESTIONNAIRE (N=72)

Type of Illness in order of Presentation	Frequency of Supernatural Responses				Total
	A	B	C	D	
1. <u>maui</u> (mild sprain)	5	6	11	17	39
2. <u>maka 'ula'ula</u> (pinkeye)	1	6	5	18	30
3. <u>'auwae-pahāha</u> (mumps)	3	5	7	15	30
4. <u>'ulāli'i</u> (measles)	4	5	11	16	36
5. <u>'ōpū huli</u> (turned stomach)	2	4	13	17	36
6. <u>pu'uulele</u> (rupture)	1	10	18	17	46
7. <u>hānō</u> (asthma)	5	9	19	23	56
8. <u>ma'i pūhō</u> (a very deep sore that eats into the bone)	7	13	16	21	57
9. <u>ma'i-'ai-ake</u> (tubercu- losis)	6	13	21	29	69
10. <u>kauhola</u> (fatal heart attack)	16	22	27	33	98

In addition the total number of supernatural responses on the Tactics Questionnaire generally increased from the first illness through the tenth, with the exception of the first illness (see Fig.9).



The ten illnesses on the Tactics Questionnaire

FIG. 9. SUPERNATURAL RESPONSE TOTALS PER ILLNESS  
(N=72)

The overall increase in number of supernatural responses occurred as the illnesses became more severe in type. The one exception, the first illness, might be due to several factors. There could be a mistake in the order of illness severity due either to the initial anxiety and unsureness experienced by respondents to the test, or to a halo effect

from the example illness, a broken leg, used by the interviewer in his explanation of the Tactics Questionnaire (see Appendix B).

The frequency distribution of scores of the total use of supernatural tactics is shown in Fig. 10 as being negative in slope. This distribution reflects Paul Radin's postulation that most individuals in a culture do not use the supernatural normally, but only crisis situations, while a few individuals tend to use the supernatural quite frequently.

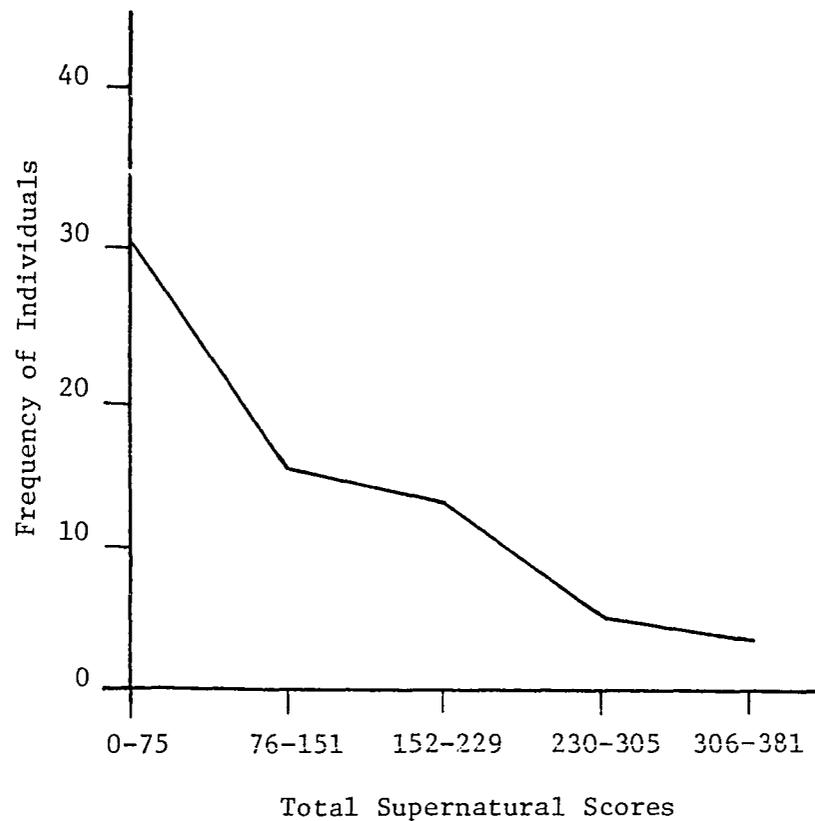


FIG. 10. FREQUENCY DISTRIBUTION OF TOTAL SUPERNATURAL SCORES (N=72)

As noted in Chapter III, the Tactics Questionnaire consisted of a list of ten illnesses arranged in rank order according to the severity of each illness as judged by the respondents in the pre-test population. The illnesses were selected for the final questionnaire form for the following reasons:

(1) Each illness was considered by the respondents to represent a single instance of being "not well."

(2) Each illness was considered by the respondents to be a condition from which a person either gets well or dies; in other words, as far as the respondents knew, none of these illnesses could lead into another illness.

(3) The list of illnesses included those which most of the respondents had experienced or had knowledge of because of fairly frequent occurrences within their life experience.

These final ten illnesses were selected from a list of fifty-five which were originally obtained in informal interviews according to the three criteria cited above. The twenty pre-test respondents ranked each of the ten illnesses on a scale from the least serious to the most serious. The final ranking of the ten illnesses was determined by the average ranking given each illness by the pre-test population.

The Kendall coefficient of concordance ( $W$ ) (Siegel 1956:229-238) was used to determine the degree of interjudge reliability. Reliability was found to be very high ( $W=.55$   $p\leq.001$ ). Except for the rankings of the first four illnesses, the scales of each pre-test subject were almost identical. Two Western medical doctors and two

Western nurses also ranked the illnesses on a scale from the least serious to the most serious. The interjudge reliability was high ( $W=.70$   $p\leq.01$ ). Comparison of the average rankings by the Hawaiians and by the medical professionals of the seriousness of these ten illnesses showed a fairly high similarity ( $r=.661$   $p\leq.025$ ).

The Illness Rating Test (see Chapter III for description) was also used as a reliability check upon use of the supernatural and the ordering of the ten illnesses along the dimension of seriousness on the Tactics Questionnaire. The span of time between the giving of the two tests was sufficient to check for reliability. The Tactics Questionnaire was given in third position on the schedule of instruments; the Illness Rating Test was given in eighth position. Usually between the two tests there was a time span of twenty-five to thirty-five minutes when unrelated tests were given.

The seriousness scores for each illness on the Illness Rating Test were added together and a mean score derived for each illness. The illnesses were then ranked according to the means and compared with the rank order of the ten illnesses on the Tactics Questionnaire. The two rankings were significantly correlated ( $r=.889$   $p\leq.001$ ).

There was no exact correspondence between the ten illnesses on the Tactics Questionnaire and the twenty-five illnesses on the Illness Rating Test. The eighth illness, ma'i pūhō, was not included on the Illness Rating Test in the final test sample because of an oversight. As noted with an asterisk in Figures 11 - 14, an estimation of rank for ma'i pūhō as compared with the other illnesses was made on the basis of the pre-test population's ranking and by comparison of ma'i

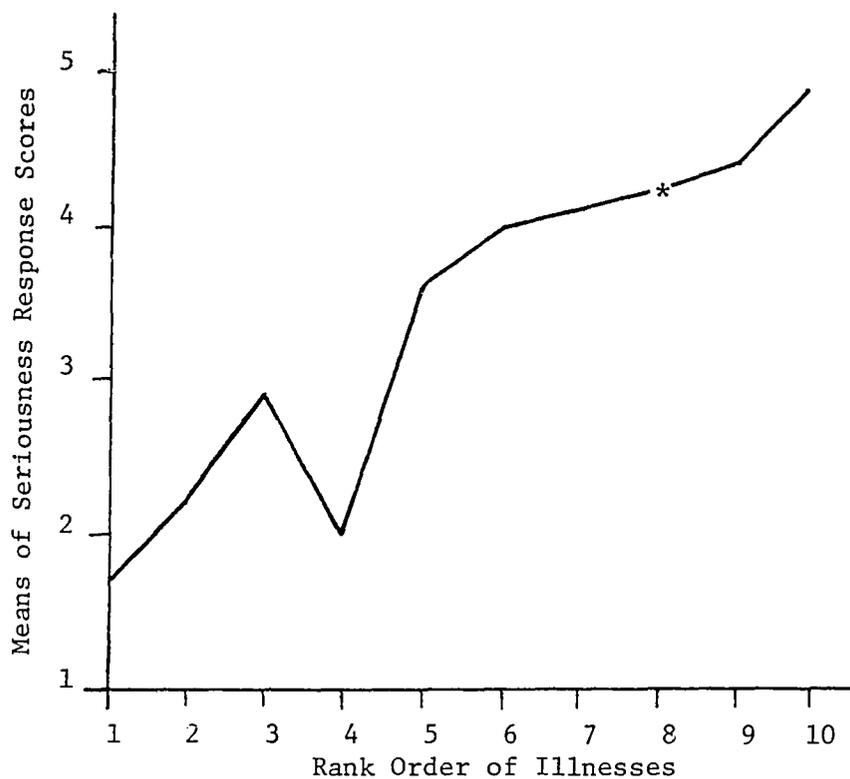


FIG. 11. COMPARISON BETWEEN ILLNESS RANKINGS ON THE ILLNESS RATING TEST AND THE TACTICS QUESTIONNAIRE (N=72)

\* = an approximation

pūhō to skin cancer, which did appear on the Illness Rating Test.

While the two illnesses are similar to each other in nature, the Hawaiian respondents considered ma'i pūhō more severe than skin cancer.

Thus an estimation was made using skin cancer as the minimum baseline and tuberculosis as the maximum. The Hawaiian pre-test population stated that ma'i pūhō was more severe than hānō (asthma) and more severe than skin cancer, but less severe than tuberculosis. Through

use of all available pre-test material and return interviews with the test population to make a judgment, the estimate of rank as given in the figures was judged to be very accurate.

On the Illness Rating Test measles were considered by the respondents to be slightly less serious than pinkeye and mumps (see Fig.11). This ranking was different from that on the Tactics Questionnaire. However, the original order from the Tactics Questionnaire was maintained because the other measures of seriousness to be discussed below (length of illness and chances of dying) indicated that measles are really considered more serious than mumps and pinkeye.<sup>3</sup> Since the rating by the pre-test population and these other measures of seriousness reinforced each other, the order was maintained as originally ranked.

According to the pre-test population, one of the elements of seriousness or amount of danger involved in an illness was the length of time a person was stricken. The longer an illness lasted, the more serious it was considered to be. In Fig. 12 the graph shows the means of responses judging the length of time needed to recover from each of the same illnesses for seventy-two individuals on both the Illness Rating Test and the Tactics Questionnaire. With the exception of

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<sup>3</sup> The possible explanation for the ranking is mentioned in Chapter II, namely, that illnesses located on the outside of the body are considered to be less serious than those inside. If this observation is taken into account, mumps might be considered to be more of an internal malady than measles and could be viewed as more serious. However, the matter of the ranking of measles and mumps was kept as it was originally obtained from the pre-test population.

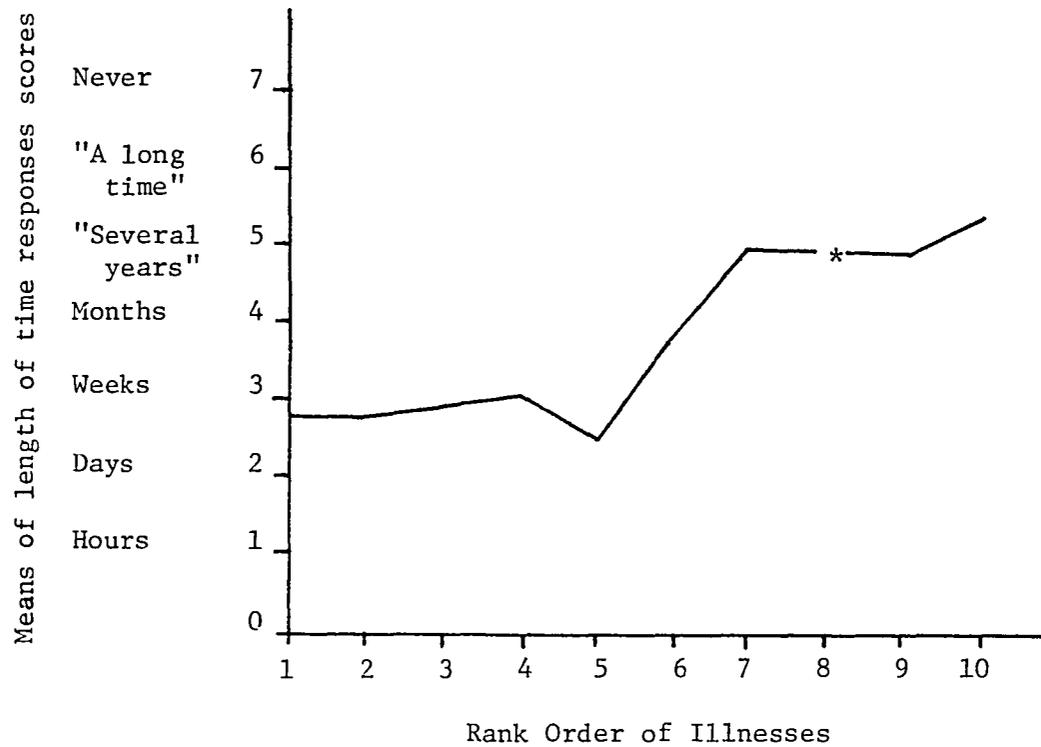


FIG. 12. COMPARISON BETWEEN LENGTH OF ILLNESS AND THE RANKING OF ILLNESSES BY SEVERITY (N=72)

\* = an approximation

'ōpū huli, the illnesses are generally arranged in order of the expected time duration of the illness; the expected relationship between the serious nature of an illness and the time duration is evident.

The vertical scale of Fig. 12 has a ranking of seven time units which differ slightly from the six time units described in Chapter III in connection with the Illness Rating Test. The fifth and sixth rankings in Fig. 12 were derived from the previously described fifth time unit labeled "several years" (one to three years) as generally

defined by the respondents. The sixth time unit labeled "a long time" was artificially limited to a range of three to fifteen years. Any longer time span was included in the "never or lifetime" category.

A second factor of severity as noted in Chapter II involved some uncertainty concerning death. The more risk or chance of death, the more severe the illness was considered to be. Fig. 13 shows that the means of the scores derived from the Illness Rating Test for the responses estimating the chances of dying increased fairly steadily

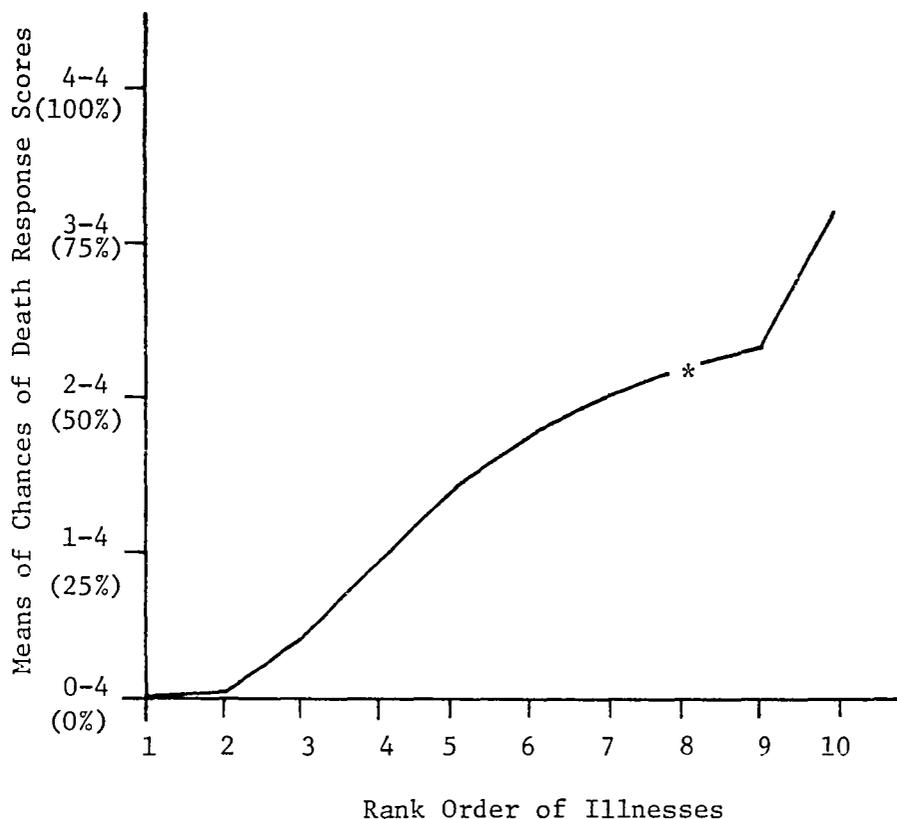


FIG. 13. COMPARISON BETWEEN CHANCES OF DEATH AND THE RANKING OF ILLNESSES BY SEVERITY (N=72)

\* = an approximation

from a mild sprain until there is a great chance of dying from a heart attack. This was in complete agreement with the ranking of severity of the ten illnesses on the Tactics Questionnaire.

Represented in Fig. 14, is an estimate of uncertainty based on the answers to the following question from the Illness Rating Test: "Now if four people who have \_\_\_ do all the things you say they should do to treat \_\_\_, how many out of the four might die?" This estimate is an index of uncertainty based on the assumption that the feeling of uncertainty will arise from inability to completely control an illness situation after an individual has done everything possible. Both estimates of uncertainty in Fig. 14 increased slowly at first until the fifth illness on the Tactics Questionnaire, and then increased much faster as complete control of the situation became more difficult. The rate of increase in responses in Figures 11, 12, and 13 is very similar to the response pattern involving use of the supernatural as seen in Fig. 9. It seems that after the fifth illness, responses involving use of the supernatural increased fairly rapidly. Thus there was support for the assumption that the ranking of these illnesses according to their severity was sufficiently reliable for this study.

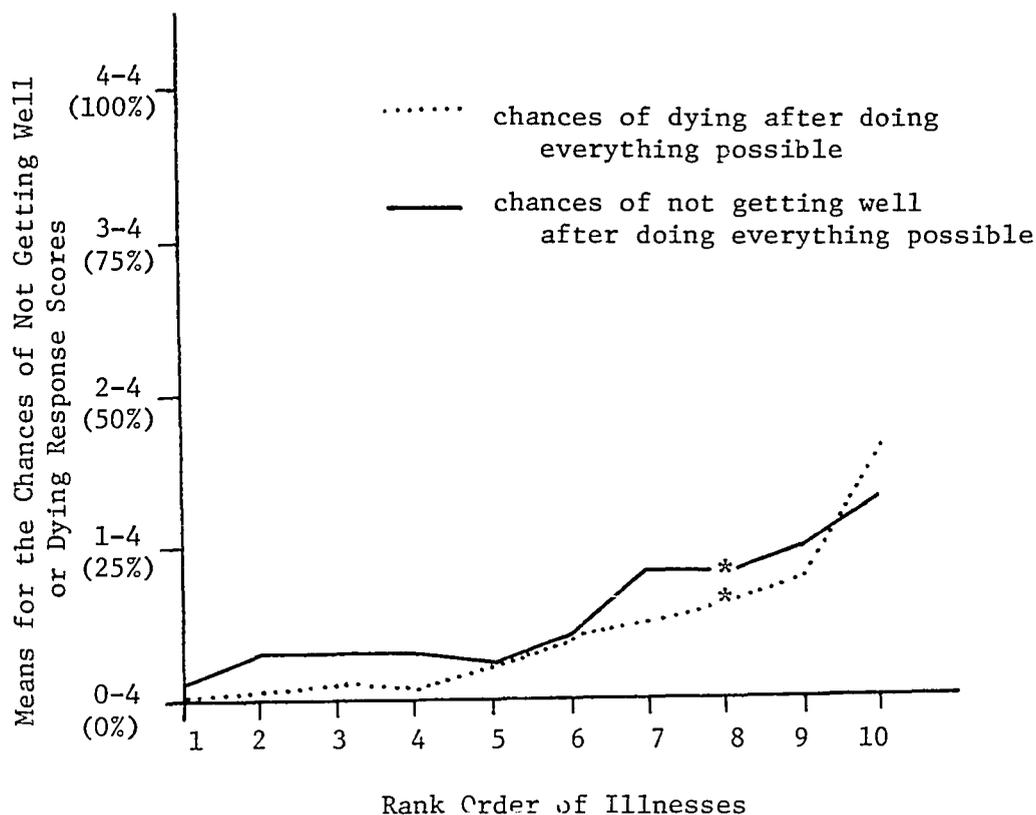


FIG. 14. COMPARISON BETWEEN CHANCES OF DYING AND CHANCES OF NOT GETTING WELL, AND THE RANKING OF ILLNESSES BY SEVERITY (N=72)

\* = an approximation

Three methods were used to check the validity of the total supernatural scores recorded in the Tactics Questionnaire. In those cases where the data were available from interview data gathered in 1967, the frequency of church attendance was correlated with the total supernatural scores of the sample population. The response scale for attendance was (1) Never, (2) Holidays only, (3) Occasionally (once a month), and (4) Regularly (almost every week). Of fifty-eight cases where data on church attendance were available, the correlation was

not significant but did show a positive trend ( $p \leq .08$ ).<sup>4</sup>

The second validity check was a subjective evaluation by two ministers from the community's largest churches on the religiosity of those respondents in the test population who attended their churches and whom they knew personally. These ministers were given a list of all the names in the sample and were requested to judge the respondents on frequency of attendance, religious practice, amount of knowledge of religious beliefs, degree of adherence to religious belief, and any other factors they felt made a person religious. The respondents were then rated on the following five-point scale:

(5) Most religious	= 100%
(4) Above average religious	= 75
(3) Average religious	= 50
(2) Less than average religious	= 25
(1) Not religious	= 0

Correlations were obtained between these ratings and the total scores for use of the supernatural. The first rating of seventeen respondents by one minister was not significant, but did show a positive trend ( $p \leq .07$ ). The second group with eleven respondents showed less of a trend ( $p \leq .20$ ).

The above analyses gave slight support to the validity of the Tactics Questionnaire in measuring use of the supernatural by the respondents. That they did not give more support was probably a reflection of the fact that many Hawaiians attended church only when

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<sup>4</sup> The Mann-Whitney U test (Siegel 1956:116-127) was used to obtain the probabilities discussed here.

they felt there was need for a religious specialist outside of the family. Otherwise religion was either an individual or a family matter. Thus the church-attendance data and minister evaluations were not true measures of the total use of the supernatural.

The third and final method used to check the validity of the total supernatural scores as measured by the Tactics Questionnaire was the use of the Illness Rating Test. On the Illness Rating Test the respondent was asked to name two remedies he would use to treat the particular illness. The total frequency of supernatural tactics named as remedies for each individual's Illness Rating Test was then correlated with the total scores for the use of the supernatural on the Tactics Questionnaire. Both scores seemed significantly related. The higher the total score on the Tactics Questionnaire, the greater was the probability that the respondent would mention use of the supernatural on the Illness Rating Test ( $z=2.09$   $p\leq.04$ ).

The possible reason this correlation was not higher lay in the fact that the respondent was only asked to give two remedies on the Illness Rating Test, and the use of the supernatural was dependent on how severe the illness was considered to be. On the Tactics Questionnaire the respondent was forced to give four responses on each illness and tended to use the supernatural when the earlier actions failed. This measure of seriousness was not present in the Illness Rating Test.

Thus the Tactics Questionnaire appears to be a reliable and valid measure reflecting severity of illness and capable of measuring the use of the supernatural.

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