

HEX DEATH

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The phenomenon of hex death, although widely reported in the anthropological literature, has received very little systematic attention. Hex death, sometimes referred to as voodoo death, curse death, or death by suggestion, can be defined as the demise of an individual resulting from a malign magical procedure or the breaching of a taboo. It has been described in every major culture area of the world and appears to have existed in every historical period.

Hex death, however, is usually talked about in relationship to preliterate peoples. In fact, some researchers have even postulated preliteracy as a necessary prerequisite to hex death! This, of course, is not the case; it has been frequently observed and described in both southern and northwestern Europe as well as the United States. There exist numerous anthropological, psychiatric, and popular descriptions regarding the effects of malign magic but most of these reports are anecdotal and only a few of them include: pertinent and longitudinal physiological data; and, adequate descriptions of events leading to and surrounding the hex death itself. (An exception to this is Professor Lewis's unpublished doctoral thesis, 1972.)¹

I would like to mention in this context that I too suffer from the same critical lack of data as have my forebears and colleagues. During the years of my clinical anthropological studies, I have never personally witnessed a case of actual hex death. While on the faculty of the University of Miami School of Medicine, I was, however, confronted daily with the perplexing problem of the hexing syndrome, both in the psychiatric setting and in other clinical areas of the hospital. This experience has convinced me that there are some rather specific aspects of the hexing syndrome that are not adequately explained by the existing psychiatric theories, which consider them manifestations of hysteria or schizophrenic psychosis. Moreover, it has become increasingly obvious to me that the conventional medical and psychiatric approaches to hexed individuals are often rather ineffective and inadequate. In staff meetings and seminars, I tried to communicate to the clinicians and

other health care professionals that the hexing syndrome is a complex problem *sui generis* and should be seriously considered. It was not only a matter of teaching clinicians a bit of anthropology, but also of being deeply involved in the therapeutic process, including finding appropriate indigenous healers on occasion. This approach is described elsewhere;² I mention it only because of the paucity of work being done in this area.^{3,4,5}

In my approach to the discussion of hex death, I will, therefore, combine an intimate knowledge of the phenomenon of hexing with literary data concerning hex death *per se*. Study of the existing literature suggests that hex death is a complex multidimensional and multifactorial event. In addition to the emotional, psychological, and physiological factors operating within the individual, it involves an explicit or implicit relationship between the hexer and the hexed; it is also happening in a broader interpersonal and social context set into the larger frame of the cultural milieu. In individual cases of hexing these factors appear in different combinations; yet, for the purpose of this discussion, I have made an effort to isolate several levels of information related to hex death. Briefly, the following factors have been postulated as the direct or underlying cause or causes of hex death: 1) poisons and other physical agents; 2) the critical relationship between emotional factors and physiological processes in the organism; 3) interpersonal and social interactions in a particular cultural context; and 4) parapsychological influences.

We will consider first the most prosaic and obvious cause of hex death, namely *poisons*. Barber (1961),⁶ Clune (1973),⁷ and others argue strongly that hex deaths are to a great degree attributable to poison. Ackerknecht (1965), in his *Problems of Primitive Medicine*, states that about 25% to 50% of the substances found in the aboriginal pharmacopoeia are pharmacologically active. Some of these active substances have unquestionably toxic properties and could be used for the purpose of malign magic. From the hundreds of noxious drugs we could cite, only the most salient will be mentioned in this context. There are the well-known metallic poisons, such as lead, arsenic, and mercurial derivatives, all causing fatal damage to the organism. The infamous plant poison, curare, paralyzes the victim by interfering with neuromuscular transfer. Strychnine, another plant poison, on the other hand, increases the sensitivity of the nervous system to the point of producing tetanic spasms and ultimately death. There are numerous poisonous mushrooms with toxic alkaloids, such as muscarin and phalloidin. A variety of venomous snakes and insects are another plausible source of fatal aboriginal poisons. The skin of the toad, *Bufo bufo*, a favorite ingredient of the witches' brews, contains powerful toxic substances such as bufotenine and bufotoxin, which have psychoactive and cardiotropic properties. The me-

dieval practitioners of witchcraft employed extracts and ointments made from Solanaceous plants, such as the deadly nightshade (*Atropa belladonna*), thornapple (*Datura stramonium*), henbane (*Hyoscyamus niger*), and mandrake (*Mandragora officinarum*). The active substances from these plants can cause drastic mental changes when used in small dosages but are, at the same time, extremely dangerous if the dosage is increased. These or similar substances can be found in the pharmacopoeia of many different cultures.

The following tragicomic case of the "hippity-hoppity heart syndrome" can be used as an illustration of the point in discussion:

Most notorious of root doctors was Dr. Bug who for fifty dollars would guarantee anyone who didn't want to be drafted into the service that he would fail the physical. Violating the usual root doctor tenet, Bug gave his clients a potion to swallow. He had a high percentage of success. In fact, so many young men with a particular type of heart condition were seen by the physicians at Fort Jackson that they named the complaint "the hippity-hoppity heart syndrome." Dr. Bug's downfall came when one of his clients, wanting to make no mistake about escaping the draft, took a double dose. He died. An autopsy showed the potion causing the heart irregularities was a mixture of oleander leaves (*digitalis*), rubbing alcohol, moth balls, and lead.⁸

It should be obvious from this brief description of toxic plant, animal, and metallic substances that aboriginal sorcerers have powerful materials available to them to induce sickness and death in their hexed victims. There are numerous cases, however, where "poison" refers to nonmaterial principles rather than noxious brews. As we will see, poison is not necessarily implicated in all cases of hex death.

We come now to the second category of factors that have been discussed in relation to hex death, namely the *psychophysiological*. Until the early 1940s there had not been serious scientific attempts to explain death due to fear or suggestion and relating this to hex death. In 1942, Walter B. Cannon published his classic paper on voodoo death in which he attempted to explain the physiological mechanisms by which fear can result in the rapid demise of a human being. He approached this problem unusually well prepared by his previous research on fear, rage, hunger, and pain. According to Cannon, intense fear and rage have similar effects in the body and can result in profound physiological disturbances. Both emotions serve an important function in the struggle for existence and are associated with deeply ingrained instincts. In the case of rage, it is the instinct to attack that permits survival; in the case of fear, it is the instinct to escape. The physiological reaction connected with these emotions is mediated by the

so-called sympathico-adrenal system. The activation of this system produces changes in the organs and vessels of the body that prepare the organism for necessary action. If, for whatever reason, such action does not follow, the lasting and intense activation of the sympathetic system can have very destructive consequences for the organism. Cannon described a complicated chain of physiological events that could under these circumstances result in a reduction in the volume of circulating blood and in a critical fall of the blood pressure leading to death.⁹

There exist numerous reports of unusual and puzzling deaths for which Cannon's hypothesis seems to be the most plausible explanation: they involve so called "malignant anxiety" observed during the Spanish Civil War, where young men died without any observable causes (Mira, cited by Cannon, 1958); cases of patients who died after seemingly successful operations (Freeman, cited by Cannon, 1958); and those of unaccounted deaths after minor injuries or ingestion of sublethal doses of poison (Fisher, cited by Richter, 1957).

Richter (1957), an experimental psychologist, has offered an alternative psychophysiological explanation of the phenomenon of sudden death in man (and animals).¹⁰ He approached this problem through his comparative studies of stress reactions in wild and domesticated rats. In his experiments, wild rats' whiskers were trimmed and the animals were then put into a glass jar filled with water. After swimming for a brief interval, they went to the bottom of the jar and never resurfaced. Under the same circumstances, only a few of the domesticated rats succumbed in this comparatively short period of time. Interpreting the results of the physiological analysis of the death of these animals, Richter concluded that they may have died a so-called vagus death due to stimulation of the parasympathetic rather than the sympathico-adrenal system. Here also emphasized the element of hopelessness against that of fear. In this connection, a training exposure of the wild rats to the handling and swimming situation appeared to eliminate the dramatic fatal response. Applied to the phenomenon of hex death, this indicates, according to Richter, that human victims might die a parasympathetic rather than a sympathico-adrenal death. The hexed individual is not set for flight or fight. Rather, the hex situation is characterized as being quite hopeless.

Lester (1972) in a discussion of the hypotheses formulated by Cannon and Richter pointed out that these explanations of hex death are not necessarily mutually exclusive.¹¹ According to Dynes (1969),¹² there are namely two types of death occurring without significant anatomical findings at autopsy: one following prolonged excitement and violence, the other occurring instantaneously and without warning. Lester suggests that these two types might correspond with Cannon's and Richter's models and that sudden

death and hex death can result from excessive stimulation of any system of the body.

Lester himself proposes an alternative conceptual framework for hex death that focuses on psychological rather than physiological factors. The basic ideas for this approach are derived from Engel's research into the circumstances surrounding the onset of illness and, in some instances, death. He observed repeatedly a pattern that he calls "the giving up—given up complex."¹³ Its essential features are an experience of helplessness and hopelessness, feelings of worthlessness and incompetence, inability to obtain gratification from interpersonal relationships, and reactivation of memories of earlier giving up and of situations that were not adequately resolved. According to Engel, when an individual is responding to stress with the "giving up—given up complex" the body is more prone to illness and has a reduced capability to deal with potentially pathogenic process. Lester points out that a hexed individual meets all the criteria of Engel's complex.

Although we do not have a unified psychophysiological theory explaining the mechanism of hex death, it is certainly significant that reputable researchers have not found this phenomenon incompatible with their medical knowledge and have made valid and useful attempts to elucidate it in scientific terms.

Up to this point, we have taken into consideration in our discussion of hex death only those forces operating within the individual, forces of a physical and psychophysiological nature. The situation of a hexed individual, however, has to be considered in relationship to a social context and cultural continuity. The process of hexing is not happening in isolation between sorcerer and victim. Rather, a hexed individual lives and is hexed within a community of significant others. Ultimately, all of the individuals in the hexed victim's social network will be involved in various ways and to varying degrees in the dynamics of the hex. This brings us to the third category of factors involved in hex death, the relevance of *social and cultural determinants*.

All members of a particular culture in which hexing exists share the knowledge, beliefs, expectations, and fears regarding hexing and its outcome. This knowledge can set into motion a realignment of the social network. A hexed individual, as a result of the curse put on him, can find his role and place in the community drastically redefined; he can withdraw or be forced to the very margins of his social world. In the profound social isolation that follows, he can experience a total frustration of primary and derived needs—basic material, emotional, and spiritual needs—that are usually satisfied in interpersonal interaction. An individual in this situation usually responds very sensitively to the expectations of his community, whether the cues of the outcome of the hex are explicitly stated or mediated

through metacommunication, or whether knowledge of the outcome is part of the social order and the sequence of events is so prescribed and predictable that only hopelessness and frequently helplessness can ensue on the part of the victim.

In terms of mechanisms of hex death, it is not difficult to imagine that such total isolation from, or distortion of, meaningful relationships, compounded by the threat of imminent death, could result in overwhelming anxiety of malignant proportions. The combination of prolonged intense emotional stress, social isolation, sleep deprivation, and frequent refusal of food and water can produce an unusual state of consciousness in the hexed person that is associated with heightened suggestibility. It is a well-established clinical fact that autosuggestion as well as suggestion can have a direct influence on a variety of physiological functions. Examples belonging to this category range from blisters artificially induced by means of hypnosis in the laboratory setting to instances of stigmatization and pseudocyesis. Thus, social and cultural factors involved in the hex situation contribute to a chain of events that can have very distinct and concrete biological consequences.

Isolation of the victim and withdrawal of the community is not, however, the only pattern of social realignment observed in cases of hex death. A hexed individual can also be moved to the center of the social network, either for the purpose of removing the hex or in order to complete the logical sequence of culturally determined events. In this situation, direct social pressure and even sensory overload can facilitate an unusual state of mind conducive to healing or the annihilation of the individual.

An interesting example of a variety of social locations in order to complete the hex state trajectory is given by W. L. Warner, who worked among the Aborigines of the northern territory of Australia:

There are two definite movements of the social group in the process by which black magic becomes effective on the victims of sorcery. In the first movement the community contracts; all people who stand in kinship relation with him withdraw their sustaining support. This means that all his fellows—everyone he knows—completely change their attitudes toward him and place him in a new category. He is now viewed as one who is more nearly in the realm of the sacred and taboo than in the world of the ordinary where the community finds itself. The organization of his social life has collapsed, and, no longer a member of a group, he is alone and isolated. The doomed man is in a situation from which the only escape is by death. During the death-illness which ensues, the group acts with all the outreachings and complexities of its organization and with countless stimuli to suggest death positively to the victim, who is in a highly suggestible state. In addition to the social pressure upon him the victim himself, as a rule, not only makes no effort to live and

to stay a part of his group but actually, through multiple suggestions which he receives, cooperates in the withdrawal from it. He becomes what the attitude of his fellow tribesmen wills him to be. Thus he assists in committing a kind of suicide.

Before death takes place, the second movement of the community occurs, which is a return to the victim in order to subject him to the fateful ritual of mourning. The purpose of the community now, as a social unit with its ceremonial leader, who is a person of very near kin to the victim, is at last to cut him off entirely from the ordinary world and ultimately to place him in his proper position in the sacred totemic world of the dead. The victim, on his part, reciprocates this feeling. The effect of the double movement in this society, first away from the victim and then back, with all the compulsive force of one of its most powerful rituals, is obviously drastic.¹⁴

The frequent readiness of members of a particular community to participate in or corroborate the consummation or reversal of a hex could be related to the fact that in many cases hexing plays an important part in creating social solidarity; taboos are essential for the maintenance of the social fabric and their violation could lead to disruption of the social order. The stance of the group towards the hexed individual could possibly be explained in the following terms: if culture-bearers have an ambivalent attitude toward the taboos of their society, their relationship to the hexed victim could represent a projection of each individual's own struggle against violating the taboo that the hexed person himself has violated.

In terms of social function, most anthropologists would agree that sorcery and hexing, one of the mechanisms of witchcraft, serve as a means of social control in many communities. The fear of being hexed tends to prevent individuals from violating social rules as well as breaching religious taboos. Beatrice Whiting (1950)¹⁵ and Guy Swanson (1960)¹⁶ aptly demonstrate that witchcraft is more prevalent in those societies where higher secular authority does not exist or where this authority cannot mete out punishment for transgressions against the social or religious order. According to Swanson, the existence of witchcraft has very little to do with economic deprivation but is strongly associated with the level of social organization.

No matter how one interprets the social functions of hex and hex death, the fact remains that the community plays a vital role in the fulfillment of the curse or its reversal, depending on the specific circumstances of individual cases. In view of the paramount significance of social factors in human existence, it is not surprising that manipulation of social variables in terms of inclusion into the community or rejection by it can dramatically affect the hexed individual's emotional and physiological well-being and, ultimately, the fact of his survival.

In the preceding text, we have explored some of the most important physical, psychophysiological, and social variables involved in hex death. At this point in our discussion, the question arises whether there exists a sufficient basis for postulating yet another category of variables operating in death by curse, namely, *parapsychological factors*. Certainly, the previously discussed parameters, or a combination thereof, offer plausible explanation for most of the cases of hex death. There are, however, aspects of certain cases of hex death and of the process of hexing reported in the literature for which such scientific interpretations would appear to be inadequate. In spite of the fact that incomplete and often unreliable reporting of these events make it rather difficult to offer a conclusive analysis, it appears to be worthwhile to consider which characteristics of these cases do not render themselves to explanations based on the existing scientific paradigms. In some instances, it is the striking accumulation of deaths attributed to hexing, the quite specific timing, and unusual circumstances that are difficult to account for and explain in strictly scientific terms. In other instances, it is not easy to identify or postulate the factors that could be instrumental in a causal chain of events responsible for a specific hex phenomenon. Finally, it is not exceptional that the performance of the sorcerer, shaman, or exorcist involves some rather unusual elements suggestive of psi phenomena.

The most famous examples of multiple and serial hex deaths are, of course, the instances of curses related to the violation of ancient tombs and relocation of sacred objects. We can cite the story of the discovery of Tutankhamen's tomb in the Valley of the Kings as an example of this particular genre. These situations are often colored by sensationalistic journalism; however, it is not difficult to discover similar examples in more sober frameworks. Thus, Melford Spiro, in *Burmese Supernaturalism* describes an interesting case of multiple deaths attributed to witchcraft:

The case begins with a woman who, without any previous symptoms, died while bathing at the village well. A few days later her elder daughter died of a scorpion bite and her younger daughter was smitten with a strange swelling of the body from which, shortly after, she too died.¹⁷

Although these deaths were considered by the villagers to be witch-caused, Spiro unfortunately does not give any of the contextual details of this case.

Another example of this category is a medically well-documented case published in 1967 in the *Bulletin of Johns Hopkins Hospital*. On the 29th of July, 1966, a 22-year-old Afro-American woman was admitted to Baltimore City Hospital because of shortness of breath and episodes of chest pain and syncope of one month duration. After having been hospitalized for fourteen

days, the patient disclosed to her physician that she had a "serious problem and only three days to solve it." She volunteered the following details:

She had been born on Friday the thirteenth in the Okefenokee Swamp and was delivered by a midwife who delivered three children that day. The midwife told the mothers that the three children were hexed and that the first would die before her sixteenth birthday, the second before her twenty-first birthday, and the third (the patient) before her twenty-third birthday. The patient went on to tell her physician that the first girl was killed in an automobile accident the day before her sixteenth birthday. The second girl was quite fearful of the hex and on her twenty-first birthday called a friend and insisted on going out to celebrate the end of the hex. She walked into a saloon, a stray bullet hit the girl and killed her.¹⁸

The patient was firmly convinced that she was doomed. She appeared to be terrified and manifested signs of profound anxiety. On August 12th, she died—one day prior to her twenty-third birthday.

Although the clinicians and pathologist concurred on the diagnosis of primary pulmonary hypertension, the organic findings did not provide a sufficient explanation of her death and particularly its specific timing. Freisinger, Assistant Professor of Medicine at Hopkins, made this comment in his discussion of the case:

The other factor in this woman's death is the hex. I have no doubt that the pathologist will be able to demonstrate anatomic changes which can be held accountable for her death. However, I am equally certain that he will not be able to rule out the hex as the real cause of her death. It seems very clear that she was hexed at the time of her birth and she died precisely at the time predicted. . . . It is not a part of our society and hence we know little about it; I suspect many of us would prefer to think it did not exist. Special circumstances and beliefs in a community must exist before an individual can die by hex, but once the proper background and individual conditioning exist, there is no reason why (the described physiological processes) . . . cannot occur and lead to death, at the proper time.¹⁹

In addition to the cumulative nature of this case making a coincidence highly improbable and the accuracy of the timing of the three deaths, one more aspect of this situation deserves attention. Only in the case of the last young woman can the death be explained from forces operating within the organism. Regarding the death of the first girl, there is insufficient information that would make it possible to assess the role she played in the automobile accident. However, where a stray bullet was the cause of death, the critical factors lie in this case outside of the hexed individual. An obvious weakness of this otherwise fascinating case is lack of information about how

carefully and closely the doctors from Johns Hopkins verified the claims of the patient concerning the deaths of the other two victims.

The second aspect of hexing that might entail parapsychological dimensions has less to do with statistical probabilities than the former. Rather, it is concerned with certain elements of hexing that seem to transcend the usual limitations of the time/space continuum. Unfortunately, most of the reports mentioning these kinds of phenomena are not well documented and are often dubiously regarded by anthropologists, clinicians, and historians. Because of the rather poor quality of most of the data, we must approach this category only on a theoretical level, enriched with anecdotal material.

There are numerous reports about individuals developing typical symptomatology related to hexing without any knowledge that a sorcerer has conducted a hex-inducing ritual. Harner,²⁰ for example, notes that one of the distinguishing characteristics of the process of hexing among the Jivaro is that the victim is given no indication that he is being bewitched, lest he take protective measures. Harner's informants say that sickness almost invariably follows an attack with a magical dart, the regurgitated tsentsak, and death is not uncommon.

In some instances, the victim of so-called simulated magic supposedly develops specific symptoms the onset of which coincides with the sorcerer's manipulations of the individual's symbolic image, whether it is a doll, clothing of the intended victim, body exuviae, nail parings or hair, dirt from the tracks of the victim, a photograph, or even an x-ray photo. It has also been described that, occasionally, a hexer is able to follow his victim's movements in his "mind's eye" or by using a special mirror and thereby monitor the consequences of the hexing procedure. Alfred Metraux described the Haitian sorcerer who, through an incantation, attempts to lure the intended victim into a bucket of water.²¹ If his victim's image appears on the water's surface, he then stabs it. The water reddens if the sorcerer has been successful. Another variation of this type of procedure is cited by Robert Caneiro in his work with the Amahuaca of eastern Peru.²² He reports that the shaman, after ingesting ayahuasca, can contact the jaguar spirit which discloses to him the whereabouts of his witchcraft victim. Although such situations seem quite fantastic, these and others like them have been so frequently reported in various parts of the world that they certainly deserve systematic exploration *in the field*. I emphasize field research because of the complexity of the phenomena vis-a-vis set and setting; it is highly improbable, if not absurd, to attempt to replicate such experiences in the laboratory. From this point of view, it is necessary to differentiate between so-called objective reality and the phenomenological reality of the subjective world of the sorcerer.

For the last point of our discussion of parapsychological dimensions of hexing, we will explore the display of paranormal abilities on the part of the sorcerer. It is not uncommon for such an individual to demonstrate psi ability on (at least) the first interaction with a client. This level of expertise and performance would most certainly establish the sorcerer in a position of authority in the eyes of his client and, undoubtedly, in the eyes of the community. In fact, he is not only in a position of special authority but can also be perceived as dangerous, because he is capable of penetrating and ultimately manipulating individuals and sequences of events. The sorcerer, as well as the diviner and healer, has often been characterized as a shrewd psychologist, able to elicit information from his clients in a most skillful and subtle manner. Sorcerers have also been endowed in the literature with extraordinarily long memories and sharp ears. In spite of these explanations given by social and behavioral scientists for the acumen demonstrated by such individuals, there are many reports in the literature that tell about events which intuition, memory, and access to gossip simply cannot adequately explain. Numerous accounts ascribe to sorcerers and healers the ability to make instant diagnosis of medical problems, to penetrate immediately the personalities of their clients and their basic psychological conflicts, to have access to material from the individual's past history, and to predict correctly future events.

One aspect of hexing and hex death that has been considered by some witnesses to be indicative of involvement of paranormal forces is the consistently reported helplessness of Western medicine to cope with these phenomena. The failures of experienced clinicians to prevent the consummation of a hex and save the patient's life are notable. (Examples are cited in: Cannon, 1958;²³ Prince, 1960;²⁴ Boitnott, 1967;²⁵ Tingling, 1967;²⁶ Watson, 1973;²⁷ and others.) This contrasts sharply with the quite dramatic therapeutic successes of indigenous healers to remove a death curse put on an individual. (Examples are cited in: Richter, 1957;²⁸ Cannon, 1958;²⁹ Wilson, 1963;³⁰ and others.) This situation, however, is not necessarily a proof of supernatural forces operating in hex death. It can simply suggest the lack of understanding on the part of Western medicine of the complexity of this phenomenon and the significance of specific psychological and sociocultural variables in the etiology of the hex syndrome. In such instances, clinicians would benefit from the consultation with an anthropologist experienced in the culture of the cursed individual and/or the collaboration with an indigenous healer. It seems that, because of the nature of this problem, the effective remedy must come in a specific and culturally appropriate form that contemporary medicine does not usually offer.

It would be interesting in this context to approach the problem of the

relevance of parapsychological factors for hex death from yet another perspective. It is possible to look at the phenomena postulated and studied by parapsychology and hypothesize which of them, if proved beyond any doubt, could be considered instrumental in the hexing procedure. The most obvious of them, of course, would be "telepathic control" and psychokinesis. (It was Robert Van de Castle who suggested to me that psychokinesis might be a relevant mechanism to explore in relation to hex death.) In the former case, the hexer could directly influence the emotional condition and thought processes of an individual and produce a state of mind, such as malignant anxiety or Engel's "giving up—given up complex," that could have catastrophic biological consequences. In the latter case, it is conceivable that direct psychokinetic influence could be exerted on certain parts of the body that are crucial for survival, such as the pacemaker in the heart and the cardiac conduction system, or certain areas in the central nervous system that are vitally important and crucial for survival. Numerous instances of telepathic control and psychokinesis have been reported in the parapsychological literature, including the recent experiments in the Soviet Union (Krippner, 1972, 1973;^{31,32} Herbert, 1973),³³ and well controlled experiments with Uri Geller at Stanford Research Institute in Palo Alto (Mitchell, 1973;³⁴ O'Regan, 1973).³⁵ If confirmed, the psychokinetic experiments in which the Russian psychic, Mrs. Kulagina, succeeded in stopping a frog's heart would be of special relevance in this context (Herbert, 1973).³⁶

Three other parapsychological phenomena that have been studied both in the laboratory and in the field are telepathy, clairvoyance, and precognition. Gifts for telepathy and the ability to make an instant diagnosis of physical and psychological problems could be exploited by the sorcerer, not only for impressing the victim and his social network and, thereby, enhancing his authority and power of suggestion, but also for identifying the physical and psychological "loci minoris resistentiae" in the individual to be hexed. Such knowledge could then be utilized for specifically destructive manipulations by other means. In terms of precognition, there exist cases of hexing and hex death that theoretically could be explained in terms of this mechanism rather than direct malign influence.

One more theoretical consideration deserves notice in this connection. Lawrence LeShan (1969),³⁷ a prominent researcher in the area of psychic healing, has made an attempt to formulate a comprehensive theory of the paranormal. According to LeShan, our understanding of reality and our interaction with it is determined by our way of perceiving the world. Throughout mankind's history, reality has been perceived in a variety of ways. These perceptions oscillate widely between two extremes. One extreme could be exemplified by the Newtonian world view. It has the

following set of postulates or principles: matter is real and solid; valid information about the world comes to us only through the senses; causes must precede effects in time; and objects separated by space are different objects. Our practical life and the ordinary activity of physical existence are confined by these limiting principles. This is also true for the mainstream of contemporary science. The other extreme is the mystical world view. It has an alternative set of postulates: the true nature of the world is consciousness and matter is only ephemeral; there is a better way of gaining information than through the senses (and intellectual processing of sensory data); there is no reality to time; and there is a basic unity of all things.

According to LeShan, the process of psychic healing can be explained by the fact that the healer operates on the basis of the set of postulates characterizing the mystical world view and this has practical consequences; during the healing process, the healer and the ailing individual are part of the same psychophysical field and are not separate from each other, as it appears to the Newtonian observer. This model, interestingly, can be applied without any change (except in terms of intentionality) to the situation of hexing. In this case, the manipulations in such a unified field would be used for destructive purposes rather than healing of the individual. This conceptual framework that appears so alien to our pragmatic, intersubjective, group-validated world view is, in fact, in agreement with revolutionary developments in modern physics, and, in particular, with the basic concepts of Einstein's unified field theory.

In conclusion, I hope that I have succeeded in conveying the multidimensional nature and complexity of the phenomena of hexing and hex death. As groundwork has been done by anthropologists, psychologists, and physiologists in this area, establishing hex death as a subject worthy of further scientific exploration, it seems that the way is now open to explore the parapsychological dimensions that might possibly be involved.

One of the major problems in studying hexing and hex death in the past has been the seemingly irreconcilable conflict between the ideological and epistemological superstructures that frame such events and the accepted traditional Western scientific paradigms that are employed to analyze them. One approach that might obviate to a certain degree the frequent ethnocentric bias that permeates and ultimately distorts or obscures many anthropological accounts of possible parapsychological events would be to study separately the observable elements of an event itself and then to explore the underlying belief system. In other words, one would analyze and evaluate the processes and mechanisms involved and the outcome, and then obtain the culture-bearers' interpretations of such mechanisms and their explanation of the outcome achieved.

These two perspectives would be described by some anthropologists as "etic" and "emic." Etic, as defined by Marvin Harris,³⁸ refers to "the domains or operations whose validity does not depend upon the demonstration of conscious or unconscious significance or reality in the minds of the natives"; emic indicates in this context "the domains or operations whose validity depends upon distinctions that are real or meaningful (but not necessarily conscious) to the natives themselves." In other words, the etic/emic distinction corresponds roughly to how people behave according to the judgment of a Western scientific observer in contrast to how the subjects perceive and explain their behavior themselves.

The potential heuristic value of this approach to me seems great. In the areas of psychopharmacology and psychology alone many revolutionary pharmacologic substances as well as psychotherapeutic techniques have been garnered from ancient and aboriginal cultures. Indeed, hexing and hex death have strong implications in the area of research being done on stress in technologically developed areas of the world. In terms of parapsychological research, it should prove to be an extremely rich area as it is accessible and researchable in Baltimore as well as the bush, and its phenomenology exists in the physical world as we know it and beyond.

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DISCUSSION

HARDY: Thank you very much for this really fascinating study, if I can use the word for something macabre.

DINGWALL: I've been looking forward to this paper ever since it was announced. The phenomenon of hex death has interested me for a very great number of years because there are close connections with what is called hex death with the whole problem of the relation of mind to body and disease. Of course, Cannon and Dunbar pointed the way towards the study of psychosomatic medicine and in spite of the great amount of work which has been done since, I can't see that we're very much advanced. The whole problem of hex death is, as I say, connected with the problem of so-called spiritual/mental healing about which we still live in a state of complete chaos. I remember many years ago I contributed a paper on the "Enigma of Lourdes" to *Tomorrow* magazine. I will point out some of the enormous problems which we have to face. In the case of hex death, we've had such a case in England within the past five years, a very curious case in which clearly the medical men involved had no idea of what the whole problem was with which they were dealing. They just reported the death as unexplained. But there has been a certain amount of work done, and I was somewhat surprised that our speaker did not mention the "diver reflex" theory.

You remember, our distinguished parapsychologist, Charles Richet I think somewhere in the 1890s, was experimenting with diving birds and made a whole series of experiments on ducks, and he found (what later has been called the "dive reflex theory") that in the deep diving, there is a conservation of the oxygen supply and this slows the heart rate. Now, he didn't see at that time (as far as I remember) any connection with these mysterious deaths, but it has been suggested later that hex death is a sort of perverted dive reflex in reverse. That is to say, in some mysterious way the heart gives the order when the person is to die. Now as you know, unfortunately, in England sufficient post-mortems aren't done because of some nonsense on the part of the relatives' objections, but there are certain post-mortems done on coronary patients, and in these cases it has been found the damage to the heart muscle is apparently not nearly sufficient to cause the death of the patient; and there have been a number of cases of this sort in which apparently there has been a sort of order. I don't want to discuss any of these parapsychological implications because I don't think parapsychology has anything whatever to do with the hex death. Of course, it may, but I doubt it. It seems to be as if the heart is, in certain cases, exercising this dive reflex theory in reverse. You'll find this in these cases of

people who don't mean to commit suicide; in so many words, the hex death can be regarded, in some respects at least, as a form of suicide in which perhaps the patient objects, so the brain does it for him. In other words, the brain gives the order and the dive reflex theory is put into reverse gear so to speak. Now, if that is the case, we might possibly have the beginning of a clue as to what is happening not only with hex deaths, but in other things of that kind—because it's quite clear that in the case of spiritual or mental healing, there must be some common factor present. There must be some common factor which is being exercised in some way by the person concerned, and we have no idea at the moment what that common factor is. That's all I have to say except to ask our speaker after her fascinating address, whether she has looked into this dive reflex theory.

HALIFAX-GROF: No, but it sounds not unlike Richter's "parasympathetic theory."

DINGWALL: I think some experiments were done in Oakland, California.

HALIFAX-GROF: I would like to respond to one thing. I have worked with many hexed individuals when I was at the University of Miami School of Medicine. There I observed two very distinctive psychophysiological reactions in hexed individuals. One can be characterized as an anxiety state. The other would be characterized as a state of depression without manifest symptoms of anxiety. These two states could possibly account for the theories proposed by Cannon and Richter involving the sympathetic system and the parasympathetic system. You see, there can be shifts in a hexed individual's attitude which could stimulate systems alternately. In fact, I believe that Cannon and Richter's theories are a simplification of what really happens to a hexed individual, but, nonetheless, as frameworks, they can be useful.

DINGWALL: We do know that the dive reflex has been demonstrated in man.

BRIER: I wonder about the anecdotal stories you told. You mentioned the Baltimore case as your strongest case. I was wondering how carefully these people look into these things. For example, regarding the other people who were killed—was it checked out to make sure that these people were in fact killed this way or did they just take the woman's word?

HALIFAX-GROF: Quite frankly, I took it for granted. The reason I say this is the most carefully documented case of hex death is because we have all the medical data from the time of admission of this woman to her death and the results of autopsy. In terms of the contextual details, we have

nothing but her word. No one went down to the Okefenoke swamp and tried to find that midwife. No one checked out the story with regard to the two other individuals. However, in terms of the psychophysiology, we do have more data than any other case that I know of. But I agree with you and that's one of the frustrations I have experienced, and I learn now from Ioan Lewis that Gilbert Lewis has recently done a dissertation on hex death. He's both a psychiatrist and an anthropologist, and he's done a longitudinal psychophysiological study of hexing in a group of New Guinea tribesmen.

BRIER: The only other thing I wanted to mention: I agree with you at the end when you say all we have is anecdotal material and it's very difficult to do experimental work in this area. I think it is possible, though. Let me tell you a story that happened with a student of mine in class dealing with hex death. I used to teach a course called "Parapsychology of the Occult," in which I dealt for a third of the term on witchcraft and covered in some detail hex death. I had one student in the class—these classes very often bring together a bunch of these people who believe or claim many things—who claimed he had the ability to perform hex deaths. For his term paper, he rather wanted to prove his ability, and what we agreed upon was this: Now we couldn't have him try to kill just anyone—that wouldn't be fair or nice, right? So we agreed that he would attempt by hex death to kill me. The way we worked it out was, I left a sealed envelope with the registrar on which I wrote: "Open this upon my death if it occurs within the next year." Inside, a note said that the student should be given an "A" for the course. The student and I agreed that if I didn't die, I would give him an "F" for the course. He has since gotten an "F" for the course. But I think it is possible to experimentally test these hypotheses. I think there are a lot of people around who would be willing to be targets for people who claim they can perform hex deaths, myself included, and then we can test it.

HALIFAX-GROF: I appreciate very much your courage or foolishness, Mr. Brier. I'm not sure which it is.

BRIER: I've just never seen any evidence of hex death.

HALIFAX-GROF: Earlier, we were discussing the fact that it is not very difficult to do research with people who are hexed. They come into the clinical situation every day. As I mentioned earlier, I have worked with many people who said they were hexed. There are two dimensions of the subjective experience of hexing that I would like to briefly mention at this time. One case is the individual who learns he's hexed and develops the appropriate symptoms; or perhaps he doesn't know he's hexed but he gets symptoms and then you actually do find out that a hex has been put on

him. The other situation is the individual who is genuinely mentally ill and attributes his illness to hexing. Whatever the case may be, complications emerge for the researcher who must work in the clinical situation. For example, if I am interested in doing psychophysiological research on hexing, but patients are being given a phenothiazine, the data become extraordinarily distorted and you might as well not bother. A person who is hexed is in a jam, and, for my part, I've not wanted to take the responsibility of attempting to discover some deep principles when the life and well-being of a single individual is at stake. I think we can find other ways to do it. In terms of hexing, we should proceed as ethically as possible, because these people are sick, for one reason or another.

WEINER: I agree that it is very difficult to document anything like a hex death or a hex illness. The capacity of human beings to see the same thing at the same time and yet to make different reports is so obvious that one almost despairs at this kind of documentation. I was wondering if there's another field—a way of research—if one takes a kind of lower denominator. So many claims have been made recently for the influence of a human being on the plant world in terms of definitely measurable effects. I heard recently of an experiment whereby some individuals went into a room and one of them cut a plant and then some sort of delicate electrical instrument was attached to the plant; then different individuals came in but only when the person who had done the cutting came in did a plant reaction appear. I wonder if there is anybody in this distinguished company who knows whether there has been any real definite proof of the effect of a human being and his vibrations or his toxic personality or his ill wishes or whatever it may be—any measurable effect which has been really proven on the plant world?

HALIFAX-GROF: I'm sure we are all familiar with the research done by Backster and the attempts to replicate it. In fact, I was in his laboratory where, apart from plants, he was also working with eggs, yogurt, and brine shrimp. I saw his polygraph outputs and I was there when he put electrodes into the yogurt and then stressed another batch of yogurt. I think it's quite interesting material. Many people have tried to replicate Backster's research and to my knowledge with questionable success. In fact, I found his instrumentation quite primitive, and I can't imagine that it would be difficult to replicate his studies. But he seems quite committed to the fact that what he is doing is scientifically sound.

KREITLER: Is there any information of a hex killing animals? If there is, that would be a good area for research.

BOSHIER: My name is Adrian Boshier. I agree with the speaker that field

work is essential, and I have at the moment—it sounds rather morbid—I have a patient that I'm watching very closely because the last time I was present, this man was hexed. The warning was that first he would lose his goats, and then he would lose his cattle and thirdly, he would die. First his goats were struck by lightning. Somewhat afterwards, his cattle were struck by lightning and the last I heard he was still alive and I hope he remains so.

HALIFAX-GROF: Dr. Kreitler asked if any hex death research had been done on animals.

BOSHIER: I can't answer that, except that in that case the animals had died.

HALIFAX-GROF: Yes, but you see, hex death does not necessarily involve an individual going into some sort of systemic crisis. It can be external factors, such as a stray bullet or an automobile accident or lightning, or whatever.

BOSHIER: Lightning is very very common in South Africa. This is used regularly. I was present when this happened. I saw the remains of his goats and his cattle and I know that this happened, but I have many cases second-hand of individuals being killed by lightning. This is the most common form, I think.

HALIFAX-GROF: That's very interesting. I know of no research that has been done on animals and I would think that would be amenable to the laboratory.

LEWIS: I want to say how much I enjoyed Joan's paper. I was very interested in her comment at the end of her paper: the comparison she drew between what she is talking about or certain aspects of the contextual atmosphere of hexing and current psychodynamic psychiatric theory. I recently read a textbook on transcultural psychiatry by a well-known psychiatrist called Ari Kiev in which there was a very ironic passage, but he didn't realize it was ironic. And he said it wouldn't be a very good idea to introduce, or at least one should exercise caution in introducing, modern psychodynamic therapy and theory into cultures where there was existing witchcraft. He didn't seem to understand the irony of the remark he was making because the two systems are very similar, of course. Actually, there was one point which you touched on but it wasn't at all central to your analysis, but it's a point which tends to be very central in most of the writings by British anthropologists on witchcraft. That is, the way in which, in a sense, it is arguable as to who is the victim. Is it the witch or is it the bewitched person? You were treating the bewitched person as the

victim, of course, because ultimately he died and obviously that's rather a catastrophic event. But of course, it's equally arguable that if you look at it from another point of view and especially if the bewitched person doesn't die—or even if the bewitched person does die—the witch, or accused witch, is also the victim, because the nexus of accusation is of course a form of scapegoat. Also, I wonder to what extent you had taken into account the fact that very frequently accusations of witchcraft and sorcery are made retrospectively, i.e., after disaster. They do not precede it. They are presumed to precede it because they are assumed to be its cause, but actually they come into the picture as factors in the condition, that is, once the person has suffered misfortune or had an accident as someone else might describe it, or whatever.

HALIFAX-GROF: That meshes with the point I was making earlier when I was saying that there appear to be two very distinctive types of hexed individuals: those who get sick because of hexing; in other words, they developed symptoms after they learned of it; and the others who later attributed it to hexing. In the case reported by Mel Spiro, he refutes a "so-called" supernatural cause.

LEWIS: He's very naive.

HALIFAX-GROF: One thing I didn't tell you about the Burmese case is that according to Spiro, the villagers attributed the death of these three women to sorcery after they had died, not prior. Now that could be bad as well as good anthropology. One just doesn't know at this point.

HARDY: I'm afraid we must close. Now we come to Robert Van de Castle's paper "An Investigation of Psi Abilities among the Cuna Indians of Panama." As you know, he is the past president of the Parapsychological Association and now Director of the Sleep and Dream Laboratory in the Department of Psychiatry at the University of Virginia.

VAN DE CASTLE: Before starting, I would like to make grateful acknowledgment to the Parapsychology Foundation, to Mrs. Eileen Garrett and Mrs. Eileen Coly for the financial support that has made possible the field trips that I'll be discussing.