Modernization, Value Identification, and Mental Health: a Cross-Cultural Study

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RÉSUMÉ

Cette étude des Esquimaux de l'Alaska et des Chinois de Taiwan semble démontrer que, dans les sociétés en voie de transformations rapides, la santé mentale dépend directement, et de la connaissance des schèmes culturels modernes, et d'un sentiment marqué d'identité culturelle.

INTRODUCTION

The aim of this paper is to present a cross-cultural study of the impact of value identification on mental health under conditions of rapid change. In an earlier investigation, one of the authors (Chance 1965), found that among the north Alaskan Eskimo the relation between modern western value identification and knowledge and understanding of western society was a significant factor in predicting the mental health of Eskimos undergoing rapid modernization.[1]

Specifically, the study showed that those individuals who were found to have had relatively little contact with modern western society and yet strongly identified with that society, showed more symptoms of personality maladjustment than did those

[1] The data for the Eskimo study are drawn from a long-term project, Arctic Studies in Culture Change and Mental Health, supported in part by the Arctic Institute of North America, the U.S. Office of Naval Research and its affiliated Arctic Research Laboratory, and the National Institute of Mental Health, U.S. Public Health Service. In the early phases of the study, help was provided by the American Philosophical Society. Invaluable aid has also been given by the Arctic Research Laboratory, the Arctic Health Research Center of the U.S. Public Health Service and the Russell Sage Foundation.

Eskimos who had a greater amount of intercultural contact irrespective of whether they identified with western society or not. In other words, even where newly defined goals could be achieved (an important finding of the study), the stresses placed on those Eskimos whose western identification was greater than their understanding of western society, was such as to promote more symptoms of psychic distress than among a culturally comparable group whose modern knowledge enabled them to feel more secure in their identification. Furthermore, those individuals who had extensive modern knowledge but who still chose to identify with their traditional way of life showed fewer symptoms on the same scale of personality adjustment, suggesting that they had a realistic base for their decision. The present paper attempts to compare these findings with an entirely separate study of modernization and value identification among the Chinese in Taiwan.

In the Eskimo study, the hypothesis was tested by measurements using separate indices of western value identification and western contact. The personality adjustment scale was determined by use of a revised form of the Cornell Medical Index questionnaire (CMI). A detailed statement of the research design, methodological problems, and results is already available in published form and will therefore be given minimal attention here (cf. Chance 1960; 1962; 1965).

The two other authors of the present paper carried out a separate prevalence study of psychophysiological reactions of a rural and suburban population in Taiwan also using a revised version of the CMI.[2] Inhabitants of Musan village near Taipei

[2] The Taiwan study is one of a series of psychiatric epidemiological surveys which has been carried out by the staff of the Department of Neurology and Psychiatry, College of Medicine, National Taiwan University. The investigation of psychophysiological reactions in Musan in 1963-64 was supported by a grant from the U.S. Army Medical Research and Development Command. The whole text regarding this study will be published in a monograph entitled "Psychophysiological Reactions of a Rural and Suburban Population in Taiwan", by Hsien Rin, Hung-Ming Chu, and Tsung-yi Lin.

Each of the 136 questions on the revised CMI was tested comparing responses of neurotic patients and college students (Rin *et al.* 1961). In the Musan study, a part of this health questionnaire was further remodified on the basis of the previous pre-test. The health questionnaire was utilized for obtaining health information from the sample, so that the analysis of the responses as well as the detailed content of the questionnaire will not be presented here.

were selected as subjects, the investigators drawing an age-stratified random sample of 488 reflecting four subgroups of the same size in respect to sex and ethnic origin. Chinese society is strikingly different from that of the Eskimo in size, sub-ethnic composition, and complex culture. However, it was felt that the process of psychological adjustment to rapid modernization among the Eskimo might also apply to the Chinese and other cultures in westernizing sections and by attempting a cross-cultural comparison (given the sufficiently similar design of the two studies), further insight could be gained into the middleground between anthropology and psychiatry.[3]

CULTURAL PROFILES

Kaktovik

The Eskimo village of Kaktovik is located approximately 400 miles northeast of Fairbanks, Alaska, along the Arctic coast.[4] It is a small community of a little over 100 residents and is one of the most geographically isolated Eskimo villages in all of Alaska. Living in small family clusters scattered along the northeast part of the Alaskan coast, these Eskimo had very little face-to-face contact with whites, except for infrequent meetings with missionaries, bush pilots, and nearby traders.

Before the late 1940's the basic economic pattern was one of hunting and fishing supplemented by some cash income derived from trapping. Families were composed of coexisting bilateral kin groups, flexible in their composition and not infrequently undergoing minor variations to fit individual needs. The emphasis placed on mutual cooperation and obligation in the sharing of food and labor was much more rigidly defined, however, both in intra- and inter-related family affairs. Furthermore, the Eskimo practice of extending kinship privileges to non-kin by means of

[3] The analysis of the data and the writing of the present paper were carried out when one of the authors (H.R.) joined the staff of the Section of Transcultural Psychiatric Studies, McGill University, in 1964-65.

[4] The following brief cultural description of the Kaktovik Eskimo is elaborated in other publications (Chance 1960; 1966); cf. also Chance and Trudeau 1963: 49-51.

formal partnerships frequently enabled other Eskimos in the area to become integrated into the existing cooperative system.

In 1953-54, when construction began on a nearby defense radar installation, the local Eskimo pattern of life underwent a dramatic change. The site was erected within a few hundred yards of the newly emerging village and all available Eskimo men were given employment opportunities at relatively high salaries. Since there were not enough local residents to fill the new positions, a number of families moved to the village from other Eskimo communities as far away as Barrow and Aklavik. While some were new-comers, quite a few of these new immigrants were actually returning to an area in which they had lived earlier and had many friends and relatives in the community. This influx of new residents was not large enough to seriously disrupt the close kin and friendship ties characteristic of most of the older community members.

During the period of construction, several Eskimos were given specialized training in semi-skilled occupations, and a few even achieved positions as union carpenters and mechanics. The fact that Eskimos were considered an asset by most construction and government personnel kept discrimination to a minimum.

Although problems of drinking and sexual misconduct occasionally arose, the government policy enabling Eskimos to set up their own restrictions concerning the admittance of whites to the village kept this potentially disruptive force under control. Those white men who made friends with the Eskimos and participated in their social and recreational life were welcomed by the community members, whereas those who were viewed as a potential threat to the village were discouraged. Any man, white or Eskimo, causing serious problems in the village or at the site, would be fired or sent to another installation.

Positive inter-ethnic relations were also furthered by the congruence of traditional Eskimo leadership traits and those required to articulate with whites. The Eskimo leaders' mental alertness, industriousness, generosity, cooperativeness, and ability to learn new technical skills were attributes also valued highly by whites, thereby enabling the local leaders to maintain their effectiveness and position of importance in both groups. At Kaktovik,

the two traditionally recognized leaders worked steadily as carpenters, machine operators, and labor foremen and also formed close ties with construction and government personnel in the area.

In 1957, major construction of the DEW line was completed. This did not result in a reduction of jobs, however, since extensive maintenance was still required. In recent years, approximately 75 per cent of the men in the village have been earning salaries of six hundred dollars a month. For most of these men this is a full-time relatively permanent occupation. Although unions ceased functioning at the close of construction, and the large majority of salaries no longer differentiate between occupational skills, members of all age groups over eighteen continue wage work in preference to their earlier pattern of hunting, trapping, and fishing.

Musan

The term Musan consists of two Chinese characters referring to the wood fence by which Chinese cultivators protected themselves from the attack of aborigines. The Musan district is an area with 29,000 acres of hills and a small plain located at a southeastern suburb of Taipei over the mountain range boundary. It consists of nine villages, only two of which are in the rice planting plain. The earliest known cultivation of this area was undertaken by a group of Chinese immigrants from Fukien in 1728. This caused territorial battles with Burishi tribal people for over a hundred years, resulting in the eventual extermination of those tribesmen.

In 1895, when Taiwan came under Japanese administration, Musan was a remote village with 140 households and 2,000 people. Transportation depended chiefly on the waterway along the Shintien River, and bamboo rafts were used from Musan up into the mountains. Replacement of the Shenkon temple in the early 1900's to a hill of this district contributed to the improvement of land transportation. With the discovery of coal and the marketing of tea, Musan grew steadily as a rural area. In 1945, the population numbered approximately 10,000, the inhabitants nearly all of Fukienese descent. Musan was well known to outsiders for its Shenkon temple, which, as a significant Buddhist center, attracted picnickers as well as devout worshippers. This,

in turn, stimulated greater retail trade. By the end of World War II, roughly 60 per cent of the population were engaged in agriculture.

The mass migration of Mainland Chinese to Taiwan took place in 1949-50. Over two million Chinese were distributed throughout the island resulting in major expansion of local facilites of all kinds and severe overcrowding, especially in the larger cities. During the years 1955-57, numerous government and military offices were relocated in suburban areas and small towns, including the district of Musan.

The changes in Musan since World War II have been dramatic. The population doubled between 1945 and 1960, due both to the influx of Mainland Chinese and to natural increase. Intermarriage between Mainland Chinese and Taiwanese has become more frequent. The agricultural population decreased to 31 percent by 1960, a drop of 29 percent in ten years. Native and migrant Taiwanese households now engage in more trading and salaried employment. Although there has been a steady increase in standard of living, home improvement, and transportation facilities, the cultural traditions relating to family size, kinship, and religious life remain largely unchanged. Effective community leadership roles are held by local village representatives, physicians and teachers, many of whom come from three predominantly local clans — Chang, Kao, and Hwang. Despite the increased living standards, still higher economic aspirations cause many Taiwanese in the district to complain about their limited income. Furthermore, the production of rice has not been able to keep up with the enormously growing population. The continued growth in retail trade is largely due to the increased purchasing power of the newly arrived civil workers and Buddhist worshippers, since many younger Taiwanese workers seek their economic and social future in the cities.

Although a few hundred Mainland Chinese families moved to Musan before 1954, the major influx occurred between 1955-57. By 1963, approximately two-fifths of the district population was comprised of Mainlanders. The majority of these migrants are civil service workers and their families. Their educational and socio-economic status is generally higher than that of the local

Taiwanese and most families are composed of middle-aged persons and children. The younger adult group prefer to remain in the large cities.

About 15 percent of the Mainland Chinese in the Musan district are Christians, 30 percent non-believers, and the remainder are Buddhist. For the local Taiwanese, the religious pattern reflects a more traditional orientation; 51 percent are Buddhist (Buddhism and Taoism are indistinguishable in this area), and very few are Christians. Most of the few hundred Taiwanese women married to Mainlander men come from outside the Musan district.

METHOD

Mental Health Index

For the Eskimo study, a revised form of the CMI was used as an indicator of mental health. Ninety one percent of the Kaktovik residents over the age of 17 completed the questionnaire (n=53). Those not interviewed were temporarily absent on other jobs, hospitalized, or away for other reasons. A detailed statement of the methodological, conceptual and administrative problems faced in using this questionnaire among the Eskimo is contained in a separate publication (Chance 1962).

A broader method of sampling, data collection and diagnosis for the Taiwan study was undertaken as follows: an age-stratified random sample of 488 was drawn from the 3,748 inhabitants over 15 years of age in the village of Musan and Changchao, both in the Musan district. Four kinds of study form were designed: family card, social data sheet, health questionnaire, and psychiatric examination sheet. On the family card, detailed occupation and working place, income, history of social mobility, and social and religious activities were included. Managers of the civil administration section of the local government were asked to fill out the family card. These cards were then utilized for the age-stratified sampling and home visit.

The social data sheet consisted of the following major items: personal identification, length of residence in Musan, marital

status, use of language, religion, education, sibling rank, size of family, working status and kind of occupation, type of family, dwelling, residential environment, income, social class, water facilities, toilet system, management of household, recreation, neighbourhood, and change of economic and social status in the past five years. Each item was classified in detail and a checking method was applied. Criteria were described for each item.

The abridged and remodified form of the CMI health questionnaire particularly designed for this study consisted of 136 health questions with 14 additional attitude questions (Rin *et al.* 1961). Health questions were classified in nine physiological systems and seven kinds of emotional syndromes and used as a diagnostic aid.

Three civil managers, representatives of the local government assisted in the field survey. Household visits were made by a Taiwanese psychiatrist and two social workers as a team accompanied by a community leader. Health information and social data were obtained by the social workers through questionnaires, followed by psychiatric interviews and medical examinations by the psychiatrist. Two psychiatrists and seven social workers took part in this home visit work for four months.

The psychiatric examination sheet consisted of eight major items. Particular attention was given to the discussion of psychophysiological and mental symptoms in order that accurate complaints and symptoms of inhabitants could be assessed at the interview. Criteria for symptom manifestation and degree of symptom impairment were described in terms of episode, duration, frequency, intensity, psychogenesis and organicity of cause and nature. For each of these elements, criteria were established.[5]

[5] Diagnoses of psychophysiological reactions similar to those used in the Department of Neurology and Psychiatry, National Taiwan University, were adopted in the present study. These are based on the Diagnostic and Statistical Manual: Mental Disorders, issued by the American Psychiatric Association, Committee of Nomenclature and Statistics in 1952. However, in order to define the psychiatric entity of these diseases among the community sample, and objective rating method of impairment for nine psychophysiological systems was established: musculoskeletal, gastrointestinal, cardiovascular, respiratory, genito-urinary, skin, sensory, endocrine and nerve systems. On the matter of criteria and detailed method of diagnosis, see the whole text referred to in Note 2.

To show the degree of total impairment of each physiological system, an a, b, c, and d rating method was applied. Finally, the highest impairment score was taken to indicate the total impairment of the individual. For this a I, II, III, and IV rank was given. Clinical diagnosis was independent of the degree of total symptom impairment, but a high correlation was obtained between the diagnostic standard and impairment of systems. Four categories of diagnosis, A, B, C, and D, were used to indicate: definitely sick, possibly sick, possibly not sick, and definitely not in a sick condition. Cross-validation and final diagnoses were made by the investigators after the home visits. For the prevalence study of the diseases, the individuals who showed I and II degrees of symptom impairment which matched A and B categories of diagnosis were considered as the psychiatric cases. In the present study, prevalence rates of psychological reactions are used to determine the degree of mental health. In the sample, 206 persons (42 percent) showed these reactions.

Modern Contact and Value Identification Indices

In order to measure the degree of modern contact and value identification, separate quantitative indices were developed in both studies. Indices used to determine the extent of Eskimo-white contact included the following: 1) amount of formal education, 2) knowledge of English, 3) residential mobility, 4) hospitalization, 5) salaried employment, 6) access to mass media, 7) National Guard or military service. Indices of contact used for the Chinese sample included: 1) education, 2) dwelling, 3) water system, 4) bathroom, 5) kitchen, 6) toilet, 7) household arrangement in modern style, 8) frequency of individual modern social and recreational activities, 9) contact with neighbours in terms of increase of knowledge, 10) social class.

Indices used to determine the extent of Eskimo western identification included: 1) participation in western-oriented (versus Eskimo) activities, 2) preference for western (versus Eskimo) foods, 3) preference for western clothing and hair styles (versus Eskimo). Indices used in the Chinese sample included: 1) religion, 2) language used in the family, 3) family structure, 4) traditional individual, social, and recreational activities, 5) tradi-

tional family members' social and recreational activities, 6) concept of illness.[6]

In both studies, three ranks — high, medium, and low — of modern contact and of value identification were established by dividing scores obtained from the two sets of indices (see Appendix A and B; Chance 1965). Then three comparative categories of contact and value identification ranks were made for the purpose of comparing the mental health ratings among the different categories, i.e. the rank of modern-life contact exceeds modern value identification (X), the contact rank equals identification rank (Y), and the contact rank is less than identification rank (Z).

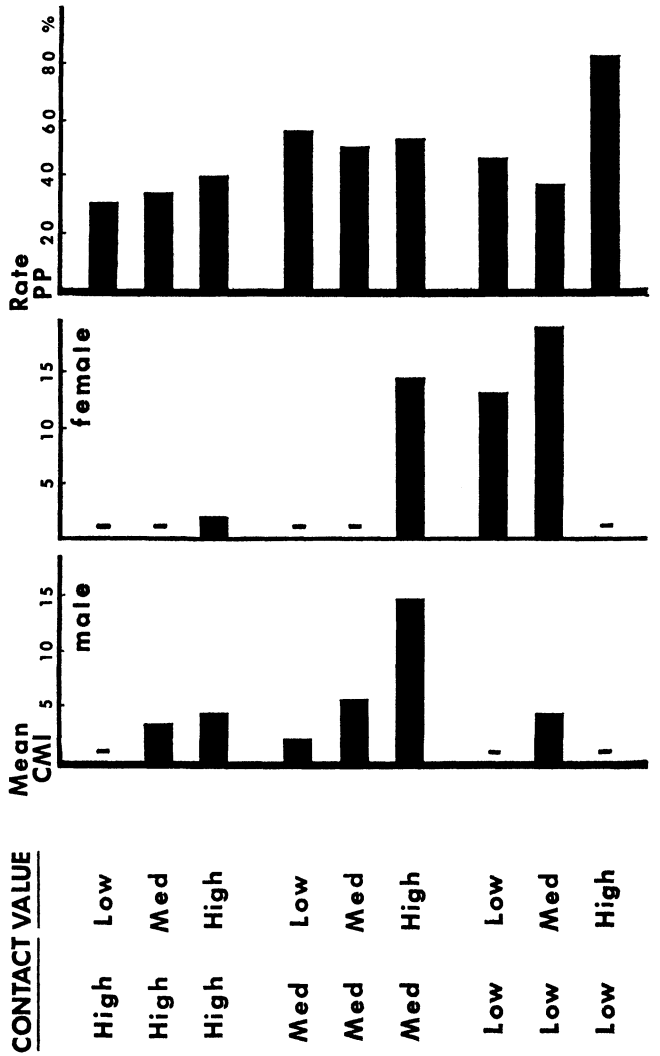
RESULTS

Figure 1 illustrates the nine combinations of contact and identification groups found in the Eskimo and Chinese samples. Figure 2 shows the correlation of mental health ratings for the three important equated contact-identified groups in both samples. Since different measures were used for both mental health and for contact-identification ranks, it is not permissible to compare the results directly, but it is permissible to compare the patterns which each exhibits. Also to be noted is the sex difference in scores for the Eskimo group and age difference in prevalence rates of psychophysiological reactions for the Chinese group.

[6] Indices used in the Musan study are as follows: eleven items were included in the Modern-Life Contact Index. For social class, criteria and method of scoring were made independently. In a formula for measuring social class, there were five spheres: 1) highest education received by any one of the family members, 2) type of family occupation, 3) residential area, 4) quality of furniture, and 5) main source of income. A maximum of 25 points could be obtained by this method of scoring, and social class scores were transformed into index scores as shown in Appendix A.

Six items were included in the value identification index as shown in Appendix B. Mandarin was considered as the medium of modern communication in present-day Taiwan compared to dialects which would limit this communication. Practically all Taiwanese speak the Fukienese dialect at home, so that no measurement could be made by the language items of their value system. Most Mainlanders' households are composed of nuclear families, since few extended relations were able to migrate to Taiwan. For these reasons, the language item was applied only for Mainlanders and the family structure item was applied only for Taiwanese in measuring values. Five questions concerning concept of illness were primarily based on traditional Chinese thoughts and beliefs regarding general illness (Rin 1965:12).

FIGURE 1: MENTAL HEALTH RATING FOR ALL CONTACT-IDENTIFICATION GROUPS



Consideration of Figure 1 indicates that for the Eskimo men's medium western contact group and for the Chinese low contact group, the hypothesis is strongly supported. In most other instances, groups whose western contact rank is lower than their identification show more symptoms of mental ill health than do groups which show higher modern contact and less identification. Among Eskimo women with a low contact rank, the difference in emotional disturbance is in this direction postulated by the hypothesis. Similarly, for the Chinese whose contact is high rank, the difference of prevalence rates is in this same direction.

Figure 2 indicates that for Eskimo men the highest emotional scores are found in groups of category Z, less emotional disturbance among those groups falling into the category Y, and still lower scores for those in category X. For Eskimo women, the trend is again in the direction postulated. There is a general tendency in the Musan sample for the prevalence rate to follow a similar decrease from category Z to category Y. Among the older age group of Mainland Chinese, the difference or rates in the three categories is significant at the .02 level. The younger age groups of both Taiwanese and Mainlanders follows this general trend, but the older age group of Taiwanese shows a reversed trend, i.e. the rate decreased from X to Z.[7]

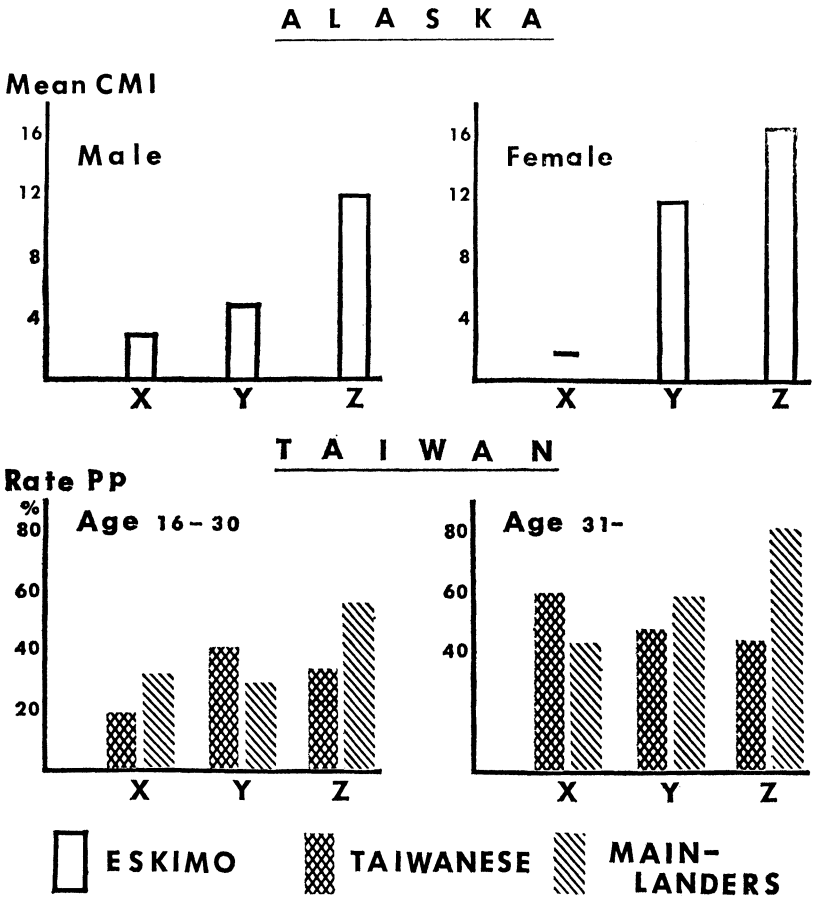
In both studies, an association exists between the extent of mental ill-health rating and the degree of modern identification when the latter is related to a lower modern-life contact rank.

DISCUSSION

Among the Eskimo, the findings suggest that the combination of lower contact and higher identification rank produces a situation conducive to emotional difficulties in the individual. This

[7] Using similar rating and diagnostic methods, the authors found 62 psychoneurotics among the Musan sample. The majority of them (53 cases) showed similar psychophysiological reactions, so that the result obtained from this group resembled to a large extent that of the psychophysiological reactions group. The percentage of prevalence of psychoneuroses for the whole sample when broken down into categories X, Y, and Z were 11, 12, and 18, respectively. Again, the group whose modern value identification exceeded their modern contact showed the highest rate of psychoneuroses.

FIGURE 2: CORRELATION OF RATING FOR EQUATED CONTACT-IDENTIFICATION GROUPS



X Contact exeeds Identification
Y " equals "
Z " less than "

is especially striking since none of the demographic factors, such as age or education, delineated consistent differences in emotional disturbance (Chance 1965). Education is associated positively with both the contact and identification ranks, yet this association is not sufficiently defined to produce significant differences in emotional states among those Eskimo with different educational achievements. Among the Musan Chinese, greater modern-life contact alone is correlated with lower prevalence rates of psychophysiological reactions. Nevertheless, by analyzing the data along the dimension contained in the hypothesis, the combination of contact and identification rank is independent of the effect of socio-economic status, education, and sex.

It appears, therefore, that those Eskimos who have had considerable contact with western culture and still identify with their traditional Eskimo way of life have made their choice freely; they have had an opportunity to select one of two alternatives and consciously chose to continue their former mode of life. It is unlikely that such a free choice would encourage emotional disturbance, and the results of the Eskimo study support such a conclusion. Comparison of the mean emotional disturbance scores of all the groups of the Eskimo sample shows that the lowest scores are associated with the groups in which contact rank is higher than identification rank. While the difference in scores between men's groups is not always statistically significant, the direction of the results does support the hypothesis.

Because the Mainland Chinese have undergone a difficult and forced migration, it is not unreasonable to suggest that they were more socially disturbed than the native Taiwanese. Lack of preparation for migration accompanied by an economic hazard on the part of the Mainland Chinese created great stress and heightened rates of mental disorders[8]. As Soddy (1961:183) states: "When value identity is rigid it is hazardous to remove a center of values, as has often been seen in the process of urbanization of Africans and others; loss of the support of older identifications

[8] Higher occurrence of psychophysiological reactions, psychoneuroses, and paranoid reactions was found among the Mainland Chinese as compared with Taiwanese during and after the period of migration in Taipei (Tsuang and Rin 1961; Rin *et al.* 1958).

will often result in a very great increase in anxiety and insecurity." Many Mainlanders have come to identify strongly with western values as illustrated by such things as a greater number of conversions to Christianity while still maintaining a core of their traditional values. With such co-existing value orientations, persons whose modern value identification or striving for western identity greatly exceeds their amount of contact and knowledge of modern-life show higher rates of psychophysiological reactions than do persons whose knowledge of modern-life exceeds their striving for modern value identification. It is suggested that sociocultural conflict is most pronounced in decision-making as it relates to the process of achieving new goals, where traditional value identity is rigid but many core values are removed, and furthermore, that such removal is relatively less hazardous to the younger group whose value identity is more flexible.

For the Taiwanese group two comments should be made. Because they are less socially disturbed than the Mainlanders, their identification with modern values involves a different quality as compared with that of the Mainlanders who have undergone rapid sociocultural change through migration. Second, the younger age group of Taiwanese have come to identify more strongly with the value orientations of the Mainlanders, and in so doing they show a similar trend in the characteristics of value identification and modern-life contact.

CONCLUSION

The Eskimo and Chinese populations studied are strikingly different in size and cultural composition. The two studies used somewhat different indices of mental health, survey techniques, measures of value identification, and modern-life contact. The research was undertaken independently by investigators from different disciplines in separate areas, drawing primarily on independent sources. Nevertheless, the results of each study strongly support the findings of the other.

Despite the great potentiality of current social and cultural studies, the concensus of opinion concerning difficulties in cross-cultural mental health research is that: 1) researchers in the

contrasting cultures often fail to agree on diagnostic criteria; 2) instruments for the detection of cases are poorly calibrated, and sampling procedures, intensity of investigation, and method of computation of data do not correspond; 3) there is reluctance or inability on the part of the population to divulge information, especially in primitive societies, and difficulties in communication, if interviews have to be carried out through interpreters, constitute a serious handicap; 4) even if detected by precise incidence or prevalence rates of mental disorders in epidemiological surveys, these findings often do not tell us the probable patterns and relationships between socio-cultural and psychiatric variables; 5) when epidemiologists deal with minor psychiatric symptoms in cross-cultural studies, they are unable to define the boundary of normality and abnormality in various cultures, the borderline and atypical types of mental disorders, and psychophysiological symptoms which are masked by hardship of life and physical ill-health of the inhabitants; and 6) although national hospitalization statistics and their extension to international comparison represent real differences in rates, they are largely limited to developed nations.

Given the problems listed above, psychiatrists, anthropologists and others engaged in cross-cultural mental health research assume that standardization of diagnostic criteria and survey techniques are an essential prerequisite for international comparative epidemiological surveys. Efforts to achieve such a standardization have been increasing steadily in recent years. Without intending to discourage these important efforts, the authors nevertheless suggest that concensus can be obtained in cross-cultural studies of the relationship between value identification and mental health in rapidly changing societies even when the conceptual and methodological approaches differ. It can be argued that similar findings stemming from differently oriented studies give added support to our hypothesis. In either instance, we suggest that in rapidly changing societies, adequate knowledge of modern patterns of life together with a strong sense of one's own cultural identity provide in people a psychic and cultural integration which promotes mental health. In contrast, individuals whose strong modern identification is not matched by sufficient knowledge of modern social life show a significantly higher risk of psychic

stress and corresponding symptom rate. In essence, it appears that the removal of the center of one's own personal value system is a highly significant hazard to people undergoing rapid social and cultural change.

APPENDIX A

Modern-Life Contact Index

A. Education:*
College (3), Senior and junior high school (2), Primary school (up to sixth grade) (1), Illiterate (0).

B. Dwelling:
Private house or apartment (1), Shared house (0).

C. Water system:
From public system (1), Use well or river (0).

D. Bath room:
Private bath room (1) Non-private or no bath room (0).

E. Kitchen:
Private kitchen (1), Non-private or no kitchen (0).

F. Toilet:
Private toilet inside the house (1), Toilet outside the house or non-private (0).

G. Household arrangement in modern style:
Excellent or good (2), Average (1), Poor or very poor (0).

H. Frequency of individual modern social and recreational activities:
Frequent (2), Average (1), Few or none (0).

I. Frequency of family modern social and recreational activities:
Same as H.

J. Contact with neighbours in terms of increase in knowledge:
Frequent (2), Average (1), Little or none (0).

K. Social class:
Social class scores were separately obtained from five factors giving a maximum of 25 points. These scores are transformed into this index as follows:

* Score in bracket.

Social class score	Index score
24 - 25	(10)
22 - 23	(9)
20 - 21	(8)
18 - 19	(7)
16 - 17	(6)
14 - 15	(5)
12 - 13	(4)
10 - 11	(3)
8 - 9	(2)
6 - 7	(1)
5	(0)

Total Score	Modern-Life Contact Rank
15 - 26	High
12 - 14	Medium
0 - 11	Low

APPENDIX B

Modern Value Identification Index

A. Religion:*

Catholic or Protestant (3), Non-believer (2), Buddhism, Taoism or Moslem (1), Indigenous, indistinguishable Buddhism-Taoism (0).

B. Language used in family:

Mandarin (2), Chinese dialects (0).

C. Family structure:

Single household or nuclear family (2), Modified extended family (two generations with few relatives) (1), Extended family (0).

D. Individual social and recreational activities:

All kinds of modern activities such as sports, movies, parties, picnics, western music, etc. (2), No activity (1), Traditional worship, mahjong, Chinese chess, local drama or opera, etc. (0).

E. Family members' social and recreational activities:

Same as D.

* Score in bracket.

F. Concept of illness: there are five questions concerning the concept of illness.

a. Do you think that all kinds of disease are caused by organic changes inside the body?

b. Do you think that many diseases are caused by *Huo-chi* (fire) or *shenn-kuei* (vital defect)?

c. Do you think that many diseases are caused by deficiency in or weakness of something inside the body?

d. Do you think that Chinese doctors' therapies and herb medicines are effective?

e. Do you think that sick persons should not eat stimulating foods (hot and cold elements)?

Give one point score for each negative answer.

Total Score	Modern Value Identification Rank
14 - 10	High
9 - 7	Medium
6 - 0	Low

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