

LIFE CAREERS OF NAVAJO EPILEPTICS AND CONVULSIVE HYSTERICS [1]*

JERROLD E. LEVY

University of Arizona

RAYMOND NEUTRA

University of California, Los Angeles

and

DENNIS PARKER

USPHS Indian Health Service

Abstract—As part of a long-term study of Navajo Indian health beliefs and practices, a survey was undertaken to identify all persons suffering seizures of a generalized type. Traditional beliefs hold that victims have transgressed moral norms and are then sanctioned by illness of which seizures are a sign. The records of these socially disvalued patients were examined, and follow-up visits undertaken. The short life expectancy of these patients is attributed to the disdain and lack of social support characteristic of their lives.

Indigenous treatment had varying results, sometimes contributing to short-term remission, at other times exacerbating the condition. Moreover, given the fact that traditional healers attribute negative social attributes to persons suffering generalized seizures, these practitioners cannot be recommended for treatment of this kind of problem. Instead, acculturated Navajo who are trained as mental health workers are the healer of choice.

INTRODUCTION

The idea that society may define even the most startling mental aberrations as either pathological or normal, almost at will, has intrigued anthropologists for at least half a century. Ruth Benedict believed that not only such transient and relatively non-debilitating signs as trance and catelepsy, but also seizures and long periods of violent insanity were honored in many societies [2]. More recently, Silverman [3] has suggested that the only significant difference between acute schizophrenics and shamans is in the degree to which the culture accepts and provides a social role for the individual displaying the signs and symptoms of schizophrenia. That curing shamans who achieve their status through a personal, mystical experience involving direct communication with supernatural beings, and by exhibiting psychotic-like behaviors may, in fact, be compensated or cured psychotics had already been suggested by a number of investigators [4]. These investigators believed, however, that the shaman was not as insane as other individuals in the same society. In effect, the shaman might be psychotic but not so deranged that he could not maintain a grasp on reality sufficient to perform the healing function demanded of him. Linton [5] felt that the shaman was more likely to be hysterical than psychotic. Silverman goes beyond this position, maintaining that the very act of becoming a shaman is a therapeutic process which cures the psychotic. Thus, a set of psychotic behaviors can be labelled as normal or even valued: a socially productive role can be provided for individuals displaying these behaviors; and the adoption of the role is itself a cure.

Over the years, psychological anthropologists have formulated a number of ideas similar to the one just mentioned. Ruth Benedict was more concerned with the effects of labelling various behaviors as normal or deviant than with the genesis of deviance or psychopathology itself. In her view, human temperaments are fairly constant in the world. It is "as if in every society a roughly similar distribution were potentially available, and as if the culture selected from these according to its traditional patterns and moulded the vast majority of individuals into conformity. Trance experience, for example, . . . is a potentiality of a certain number of individuals in any population" [6]. Many anthropologists, however, have maintained that the psychoses, as well as neuroses and social deviance, are environmentally determined. In consequence, some societies will create more psychoses than others and may even create culturally specific psychotic symptoms. *Windigo*, for instance, has been described as a "clearly localized psychosis" [7].

What these ideas have in common is the premise that most psychic variables are culturally determined. All too often, these ideas have been phrased as assertions until, with time, they have come to be accepted as truth [8]. Increasingly, however, investigators have adopted a more cautious position. The dearth of well observed data, inadequate research methods, and the difficulties involved in making adequate diagnoses in preliterate societies have been discussed in some detail [9] and, in recent years, more refined and sophisticated research has attempted to test earlier notions [10].

The present discussion addresses two questions concerning the social roles open to individuals displaying the appropriate deviant behaviors. The social and medical consequences of positive valuation of

* See Reference 1.

deviant behaviors will be contrasted with those of negative valuation. The materials presented comprise part of a larger study of Navajo seizure disorders conducted by the authors between 1964 and 1975 on the Navajo reservation in Arizona. Before proceeding to a discussion of the research, a brief statement of the questions posed is in order.

First, following Wallace [11], we will postulate that many mental disorders are so debilitating that the individual will not be able to fulfill the valued cultural role made available to him unless, of course, the indigenous healing system is able to cure or alleviate the symptoms. We will seek to determine whether individuals displaying the symptoms deemed appropriate by the native society and independently diagnosed as psychotic or neurotic by modern medical practitioners do, in fact, perform successfully in the positive role.

Secondly, we will examine individuals who, again by virtue of the exhibition of appropriate signs and symptoms, are disvalued by the society. We will ask whether either native healing practices or modern medical treatments alleviate symptoms sufficiently for these deviants to escape the negative role assigned them.

The major types of seizures associated with epilepsy are given a prominent position in Navajo disease theory. Comas, faints, spells of irrational behavior, and seizures are thought by the Navajo to be the final stages of many illnesses. In addition, however, the various types of epileptic convulsions are well described in Navajo myths and each is thought to be caused by a specific etiologic agent.

The gift of "håndtrembling", a prevalent mode of diagnosing illness, locating lost objects and identifying witches, along with its disease form, the uncontrolled trembling of one arm, looks very much like a unilateral epileptic seizure, the onset of a focal epileptic seizure, or an hysterical episode. An individual who displays unilateral trembling, especially of the arm, is thought to have been possessed by the spirit of the Gila monster and to be gifted with powers of divination. If the appropriate ceremony which makes the individual into a "hand trembler" is not performed the seizures will become uncontrolled and debilitating and are then defined as an affliction rather than as a gift. The role of hand trembler is valued, specified symptoms are a prerequisite, and a prescribed ritual is both initiation and cure.

Symptoms very much like those of a psychomotor seizure are said to be the result of sexual or "frenzy" witchcraft. The essential qualities of the epileptic psychomotor seizure are an alteration of consciousness and various simple as well as complex, purposeful, automatic behaviors. Paroxysms among some patients can involve psychotic behavior or hallucinations and illusory perceptions of the various sensory systems. The Navajo believe that young women are the special victims as they are the targets of men with witchcraft powers who seek to seduce them. The victim, in a typical description, utters a brief cry, runs about aimlessly or in circles and is likely to sink into unconsciousness or to tear off her clothing and disappear into the night where her seducer confidently awaits her arrival. A specific healing ceremony is prescribed and the malady is thought to be relatively

transient. The hysterical female and even the malingerer with sexual problems would find ample room for acting out behavior and reward without blame in this syndrome and its ritual cure which involves the use of datura, an hallucinogen.

Sibling incest is said to produce the symptoms of the grand mal, or generalized epileptic seizure. The transgressor of this tabu, like the moth from which the disease takes its name, twists and convulses and, in so doing, is likely to fall into the fire. The epileptic suffering from these seizures would, logically, be stigmatized. It would seem unlikely that hysterics have much to gain by emulating these seizures if conversion reactions are, in fact, completely psychogenic. This Navajo disease entity, "moth sickness", provides us with a clearly negative role. The healing ceremony "Moth Way" is one of the most dangerous and powerful of all Navajo healing ceremonies. Its practitioners are suspected of being witches, for good men would fear to become intimate with such dangerous powers. On the other hand, early detection and treatment with modern drug therapy should enable the epileptic to control his seizures and so escape the effects of negative labelling by the community.

Focusing attention upon symptoms such as seizures rather than on either western or Navajo diagnostic categories has two advantages. Seizures can be organic in origin—the epilepsies, Korsakoff's psychosis and alcoholic withdrawal seizures—or psychogenic in nature—the hysterical seizure, or conversion reaction. The epilepsies persist despite any set of cultural definitions. One may simply ask whether this startling and debilitating disease can, by cultural fiat, be considered normal. Do epileptic patients, in essence, with unilateral motor seizures, become functioning hand tremblers by virtue of the existence of the specified symptoms alone? Hysterical seizures, by contrast, are known to be largely influenced by cultural factors. One would expect to find hysterical individuals emulating seizure symptoms in order to become hand tremblers or to act out sexual anxieties in a socially acceptable manner. Moreover, it is relatively easy to differentiate between epileptic and hysterical seizures which are recognizable by the layman and medical specialist alike, whereas schizophrenia or psychotic depression are difficult to diagnose, and frequently doctors cannot reach agreement on their diagnoses. Starting with Navajo diagnostic categories would involve the examination of large numbers of symptom-free individuals as well as individuals with a variety of symptoms unrelated to mental phenomena. Although a study of Navajo diagnostic practices is a valuable undertaking in its own right it would not, in our opinion, get at the questions we posed as quickly as a study of seizures.

Although the research was conducted on the Navajo reservation because the authors had prior experiences with the tribe and were located there, the area offers some unique opportunities for cross-cultural medical research. Despite a century of domination by the United States, relative isolation has worked to preserve a considerable portion of Navajo health culture. At the same time, sustained ethnographic research, increasingly adequate demographic knowledge, and 10 years of extensive modern health services made survey and other forms of medical

research feasible in 1964 when this study was initiated. The population of the tribe in 1964 was approximately 100,000, large enough to yield adequate samples of such low frequency occurrences as epilepsy and hysteria. The research, with limited funding and time available for the initial field survey, was not able to include a sophisticated, large scale, epidemiological survey like those undertaken, for example, by the Leightons in Canada and Africa [12]. It was, however, possible to select a study sample from hospital admission records and to check its reliability by the use of a field survey: to have interdisciplinary teams interview subjects and their families in their homes; to review the adequacy of diagnoses with local medical personnel of the Indian Health Service, USPHS. The initial research was conducted in the summer of 1964.

(1) All inpatient diagnoses of organically based seizures—the epilepsies, Korsakoff's syndrome, alcoholic withdrawal seizures, etc.—and hysterical pseudo-seizures recorded for a 2.5 yr period in two areas of the reservation were tabulated ($N = 69$). The field sample only included patients aged six and above. Of the original 69 individuals 14 were dropped because of errors in the diagnostic code, another 8 were epileptics under six years of age and 7 were feeble-minded and committed to an institution. The field sample consisted of 40 individuals, 21 of whom lived in the western and 19 in the eastern portion of the reservation.

(2) Local medical staffs in the hospitals serving the two areas reviewed the medical records of all the subjects in the sample to determine the adequacy of the diagnoses.

(3) In contacting subjects in the field sample low priority was given to Korsakoff's psychosis, alcoholic withdrawal seizures, and cases of clear epilepsy in children between the ages of 7 and 15.

(4) A field interview was administered which attempted to reconstruct the life history, a description of symptoms, and a history of Navajo diagnoses and treatments.

(5) All subjects were placed into one of three major diagnostic categories: epileptic seizures only (including other organically based seizures), mixed epilepsy and hysterical seizures, hysterical seizures only.

(6) A field survey in one community of the western area was conducted to determine the number of epileptic patients not identified by our sampling method. We estimated that our method identified 90% of all epileptics. Those not identified by our method were, nevertheless, known to medical authorities either because they had been diagnosed in off-reservation hospitals or because they had been diagnosed prior to the 2.5 yr period included in our record review.

(7) A field survey in the same community sought to identify all known instances of sibling incest to determine whether such cases did, in fact, involve seizures as the Navajos believe.

(8) Two populations in the western area had been studied previously by Levy and Parker between 1959 and 1964. These were typical populations of two types. One was traditional, rural, and pastoral. The other was more acculturated, lived near a government compound, and relied upon wage work or social wel-

fare for support. Data had already been gathered concerning their health status and hospital use patterns which indicated that their respective health profiles approximated those of the tribe as a whole. Navajo ceremonial treatments had been monitored for the same five-year period. The ceremonial profile of these populations was compared with the ceremonial treatments given the seizure patients to see whether they differed in any significant way.

(9) Between 1964 and 1975, Parker was able to maintain contact with most of the hysteria cases in the western sample. During the summers of 1966 and 1975, Levy and Parker reviewed the medical records of all subjects in the western sample and reinterviewed all hysteria subjects who had not been visited by Parker during the preceding year.

In the discussion which follows no attempt will be made to describe all of the findings which are to be published elsewhere in monograph form. Instead, only those findings immediately relevant to the questions posed in this paper will be dealt with.

EPILEPTICS AND HYSTERICS

Nineteen patients in the field sample had epileptic and other organically based seizures only. Ten epileptics had hysterical seizures in addition to their organically based ones. Eleven patients had hysterical seizures only. The high proportion of patients with both types of seizures may be due, in part, to the fact that several cases were very difficult to diagnose accurately. Nevertheless, after following these 10 patients for 10 yr, none of our diagnoses were found to be in error. It is then likely that most, if not all, of the patients in this mixed diagnostic category did have both hysterical pseudo-seizures and true epileptic ones.

Twenty-five, or 86%, of all epileptic patients had generalized seizures (Table 1). One of these had psychomotor seizures in addition to generalized seizures. Four patients had focal epileptic seizures. There were no cases of epileptic unilateral motor seizures. The focal seizures, however, were unilateral at onset then rapidly became generalized. Most cases were chronic and had ages of onset either in childhood or during adolescence.

Cases in the mixed diagnostic category tended to have hysterical seizures of the same type as their epileptic seizures or to have hysterical episodes which emulated psychomotor seizures. Only the epileptics with focal epileptic seizures (2) had hysterical seizures with unilateral trembling.

The hysterical seizures were almost equally distributed between the three major seizure types. Three patients exhibited generalized seizures only. One combined generalized with psychomotor episodes. Three patients had psychomotor episodes only, while two combined psychomotor seizures with bouts of unilateral trembling. Two patients had unilateral trembling only. Although we have attempted to class the hysterical seizures in terms of the principle epileptic seizure types, it should be emphasized that such seizures are not identical to epileptic seizures and only resemble them in a most general way.

Hysterical patients tended not to have chronic

Table 1. Seizure patients by diagnostic category and seizure type

Diagnostic Category	Seizures					
	Generalized	Psychomotor	Focal	Generalized	Psychomotor	Focal
1. Epileptic Seizures Only (N=19)	16 1		2			
2. Mixed Seizures (N=10)	3 1 4		2	3 1	4	2
3. Hysterical Seizures Only (N=11)				3 1	3 2	2

symptoms. Often seizures occurred only during periods of crisis. The onset of symptoms for several patients was during the adolescent years while for others it occurred during their married lives.

In most respects the symptoms and life histories were not unusual. Ten of the eleven hysterical patients were women, as one might expect, while epileptic patients were equally divided between the sexes. There were, however, some unusual findings worthy of mention. None of the epileptic patients were over age 50 and far fewer than expected were over age 40. This, we thought in 1964, was probably due to the fact that adequate treatment had not been available on the reservation until after 1955, so that a higher than expected proportion of patients might die in status epilepticus or from seizure related accidents. Ten of the eleven hysterical patients were from the western reservation and we have not been able to explain this significant deviation from the expected. The third unexpected finding was that none of the hysterical patients who reported unilateral trembling actually had these symptoms when the episode was observed or upon close questioning. If the symptoms of hysterical seizures are largely culturally determined, we would expect some Navajo hysterics to display the unilateral trembling which is a prerequisite for becoming a hand trembler. Instead we found that these hysterical episodes began as bilateral trembling or shaking which were then reported by the patient as unilateral. Dr. Robert Bergman, a psychiatrist with the Indian Health Service, was able to con-

firm this observation. On two occasions, patients who presented themselves to him complaining of uncontrolled shaking in one arm were observed to be holding the afflicted extremity with the supposedly normal hand. When asked to let the shaking arm go, both arms were observed to tremble or shake simultaneously. Subsequently, Levy was able to observe several similar episodes which occurred during peyote ceremonies. In all instances one hand was used to hold the shaking arm. The implications this may have for the ultimate etiology of conversion reactions cannot be discussed here. The role of the cultural variable in this instance, however, relates to the manner of labelling and presenting the sign rather than to the formation of the sign itself.

Individuals suffering from epilepsy present a problem to their families and to the community due to the severity of the convulsions and the chronicity of the illness. It was not surprising to find that Navajo epileptics, like their counterparts in other societies and in the general population, frequently exhibited severe behavioral disorders. Despite the fact that the families of the patients often averred that they were not troubled by community attitudes, we noticed a tendency for the more wealthy, traditional families to keep the epileptic patient isolated. One male and two female epileptics over age 17 had been isolated from the community. In none of these cases did we find drinking, illegitimate births, violence, or rape.

Epileptics are more prone to have social problems than are hysterics (Table 2). Navajo males, in general,

Table 2. Social problems of epileptic and hysteria patients at time of survey (1964)

Problem	Epileptic males	Hysteric males	Epileptic females	Hysteric 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	
No information			2	
Under 17 years	2	1	4	
Total	13	1	16	10

Table 3. Social problems of female epileptics and hysterics age 17 and over

	No problems	Problems
Epileptic females	1	9
Hysteric females	7	3

Fisher's exact test: $P = 0.01$.

Note: "social problems" includes all problems listed in Table 2.

are prone to have problems associated with the use of alcohol. Seventy-five percent of a sample of rural western Navajo males studied by [13] exhibited drinking behaviors associated with alcoholism in the general population. Ten of the eleven male epileptics over age 17 had histories of drinking, but as we were not able to measure their behaviors in any meaningful way, it is quite possible that they do not differ much from other Navajo males.

Significantly fewer epileptic females than hysteric females have no social problems (Table 3). Thus, regardless of the prevalence of similar problems among Navajo females generally, epileptic and hysteric females are considerably different from each other. At the same time, however, we must recognize that the involvement of the women patients with alcohol may not be exceptional, that promiscuity is common among Navajos, and that most of the violence may be a function of the seizure disorder itself. When we omit these problems and consider only incest, rape, and illegitimate children, we still find significant differences between epileptic and hysteric females (Table 4). It is our impression that the epileptic women's sexual problems are due to social labelling and are not the normal expectation for Navajo females. The relatively trouble-free lives of the isolated patients seem to confirm this impression.

Exploitation of the vulnerable and the use of isolation to protect against this exploitation is the norm for handicapped people in traditional Navajo society and indicates strong disvaluing of the handicapped by the community generally. One of the hysteria patients had a cleft palate and was isolated by the

family. Field health personnel persuaded the parents to allow their daughter to attend an off-reservation school while undergoing a series of operations. The child suffered so much ridicule from her schoolmates that she refused to return after vacations upon three occasions and finally had several hysterical seizures. An example of exploitation is provided by a female epileptic patient, orphaned in childhood, who had been reared by her maternal relatives. Her normal siblings fared well under this arrangement and have married and raised children of their own. The patient, however, was used as a servant and, after puberty, was forced to prostitute herself. Currently, she is living with an aged and blind kinsman in isolation from even the nearest neighbors. In addition to her seizures she has numerous hysterical and psychosomatic symptoms.

The subsequent careers of the epileptic and hysterical patients continued to differ over the following 10 years. Only the patients living in the western portion of the reservation were followed between 1964 and 1975. This area included 11 of the 29 patients with epilepsy and 10 of the 11 patients with purely hysterical seizures.

Four of the 11 epileptics had died, all from unnatural causes. The only male to die had been suicidal since the age of 16. His mother and maternal aunt refused, for several years, to let him go away to school. He took his medications erratically and had continuous seizures. He ran away from home three times and had frequent temper tantrums. He also attempted suicide by taking an overdose of Dilantin and phenobarbital. After being found in a disoriented state in an off-reservation city, his family acquiesced

Table 4. Incest, rape and illegitimate births among female epileptics and hysterics age 17 and over

	Incest, rape or illegitimate birth Absent	Present
Epileptic females	6	4
Hysteric females	10	0

Fisher's exact test: $P = 0.04$.

and allowed him to go to a special school in another state. While at school he was found unconscious and subsequently died from concussion at age 19. Whether his death was due to trauma suffered during a seizure or to suicide was never determined. This case is of interest because it is illustrative of the severe difficulties encountered by even the younger, more educated epileptics who were diagnosed early, at age 11 in this instance, and who were placed upon medication at the onset of the seizure disorder. Prior to adolescence this patient's seizures had been well controlled by medication.

Two female epileptics were found dead after drinking, one frozen to death and the other from causes never determined. Both had histories of drinking and promiscuous behavior. Both had also been diagnosed as psychotic. Both were from poor families who did not take care of them and both had committed incest. Neither of them had taken medication consistently and suffered seizures throughout their lives. One died at age 30, the other at age 52.

Another female died at age 31. She took her medications regularly and although she was never seizure free she seemed to do fairly well until she was found dead at some distance from her home where she had been herding sheep. The cause of death was never determined.

The frequent occurrence of premature death under unusual circumstances suggests that the absence of older epileptics from the total field sample in 1964 might not be due to the unavailability of medications alone.

Of the remaining seven epileptic patients all but two continue to lead difficult lives. One male manages to take his medications regularly enough to keep his seizures under control. He drinks heavily, however, and leads a disordered life. The only male epileptic known to have committed incest is now seizure free on medication except when under stress. He has married and has had four children but is unable to support his family. His wife receives aid to dependent children and he receives general assistance. Originally

placed in the mixed diagnostic category he continues to be seen by mental health personnel and receives medication for his personality disorder and psychosomatic complaints. Three females with both epileptic and hysterical seizures continue to have seizures and to lead troubled and unhappy lives. The two who were married have both lost their husbands and one has become promiscuous and a heavy drinker.

Only two epileptics seem to be leading normal lives. One, a young woman, was put on medication by the time she was six years old after suffering from febrile seizures between ages three and four. Her mother was a hospital employee so medical care was consistent. She was seizure free from age 8 to age 14 after which time she took her medications erratically. When she was 16 she utilized her seizures to express conflicts with her mother. During a several month period she refused to take medications. Since age 17, however, she has been seizure free. This patient has only displayed epileptic symptoms and aside from adolescent turmoil has had no psychiatric problems. The other well-adjusted patient is a male who has had seizures since age three. He was seizure free as long as his medications were administered regularly. This was the case in school but his traditional parents did not supervise him well at home. At age 14, he suffered a concussion during a seizure. Since that time both he and his parents have taken great care to administer medications properly. He is currently 26 years of age and has been seizure free for the past 12 years. The parents have a very warm and close relationship with the patient who remains unmarried, relatively isolated, and is, perhaps, slightly retarded.

Only one of the ten hysteria patients died and that was from old age. Four have been symptom free for many years and lead normal lives. Four continue to have problems but their seizure symptoms have disappeared and they report, instead, visual disturbances or persistent psychosomatic complaints. Only one of the ten continues to have hysterical seizures along with some new symptoms such as globus hystericus.

Table 5. Navajo treatments given epileptic patients by type of seizures

Seizures	Moth Way substitutes	Frenzy Witchcraft and Moth Way substitutes	Hand trembling way	Other	No information	Total
1. <i>Epileptic only</i>						
Generalized	3			4	9	16
Focal				2		2
Generalized and psychomotor				1		1
2. <i>Mixed types</i>						
Generalized epileptic and generalized hysteric	3					3
Generalized epileptic and generalized psychomotor and focal hysteric				1		1
Generalized epileptic and psychomotor hysteric	3	1				4
Focal epileptic and focal or psychomotor hysteric				2		2
Total	9	1	0	10	9	29

HAND TREMBLING AND UNILATERAL SEIZURES

Nine patients in the field sample had either focal epileptic seizures or hysterical unilateral seizures (Tables 1, 5 and 6). 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 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 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 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. Nevertheless, 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 were, on close observation or careful questioning, seen to be episodes of bilateral trembling.

During the subsequent 11 years one of the two patients died of old age and the other abstained from hand trembling entirely. Another patient, however, one who had only displayed 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.

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 which 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 were ineffectual and after attempting to shoot a man who, she was convinced, 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

Table 6. Navajo treatments given hysteric patients by type of seizures

Seizures	Moth Way substitutes	Frenzy Witchcraft and hand trembling way	Hand trembling way	Other	No information	Total
Generalized				3		3
Generalized and psychomotor				1		1
Psychomotor				3		3
Psychomotor and focal		1	1			2
Focal				2		2
Total	0	1	1	9	0	11

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 60s 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.

Elsie was born in 1931 and was 33 years old when interviewed in 1964. Elsie had married young and had her first child at about age 15. When she was 23 both parents died within a year of each other. Five years later, in 1959, while 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 10 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 stormy 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 trembling. 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, few women do. Each of these men handed on their hand trembling powers to their 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. The 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 they are too ill to perform the role and both, in contrast to their normal sister 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 right. 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. Similar cases are reported by Chisholm [14].

Parker's brother was selected by his step-father to learn his hand trembling powers. While camping one night on a journey, the step-father 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 step-son'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. Because her initiation into the role occurred after the 1964 survey, it has not been included in the tabulations of treatments presented in Table 5.

PSYCHOMOTOR SEIZURES AND FRENZY WITCHCRAFT

The Navajo belief that sexual witchcraft produces symptoms resembling those of the psychomotor seizure led us to the idea that young, hysterical females would tend to have pseudo-seizures of this type. Subsequently we would expect them to be diagnosed as suffering from Frenzy Witchcraft and to be treated with the appropriate ceremonial, the Frenzy Witchcraft Way. Although this Navajo diagnosis does not provide the individual with a socially valued role it does indicate that he or she is a victim rather than a transgressor and deserving of sympathy and support. It seemed likely that hysterical patients would gain considerable attention and that their symptoms should be alleviated, if only temporarily, by the ceremonial treatment.

Twelve patients in the sample had psychomotor seizures. Of these, six were hysterical, five were epileptics who combined hysterical psychomotor seizures with generalized epileptic seizures, and one was an epileptic with both generalized and psychomotor epileptic seizures (Table 1). Only three patients received the expected diagnosis, and only two of these received the appropriate treatment (Tables 5 and 6). Contrary to our expectations, the hysterical patients most often received no diagnosis thought to be specifically related to their seizures. Neither of the patients who had the Frenzy Witchcraft Way performed over them received much benefit from the treatment although their cases were dramatic and their hysterical symptoms conformed to expectation.

The hysterical patient, Mildred, also had bouts of hand trembling for several years prior to her psychomotor-pseudoseizures and has been described in the preceding section. When the Frenzy Witchcraft Way was first performed the symptoms were aggravated rather than relieved. We suspect that it was the administration of datura during the ceremonial which precipitated the catatonic attacks for which she was subsequently hospitalized. This appears to have occurred upon two occasions in association with the Frenzy Witchcraft ceremonial and upon one occasion when datura was administered as part of the smoking ritual of Mountain Top Way. Several years later, however, another ceremonial which used datura and which may have been Frenzy Witchcraft Way alleviated her symptoms considerably.

The other patient, an epileptic female, had generalized epileptic seizures combined with psychomotor pseudo-seizures. At age 14 an episode of hysterical paraplegia was alleviated after two treatments performed by a Hopi medicine man. After the death of a grandfather and the institutionalization of her epileptic and retarded younger brother, she went through two years of frequent seizures both epileptic and hysterical. During her hysterical pseudo-seizures she would respond only to her father. During a brief hospitalization in Phoenix, a pseudo-seizure was precipitated by a homosexual advance initiated by her room-mate. After this hospitalization a Frenzy Witchcraft Way was prescribed but halfway through the ceremony the patient had a psychomotor pseudo-seizure and demanded that the ceremony be halted. Datura had not been given before this episode. After

a second hospitalization, seizures continued. Some of them even her father believed to be malingering; others were clearly hysterical. At age 16 the patient was married and spent a year off-reservation. During this time she was seizure free. Upon her return home, at age 17, hysterical seizures recurred and another Frenzy Witchcraft Way was performed. During the ceremony, which was observed by Parker, the patient had another pseudo-seizure and was only calmed down when her father held and stroked her body. For the next three years she remained seizure free and the marriage appeared stable. The alleviation of the symptoms was attributed to the Frenzy Witchcraft ceremony though marriage and living away from the family must also be considered.

Dr. David Guttman interviewed this patient and administered a thematic apperception test during the summer of 1964. His impression was of an aggressive and independent girl afraid of the consequences of independence and sexual maturity. A strong undercurrent of incestuous feelings for her father heightened her need to cling to parental modes. These incestuous feelings were externalized, both in the TAT responses and in her hallucinations, and experienced as an assault by their object, the father.

In 1967, three years after the Frenzy Witchcraft Way and after the birth of her first child, in 1965, psychosomatic symptoms appeared. Marital discord, excessive drinking, depression and suicidal feelings culminated in a suicide attempt in 1972. *Bona fide* epileptic seizures with a positive EEG occurred during the same year and were soon followed by several hysterical seizures. Generalized epileptic seizures continued to occur whenever the patient refused to take medication regularly. Hysterical seizures continued and the family situation deteriorated rapidly. At the time of the most recent follow-up, in 1975, the patient was living alone in an off-reservation town, working in a disreputable bar. She was still drinking heavily and suffering from seizures.

These two cases raise a number of questions. The hysterical seizures, in these instances associated with sexual problems, were upon occasion, alleviated by the use of a ceremony. That they did not help either patient substantially over a period of time was due, in our opinion, to the severity of the personality disorders of both patients and to the chronicity of the epilepsy in one of them. But given even the temporary alleviation of symptoms it is not clear why the less severe cases of hysteria with psychomotor-type seizures were not diagnosed and treated in this manner. One must also ask why the remaining five epileptics were not given the same diagnosis for their psychomotor seizures.

The answer to the latter question, we think, lies in the nature of epilepsy itself. The single epileptic patient with no hysterical seizures began having convulsions at an early age and was considered to be suffering from a sexual disorder which had afflicted her mother and affected the patient through prenatal influence. The young male epileptic who received the diagnosis of Frenzy Witchcraft was never treated for it because his epileptic seizures became severe and other courses of action were followed. Three of the five remaining epileptics were diagnosed in a manner more appropriate for the problems thought to cause

generalized seizures. The epileptics, by virtue of the chronicity, early onset, and debilitating nature of their malady, were channelled into the negative role assigned them by the Navajo belief system. The hysterics, whom we would expect to be diagnosed as sexual witchcraft victims, were not so diagnosed. Whether this was due to the more transitory nature of their symptoms or to a complex of other reasons, we cannot determine with confidence at this time. It is clear, however, that for five of the six hysterical patients, our expectations were not fulfilled.

GENERALIZED SEIZURES, INCEST AND MOTH SICKNESS

Incest with a true sibling or a matrilineal parallel cousin (a clan sibling) is thought to be the major cause of generalized seizures. Like cancer in modern American society, this is the dread disease of the Navajo. The appearance of the clear and fearful signs of the grand mal seizure indicates the transgression of a major tabu. If the signs appear during childhood the Navajo suspect that the transgressions of the parents are causing the disease of their child via prenatal influence. Should the diagnosis be sorcery it is still felt that the disease process will ultimately cause an act of incest. When the symptom can lead to the causal factor an unbreakable circle is formed from which the unfortunate patient cannot hope to escape. It is not surprising to find families attempting to isolate their epileptic children both to protect the child and themselves. Only the suppression of seizures, we felt, would enable the patient to be cured and, hopefully, to avoid the censure of the community.

The Navajo ceremony said to cure "Moth sickness" is virtually extinct. We are only able to find two men who had any knowledge of the ceremonial and neither had ever performed the complete ceremony. None of the patients in our sample had been diagnosed as suffering from Moth sickness and not even portions of the ceremony had been performed over them. Two subjects subsequently identified in the survey of one small community had been given the diagnosis of Moth sickness and one had been treated by Moth Way. This event, however, had taken place in the late 19th century. One of the two ceremonialists with some knowledge of Moth Way claimed that his son had become contaminated and subsequently sick when the father attempted to transmit his knowledge to the young man. The son has been diagnosed as an epileptic and his seizures are controlled by medication. Though the father has administered the proper native medications he has found no one able to conduct the healing ceremony.

Due to the unavailability of the Moth Way ceremonial an alternative etiology and treatment is currently in use. The diagnosis of a general sexual excess related to Coyote is made and is treated by a set of Coyote songs, the *he'ekaanz* ceremony, performed as a part of the Mountain Top Way.

Twenty-five epileptic and four hysterical patients had generalized seizures (Table 1). None of the hysterics were given any diagnosis specifically related to seizures (Table 6). Their seizures did not persist and all but one were leading normal lives in 1975. One, although seizure free, has continued to have various

psychosomatic complaints and to suffer from chronic anxiety and depression. She is seen frequently by the Mental Health staff and is said to have an inadequate, borderline personality. Despite similar seizures, the hysterical patients have not been diagnosed in the same manner as the epileptics, nor have they had the same tragic careers.

A number of patients with organically based seizures were unavailable for interview, were under 10 years old, had only a single isolated seizure due to trauma, or suffered from alcoholic withdrawal seizures. These patients were not interviewed in the field. In consequence we have information on native diagnoses for 16 epileptic patients with generalized seizures (Table 5).

Ten of the 20 patients with generalized seizures for whom we have information received the expected Coyote diagnoses. They were, in most instances, treated with the *he'ekaanz* ceremony of Mountain Top Way or received no treatment due to the poverty of the family. This is a significantly higher proportion of patients receiving the expected diagnoses than was found in the other two seizure categories (Table 7).

Of the six epileptic patients who were not diagnosed in the expected manner, one received irrelevant diagnoses, two were Christian and sought modern treatment only, one came from a family which opposed ceremonial treatments generally, and two came from families too poor and too disintegrated to give them any kind of help.

Three epileptics had committed sibling incest. Thus, 10% of all epileptics, regardless of the nature of their seizures had actually breached the major tabu. Two other cases had vague mention of incest in the records. Because the social service records were of better quality in the western than in the eastern hospital, we are not confident that the cases of incest are well reported for half the sample. These three cases comprise 30% of the cases with epileptic generalized seizures in the western portion of the reservation.

This proportion seemed remarkably high and led us to conduct a field survey in one small area of the western reservation with an estimated total population of about 1500 people. Informants identified four cases of sibling incest with little trouble. As one of these cases was already in our sample, only three new cases were added for investigation (Table 8).

The three cases in our original sample involved two female epileptics and one male. Their partners were all asymptomatic and all the epileptic patients exhibited seizure symptoms and signs of disturbed personalities prior to the act of incest. Two cases involved incest with a sibling; one, incest with a clan sibling.

One couple identified in the field survey had exhibited no untoward symptoms for nine years. The male had a note in his medical records of "acute brain syndrome with confused state". The couple continue to live together in their home community (Table 8, No. 6). Another case involved the incest of a woman now in her nineties who had been treated by Moth Way around 1890. Her one seizure was certainly not epileptic. The brother was totally asymptomatic but later married a Paiute, an indication that he was not held in high esteem by the community (Table 8, No. 4). The third case involved an epileptic girl who com-

Table 7. Patients exhibiting appropriate signs who received the expected Navajo diagnoses and ceremonial treatments

Exhibit appropriate signs for	No treatment	Treatment
Hand trembling or Frenzy Witchcraft Way	17	4
Moth Way and its substitutes	10	10

Fisher's exact test: $P = 0.03$.

mitted incest with a clan sibling. Despite the fact that she had suffered from seizures since childhood no seizure specific diagnosis was made until after the incestuous union. The *he'ekaanz* ritual of Mountain Top Way was performed. The family believe her disease is incurable and that she needs Moth Way which is not available. Her consort has left the area and is, as far as anyone knows, totally asymptomatic (Table 8, No. 5).

Two of the total six cases involved incest between consenting partners and one of these became a permanent liaison. Three cases involved epileptic women who were seduced by male siblings. Only one case involved an epileptic male who initiated the incestuous act. In all instances some evidence of seizures or seizure-like behavior is reported for one partner only, the other being asymptomatic.

In those cases involving an already sick female who becomes prey to sexual exploitation by virtue of the malady itself, we believe that the social definition of the illness creates a self-fulfilling prophecy from which the individual finds it most difficult to escape. The two epileptic women in our original field sample had severe personality problems in addition to their epilepsy. Both were diagnosed as schizophrenic, were promiscuous, alcoholic, and came from rejecting, non-supportive families. Ultimately both died from unnatural causes (Table 8, Nos. 1, 3 and 5).

The seizure-like episode described by the very old lady interviewed in the field survey (Table 8, No. 4) was brief and stereotyped. She reported that she stood up, twisted about and fell into the fire. After this she confessed and a full Moth Way was performed. She was later married and had children. At most this was a brief hysterical episode precipitated by anxiety over the forbidden act. In its major outline it conforms

to all ethnographic accounts of Moth sickness and a successful cure. Unfortunately the account was obtained some 75 years after the event.

The case of the epileptic, incestuous male is both dramatic and puzzling. As a child he was prone to violent temper tantrums and had a generally turbulent personality. A cousin has temporal lobe epilepsy and, at age five, the patient was hit on the head with a rock and lost consciousness. His abnormal behavior is said to date from that time. He did poorly at school and would hit girls who would not sleep with him. There is, then, presumptive evidence of an underlying organic etiology prior to his incestuous relationship.

Pubescence of the sister was coincident with the patient's "fainting spells". He was 18 at the time and had already been expelled from several schools. The spells are said to have increased in frequency and involved violence to himself and others in his family. At times he would go down on all fours and howl "like a wolf" which led the family to suspect witchcraft. The incest was repeated and violent and the family found themselves unable to protect the sister. The case was finally reported and handled in tribal court. The patient was institutionalized for a few years and the sister left home. No Navajo diagnoses were made nor ceremonies performed. The entire family had converted to Mormonism some years earlier in an attempt to stop the heavy drinking of the patient and his father who had deserted them before the incest took place. When interviewed in 1975 we found that the patient had returned to the community some eight years previously. As long as he was not in a stressful situation seizures did not recur. He is maintained on Trilafen, a tranquilizing drug, and has various psychosomatic complaints. He has married but is unable to support his wife who

Table 8. Sibling and clan sibling incest

Cases	Sex	Medical diagnoses	Type seizure	Type incest	Partner symptomatic	Rape involved	Moth or Coyote Dx
<i>Seizure sample</i>							
1.	F	Epileptic	Generalized	Sib	No	?	No
2.	M	Mixed	Generalized epileptic psychomotor hysteric	Sib	No	+	No
3.	F	Mixed	Generalized epileptic psychomotor hysteric	Clan	No	?	Yes
<i>Community field survey</i>							
4.	F	?	?	Sib	No	—	Yes
5.	F	Epileptic	Generalized	Clan	No	?	Yes
6.	F	None	None	Clan	Yes	—	Yes

receives aid to dependent children while the patient himself receives general assistance. The wife does not come from the community and we were unable to find out much about her. The patient's only friend in the neighbourhood is a non-Navajo. We have the impression of a surly, uncommunicative young man who is not integrated into the community.

CONCLUSIONS

In summation, we were not able to find sufficient evidence to support the contention that mentally ill people displaying appropriate signs and symptoms are selected to be hand tremblers and are cured of their illness by ceremonies of initiation. Few patients exhibiting the symptoms of hand trembling were ever selected for the role (2/9, Tables 5 and 6). The performance of the ceremonial by hysterics who became hand tremblers aggravated their symptoms. Most functioning hand tremblers appeared quite normal and the selection process involved the transmission of ceremonial power within families. None of the hysterical patients who became hand tremblers were able to function successfully for any period of time. There is even some doubt about the existence of the unilateral seizures themselves. One subject was selected for the role who displayed psychomotor seizures. All episodes of hand trembling which were observed or described in detail were, in actuality, bilateral in nature.

Similarly, we found that few of the patients with psychomotor seizures were ever thought to be suffering from Frenzy Witchcraft (2/12) and, when performed, the ceremony was as likely to aggravate seizure symptoms as to alleviate them. In no instance was a permanent cure effected. In addition, the expected diagnosis was never made for those hysterical patients who displayed psychomotor seizures only and who did not have severe personality problems. These patients were the ones who most fitted Navajo descriptions of the disease and who we thought would be most likely to benefit from ceremonial treatment by virtue of the fact that their symptoms were precipitated by transient life crises.

On the other hand, most epileptics with generalized seizures were diagnosed in the expected manner (10/16, Table 5). High proportions of these epileptics had drinking problems, were raped, bore illegitimate children, committed sibling incest, or died prematurely. Society, it would seem, finds it easier to condemn than to cure, at least where the labelling of major mental signs is involved.

Although it was clear that the Navajos did distinguish between the major seizure types, a number of observations led us to question whether this was the primary means by which they determine how seizure patients will be treated and cared for. Despite the fact that epileptic and hysterical patients displayed similar seizure behaviors, only epileptics with generalized seizures were given the expected diagnoses of Coyote or Moth sickness. And only epileptics subsequently had tragic careers. If the seizure type, said to signify the presence of a specific malady, was the major diagnostic criterion, why were the hysterical patients with generalized seizures not treated in the same manner? No epileptics with either focal epileptic seizures alone or in conjunction with hysterical

unilateral seizures were ever considered as candidates for the role of hand trembler. No hysterics with the transient symptoms of psychomotor type so characteristic of ethnographic descriptions of Frenzy Witchcraft were ever thought to be its victims in actuality. Moreover, only a chronic hysteric and two epileptics with many hysterical symptoms were ever so diagnosed. The epileptic with organically based psychomotor seizures was never thought to be a victim of this type of witchcraft. The discrimination between the symptoms of hysteria and those of epilepsy, in our opinion, accounts for these findings and is of primary importance in determining how the seizure patient will be diagnosed and maintained in Navajo society.

Chronicity and early age of onset are characteristic of the epilepsies and certainly play a large part in the process by which epileptics are distinguished from other patients. Perhaps as important, however, is the terrifying nature of the true epileptic seizure which causes the family to recoil in horror and to feel helpless in the face of this unmanageable force. Whether the serious personality problems so often found in association with epilepsy and the high mortality rates found in this study are the natural consequences of the disease or are the result of social reactions to the patient remains to be investigated by comparing the careers of Navajo epileptics with those in other societies, especially the more urbanized and secular ones.

The limits of labelling in accordance with cultural definitions are, in this instance, provided by the nature of the disease itself and by the direct perception of its signs by individuals who must ultimately either maintain or reject the patient. Although the culture may arbitrarily define some signs as evidence of a supernatural gift, the individual epileptic or hysteric, who displays them is simply unable to perform the tasks appropriate to the shamanistic role. Even hysteria, that most culturally influenced form of neurosis, may not be able to accommodate itself to cultural dictates. The hysterical seizures, when not bouts of altered behavior akin to psychomotor seizures, were generalized, bilateral ones. The hysterical patient could hide this fact only by holding one extremity still in order to present himself in the desired manner. He could not provide the required sign. By the same token, many hysterics could not refrain from displaying the signs of the generalized seizure even though they must have been aware of the possible consequences. The hysterical symptoms, in fact, may not be radically different from those described in the literature for the United States and Europe generally. Whether pseudo-seizures are more frequent among Navajo hysterics than among hysterics in other societies is still an open question. The point to be made here is that these hysterical symptoms are not completely malleable within the society which produces them.

The question of whether the obliteration of symptoms by the use of modern medications can alter the course of the labelling process remains to be discussed. The traditional maintenance of the Navajo epileptic as well as other defectives has been to keep them isolated. Both the patient and the family seek to avoid social censure thereby. Modern therapy is

predicted upon the notion that medication will control seizures sufficiently for the patient to lead a normal life. This was not the outcome of treatment for most of the patients in our sample. At some point, personal problems led patients to take their medications erratically and to suffer seizures as a result. Only two epileptics were well maintained on medication, one because the patient and her mother were educated and lived next to the hospital, the other because the parents, after their son suffered a concussion during a seizure, decided to take more responsibility in monitoring their son's medication. It seems to us that the attitude of the family, whether it rejects or supports, is of crucial importance.

Currently, the Indian Health Service provides medications and counselling in a hospital setting. Diagnosis is usually early and the prospects for cure or adequate control of seizures should be good. That this is not the case indicates an inadequacy in the prevailing methods. Contacts with the patient by field personnel are often aimed at breaking the family imposed isolation or convincing the family that their fears are groundless. Yet the Navajo can point to more instances of sibling incest and death than the Indian Health Service can to success.

The question remains whether indigenous health workers can help improve the course of treatment for epileptics or hysterics. Because Navajo ceremonies have not helped the patients in our study and because traditional beliefs about the nature of seizures are so negative, we do not believe that Navajo ceremonialists, diagnosticians, or herbalists can be utilized successfully by the Indian Health Service for this purpose. Any attempt to do so would involve asking them to accept ideas which directly contradict their own. Rather, we are of the opinion that Navajos who do not have a total commitment to traditional belief may be better suited to the task.

Currently, the Mental Health Program of the Indian Health Service utilizes Navajo mental health technicians. These trained paraprofessionals serve in the capacity of aides to the psychiatrists. Instead of handling the epileptic patient solely as a medical problem, we feel they should be referred to the Navajo mental health staff who would work closely with the patient and the family from the time of the first diagnosis. The Mental Health Technicians have some chance of success in this area because they are aware of what the epileptic patient faces at home and in the community, and because the proper use of anti-convulsant medication is a proven means to control seizures for most patients.

It is more difficult to make suggestions for the improvement of therapy for the hysteric. Most of the hysterics were of short duration and the patients got better without attention from physicians. The few whose symptoms persisted, along with those epileptics with an hysterical component to their seizures, became frequent visitors to the hospital. The hysterics, including those with epilepsy, were maintained on tranquilizers and other psychoactive drugs. Two patients became drug dependent and maintained contacts with the mental health staff primarily to get their prescriptions refilled. Lacking a proven treatment for hysteria there is little that Navajo mental health technicians can offer their traditional patients.

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