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***Kyol Goeu* ('Wind Overload') Part II: Prevalence, Characteristics, and Mechanisms of *Kyol Goeu* and Near-*Kyol Goeu* Episodes of Khmer Patients Attending a Psychiatric Clinic**

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Abstract

Kyol goeu (literally, 'wind overload') is an orthostatically triggered syncopal syndrome often found among Khmer refugees in the US. In the present study, 36 of 100 (36%) Khmer patients attending a psychiatric clinic were found to have suffered a *kyol goeu* episode in the past, whereas 60 of 100 (60%) patients had experienced a near-*kyol goeu* event in the last six months. Following a survey-based characterization of *kyol goeu*, as well as the presentation of case vignettes, the article discusses six mechanisms resulting in the high prevalence of the syndrome. The article concludes by comparing *kyol goeu* and *ataque de nervios*.

Keywords

cultural syndromes; Khmer; mental health; panic disorder; traditional healing

Introduction

As detailed in the previous article in this journal (Hinton, 2001a), Khmer consider *kyol goeu* to be a potentially fatal fainting episode. According to the Khmer conception, prior to an episode, despite some accumulation of wind in the body (e.g., in the limb vessels, belly, chest, neck vessels, and head), the person may feel just some malaise. One day, most often upon standing, the individual will suddenly feel dizzy while concurrently experiencing other panic-like symptoms (e.g., palpitations, shortness of breath, and blurred vision) and then fall to the ground. In the supine position, the sufferer normally retains conscious awareness but can not move or speak. Family members and friends must quickly administer various emergency treatments that aim to directly remove excessive wind from the body (e.g., by 'coining'), cause the wind to move normally in its course through the vessels (e.g., by massaging the limbs), and rouse to consciousness (e.g., by biting the ankle). Khmer believe that if these interventions are not implemented quickly, the sufferer will either permanently lose the use of a limb, such as an arm, or die. Although Khmer sometimes suffer *kyol goeu* episodes, near-*kyol goeu* episodes occur much more frequently, in which the person feels multiple symptoms upon standing, such as dizziness, often staggering, or even falling to the ground, but remains in control of self-movement.¹

This study begins by delineating certain characteristics of episodes of *kyol goeu* and near-*kyol goeu*, including prevalence; then, after presenting vignettes, the article discusses six factors that seem to converge to cause these syncopal-like events. The article concludes by comparing *kyol goeu* and *ataque de nervios*, highlighting similarities and differences.

Method

The study was conducted in two community Southeast Asian clinics, one located in Lowell, MA, the other in Revere, MA. The clinics serve over 250 Khmer patients, all treated by the first author. For the study, all patients were interviewed by the first author, who is almost fluent in Cambodian, assisted by bilingual Khmer staff. One hundred Khmer patients attending the two clinics were asked the following nine questions by the first author (with clarification provided by bicultural staff if needed):

1. Have you ever suffered an episode of *kyol goeu*?
2. If so, when did the *kyol goeu* episode occur: in the pre-Pol Pot period, in the Pol Pot period (i.e., 1975–1979), in the post-Pol Pot period before arriving in the United States, and/or in the United States?
3. If you have had *kyol goeu* episodes, how often did you have such an event in each of the four periods?
4. If you have had a *kyol goeu* episode, during the *kyol goeu* episode were you able to hear what was transpiring around you though unable to speak or move the body or were you completely unconscious?
5. How often have you seen others suffer *kyol goeu*?
6. What do you consider to be the cause of frequent *kyol goeu* events in the Khmer Rouge period?
7. Have you had an episode of near-*kyol goeu* in the last six months, for example, upon standing?
8. If you have had *kyol goeu* and near-*kyol goeu* episodes, were these precipitated by standing upon awakening, by standing during the day from a sitting or lying position, or from quickly turning the head?
9. If you have had a near-*kyol goeu* episode in the last six months, was something upsetting you just before the occurrence?

Results

Of the hundred patients surveyed, 75 were female and 25 male. The mean age was 45 (with a range of 38–65). Most of the patients were on disability allowance, usually staying home to tend children and grandchildren and maintain the home. The vast majority of patients in the study were former farmers, illiterate in Khmer, having received just a few years of education; nearly every person interviewed spoke minimal English. All patients were survivors of the Pol Pot regime; and every patient in the study had been treated by the first author for several years.

Of the 100 patients, 36 (36%) stated that they had experienced an episode of *kyol goeu*. A similar percentage of men and women had endured episodes of *kyol goeu*: 28 of 75 women (37%) and 8 of 25 men (32%).

¹Often, near-*kyol goeu* episodes are almost as severe as actual episodes. Usually near-*kyol goeu* episodes are also considered to carry the risk of death. This lethal dimension is discussed below.

In terms of time of occurrence of the *kyol goeu* episode, the following was found for the 36 patients with a history of *kyol goeu* episodes: 12 of 36 (33%) had experienced *kyol goeu* in the pre-Pol Pot period, 20 of 36 (56%) had had an episode in the Pol Pot period, 8 of 36 (22%) had had a *kyol goeu* episode in the period between the end of Pol Pot and arrival in the US and 8 of 36 (22%) reported having undergone episodes in the US.

With regard to frequency of *kyol goeu* episodes among those suffering events, the following rates were found: for the entire pre-Pol Pot era, all 12 persons had fewer than three episodes; during the entire Pol Pot regime, 12 of 20 had fewer than three episodes, whereas 8 of 20 had at least one episode a month (and one person, every day); during the entire pre-immigration period, all eight patients had fewer than two episodes; and in the post-immigration phase, for five of eight patients, the frequency was one or two for the entire period, whereas for three of eight patients the frequency was at least once a month.

In keeping with the above information, patients reported observing *kyol goeu* most frequently in the Pol Pot period. However, the severity of the conditions and other variables created considerable variability in the number of cases seen. Most Khmer regularly saw others suffering *kyol goeu* episodes in the Pol Pot period, normally at least a few times a week. One patient, who was part of a work group of 30 women, saw approximately three people have a *kyol goeu* episode every day.

Of those surveyed, most attributed Khmer Rouge period syncopal episodes to starvation during conditions of slave labor. As the surveyed patients described it, in a typical scenario a Khmer would work all day digging and carrying dirt, then exhausted and malnourished, fall over in a *kyol goeu* episode; the person usually revived following coining, although sometimes the individual could not be resuscitated. Most patients believed that starvation caused *kyol goeu* and near-*kyol goeu* episodes by resulting in excess bodily wind, blockage of wind at the joints, and wind hitting upward from the abdomen. Many mentioned ear buzzing as a prodrome – hunger is said to cause air to shoot from the ears – to falling over in a *kyol goeu* episode. Patients mentioned that starvation, excessive fright, and hardship all tend to weaken the heart. A weak heart may not meet an orthostatic challenge; in addition, a weakened heart leads to a less vigorous flow of blood and increased blockage of the vessels in the limbs.

With regard to retaining auditory awareness during *kyol goeu* episodes, in 62% of the total number of *kyol goeu* episodes, patients reported that they could not move the body or speak but could nevertheless hear; whereas in 38% of the episodes the person was completely unconscious upon falling to the ground.

Of the 100 patients surveyed, 60 (60%) stated that they had had a near-*kyol goeu* episode in the last six months. Many more women (53 of 75, i.e., 71%) than men (7 of 21, i.e., 33%) had suffered near-*kyol goeu* episodes in the last six months.

The frequency and severity of full-fledged or near-*kyol goeu* influences the trigger types. If a patient has infrequent to somewhat frequent orthostatic episodes, these tend to occur upon moving from the supine to the upright position in the morning upon awakening. As the panic attacks increase in frequency, the trigger tends to be the act of moving upright from a sitting position. In rare instances, just quickly turning the head can trigger a *kyol goeu* episode.

In many cases, near-*kyol goeu* episodes were associated with a stressor: a fight with a daughter, a dispute with a husband, a son's imprisonment, the receipt of a bill indicating a great debt to the phone company, heating company, or other agency, to name a few typical causes.

Case Examples of Kyol Goeu and Near-Kyol Goeu

Case 1: Sac—To give a typical case, Sac, who is a 50-year-old female, stated that during the Khmer Rouge period, one day while working carrying dirt during dam building, she suddenly felt extremely dizzy and fell to the ground. In a supine position, Sac could see all the people around her but was not able to speak or move. After the usual ministrations – e.g., coining, biting the ankle, and pulling the vessels of the armpits – had been performed by four people who had rushed to help her, Sac revived and felt reasonably well. These episodes did not recur until recently when she suffered some near-*kyol goeu* events following a family crisis. With pharmacological (a benzodiazepine and a selective serotonin reuptake inhibitor [SSRI]) and psychological treatment, these panic-like episodes of *kyol goeu* resolved.

Case 2: Ry—Ry, a 48-year-old woman, was currently suffering weekly episodes of orthostatically induced panic disorder. During the Khmer Rouge regime, she experienced one episode of *kyol goeu*. Typical of almost all Cambodians in that period, for several months she was made to participate in dam and canal building as Pol Pot and his cadres attempted to make the country an agrarian Utopia. As was usual during dam building, Ry would dig dirt with a hoe, then transport the earth in buckets hanging from either end of a wooden pole balanced at her shoulder; she carried the dirt up to the top of the dam wall that was being constructed, dumping it there, endlessly repeating this cycle of drudgery under a scorching equatorial sun. She was forced to work from five in the morning until eight at night, only given her first meal at noon: a spoonful of rice and a few vegetables (*prolut, truguen*) in water. One day as she stood-up with the pole put to her shoulder, Ry suddenly felt extremely dizzy and fell over unconscious. She awoke to the sensation of being whipped on the back, her attacker accusing her of feigning illness. Ry tried to stand, lifting the pole on to her shoulder, but fell back to her knees again, only to be whipped on the back once more, further calumniated as being a faker and threatened with death. Ry's tormentor told her that she had an 'illness of consciousness' (*chuu sadti arrom*) rather than one of the body. Somehow, she managed to work for the rest of the day.

Case 3: Chuan—Chuan, a 60-year-old male, was a former policeman; had his identity been known by the Khmer Rouge, he would have been killed. Instead, he was sent to do dam building for the entire Khmer Rouge period during which time he frequently saw others suffer *kyol goeu* episodes.

Chuan worked in a group of 30 men. He was fed two bowls of rice-flavored water each day, each bowl containing a mere spoonful of rice, this regimen often causing diarrhea and cramps. The work was very hard; two to three of the 30 members of the group had a *kyol goeu* episode every week. A Khmer Rouge would assign someone to do coining of that person after he had been revived following the typical *kyol goeu* ministrations; all would volunteer for this task for it was much easier than digging and carrying dirt. Typical ministrations included pressing under either side of the jaw; the person, who before could hear that occurring around him but could not speak, could then often begin to talk. Usually the person would recover from the *kyol goeu* episode and return to work – often in about two hours – but according to Chuan, about once every two weeks the individual could not be revived and would die.

Chuan often treated people who fainted in this way. When Chuan queried the person as to why he had suffered a *kyol goeu* episode, the individual would most often say something like the following: 'I felt too hungry, so hungry that wind shot from my ears; the wind hit upward from my belly and caused me to have *kyol goeu*' (*khlien pbeik, kyol ceuny tdaam treujieu khlieum peik, hung treujia, kyol ceuny tdaam treujieu*); the individual would then explain that he had felt abdominal cramps and the wind shooting upward in the body from the stomach, this

ascending blast making it impossible to breathe, blocking heart action, and shooting out the ears (*khlieum peik kyol theu laeung ceuny tdaam treujieu*).

Chuan himself said that he had endured stomach cramps every day from hunger during the Pol Pot period. He routinely felt dizzy upon standing; and about once a month, when he stood-up, he experienced severe dizziness, causing him to stagger forward, everything seeming to spin around him – Chuan made a circle with one arm to illustrate the vertigo – simultaneously feeling both nausea and a strong desire to vomit. Every time he felt such dizziness upon standing, he feared that this indicated possible *kyol goeu* and, subsequently, death. Chuan classified these events as near-*kyol goeu* episodes.

Case 4: Suy—This 50-year-old man dated his problems to an event that took place just over 20 years ago. During the Khmer Rouge period, he experienced near death due to starvation while food grew in abundance around him (tubers, fruits, and vegetables), the Khmer Rouge prohibited their consumption. One day, overcome by hunger, he attempted to steal a pumpkin. When he was caught, a soldier struck him at the back of the neck three times with the butt of the gun. He lost consciousness and his face fell into a wet and muddy area. The soldiers assumed he would either die of his wounds or else would suffocate in the mud. They left him for dead.

In fact, as his nostrils were just above the water's surface, he survived. Since then, the patient had suffered headaches and orthostatic dizziness panic. He attributes the dizziness to the blow to the head. Of note, Khmer refer to concussion as 'splashing of the brain' (*greulook khue*), commonly considering that this leads to a destabilization of the brain matter, predisposing to an actual spinning of brain matter inside the skull. In addition, Khmer often emphasize the swinging action of the head as it is struck – for example, I have treated several Khmer female patients who developed orthostatic panic after being struck in the head by a spouse, with several patients demonstrating the blow sustained from the husband by swinging around the head and body in a rapid semi-circle.

However, Suy didn't develop *kyol goeu* until a few years ago when he was working in a factory and suddenly, upon standing, felt dizzy – this was accompanied by palpitations, shortness of breath, and a sense of imminent death – and collapsed. Once lying supine, he could see and hear, but was unable to move his body or speak. After several Khmer co-workers bit his ankles, coiled him, and performed the various ministrations described above, Suy was able to move and speak. He was sent by ambulance to the hospital. After this initial episode, he started to have *kyol goeu* events six times a month and had to quit work. The subsequent episodes were identical in character to the first.

After being treated at another psychiatric facility, the *kyol goeu* episodes decreased to four times a month. Following several months of treatment at our clinic, his orthostatic dizziness panic episodes dramatically decreased in frequency, length, and intensity, although he continued to have a *kyol goeu* episode about once every three months. At that time, he attributed his orthostatic dizziness and *kyol goeu* events to family conflicts. In particular, he had been troubled by the actions of his 13-year-old daughter. She skipped school every day in order to socialize with friends; she disregarded her father's advice. As the patient phrased it, he was 'thinking too much' (*kut caraeun*) about the daughter. This 'energy-consuming cogitation' enervated his body directly; it also disturbed his sleeping and eating, further depleting his inner reserves of vitality (Khmers often speak in such 'energy terms,' considering depletion states as dangerous). As he saw it, such a state of exhaustion made him susceptible to orthostatic panic. He also believed that 'thinking too much' had so depleted his body that he suffered 'weak heart,' resulting in both easy startle and a tendency to have orthostatic dizziness and *kyol goeu* episodes.²

After another four months of treatment that included a cognitive-behavioral therapy-type intervention – for example, undoing catastrophic cognitions, a discussion of post-traumatic stress disorder (PTSD), and explaining the resonances of dizziness to past Pol Pot traumas and present life ‘spinnings’ – the patient was completely free of orthostatic dizziness or *kyol goeu* for five consecutive months. This despite the fact that family conflicts continued with the Department of Social Services (DSS) at one point threatening to remove all the children from the home due to the lack of school attendance and antisocial behaviors; the patient learned to better manage familial disputes and to control his anger and anxiety.

Case 5: Tek—Tek was a 45-year-old female Pol Pot survivor. One traumatic experience stands out in her mind: being ill with a malarial-like episode for a year during the Khmer Rouge period (*krun nyeu*). During the illness, if Tek tried to stand, she would feel extremely dizzy and collapse to the ground. The Khmer Rouge accused her of feigning illness. Several years after her arrival in the US, in 1994, she suffered a concussion in a car accident. After the car accident, Tek suffered occasional episodes of dizziness relieved by cupping the forehead.

Despite these various hardships, Tek had done reasonably well until 1996 when her husband started having an affair and threatened to leave her. During that difficult time, she developed sore-neck (occurring several times a month) and orthostatic panic.³ Twice a week, Tek suffered orthostatically induced panic attacks (i.e., a feeling of dizziness, palpitations, and imminent death, triggered by standing). Also, she had panic episodes triggered by rotating her head too quickly; for example, if Tek heard a loud noise and turned to see the origin, this then triggered a dizziness panic attack.⁴ Frequent startle due to noise convinced Tek that she had a weak heart (as did the palpitations upon standing). In addition, Tek had *kyol goeu* episodes about three times a month. These occurred if she stood up too quickly, causing her to feel dizziness, palpitations, and cold extremities, next falling to the floor unconscious. Tek often awoke in the emergency room. She suffered these symptoms for over two years until she finally attempted suicide and was referred to me for treatment.

After assessment, I found that Tek suffered not only PTSD but also two types of panic disorder: orthostatically induced panic episodes and sore-neck panic. Tek attributed her various illnesses to a disordered flow of wind in the body. She often felt an occlusion at the joints (*cok*), manifesting as a pain and throbbing, accompanied by a dull ache, weakness, and chill at all points distal to those joints. At such times, if she snapped out her arm in a brisk extension, Tek heard a popping sound. Tek explained that this sound was made by the pressurized flow of air upon release from blockage at the joint. If she repeated the outward snap of the arm, no sound would be emitted, for the occlusion had already been removed. She also coined (*gaoh*) and had her children walk along her limbs.⁵ Other wind-removal procedures she routinely utilized included: applying wind oil to her body, having her children perform cupping on her back, requesting that her offspring hit her chest (to rouse the heart to action and to relieve tension in the chest), rubbing downward on the chest (to cause the wind to recede to the belly rather than rise to impinge on the heart and lungs), and coining along the limbs.

²A ‘weak heart’ has a diminished ability to respond to the challenge of standing, causing orthostatic dizziness; in addition, a weakened heart leads to decreased circulation and a tendency to clot at the joints, this then causing more wind to move upward in the body. On ‘weak heart,’ see Hinton (2001c).

³As described elsewhere (see Hinton, in press), sore neck is a panic-like syndrome in which the patient suddenly feels as if the neck vessels are distended with wind and blood and may burst. Of note, orthostatic and sore-neck panic both involve a sense of air rising into the head area. In a sense, *kyol goeu* is the final stage in a continuum of this same pathophysiology.

⁴Note here the cultural influence on the startle response; a noise as harmful for it forces a head turning; this represents a unique cultural patterning of PTSD.

⁵Coining and walking on the body allow the wind to flow again, so that the wind can exit the body through the feet and hands; also, along the streaks made by coining, wind can directly exit the body.

Tek assumed her 'wind overload' episodes to be generated by three processes. For one, she firmly believed that wind first accumulated in the stomach, subsequently ascending (*crah laeung*) into the thorax and ultimately the head. She thus anxiously surveyed her abdomen, frequently rubbing downward along the chest and belly. In addition, she applied wind oil to her belly in order to directly remove vapors. When very concerned about wind hitting upward, Tek encircled the area just below the ribs with the hands, placing one hand on the right side and the other on the left, then squeezed downward. Tek attributed cold extremities to vessel blockage at the elbow, resulting in the backward movement of the wind toward the trunk, such limb chill signaling possible wind overload. Finally, owing to a weak heart, Tek thought she had startle, poor circulation, inner wind accumulation, and orthostatic intolerance.

After initiating therapy and starting medication (an SSRI and a benzodiazepine), Tek's orthostatic and sore-neck panic attacks resolved completely for a year, and there were no more *kyol goeu* episodes. Then approximately six months ago, her son became involved in gang activity and stopped attending school. Around that time, without prior warning, the DSS came to the house to take this teenage son into custody. Later that same day, Tek stood up, felt extremely dizzy, then fell unconscious to the ground, hitting her head. Several family members came to her rescue, biting her ankles, pulling the vessels at the armpit, and massaging and coining the limbs. Tek soon regained consciousness. Everyone referred to this as an episode of *kyol goeu*, and so she was not taken to the emergency room. For about a month after this incident, whenever she thought about the arrested son and then stood up, Tek became very dizzy, experienced palpitations, and feared death due to *kyol goeu* or her heart stopping. Whenever she felt these symptoms upon standing, Tek yelled-out to her children to come and quickly administer coining. I raised Tek's benzodiazepine dose (her SSRI was already at a maximal dosage and could not be increased), discussed her family situation with her, explained how these somatic episodes represented panic attacks, and discussed the events in the frame of both a stress reaction and a flashback to Khmer Rouge traumatic events (e.g., malarial episodes). Following these interventions, Tek has had no more orthostatic panic – or *kyol goeu* – episodes in the last five months.

Discussion

This study of a Khmer refugee population attending a psychiatric clinic found an extremely high rate of actual and near-*kyol goeu* episodes: 36 of 100 patients (36%) stated that they had experienced a *kyol goeu* episode in the past, whereas 60 of 100 (60%) stated that they had had, usually upon standing, a near-*kyol goeu* episode in the last six months.

This study also found a much higher rate of near-*kyol goeu* episodes among women. In fact, the rate of past actual *kyol goeu* events was similar for men and women, but many women who had never had a *kyol goeu* episode in the past had had near-*kyol goeu* episodes in the last six months. One explanation for the prominence of near-*kyol goeu* episodes among women in the last six months may be that it serves as a 'weapon of the weak' (Scott, 1985), an accepted form of reacting to an intolerable interpersonal situation. Near-*kyol goeu* episodes would be less acceptable for men, an admission of frailty. Another explanation for the higher rate of near-*kyol goeu* episodes among women is a cultural belief: a woman should rest and undergo post-partum rituals after giving birth or the wind-and-blood carrying vessels in the body may be permanently damaged. However, the Khmer Rouge prohibited steaming and other post-partum rituals and sent women to work soon after giving birth. To the Khmer woman, this lack of post-partum steaming and the absence of post-partum rest is thought to result in a perduring damage to the wind-and-blood vessels, a sort of permanent imprinting of trauma in the body. There is, in addition, a physiological reason for higher rates of near-*kyol goeu* episodes among women. Khmer women – owing to pregnancy and menstruation – suffer anemia much more frequently than do their male counterparts. Anemia increases the risk of posturally induced sensations of

light-headedness and dizziness; and, of course, dizziness will tend to prompt fears of *kyol goeu*. It may be that these factors – acceptability as a means of interpersonal protest, a sense of permanent vessel damage as a result of post-partum overwork and non-observance of the prescribed rituals, and anemia – account for the far higher rate of near-*kyol goeu* episodes among women in the last six months.

Mechanisms of Kyol Goeu Occurrence

As described above, the *kyol goeu* and near-*kyol goeu* episodes of patients can be placed chronologically in the following four main periods: pre-Pol Pot, Pol Pot, transitional (i.e., post-Pol Pot period in Cambodia and in the refugee camps), and post-migration (i.e., in the US). If the episode occurred in the Pol Pot period, it is extremely difficult to determine etiology: Are such syncopal events due to malnutrition or overwork or psychic distress in conditions of extreme terror? However, the more recently experienced near-*kyol goeu* and *kyol goeu* episodes seem to be almost exclusively psychological in origin as judged by the presence of clear precipitants and response to treatment. I argue below that near-*kyol goeu* and *kyol goeu* episodes here in the US usually result from a combination of six processes: somatic flashbacks, witnessing prototypical illness episodes, catastrophic cognitions, inter-symptom and inter-symptom activation, psychic distress somatized as vertigo, and the physiology of orthostasis.

Somatic Flashbacks—I would argue that somatic flashbacks triggered by two cues – abdominal discomfort and dizziness – account in part for the high prevalence of near-*kyol goeu* episodes in Khmer refugees during the last six months. For Cambodian refugees, abdominal sensations and dizziness trigger somatic flashbacks in the absence of actual event recall. Increasingly, researchers realize that partial remembering – caused by certain trauma cues – occurs continually in PTSD and plays a key role in its chronicity (see Clark, 1999).⁶

Of the one and a half million people who died out of a total population of eight million during the Pol Pot period (Kiernan, 1996), many succumbed to starvation. In one study, when Cambodian community leaders were asked to rate the most upsetting experiences endured during the Khmer Rouge period, starvation topped the list, above such traumas as being assaulted, having family members killed, being sent to prison, or feeling one's life to be in danger (Carlson & Rosser-Hogan, 1994). As a typical vignette of the starvation endured during the Pol Pot period, one of our bicultural workers described how each morning, emaciated to the point of skin and bones, he would crawl into the sunlight. When the sun had heated his body, he then mustered the energy to stand up – this causing him to feel very dizzy – and go and work. If he worked all day, and his performance was considered satisfactory, he would be given a small bowl of rice. Patients often describe how they could hear their own stomach churning due to a lack of food. Starving patients ate leaves or any other tuberous or grassy material, this almost inevitably resulting in abdominal distress, bloating, and diarrhea. This cycle of hunger and ingestion of inappropriate foodstuffs causing abdominal discomfort is described by the idiom, 'my stomach loudly churns like that of a skinny dog eating grass.' I would posit that here in America, hunger sensations and abdominal distension may serve as somatic cues that elicit a somatic flashback of Pol Pot privation. Clearly, these are two completely different levels of privation; that is, being a little late in the taking of one's midday meal in America versus starvation in the Khmer Rouge period. Nonetheless, a pressing hunger in the stomach, a feeling of abdominal distension, may trigger a somatic flashback, flooding

⁶In this case, there is not a degustation of tea-dipped *petites madeleines* that brings warming recollection; rather a bitter taste is surreptitiously placed on the tongue, causing affect and somatic sensations to be recalled but no locating images coming to mind (Schacter, 1996, pp. 26–27). Here we write a sadder chapter of *A la Recherche du Temps Perdu* (*In Search of Lost Time*): Proust tastes a bitter absinthe, this gustatory experience flooding him with uncomfortable sensations and inner chill, a sense of terror, but is unable to discern why the taste affects him so; he sits, muscles tightened, short of breath, with a pounding heart, as his glass falls to break on the ground, as his mind desperately seeks its secret usurper.

the patient with disordering affect.⁷ This is especially so if the patient is currently in psychic distress.

But it is not only the interoceptive cues of hunger and abdominal discomfort that serve as triggers of somatic flashbacks. Patients also suffered severe dizziness during the Khmer Rouge period due to illness, starvation, and overwork. For one, almost all patients endured malarial episodes, lasting months, characterized by severe chills and fevers that resulted in extreme dizziness upon attempting to stand. Moreover, many patients state that due to starvation and overwork they felt dizziness almost daily in the Khmer Rouge period, especially upon rising from a lying or squatting position. Patients explain that lack of food, decreased sleep, and ‘thinking a lot’ (*kut caraeun*), led to much ‘wind illness’ during the Pol Pot period; and the cardinal feature of wind illness is dizziness, especially orthostatically caused dizziness. Hence, Pol Pot period experiences, such as starvation, overwork, anemia (from malnutrition, hookworm, and other parasites), and certain illnesses, led to frequent episodes of orthostatic hypotension and dizziness. Owing to these hardships, for actual physiological reasons, Khmers endured symptoms (e.g., severe orthostatic dizziness) – and full syndromal episodes – of *kyol goeu* during the Pol Pot period.

It is my hypothesis that through previous prolonged conditions of overwork, starvation, and illness, as described above, Khmer patients have been highly sensitized to symptoms of gastrointestinal distress and postural dizziness. Similarly, researchers have demonstrated sensitization to hypoxic cues due to past aversive anoxic experiences. In such cases, somatic flashbacks seem to result in panic disorder; for example, among Americans, suffocation experiences – for instance, almost drowning or strangulation – may eventuate in panic disorder in which the panic attacks have shortness of breath as the main symptom (Bouwer & Stein, 1997, 1999). Also, researchers have demonstrated an extremely high rate of childhood respiratory illness among those with panic disorder (Griez & Verburg, 1999), and, of course, shortness of breath is a key feature of panic disorder among American patients. Researchers hypothesize that such experiences of asphyxia may have resulted in sensitization to hypoxic cues. I would argue that by an analogous process, Khmers became sensitized to certain bodily symptoms due to generic trauma events endured by most survivors of the Pol Pot period. That is: (i) bouts of severe gastrointestinal distress during the Pol Pot period have resulted in a sensitization to abdominal sensations, and (ii) frequent orthostatic dizziness has led to sensitization to dizziness cues.

Witnessing Prototypical Illness Events—In a well-known article, Young (1981) discusses the importance of determining prototypical illness events rather than simply ascertaining ‘explanatory models,’ because prototypical illness events more closely approach the manner of memory storage and retrieval. In fact, witnessing certain kinds of illness events predisposes to panic disorder (Eifert & Forsyth, 1996); some authors claim that such witnessing results in ‘vicarious conditioning’ (Mineka & Zinbarb, 1996). In essence, observing illness events seems to have three major effects: (i) teaching the individual to catastrophize certain symptoms (Taylor, 2000); (ii) causing a flashback-like remembering of the witnessed illness event upon exposure to the sensation linked to the witnessing (of course, the memories will be more traumatic if the individual witnessed the event when young and if the sufferer of the observed event was a close relative); and (iii) creating strong negative-affect associations to certain sensations by means of vicarious conditioning. Khmer have witnessed three different kinds of prototypical illness episodes – human, animal, and environmental – that would seem

⁷See Ledoux (1996) for an account of the neurological basis of triggering by a trauma cue that results in strong arousal but without conscious recall of the actual event. On somatic remembering, in the absence of ideational recall, and a discussion of ‘triggers,’ see the volume edited by Goodwin and Attias (1999).

to increase the risk of orthostatic panic attack and ‘wind-overload’ episodes in response to standing.

Multiple viewings of fellow Khmer collapsing due to *kyol goeu* – especially during the Khmer Rouge period – creates panic-like concerns about experiencing such episodes. And too, recall that what we call a stroke and seizure are often classified as episodes of *kyol goeu*. These various types of *kyol goeu* occurrences become lodged in the person’s memory as prototypical illness events (Young, 1981).

In addition, I would argue that if members of a particular culture consider an animal to suffer a disorder that is analogous to a human disease process, then observations of such animal illness events would also result in a sort of vicarious conditioning. Zoological exemplars further validate the local model of pathophysiology as well as providing a vividly remembered instance of the morbid nature of certain mechanisms of disease.

A common illness among fowl serves as an animal model of the dangerousness of dizziness and the importance of vertigo as a sign of severe disorder. This annual chicken malady, which almost all Khmer patients know well, is often ascribed to excrementitious steam rising from the ground. According to the Khmer conception, at the end of the dry season, when the first rain hits the hot and parched ground, an especially malignant vapor rises upward, laden with excrement and other refuse that has accumulated on the ground during the dry season. As a result of the noxious vapors common at this time, chickens frequently develop a disorder that causes sudden episodes of neck twisting and rapid full-body rotations, the pirouette followed by a tumbling on the ground; after a moment, the chicken will stand-up again. After several days of sporadic neck-twisting and bodily-rotation episodes, the chicken often dies. This avian illness seems to illustrate the lethal effects of dizziness and the morbid and maleficent nature of rising winds and steam. Similarly, Khmer believe that if it is a hot day and it rains, the steam rising from the ground will make humans dizzy and ill.

As described elsewhere (Hinton, 2001a), Khmer often observed how the blood of animals will coagulate as it cools (of note, clotted blood is commonly added to soups and other dishes), this serving as an image of what happens to the blood in the extremities upon chilling.⁸ Such animal images come to the Khmer mind when experiencing dizziness or coldness in the limbs, the congealings viewed previously leading to a heightened sense of fear during the experiencing of such sensations. Hence, observing what happens to an animal as it dies vividly and affectively illustrates the local pathophysiology.

Finally, the observation of natural events can serve as illness prototypes. So, for instance, when a Khmer feels an upwardly hitting wind upon detecting some abdominal sensation (e.g., increased peristalsis, muscle tightness, or bloating), the Khmer may recall previously observed events of whirlwinds carrying earthly detritus upwards; this greatly increases the emotive power of such bodily events, a powerful homology that demonstrates in a dynamic and visible manner the putative nature of the corporal pathophysiology, creating a sense of inevitable inimical sequence (Hinton, 2001a).

In sum, witnessing prototypical illness events – for example, human, animal, and environmental exemplars of the pathophysiology of wind overload as detailed above – would seem to increase the likelihood of panic by three means: (i) confirming the local episteme of the body and heightening fears of the relevant symptoms (in this case, a sort of informational effect of teaching about the dangerousness of certain symptoms); (ii) resulting in the

⁸As a ubiquitous experience in Cambodia, almost all Khmer have slit the throat of a chicken, then letting the blood flow into a bowl. After a few minutes, the blood both cools and congeals. The blood is then cut into cubes for food.

recollection of past observed illness episodes when enduring the relevant symptoms (in this case, a sort of flashback effect); and (iii) causing vicarious conditioning, thereby conditioning fear directly to sensations without the mediation of catastrophic cognitions or flashbacks (this recalls Ledoux's, 1996, description of an amygdala-based memory).

Catastrophic Cognitions and Escalating Panic—Furthermore, catastrophic cognitions play an extremely important role in the generation of *kyol goeu* episodes. For one, the patient worries about the consequences of rising wind as described above. In addition, the neck tension associated with anxiety – especially if abdominal sensations create the illusion of upward hitting wind – results in the fear that the nuchal vessels may burst. In addition, the hand and foot coldness detected upon standing causes concern that there is limb-vessel blockage which then will result in wind flowing backward toward the trunk (and possibly loss of limb use). Further still, the patient worries that palpitations indicate possible cardiac arrest through mechanisms separate from the pathological process of ‘upward hitting wind’: palpitations may be attributed to an intrinsically weakened heart. In effect, during standing, if some dizziness or other abnormality is detected, all zones of autonomic arousal become the focus of worried concern, creating an escalating spiral of panic (Clark, 1986).

Inter-Symptom and Inter-Syndrome Activation—To depict how a Khmer experiences a sudden escalation of panic that results in a near- or full *kyol goeu* episode, the usual rendering of the vicious cycle of panic proves to be inadequate. According to the typical psychological model of panic generation (Clark, 1986), the patient worries that a symptom (e.g., palpitations) indicates possible demise (e.g., heart attack). Subsequently, the heightened arousal due to this catastrophic cognition (e.g., that palpitations indicate a heart attack) causes yet more autonomic arousal, worsening arousal-reactive symptoms such as shortness of breath, palpitations, sweating, nausea, dizziness. Hence, a symptom (e.g., palpitations), by triggering catastrophic cognitions (e.g., fear of heart attack), brings about an increase of general arousal that results in an elevation of various symptoms. I would argue that this model, what might be called autonomic arousal-mediated inter-symptom amplification, although descriptive of many aspects of the phenomenology of such events, fails to consider the direct and specific linkages between particular symptoms as determined by physiological pairing, cultural syndromes, and ethnophysiological conception.

In the case of physiological pairing, one symptom tends to co-occur with another. A clear example would be dizziness and nausea; for having either of the symptoms tends to immediately cause the generation of the other. This might also be called specific, biologically mediated, inter-symptom amplification (as opposed to the non-specific biologically mediated inter-symptom amplification of general autonomic arousal).

In addition, there may occur cultural syndrome-mediated inter-symptom amplification. For instance, if an American notices palpitations, they may become concerned about a possible heart attack and will scan the body for other evidence of having the condition; other symptoms that might ‘confirm’ a heart attack might be chest pain or shortness of breath. Hence, one symptom, when ascribed to a cultural syndrome, leads to a selective attention to various body areas; then through expectation and attention there tends to be an increase of the symptoms even without autonomic arousal (Pennebaker, 1982; Willem Van der Does, Antony, Ehlers, & Barsky, 2000). This inter-symptom activation occurs by way of cultural syndrome-guided expectations about symptom clustering.⁹

⁹Another important aspect of symptom increase in panic attacks that is different from a general increase in arousal is hyperventilation, this resulting in such bodily affects as dizziness, numbness, cold extremities, and chest pain.

Furthermore, there is symptom linkage through the intermediary of ethnophysiological conception, what might be referred to as ethnophysiological mediated inter-symptom amplification, if, for instance, having one symptom suggests a general ethnophysiological perturbation that should result in another symptom.¹⁰ If a symptom or symptom cluster generates fears of having a certain cultural syndrome caused by a specific ethnophysiological disturbance, then other syndromes that either cause or result from ethnophysiological disturbance will become of concern. Multiple syndromes may result from the same ethnophysiological dysfunction, so that fears of having one cultural syndrome may conjure fears of having another.¹¹ In general, fears of having an ethnophysiological dysfunction will cause a self-assessment for the presence of two types of syndromes: one contributing to the ethnophysiological dysfunction or one resulting from the same type of ethnophysiological dysfunction. In certain cultures, there may be an even greater tendency for one ethnophysiological dysfunction to suggest multiple such cultural syndromes.

Let me examine in more detail how autonomic arousal-mediated inter-symptom amplification, physiological pairing-mediated inter-symptom amplification, cultural syndrome-mediated inter-symptom amplification, and ethnophysiological mediated inter-symptom amplification, lead to an escalating sense of trepidation regarding imminent wind overload.¹²

When dizzy, Khmer scan the body for evidence of nausea, because dizziness and nausea are the classic signs of excessive inner wind and would be expected to occur together, both having a common etiology. In fact, there is actually a biological linkage, for dizziness tends to cause nausea by the very structure of corporal physiology.¹³ In the Khmer case, the physiological pairing of dizziness and nausea is strengthened by a cultural frame of explanation (i.e., the notion of wind). By these biological and cultural mechanisms, dizziness quickly evokes nausea, so that upon standing and feeling dizzy, it would not be uncommon for a Khmer to feel nausea almost immediately. This abdominal discomfort, in turn, would provide evidence of 'upward hitting wind.' Subsequently, as autonomic arousal escalates, symptoms such as abdominal cramps, abdominal musculature tightness, nausea, and dizziness would only increase, further creating fear of a fatal ascent of wind. Feeling a sense of wind ascent from a tight and distended belly, the person would scan the body for other signs of upward hitting wind such as shortness of breath; or shortness of breath might be the first symptom noticed and would cause the individual to suspect wind hitting upward from the belly, leading to a nervous glance to that area. Similarly, palpitations would cause concern about both a weakened heart or fears that the organ's action is impaired by upward hitting wind; and a poorly functioning heart, whatever the cause, may result in poor circulation, so that worry about cardiac dysfunction may cause the person to suspect peripheral joint blockage and coldness and numbness in the extremities, immediately assessing these bodily zones. Should some evidence of coldness or numbness in the extremities be found, this would lead to concerns of wind rushing to the trunk of the body. The anxious state may lead to muscular tension in the neck, which in turn causes fears of 'sore-neck syndrome,' these worries worsened by a sense of uprising wind due to either peripheral blockage or abdominal wind ascent; and, in a loop of reciprocal activation, a sore neck creates further fears of ascending wind and dizziness. Tinnitus, usually referred to as 'wind shooting from the ears' (*kyol ceuny tdaam treujieu*), another typical sympathetic outflow symptom,

¹⁰To give an American example, a patient may worry that a headache indicates high blood pressure (of note, lay conceptions of blood pressure forming a sort of ethnophysiology, as discussed by Blumhagen, 1980). This leads to concerns about other sequelae of elevated pressures, such as chest pain, chest dolor considered to be indicative of dysfunction of the overworked 'heart pump.'

¹¹To give an American example, dizziness leads to concern that the syndrome of stroke will result from high blood pressure, and the person may worry that hypertension and heart over-activity may result in the syndrome of a heart attack. So, dizziness, through invocation of a dysfunction of blood pressure, suggests one syndrome that is made worse by the blood pressure disturbance.

¹²In sum, panic probability, in part, depends on the number of symptoms subject to catastrophic cognitions, the severity of the catastrophic cognitions, the number of cultural syndromes feared, the severity of fear of those cultural syndromes, and the degree of inter-symptom and inter-syndromal activation.

¹³For instance, bad odor simultaneously elicits nausea and dizziness as does a rough car ride or a difficult boat journey (i.e., sea sickness).

suggests excessive bodily wind, a pressurized shooting from the ears, causing a worried scanning of all body zones that undergo perturbation in times of increased wind.¹⁴ Here, catastrophic cognitions, increasing autonomic arousal, inter-symptom and inter-syndrome linkages, all converge to create a sense of an upward surging of wind and possible demise.

In summary, I would argue that the profound change of state that is a near-*kyol goeu* or *kyol goeu* event becomes comprehensible when symptom escalation is understood, not only in the traditional manner of a general increase in arousal consequent to a catastrophic cognition of one symptom, but also when the three following perspectives are considered: (i) physiological pairing of autonomic symptoms; (ii) symptom-to-symptom linkages mediated by cultural syndromes and ethnophysiology; and (iii) the process of inter-syndromal activation (usually through the syndromes sharing a related dysfunction of ethnophysiology). For instance, as shown above, in the Khmer case, multiple syndromes result from the dysfunction of the same ethnophysiology so that the fear of one disorder leads to the fear of the others. In this sense, multiple simultaneous syndromes may occur. In explaining a particular *kyol goeu* or near-*kyol goeu* event, patients may invoke only one of the explanations but potentially multiple different ones – or all together. There exists the idea that standing challenges the body and precipitates any latent abnormality – a kind of stress test. The patient then may invoke any of multiple catastrophic explanations for the bodily sensations felt upon standing: cardiac arrest, upward hitting wind, and so on. In most all of these explanations, wind will play a major role; and there lurks the fear of bodily disaster due to any of the other disorders caused by ‘wind overload.’ As can be seen, *kyol goeu* seems to be a syndrome that results in part from the simultaneous occurrence of multiple other syndromes; and the syndromes seem to mutually implicate ‘wind overload.’

As this explanation suggests, in societies having a complex ethnophysiology – especially those centered on one element such as wind – if an individual has one symptom or syndrome that indicates an excess or deficit of the key ethnophysiological element that person will suspect the presence of other symptoms and syndromes that also result from (or cause) a dysfunction of that element. Consequently, due to selective attention, amplification, and worried expectation, in combination with the nature of autonomic arousal and escalating fear, bodily events tend to occur in the expected simultaneities and sequences. In this way the local conception of the body, corporal and cultural logics are confirmed. Cultural logics are naturalized by accurately predicting bodily sequences; so paradigms are perpetuated, and a bodily episteme confirmed.

Metaphor-guided Somatization and Evocation—For a Khmer, distress tends to be somatized as dizziness and dizziness tends to evoke current life problems and distress, for the master Khmer trope of psychic distress is ‘spinning.’ As I have discussed elsewhere – probably due to multiple metaphors constructing ‘spinning’ as dysphoria (Hinton, 2001b) – dizziness serves as a key somatic symptom of anxiety for Cambodians.¹⁵ As reviewed in Hinton (1999), Kirmayer (1984) hypothesized that metaphors guide the manner of somatization of psychic distress.

¹⁴For instance, fear of wind rushing toward the head due to blockage of wind at the joints causes an assessment of hand and foot warmth, degree of numbness, as well as elbow joint soreness; whereas fears of wind hitting upward to the head causes a perusal of the degree of abdominal distension, tightness, nausea, peristalsis, and even gustatory sense (often, a certain taste in the mouth is said to be due to a regurgitation).

¹⁵To give an example, Americans also think of worrying in circular terms, as a cogitating in a stuck fashion, like a stylus circling on a scratched record (‘you sound like a broken record’), around and around, perseverating. Khmer tropes metaphorize anxious concern as a sort of spinning. A typical worry statement would be ‘*kut anjeh kut anjoh*’ (i.e., ‘think go there, think go here’), the two words ‘*anjeh*’ and ‘*anjoh*’ differing but by a vowel, both terminating with aspirations (indicated by the ‘h’), iconically represent a sort of return, the aspirations accompanied by a downward unfurling motion of the tongue. Or to worriedly think is to ‘spin in thought’ (*rewuel kut*). These are just a few examples of how worry is configured as a ‘spinning.’

The Physiology of Orthostasis—*Kyol goeu* events represent the interaction of physiology, cultural framing, and attentional focus. Let us review the physiological reasons for orthostasis to result in dizziness sensations and autonomic arousal. For a normal individual, standing results in many physiological shifts: the heart rate accelerates, peripheral blood vessels constrict, hand and feet cool (because of peripheral vasoconstriction), blood pressure may fall, brain perfusion may decrease, and some dizziness or black-out sensations may be felt (the latter due to general hypotension and/or a decrease in brain perfusion) (for a review, see Taylor, 2000). Some researchers believe that anxiety creates greater impairment of blood pressure adjustment upon orthostasis, worsening dizziness sensations upon standing (Friedman & Thayer, 1998). In addition, panic disorder may result – and recall that Khmer suffer a very high rate of panic disorder (Hinton, 2001a) – upon standing, in a vascular-control dysfunction in major intracranial vessels, leading to decreased brain perfusion and sensations of dizziness (Faravelli et al., 1997). Also, hyperventilation impedes blood perfusion to the brain upon standing (Ball & Shekhar, 1997). Hence, in a self-fulfilling prophecy, if the patient feels acutely anxious and in addition hyperventilates – hyperventilation being a very common reaction to stress – then sensations of dizziness may very well occur upon standing. In addition, if the patient rotates the head either upward or to the side upon standing, vestibular effects will augment the sense of dizziness (Jacob, Furman, Durrant, & Turner, 1996).

Some authors suggest the term ‘local biology’ for the local patterning of certain psychological disorders (Lock, 1998). However, this term may minimize the key role of attentional processes. A better term might be the ‘local attentional–physiological–ethnophysiological episteme.’ So, for instance, Lock (1993, 1998) writes of how the physiology of the menopause is shaped by actual autonomic fluctuations occurring more frequently at the menarche, as in ‘flushing’; and she hypothesizes that cultural groups may have a different biologically determined degree of flushing at the menopause, and, as well, that the local frames affect attentional processes. Likewise, it is possible that Khmer have a greater biologically determined degree of orthostatic dizziness and/or that cultural frames direct attention; physiology, attentional focus, ethnophysiology, and autonomic arousal escalation interact dynamically.

Summary of Mechanisms—For Khmer refugees, it would seem that *kyol goeu* episodes most usually result from a combination of six processes: somatic flashbacks, vicarious conditioning, catastrophic cognitions, inter-symptom and inter-syndrome activation, psychic distress somatized as vertigo, and the physiology of orthostasis. Here, the individual does not simply label bodily symptoms –and merely augment by attentional means a particular symptom, like a magnifying glass enlarging an unvarying entity – but rather unleashes and triggers dynamic sequences and concurrences that unfold in time. Such mechanisms result in panic; and, given the expectancies of what happens during such orthostatically induced panic states and the known ethnobehavioral pathway, a sort of ‘final common pathway of distress’ (Carr & Vitoliano, 1985), the patient enacts the behaviors of *kyol goeu* – for example, lies on the ground, mute and motionless, until certain ministrations are performed – associated with such orthostatically induced states. The *kyol goeu* event appears to a non-Khmer to be so choreographed and acted, whereas, in fact, the action sequence is felt to be compulsory and automatic by the sufferer.¹⁶ Let us now re-examine Tek’s case in order to illustrate how the six mechanisms mentioned above combine to result in near-syncopal episodes.

An Exegesis of a Case of Kyol Goeu—Tek’s *kyol goeu* events may occur in the following fashion. Before, standing, Tek may be thinking of her son and other problems, creating a sense of psychic spinning (and via somatization, there is a sense of actual vertigo as well). Owing to

¹⁶Another example of stereotypical sequencing would be the *arc de cercle* and other stages of the ‘grande hystérie’ observed by Charcot in his patients and soon ‘noticed’ all over France (Shorter, 1992).

her state of anxiety, she may have a sense of abdominal distension, construing this as incipient rising wind; she may also worry that her poor nutrition as well as poor sleep and 'thinking too much' have resulted in a 'weak heart'; and experience some joint discomfort and limb coldness. For these reasons, just before standing, Tek will anticipate the possibility of *kyol goeu*, thereby resulting in increased body vigilance and escalating anxiety. Of note, she may hyperventilate in her anxious state, and studies suggest that acute anxiety as well as hyperventilation result in increased dizziness upon standing (Faravelli et al., 1997). Yet still, several investigations indicate that patients, like Tek, with panic disorder, have an increased tendency to experience orthostatically caused dizziness (Friedman & Thayer, 1998). Even normally, upon standing, the heart rate increases substantially and blood pressure shifts, so that some degree of dizziness is not abnormal, and a concerned patient will be yet more hyper-alert to such heart accelerations and dizziness sensations (Taylor, 2000). Other factors impacting on the degree of dizziness (and palpitations) felt on standing include the degree of postural shift (i.e., whether moving from the prone or sitting position to the upright), rapidity of upward shift, as well as other variables, such as turning the head upon standing. When Tek stands, therefore, she may have a greatly increased sense of dizziness as well as palpitations for both psychological (e.g., increased vigilance to bodily sensations) and physiological reasons (normal physiology of standing, rate of standing, hyperventilation, and so on). Moreover, the dizziness caused by psychic distress and the act of standing may trigger somatic flashbacks (in addition, the car accident may be encoded as spinning if the impact involved swinging of the occupants of the vehicle). In fact, when queried, Tek describes sometimes experiencing such flashbacks during orthostatic episodes (e.g., her malarial episodes). Further still, catastrophic cognitions occur as Tek thinks of her 'weakened heart' (as evidenced by the heart acceleration upon standing), cold extremities, and her abdominal bloating and upward-hitting wind (and, of course, abdominal distension increases somatic flashbacks by the mechanisms described above). The sense of uprising wind paired with dizziness may result in fears of neck-vessel bursting as well.¹⁷ As she surveys her various bodily aberrations, sundry images may come to mind: her wind-full blood, dark red in color like a pig's blood, clotting as does an animal's blood when it cools; memories of seeing people suffer *kyol goeu* episodes and then losing limb function, of witnessing persons suffer such events in the Khmer Rouge period or some other time; and her abdominal distress, upward hitting wind, and dizziness (the latter a sort of inner whirling, a vertigo), evoke the upward rising dust-devil or the chicken spinning and falling as excrementitious vapors rise upward from the soil and intoxicate it. These multiple concerns and rememberings create a state of extreme somatic and psychic dysphoria upon standing, this is then considered as evidence of imminent *kyol goeu*. In a self-fulfilling prophecy, the patient's catastrophic cognitions about autonomic symptoms, such as abdominal distension, neck soreness, palpitations, cold extremities, numb extremities, dizziness, and fears of a *kyol goeu* event, amplify the state of autonomic arousal, the resultant increased state of sympathetic activation seeming to confirm these trepidations, the spiral continuing until *kyol goeu* occurs.¹⁸ By dint of the complex processes elucidated above, and depending on the level of somatic and psychic anxiety, the severity of the dizziness induced upon standing, the intensity of somatic flashbacks, the vividness of recall of past and viewed events of prototypical illness, the number and seriousness of catastrophic cognitions, and the degree of inter-symptom and

¹⁷Even the symptoms of dizziness create the expectancy of accumulating inner wind for they are said to result from 'wind illness,' that is, increased inner wind; so dizziness suggests that wind hits upward towards the head, thus signaling possible neck-vessel bursting and *kyol goeu*; in addition, dizziness upon standing creates fears of a 'weak heart,' for it indicates the heart's inability to respond to this testing of vigor. As can be seen, the symptom of dizziness takes on multiple complex meanings and serves as a key indicator of psychic and somatic state.

¹⁸Researchers have found an association between panic attacks and psychiatric syncopal episodes (Linzer et al., 1990). It may be that a conjunction of orthostatic shift (itself an autonomic challenge) and onset of panic is particularly likely to bring about a syncopal event. According to this hypothesis, given the prevalence of orthostatic panic in the Khmer group, actual syncopal episodes (locally called *kyol goeu* episodes) would be expected to occur with some frequency.

inter-syndrome activation, a state of panic is reached and the stereotypical syndrome of near-*kyol goeu* or *kyol goeu* enacted.

Comparison of Two Syncopal-like Syndromes: ‘Kyol Goeu’ and Ataque de Nervios

Kyol goeu invites comparison with *ataque de nervios* (Guarnaccia, 1992; Guarnaccia, Canino, Rubio-Stipec, & Bravo, 1993; Guarnaccia, DeLaCancela, & Carillo, 1989; Guarnaccia, Good, & Kleinman, 1990; Guarnaccia, Rivera, Franco, & Neighbors, 1996), both syndromes involve a sudden alteration or loss of consciousness. As reviewed in detail above, Cambodians consider the wind-carrying vessels that traverse the body to be a key aspect of being, constituting a complex psychophysiology, a master metaphor of psychological and physiological state.¹⁹ Whereas Cambodians have a psychophysiology of vessels and wind, Puerto Ricans have one of nerves. In fact, ‘*ataque de nervios*’ means ‘an attack of nerves.’ My Puerto Rican patients constantly conveyed dysphoric affect using a ‘nerve’ idiom: ‘my nerves grab me in the stomach’ (*los nervios me aggaran al estomago*), ‘my nerves are out of control’ (*se me descontrolan los nervios*), ‘I was so nervous that everything fell from my hands’ (e.g., a coffee cup falls from the hands and breaks; *tan nerviosa, los cosas me caigan de los manos*), and ‘my nerves are in points’ (*yo tengo los nervios en punto*). It is only in the context of this ethnophysiology of nerves, these metaphors of emotion, that *ataque de nervios* can be understood.

The people most likely to have *ataque de nervios* are those considered ‘very nervous’ (*muy nerviosa*). Generally, an attack occurs upon hearing some disturbing news (as in the death of a relative) or after a dispute with a family member or spouse. The attacks often begin with shaking; typically, to illustrate the initiation of such an event, the patient puts the hands in front of the body, proceeds to demonstrate how they started to shake up and down during the prodrome, and says that the attack began when ‘my nerves went out of control’ (*se me descontrolan los nervios*). Usually, when this shaking commences, there are various acute anxiety complaints, such as tightness in the chest, shortness of breath, tachycardia, and diaphoresis. The sufferer, in most cases a woman, may engage in any of six main patterns of activity: (i) start to attack those around her; (ii) destroy anything in her ambit; (iii) fall to the ground in seeming unconsciousness; (iv) pace in a distressed state; (v) attack herself, such as hitting her head against the wall; or (vi) owing to extreme shortness of breath, protrude her head from a window, sit in front of a fan, or rush outside.²⁰ Some patients have complete amnesia for the episode of *ataque de nervios*. To summarize, *ataque de nervios* frequently consists of ‘nerve instability,’ symptoms of autonomic arousal (e.g., trembling, palpitations, and especially shortness of breath), the affect of ‘rage’ rather than ‘fear of imminent death,’ and alteration or loss of consciousness.

Just as spinning plays a key role in the tropes of Khmer emotion, so ‘breath’ is the central configuration of distress for Puerto Ricans. Some examples include, ‘*no se ahoga en un vaso de agua*’ (‘don’t drown in a cup of water,’ meaning, ‘don’t make a mountain out of an ant hill’); ‘*se me llena el cuarto de agua*’ (‘my room is filling with water,’ meaning, I have lots of problems); or ‘*eso me desaliente*’ (‘this takes away my air,’ meaning, this discourages me);

¹⁹In contrast, in the last century in America and England, the key idiom of the psychophysiology and physiopsychology was ‘nerves’ (see, e.g., Porter, 1991). *Kyol goeu* and the ethnophysiology of wind could be contrasted to ‘hysteria’ and the ethnophysiology of nerves in the later 18th century and 19th century England, America, or France.

²⁰Of note, patients often complain of excess heat in the body, wishing to take a shower or using other cooling techniques. There is an association of heat with shortness of breath (*este calor me ahoga*; ‘this heat suffocates me’). Patients frequently speak of *calentones* (strong painful heats) in the neck and other body parts as well. So, for the Puerto Rican, heat rather than coolness is feared, whereas for the Khmer, as mentioned above, coolness signals excess wind and disorder (and incipient wind overload, rising of wind, and dizziness; this, by association, links cold, wind, and dizziness). In the Puerto Rican case, both cooling (which is linked to ideas of breath) and ‘air’ are sought in the moment of acute somatic anxiety and distress. Of note, this technology of cooling may relate to the fact that *ataque de nervios* has a physiological basis in anger, this causing genuine heating sensations; by way of contrast, Khmer experience primarily fear in *kyol goeu* states, this resulting in prominent sensations of coldness in the extremities.

and so on. I would argue that these idioms guide the bodily experiencing of distress (see Kirmayer, 1984). For this reason, dizziness plays such an important part in the Khmer cultural syndrome and shortness of breath in that of the Puerto Rican. As a body language example of this cultural difference, Puerto Rican patients frequently press the hands against the chest – or close the hand in a tight fist – to kinesthetically express dysphoria; whereas Khmer patients, when expressing distress, especially anxiety, make constant spinning gestures with the hands, especially by the head, mirroring the multiple Cambodian expressions construing dysphoria as spinning, such as the idiomatic meaning of ‘spinning brain’ as ‘crazy.’

Kyol goeu and *ataque de nervios* are both syndromes of rapid onset, short duration, and extreme intensity, characterized by symptoms of autonomic arousal. Some important differences between *kyol goeu* and *ataque de nervios* include:

1. *Kyol goeu* relates to an ethnophysiology – and to emotional idioms – of vessel blockage and wind excess, whereas *ataque de nervios* concerns an ethnophysiology, and emotional idioms, of disordered nerves.
2. *Kyol goeu*, unlike *ataque de nervios*, is triggered by orthostasis.
3. Anger is not a major aspect of *kyol goeu*, whereas the prominent emotion of *ataque de nervios* is rage, expressed by such actions as the hurling of objects and screaming (on anger in *ataque de nervios*, see the references above, and, in addition, Salman et al., 1998).
4. Fear of death is a much more salient affect and cognition in *kyol goeu* than in *ataque de nervios*.
5. In *kyol goeu*, the most prominent complaint is dizziness, whereas shortness of breath and palpitations are the most emphasized somatic symptoms in *ataque de nervios*.
6. In *kyol goeu* the person falls helplessly to the ground, whereas in *ataque de nervios*, the person usually screams, throws things about, and attacks herself or others.
7. *Kyol goeu* is treated by specific and elaborate modalities that involve family members (coining, etc.), whereas *ataque de nervios* does not elicit such specific ministrations by loved ones (other than, for instance, opening a window, getting cool water, or calling an ambulance).

However, an extremely important similarity of the two disorders is their profound affect on family members. Spouse and children will often modify their behavior in order to prevent the sufferer from having an *ataque de nervios* (in the Puerto Rican case) or an episode of *kyol goeu* (in the Khmer case). For instance, one Puerto Rican woman told me that her *ataque de nervios* – which resulted in her being sent to the emergency room with shortness of breath – was triggered by a dispute with her husband; subsequent to the *ataque de nervios*, she says, her husband would no longer precipitate an argument with her. Or a Cambodian patient of mine, whose children constantly disobeyed her and also became involved in gangs, developed episodes of *kyol goeu* – in which she fell to the ground upon standing – resulting in her being sent to the emergency room about twice a month over a year. Now, she says, her children do not want her to die and promise to stop disobeying her. In fact, the patient has had no more *kyol goeu* episodes in the last year since her children have modified their behavior. In a sense, then, these episodes can be considered as ‘weapons of the weak’ (Scott, 1985).

Conclusion

The cultural syndrome of *kyol goeu* occurs frequently among Khmer refugees attending a psychiatric clinic. Most likely the extreme frequency of *kyol goeu* in this population relates to privations in the Pol Pot era. Through traumatic experiences, Khmer have been sensitized to

dizziness (and gastrointestinal distension); these interoceptive sensations can trigger somatic flashbacks and start a spiral of autonomic arousal that may result in the syncopal syndrome of *kyol goeu*. This phenomenon of somatic flashback (with dizziness and other sensations, such as cold extremities or abdominal distension, as important triggers of remembrance), spinning as a master trope of distress, catastrophic cognitions, inter-symptom and inter-syndrome activation, and memories of past prototypical illness episodes, all combine to result in an extreme sensitivity to – and amplification of – any dizziness sensations detected upon standing, creating a strong predisposition to orthostatically induced panic. The explanation of the frequency of orthostatic panic and *kyol goeu* episodes requires multiple analytic frames: catastrophic cognitions; the physiology of fear; the physiology of orthostasis; the local ethnophysiology; metaphors as guiding somatization and bodily symptoms as evoking current life distress by means of these very metaphors; inter-symptom and inter-syndrome activation; witnessing of prototypical illness; and partial and full flashbacks. Such a multidimensional approach may allow for a clearer elucidation of other cultural syndromes, for instance, *ataque de nervios*, as suggested in this article.

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Biographies

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