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CULTURAL EXPECTATIONS VERSUS REALITY IN NAVAJO SEIZURE PATTERNS AND SICK ROLES

ABSTRACT. Anthropologists have discerned three seizure syndromes among the Navajo Indians. *Ichaa* with generalized seizures is thought to be caused by incest and carries with it a stigmatized social role. *Frenzy witchcraft* is characterized by fugue states and since it is thought to be caused by witchcraft carries a neutral role. Hand-trembling is considered to be a sign of shamanistic proclivity and is a potentially rewarding role.

We identified all residents of two Navajo reservation service units admitted to Public Health Service hospitals between 1962 and 1964 with the diagnosis of epilepsy or hysterical seizures. Despite the concern with seizure syndromes among the Navajo, we were unable to demonstrate an excess prevalence of epilepsy or hysteria among them. The hysterics were more likely to display psychomotor or *hand-trembling* seizures (neutral or rewarded seizure patterns) than the epileptics; this association, however, was statistical and the symptom patterns of the patients did not fit the 'classical' anthropological descriptions. Epileptics did have a higher rate of death, drunkenness and crime than the hysterical patients, perhaps as a result of their stigmatized role, but they also had a chronic condition while the hysterics after eleven years of follow-up were free of their original symptoms. Hand-trembling patients who became shaman-like diagnosticians did not benefit from this socialization of their symptom and left the profession.

In short, epilepsy and hysteria manifest themselves on the Navajo reservation with a frequency and pattern not strikingly different for the Western observer. Though the force of cultural factors can be discerned, their effect is to produce variations on a general human theme – not a dramatically new composition.

INTRODUCTION

Anthropologists have suspected that cultural factors could influence the frequency (Linton 1956:65), the symptomatic patterning (Linton 1956:132; Cooper 1934; Gussow 1960; Yap 1952) and sick role (Benedict 1946:229,231; Silverman 1967; Devereaux 1956; Kroeber 1952; Linton 1956; Murphy 1976) of neurologically or mentally ill patients. According to some of these authors, social expectations can influence the degree of social disability which certain mental symptoms create. Silverman (1967), for example, feels that the role of the shaman can convert a florid schizophrenic into a functioning member of society.

Seizure conditions among the Navajo Indians of Arizona provide a unique opportunity to test some of these assumptions. Anthropological field work has demonstrated that the Navajo recognize three distinct seizure syndromes. The

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first syndrome, *ichaa*, is characterized by a generalized convulsion and is said to be caused by having committed incest (Wyman and Bailey 1964:30; Wyman and Kluckhohn 1938:1; Haile n.d.). The social role which results from this label is a negative (stigmatized) one. The second syndrome, *frenzy witchcraft*, resembles a fugue state or psychomotor seizure (Kluckhohn 1962:37–41,182,230; Wyman and Kluckhohn 1938:5; Haile n.d.). Since the patient is the victim of witchcraft the resulting role is socially neutral and elicits help from the community. The third syndrome is *hand-trembling* (Wyman 1936a:134; Wyman 1936b:236). It is usually a sign that the patient can become a hand-trembling shaman-like diagnostician. Presumably persons with such symptoms will eventually assume the positive (rewarded) hand-trembler's role and will turn their symptom into an asset. Some authors (Kaplan and Johnson 1964:203–220) have suspected that the prevalence of seizure disorders is higher among the Navajo than the general population. They proposed that a genetically induced increased frequency might account for Navajo seizure concerns, or that the seizure concerns had caused an increased incidence of hysterical seizures.

We proposed to study the frequency, patterning, and sick role of patients with epileptic and hysterical seizures. The epileptics could serve as a kind of control, in that the frequency and basic patterning of epilepsy is less likely to be culture-induced than it is for hysteria. The sick role of both kinds of seizures, however, could be influenced by the culture. Our field work has been analyzed with several hypotheses in mind:

1. The prevalence of hysteria will be increased, while the prevalence of epilepsy will be the same when compared to non-Indian populations.

2. Hysterical seizure patterns will take on socially positive rather than negative patterns. They will less frequently demonstrate the dreaded *ichaa* pattern and more frequently will demonstrate the *hand-trembling* and *frenzy witchcraft* pattern when compared to the epileptic patients.

3. The sick roles of patients with generalized seizures will be more negative than those of patients with psychomotor or hand-trembling seizures. The hand-tremblers will assume the diagnostician role and will derive social benefit from it.

MATERIALS AND METHODS

The Window Rock Field Office of the Navajo Reservation is the administrative center for eight service units. A copy of the 'face sheet' for every admission to a division of Indian Health Hospital is kept on file at Window Rock. This face sheet contains identifying data and the diagnostic code for the major diagnoses which brought the patient to the hospital. It was possible for us to go through the face sheets of the Tuba City and Ft. Defiance hospitals for the period

January 1962 to June 1964. In order to deal with a known population, we concerned ourselves only with patients who resided in the respective service units. In fiscal year 1964 there were 2,580 inpatient admissions to Tuba City Hospital and 2,735 inpatient admissions to Ft. Defiance.

Using the above technique we identified 69 patients:

Total identified	69
Dropped	
No medical record found	7
Mistaken code	3
No seizures mentioned in record	4
Retained	
Diagnosis convulsive hysteria	11
Diagnosis epilepsy or epilepsy and hysteria	44

These patients were all traced and were found to be alive in June of 1964. Seven of these patients were found to be in institutions for the mentally retarded; 8 were under 6 years of age. This left 21 patients in the Tuba City Hospital and 19 patients in the Ft. Defiance Hospital service units to be interviewed, a total of 40 patients.

We devised three main diagnostic categories, *A*, *B*, and *C*. *A* contained persons whose seizures were all of the epileptic type; *B* contained persons who had seizures of both the epileptic and hysterical type; and *C* comprised persons whose seizures were only of the hysterical type. Table I presents the operational definitions of these categories.

The 'hysterical seizures' in our study would be classified as 'conversion reaction' or 'dissociative reaction' by the American Psychiatric Association's diagnostic handbook. We felt that hysterical seizure or 'hysterical spell' was the shortest and most compact way to characterize phenomena we wanted to designate.

Spell and seizure, as we use it, imply an episode of altered consciousness with a range of concomitant behavior from convulsions to organized hysterical behaviour.

'Convulsion' is used to denote a violent and seemingly involuntary contraction or series of contractions of muscles of the body, a special kind of spell or seizure.

'Dissociation' is the segregation from consciousness of certain components of mental processes, which then function independently; the classical 'split personality', as in the *Three Faces of Eve*, is an example where several aspects of personality are dissociated from each other and take on an independent existence.

TABLE I

Operational definition of categories used to group patients with epileptic and hysterical seizures

A. Epileptic – Persons whose seizures were all of the epileptic type	
Positively epileptic:	Patient had at least one seizure which was seen by an M.D. and pronounced as an epileptic seizure,
	AND/OR
	Patient had a clearly abnormal EEG, ictal or interictal, which was consistent in location with the clinical characteristics of his seizures.
Probably epileptic:	If there was absence of an EEG and an observed seizure
	AND
	Patient had consistent long-term response to antiepileptic medication,
	AND
	Patient had history of stereotyped classic grand mal, petit mal, or psychomotor seizures,
	AND/OR
	Patient had neurological deficits that were consistent with localizing signs during the seizure
B. Mixed – Persons whose seizures were both epileptic and hysteric in type	
Positively epileptic and probably hysterical seizures	
Positively epileptic and positively hysterical seizures	
Probably epileptic and probably hysterical seizures	
Probably epileptic and positively hysterical seizures	
C. Hysteric – Persons whose seizures were all of the hysterical type	
Positively hysterical:	Patient had at least one seizure which was seen by an M.D. and pronounced to be hysterical in nature,
	AND
	Absence of epileptic criteria,
	AND
	No positive EEG
Probably hysterical:	If a patient had not had a seizure in front of a physician,
	AND
	The patient had elaborate nonstereotyped spells,
	AND
	The spells had their onset later in life.

'Fugue state' and 'psychomotor seizure' are kinds of dissociation in which the patient behaves as if in a trance state, often wandering about in bizarre fashion.

Once the cases had been identified from the hospital records, their residential location was obtained from the hospital personnel and home visits were carried out. A routine neurological history and physical was carried out by one of us (RN) with the interpretive help of another (DP). A history of Navajo diagnoses and treatments was also taken, as well as a social history. In 1975 Parker and Levy visited the patients still living on the western part of the reservation, to determine their medical and social status over the intervening 11 years by means of an informal interview.

TABLE II
Follow-up status of 21 Western Navajo seizure patients

Patient status	Epilepsy with or without hysteria %	Hysteria only %
Free of seizure	0	80
With original 'epileptic' seizure type	64	0
New seizure type	0	10
Dead	36	10
Total	100	100
	n = 11	n = 10

RESULTS

We were concerned with the accuracy of our diagnoses. A follow-up of the diagnosed epileptics and hysterics on the western part of the reservation reassured us. The diagnosed epileptics have continued to have stereotyped seizures while none of the diagnosed hysterics have seizures of the same type. This can be seen in Table II. The fact is that 8 of the 9 living hysterics are now seizure-free, though most have other psychosomatic complaints 11 years after our initial interviews. The one patient who still has seizures originally had psychomotor seizures. She has replaced these with occasional episodes of hand-trembling. The expected number of epileptics and convulsive hysterics for these two service units could be calculated if we applied the expected age-specific prevalence rates to the Navajo populations in these two areas. Johnston (1966) provides information which makes it possible to estimate the population of Tuba City and Ft. Defiance service units.

Table III presents the population in each age group, as well as the age-specific

TABLE III
Age composition and observed and expected seizure prevalence in study area

Age	Percent in age group	Number in age group	Number of cases expected	Expected rate/1000	Number of cases observed	Observed rate/1000
0–14	48.9	12,093	42	3.5	14	1.16
15–19	10.1	2,498	11	4.4	10	4.0
20–29	14.1	3,487	15	4.5	10	2.87
30–39	10.2	2,473	10	4.2	8	3.23
40–49	6.9	1,760	7	4.2	2	1.17
50+	10.0	2,473	10	4.0	0	0
Total	100.0	24,730	95	3.8 ± 0.4	44	1.7 ± 0.8

epilepsy rates found in Iceland (Gudmundsson 1966) and the expected and observed cases and rates. The overall prevalence of recently hospitalized cases is 1.7 per 1000 (± 0.8). This is about half the total prevalence expected if the Iceland figures obtained or if the figures of Brewis et al. (1966) or Kurland (1958) obtained. The Icelandic figures predict 95 epileptics in the two areas while we observed only 44. This leaves 51 epileptics unaccounted for. The largest deficit occurs under the age of 14.

In one area of the Tuba City service unit we conducted an informal survey of the community in an attempt to find more epileptics. Only two additional cases were found in this manner. One of us (RN) subsequently ran the field health program for another part of the reservation, the Crownpoint service unit, which has about 4500 children under the age of 15. If Icelandic rates were operating the 95% confidence interval would include anywhere from 4 to 27 cases of epilepsy with an expected number of 15. In fact there were seven cases in this age group and only one of them was in school. The rest were quite retarded and were receiving fairly regular medical supervision from the public health nurses. It is our impression, therefore, that the Navajo epilepsy rate is not unusually high. Definitive conclusions would require an extensive prevalence study in the field.

There were 10 patients over age 15 with hysterical seizures. Dividing this by the population in this age group, we have 10/12,637 = 0.8/1,000. Leighton and his co-workers in Nova Scotia (1963:508) and Nigeria (1963:172) have reported conversion reaction lifetime prevalences of 1% and 3%, respectively. We suspect that hospitalized hysterical seizures represent only a fraction of the total. We note, for example, that 10 out of the 11 total hysteria cases came from the western reservation, while only 11 of 29 epilepsy cases came from that region. Health care utilization practices are undoubtedly affecting the proportion of cases we are seeing in each category. We doubt that variations in social or biological factors in the two regions are responsible. We estimate that there were some 13,300 discharges from these two hospitals during the two-and-a-half year study period. Almost all the hysterics admitted had seizures as their presenting complaint. These 11 patients represent a rate of 0.8 per thousand, a number lower than the 8 per thousand reported by Lewis and Berman (1965) among 16,000 discharges from the Wisconsin General Hospital. Although there is no evidence to suggest that convulsive hysteria is more common among the Navajo, we do not feel we can make any conclusions about its prevalence.

We compared the type of seizures found among hysterical patients and those with epilepsy. As we had postulated, the socially negative, generalized seizures were less frequent among the hysterics than among the epileptics, while the psychomotor and focal seizures were more common. This difference was statistically significant. The detailed results can be seen in Table IV.

Dr. Robert Bergman, a psychiatrist who worked with the Indian Health Service, says that one of his patients who claimed to have unilateral

TABLE IV
Seizure patterns in 'pure' hysterics compared to 'pure' epileptics

Seizure Pattern		Hysterics %	Epileptics %
Generalized; general and psychomotor	Stigmatized	36	89
Psychomotor and/or focal; focal only	Socially acceptable	64	11
Total		100 n = 11	100 n = 19*

Note: Fisher's exact test for this table gives a P value of .004.
*19 of 29 epileptics had no trace of superimposed hysteria.

hand-trembling seizures was observed during one of these spells and was found to be holding the trembling hand with the other. When she let go, both hands were seen to tremble. This provides a rather dramatic example of shaping clinical signs to fit cultural expectations. None of the epileptics or hysterics with generalized seizures fitted that part of the stereotyped description of *ichaa* which includes the vomiting of moth wings or rolling into the fire. None of the patients had received a ceremonial diagnosis of *ichaa* or gave incest as the cause of their seizures. The patients with psychomotor seizures did not fit the classical description of frenzy witchcraft, tearing off their clothes and running into the night. Table V shows the variety of seizures which were found. Striking is the frequency of hallucinations which accompany these spells.

The social role of the patients followed anthropological expectations only partially. Table VI shows that the prevalence of serious problems was indeed higher among the epileptics with their chronic generalized seizures. The hand-trembling spells brought more dismay than relief to their victims. This will be seen in the case materials presented further on. The patients with psychomotor seizures rarely received the diagnosis of frenzy witchcraft but did have more or less neutral social roles. The higher frequency of problems among the epileptics was statistically significant. Table VII provides a detailed listing of the problems encountered by the epileptic and hysterical patients at the time of our first interview. Four of the epileptics on the western reservation had died by the time of our interview in 1975. Incest or rape was more common among epileptic females than among the hysterical patients, as can be seen in Table VIII. In Table IX we see the characteristics of these cases of incest plus three more picked up during a field survey. In only one of these cases picked up in the field survey did incest predate the seizures. In the rest, the incest resulted from

TABLE V
Seizure patterns of 11 hysterical patients

Case number	Age	Sex	General seizures	Psychomotor	Focal hand	Ghosts or visions of persons	Other symptons	Status 1975
30	45	F	One fainting and tremor					Drinking, no seizures
31	33	F		Over several years		Dead parents		No fugues, fainting. Globus hystericus, aphonia, hand trembling
32	19	F		Fugue		Witch dogs	Began to hand-tremble	Eye symptoms, no fugues
33	25	F			Conscious but uncontrolled tremors		Somatic complaints, rash	Mild depression only
34	70+	F		Fugue	One hand trembles			Dead of natural causes
35	31	F		Fugue	Hands clench	Witches	Frontal headaches	Anxiety about her children
36	28	F		Fugue	Hand trembling	Saw men pursuing her	Catatonic posturing triggered by peyote	Depression, somatic complaints
37	46	F	Several years of writhing episodes				Chest pain	Anxiety, chest pain
38	11	M	Unconsciousness, twitching	Fugue		Dead brother	Nightmares, dead brother	
39	22	F	Unconscious twitches	Fugue		Tall figures, try to touch		No seizures
40	30	F	Blackout spells	Senseless talking			Backpain	Somatic complaints, anxiety

TABLE VI
Ultimate social role by seizure type

	Epilepsy	Hysteria		
Social role	%	Focal Seizures %	Psychomotor Seizures %	Generalized Seizures %
Became shaman	0	0	0	0
Social problems or death	72*	50	43	0
Neutral	28	50	57	100
Total	100	100	100	100
	n = 29	n = 2	n = 7	n = 2

*A comparison of the probability of 'problems' in epileptics and hysterics gives a Fisher's exact test P value of less than 0.001.

the sexual use, by relatives, of retarded epileptic females, and in one case was part of the disturbed behaviour of an epileptic boy. In four cases, treatment with chants relating to incest themes (moth or coyote legends) were used.

The hand-trembling cases provide an interesting example of patterning of symptom perception and of social role. Nine patients in the field sample had either focal epileptic seizures or hysterical unilateral seizures. Of these only two were ever diagnosed as suffering from uncontrollable hand-trembling. Neither of these patients were epileptics. Both became hand-tremblers but their symptoms

TABLE VII
Social problems of epileptic and hysteric patients at time of survey (1964)

	Epileptic		Hysteric	
Problem	Males	Females	Males	Females
Alcohol	6			
Alcohol and violence	3			1
Alcohol, violence and incest	1			
Violence		3		
Promiscuity and alcohol		1		1
Promiscuity, alcohol and violence				1
Promiscuity, alcohol and incest		1		
Promiscuity, alcohol, illegitimacy and incest		1		
Promiscuity and rape		1		
Rape and illegitimacy		1		
Suicide attempt		1		
No problem	1	1		7
No information		2		
Under 17 years	2	4	1	
Total	13	16	1	10

TABLE VIII
Likelihood of incest and rape in epileptic and hysterical females

Incest, rape, or illegitimacy	Hysteric %	Epileptic %
Present	60	100
Absent	40	0
Total	100	100
	n = 10	n = 10*

Note: Fisher's exact test: P = 0.04.
*Only 10 of 16 epileptic females were over 17, for whom we had full information.

persisted. One, an old Paiute lady, continued to have uncontrollable episodes of hand-trembling as well as many hysterical episodes of strange behavior which resembled psychomotor seizures. Despite the adoption of the role she remained a sick individual and was utilized only infrequently in her capacity as a hand-trembler. The second woman also attempted to become a diagnostician but was unable to do so due to the severity of her symptoms which included psychotic-like episodes. In 1964, we concluded that few individuals displaying the appropriate signs were selected to fill the role of a hand-trembler; that those few who were chosen were hysterics rather than epileptics; and that even they were too incapacitated to perform the role adequately if at all. Nonetheless,

TABLE IX
Sibling and clan sibling incest

	Sex	Medical Diagnosis	Type Seizure	Type Incest	Partner Symptomatic	Rape Involved	Moth or Coyote Diagnosis
Seizure Sample							
Case #1	F	Epileptic	Generalized	Sibling	No	?	No
Case #2	M	Mixed	Generalized epileptic psychomotor hysteric	Sibling	No	Yes	No
Case #3	F	Mixed	Generalized epileptic psychomotor hysteric	Clan	No	?	Yes
Community Field Survey							
Case #4	F	?	?	Sibling	No	No	Yes
Case #5	F	Epileptic	Generalized	Clan	No	?	Yes
Case #6	F	None	None	Clan	Yes	No	Yes

those patients who did have the hand-trembling ceremony also exhibited the appropriate signs. The question remained whether a large survey of practicing hand-tremblers would reveal an unusually high proportion of hysterical personalities, those who, in Ruth Benedict's view, had the constitutional potential to produce the required behaviors. We also noted the fact that neither the epileptic focal seizures nor the hysterical hand-trembling seizures were truly unilateral. The former were only briefly unilateral at the onset but spread rapidly to all extremities. The latter, on close observation or careful questioning, were seen to be episodes of bilateral trembling.

During the subsequent eleven years one of the two patients died of old age and the other abstained from hand-trembling entirely. Another patient, however, one who had displayed only psychomotor-like hysterical seizures, did become a diagnostician. The histories of these two patients are of some interest because they reveal the process by which a great many diagnosticians are actually selected by society.

Case report 1

Mildred had been bothered by hand-trembling attacks intermittently during childhood. She married at age 16 (1952), had three children and appeared happy. Her husband drank frequently. In 1959, at age 23, she became a recognized hand-trembler. For three days prior to the ceremony she was in a continuous state of uncontrolled trembling. In 1960, her husband left her and a few months later, she gave birth to a baby with hydrocephalus who soon died. Shortly thereafter she suffered from a variety of psychosomatic complaints, anxiety and some alarming bouts of altered behavior, during which she saw battle scenes and identifiable Navajo males who attempted to kill her. A series of ceremonies was ineffectual and after attempting to shoot a man whom she thought was going to kill her, she began to have spells of sitting motionless for long periods of time. At this juncture, in January, 1961, she was hospitalized. During her hospitalization she was paranoid and assumed catatonic positions upon several occasions. She was discharged after a few weeks with a diagnosis of catatonic schizophrenia.

Between the time of her return from the hospital and 1963, Mildred began drinking and then to attend peyote meetings to help restructure her life. During 1963, she had several episodes of catatonic-like behavior and was rehospitalized. Levy and Parker were able to establish that these episodes occurred during peyote meetings and were precipitated by ingestion of the drug. It also turned out that the initial episode had occurred after a frenzy witchcraft ceremony during which she had ingested datura. During the second hospitalization no evidence of psychosis was found.

During the year of our study, Mildred was once again doing hand-trembling and was also curing by the sucking method, another shamanistic practice. Psychotic episodes had recurred but she did not attend peyote meetings. Dr. David Gutman, a psychologist, and Dr. Robert Bergman, a psychiatrist, interviewed her subsequently. Neither found evidence of psychosis. By 1966, Bergman was impressed with her normal status and noted that she attributed her improvement to a ceremony during which she ingested datura with no untoward effects. This ceremony had been performed after a particularly intense paranoid episode during which she was convinced that witches were trying to destroy her second marriage.

Mildred was contacted again in 1975 by Levy and Parker. Her second marriage had stabilized and she had given birth to several children. She has three children by the first marriage and five by the second; all are well and healthy. She appeared well nourished and

relaxed, spoke fluently, and described her life and symptoms with appropriate detail. She appeared outgoing and affectionate with two of her young children who were present throughout the interview. She and her husband had moved away from her family and were living in a new home with a modern kitchen. The house and surroundings were pleasant and well cared for.

By her own account, she and her husband joined the peyote church. It has helped her husband stop drinking and she has suffered no ill effects from the peyote. She now refuses to do hand-trembling for anyone. For a while after her recovery in the late 60's she would perform hand-trembling occasionally because her parents pressured her to do so. But invariably she would suffer 'spells' afterwards. These consisted of dizziness, occasional blackouts, and severe lassitude so that she could not get up from the bed. The condition lasted from one to two days. Mildred felt that hand-trembling only made her condition worse and that her parents should never have persisted in their efforts to make her into a diagnostician.

Before proceeding to an examination of Mildred's family, and the reasons for her having been selected to become a hand-trembler, it is appropriate to describe the case of her cousin, Elsie, who became a hand-trembler after the survey was completed.

Case Report 2

Elsie was born in 1931 and was 33 years old when interviewed in 1964. She had married young and had her first child at about age fifteen. When she was 23 both parents died within a year of each other. Five years later, in 1959, while she was hospitalized for tuberculosis, her husband was killed in an auto accident. Then, in 1961, her second child died in infancy. Her second marriage, to a man ten years younger than herself, was a stormy one. Soon after the loss of the child, she had a number of seizures which involved inertness, lack of response to even painful stimuli, calling out the names of her dead relatives, and singing snatches of ceremonial songs. She recovered rapidly after these episodes and talked quite easily about them. Several seizures were observed by doctors who pronounced them hysterical. An EEG was negative. We classed these episodes as hysterical pseudo-seizures which resembled psychomotor seizures.

With the exception of one mild episode, Elsie was seizure-free between 1962 and 1972. Her second marriage dissolved and a third marriage was made sometime before 1968. Between 1968 and 1971 she was seen occasionally by Mental Health personnel from the nearby hospital. Her life during this period was a turbulent one involving fights with her third husband, her son, relatives and neighbors. She also began to drink frequently.

From 1972 to the present, Elsie has experienced hysterical seizures, numerous bouts of globus hystericus and depression. In 1972 she was temporarily deserted by her third husband and also became a hand-trembler, specializing in finding lost and stolen items. Her performances were theatrical and much discussed in the community. Nevertheless, like her cousin, Mildred, she complained of the bad effects from hand-tremblings. She, too, suffered from blackouts, dizzy spells and headaches. Upon several occasions she complained that she did not wish to perform as a hand-trembler but was being 'forced' to do so. Once she asked for a statement from the Indian Health Service that she could show people to convince them she was ill and should not do hand-trembling.

During the summer of 1975 Parker began to gather genealogical data on the families of these two patients. We have already mentioned that the two women

are cousins. In the parental generation, three brothers were not only healing ceremonialists but also hand-tremblers and star-gazers. Each of the three, then, had three separate statuses within the religio-healing system. Although males can become ceremonial singers, women cannot. Each of these men handed on his hand-trembling powers to his daughters. Mildred was hysterical; her sister is currently a hand-trembler but is quite normal and asymptomatic. Elsie was prevailed upon to become a hand-trembler after her cousin Mildred declined to perform the ceremony any more and Mildred was asked to perform the initiation ritual for her. Another cousin, the daughter of the middle brother, is quite normal, very acculturated and is an active and successful hand-trembler.

Normal tremblers perform their functions easily, are able to hold full-time wage–work jobs and do not suffer in any way after performing a hand-trembling ceremony for diagnostic purposes. It is our impression that the two hysterical subjects were selected by their families to become hand-tremblers in order to transmit ceremonial property within the family and not because of their seizure symptoms. In Elsie's case, the seizures were of psychomotor type rather than unilateral. For neither woman did the ceremony which made them hand-tremblers alleviate their symptoms or make them better adjusted individuals in any way. Both complain that they are too ill to perform the role and both, in contrast to their normal sisters and cousins, find their symptoms aggravated by the practice of the gift of hand-trembling.

A parallel instance of the transmission of ceremonial powers within a family has been documented by Eric Henderson (personal communication). A ceremonial singer married to an herbalist bequeathed his ceremonial properties to two of his sons who became ceremonialists in their own righr. Another son was taught some of the powers, enough to qualify him as a leader (*Nataani*). This son later became a tribal councilman. The fourth son was the black sheep of the family who left home after making a disapproved marriage and never inherited ceremonial power. There were only two daughters, both of whom became herbalists like their mother. Both daughters also married ceremonialists.

The brother of one of us (D.P., a Navajo) was selected by his step-father to learn his hand-trembling powers. While camping one night on a journey, the stepfather began to hand-tremble and then to slap the young man's arm repeatedly. By so doing the power could be transmitted to the younger man. The visible sign that this had happened occurred when the stepson's arm began to tremble.

It is our impression that selection is done largely for the purpose of transmitting ceremonial property within families and that signs and symptoms may play far less of a role than cultural definitions or ethnologists would lead us to expect. Elsie, in fact, was selected to be a hand-trembler despite the fact that her pseudo-seizures resembled psychomotor episodes and did not involve unilateral trembling.

CONCLUSIONS AND DISCUSSION

We believe it unlikely that the rate of epilepsy is high on the Navajo reservation. If Navajos emphasize the magical significance of seizures it does not seem likely that this was caused by an unusual prevalence of epilepsy among them. We cannot make any conclusions about the prevalence of hysteria, or the relative frequency of epilepsy accompanied by hysteria.

The social role of epileptics was more often characterized by rape and violence than was the social role of hysterical patients. Since all but two epileptics had generalized seizures and only two hysterics had generalized seizures, it is not possible to say if this association between epilepsy and negative social role is due to the chronicity of the epilepsy or is due to the generalized seizures characteristic of it.

Hysterical hand-trembling was not converted into a lasting asset by assuming the hand-trembling role. Three patients with this characteristic found that the hand-trembling diagnostician role did not serve to integrate them into the community. Most hand-tremblers seem to be chosen on the basis of family ties, not on the basis of hysterical symptoms.

There was some suggestive evidence for cultural patterning of symptoms. Patients diagnosed as having hysterical seizures were less likely to exhibit generalized seizures and were more likely to exhibit focal and psychomotor seizures than were the epileptics. Lacking comparisons from other cultures, we cannot say if this difference is universal or is a reflection of the negative implications of generalized seizures and the positive implications of hand-trembling seizures.

Our experience during this study leads us to suspect that culture-bound syndromes when actually seen in the field may be neither as stereotyped as usually described nor as unique to a particular culture. Linton has written that "hysterical phenomena are everywhere very decidedly culturally patterned. In fact, if one knows a culture, one can predict what form hysterias are going to take in that society or pretty nearly so" (Linton 1956:132). The assurance of Linton's assertion would never lead us to suspect the scantiness and perfunctory nature of the data which describe the several culture-specific syndromes to which he refers in his book. It may be useful to briefly review several of the best-known syndromes so that the reader can confirm for himself in the original literature how little we really know of these conditions and how much further solid research is needed. First of all, we should point out that many of the culture-specific syndromes were first described in the late 19th and early 20th century, a time when new bacterial diseases were being discovered all over the world on the basis of a few poorly described cases. Indeed, some of these psychiatric conditions were thought at first to be neurological infections peculiar

to their country of origin. The quality of the descriptions would be perhaps adequate for an acute infectious disease, which is limited to a brief episode of symptomatology, but it is not sufficient for shedding light on a complex behavioral disorder. The conditions we shall briefly review are *imu, latah,* old world *arctic hysteria, pibloctoq* and *windigo psychosis.*

Imu is a condition attributed to the Ainu. It is supposed to manifest itself in older women who have been in contact with snakes. After this ceremonially dangerous exposure the patients are said to startle easily at even the mention of a snake, and once startled are compelled to imitate the people who happen to be nearby. Winiarcz and Wilawski (1936) have given the English-language summary of the work in this field. It appears that our knowledge of this condition is based on the twelve briefly described cases of Sasaki (1903–05) quoted by Winiarcz and Wilawski (1936). The most interesting cases among these were not directly observed by the authors but were known by hearsay. Uchimura (1934,1956) claims to have identified 100 cases but he does not specify what he means by a case and does not describe any cases in much detail. The 'classical' cases of *imu* as they have been discussed by subsequent authors are the hearsay cases, and thus in studying *imu* we may be studying how culture patterns hearsay accounts of hysterical behaviour rather than how culture patterns the hysterical attacks themselves.

Latah also is said to manifest itself as a fit of compulsive imitation subsequent to being startled; sexually vulgar words will often be compulsively repeated. It occurs among the Malayan people and is considered by them to be an amusing impediment, like ticklishness, and is not thought to be a disease. Although the bibliography for *latah* is long (Yap 1952), only 12 articles really report cases known personally to the authors. There are only 37 cases in the literature which have been described first-hand by a physician (Ellis 1897; Fletcher 1908; Galloway 1922; Gerrard 1904; Gimlette 1897; Van Brero 1895; Yap 1952). Five non-medical authors in Yap's bibliography mention 21 additional cases as part of more dramatic autobiographical accounts of their stay in Malaya (Clifford 1898:186–201; Graham 1897; O'Brien 1883; Swettenham 1900:151; and Forbes 1885:21–25). Even the medical case reports are merely accounts of one or two episodes of the condition and only brief glimpses are given into the natural history of the condition, or its social context. All the writers seem to feel that the condition, particularly mild forms of it, was quite common. Van Loon (1927) sent a questionnaire to 150 doctors. Twenty percent had never seen a case and 120 had seen 300 cases among them. Most of these cases were middle-aged females and house servants. This reflects the fact that perhaps servants were the only lower-class Malays who got to Western physicians or that the servants were at special risk of getting the condition. At any rate, the physicians had on the average known only two to three cases. Thus, although

latah does most certainly exist we have but an imperfect idea of its prevalence or importance in Malaya. Murphy has summarized this literature in a useful way, in a book edited by Lebra (Murphy HBM 1976:3–21).

Recently, Geertz (1968) collected 13 cases of *latah* by a cursory search in a Javanese provincial town with a population of about 20,000 (Geertz 1965:75). Her description of two 'typical' cases resembles those in the rest of the literature. The cases were women of lower class. Six of the thirteen had been servants with the Dutch, a higher proportion than would be expected. Geertz points out that *latah* symptoms bear on several cultural themes in Java: the fear of being startled, the horror of sexual vulgarity, a concern with good etiquette, and a concern with status. Geertz feels that the *latah* victim is able by compulsive mimicry to parody the subservience she feels and to subtly rebel in an acceptable way by doing and saying things not permissible when not *latah*. Geertz provides evidence that *latah* was still prevalent (the lowest estimate for her town would be about 0.6/1000) in Java in the early 50's. She presents, as well, some intriguing hypotheses which could be tested. The evidence to date, however, leaves much to be desired. A true prevalence study, giving the actual range of severity (rather than the most amusing cases), is sorely needed. We need to know the type of onset, the frequency of episodes, and the natural course of the condition over time. The risk factors for this condition, if discovered, would go a long way towards corroborating her hypotheses.

Like *imu* and *latah* old-world *arctic hysteria* (Foulkes 1972:10) is characterized by compulsive imitation. Knowledge of this condition is based on only 23 case reports (Aberle 1952: Jochelson 1903; Czaplicka 1914; Shirokogoff 1935:253,347,355; Hammond 1884). These reports are of a very brief and fragmentary nature.

New-world *arctic hysteria* (Foulkes 1972:10) was first described among the Eskimos of Greenland. Foulkes, who has devoted an entire monograph to this condition, reproduces the fragmentary descriptions which pertain to the 15 cases in the world literature (Foulkes 1972:11–20). He then adds ten additional 'cases' which were referred to him while a psychiatrist with the U.S. Public Health Service in Alaska. Murphy (1975), when reviewing his monograph in the American Journal of Psychiatry, points out that these cases came from a denominator of 11,000 Innuit Eskimos and that they are by no means classical examples of the condition.

Foulkes (1975:17) quotes Murphy as having found several cases which resemble *pibloctoq* (new-world arctic hysteria) in an epidemiological survey she made of an Eskimo community. In a personal communication she points out that there was one case which by the remotest stretch of the imagination *might* be considered *pibloctoq*. The Eskimos did not recognize the case as anything special. This one case occurred in a population of 500. Despite the rarity, heterogeneity and small number of cases, Foulkes proposes an elaborate

multivariate causal model of a condition which may not even exist as a stable endemic entity. It may, however, have existed as an *epidemic* condition. Nine of the fifteen cases documented by Foulkes and earlier by Gussow (1960:218–235) are dramatic examples which occurred among the Smith Sound Eskimos during the expeditions of Admiral Peary (Peary 1907:384–385; Peary 1893:125; MacMillan 1934:101,102; Whitney 1911:67,82–83,87,181,187). The entire population of this group was only 253 (Peary 1898:101). The cases sometimes occurred in small clusters. "Someone among the adult Eskimos would have an attack every day or two and one day there were five cases" (Peary 1910:166). In Peary's first book (1898), *pibloctoq* refers to a disease of dogs and no human cases are mentioned. Perhaps Peary's appearance among the Eskimos may have influenced the frequency and patterning of this condition. Certainly the evidence presented to date does not suggest a common and characteristic condition of the Eskimos.

The *windigo psychosis*, a term which has been much discussed by anthropologists, was coined by Professor John Cooper (1933), who had never seen a case and who never reviewed the literature for first-hand accounts of a case. Teicher (1960) has made such a review, which extends back to the 17th century. He has been able to identify 70 case reports of people suspected by the Indians to have had this syndrome, which is characterized by craving after human flesh, possession by the icy-hearted windigo spirit, and finally by actual cannibalism. Of these 70 cases only 19 were first-hand reports; the rest were hearsay. Of the 19 first-hand reports only eight patients had actually eaten another human being, but only three had done so without the duress of starvation. It does not seem warranted for Cooper to call this condition a 'very typical psychosis'. Windigo is not an example of a common culture-specific disease. Rather, it is an example of the social importance of a near-mythical syndrome (Hallowell 1934,1936, 1938; Landes 1938). Like witch-possession in our Middle Ages, it was an issue for major concern and occasional community action, even though the actual condition rarely if ever existed. Nonetheless, recent articles propose elaborate biological and psychodynamic explanations of this nonentity (Rohrl 1970; Brown 1971; Hay 1971).

This review of selected culture-specific syndromes has been carried out to show some of the pitfalls which can occur in this field. Among them is the temptation to present the most extreme 'classic' examples, and therefore to distort the significance and context of the condition. Another temptation is to overestimate the prevalence and social importance of a condition and to remain ignorant of the condition's natural evolution. Finally, it is tempting on the basis of a few cases to make elaborate hypotheses in which cultural, biological or psychodynamic variables perfectly explain the condition. In this paper we have tried to avoid these temptations.

Although beliefs about *ichaa*, frenzy witchcraft and hand-trembling are

prominent for the Navajo, we have no evidence to suggest that these beliefs have influenced the frequency of epilepsy or hysteria among them. The condition seems to be as rare among the Navajo as among the Caucasian population.

We have examined the full range of symptom presentations and found that none of the cases resembled the classic descriptions in the anthropological literature. Although the pattern of the psychomotor seizures contained culture-specific material they were not dramatically different from similar seizures in the general population. The seizure patterns of hysterical patients tended to be of a type with neutral or positive cultural connotations, but this was a statistical relationship only.

We were able to follow up ten of the hysterical patients for eleven years. All of them were free of their original symptoms at the end of the period. Thus, the hysterical episodes were transient phenomena, perhaps better understood in terms of transient personal and family stress than in terms of general cultural factors. Initiating patients with hand-trembling into a diagnostician's role did not change their view of themselves as being sick. Eventually they retired from their profession and subsequently improved. Social reward did not abolish a sick role. Social stigmatization, however, did aggravate a sick role. Epileptics were raped, beaten, and in turn participated in violence more than was expected.

In short, epilepsy and hysteria manifest themselves on the Navajo reservation with a frequency and a pattern which is not startlingly different for the Western observer. The force of cultural factors can be discerned but their effect is to produce variations on a general human theme, not to produce a dramatically new composition.

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