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A Cross-Cultural Review of Sudden Mass Assault by a Single Individual in the Oriental and Occidental Cultures

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ABSTRACT: A nonrandom sample of North American cases of sudden mass assault by a single individual (SMASI, $n = 30$) is compared with a nonrandom sample of Laotian amok cases ($n = 18$) and other amok studies. Perpetrators in both studies show evidence of social isolation, loss, depression, anger, pathological narcissism, and paranoia, often to a psychotic degree. The term "innovative perpetrator" is reintroduced and expanded upon. Similarities among samples far outweigh differences, leading the authors to conclude that SMASI and its appearance in different cultures is not a culture-bound syndrome.

KEYWORDS: forensic science, forensic psychiatry, mass murder, amok, predatory violence, homicide

Amok is a Malaysian word meaning to engage furiously in battle (1). The term refers to a syndrome characterized by sudden unprovoked outbursts of uncontrollable rage and aggressive behavior, often leading to indiscriminate injury or death to others (2). Amok has traditionally been placed among a mixed group of phenomena known as "culture-bound syndromes." This phrase proposes that a particular society or culture has a powerful influence on the syndrome to the point of making it unique to that culture.

Traditionally the term amok has been limited in use to describe behavior in non-Western cultures. Yet, increasingly, amok-like behavior is observed in the West, which we call sudden mass assault by a single individual (SMASI). In the U.S. there appears to have been an increase in the incidences of SMASI (3). To explore the question of whether these phenomena are unique or simply culturally influenced manifestations of the same behavior, we will compare 30 North American cases of SMASI (4) with reports of amok from Asia (5).

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Historical Perspectives on Amok

According to Teoh (6), "Sporadic cases of amok or berserk have been reported in all countries throughout the world occurring in all ethnic groups" (p. 346). One proposed definition of amok is "an acute outburst of unrestrained violence associated with homicidal attacks preceded by a period of brooding and ending with exhaustion and amnesia" (p. 199, 7). In the Malaysian language the act of amok is sometimes termed "mengamok" and the perpetrator of amok as "pengamok." The phenomenon of amok is believed to have had its origins in the cultural training for warfare which the Javanese and Malays adopted from the Hindu states of India. Large groups of Malaysian warriors armed with the kris (a Malaysian short sword) would impart fear in their enemies by screaming "amok" at the time of attack. In the 14th century amok was also observed in Malaysia as an act of religious fanaticism. While amok is indigenous to the Malay peoples of Southeast Asia, it has been loosely associated with individuals who exhibit frenzied, bizarre, and violent behavior from many parts of the world at different times in history (7).

In 1770, Captain Cook reported that amok was a frequent and long-standing Malaysian behavior. One of Cook's officers commented, "there was scarcely a week when he was not called upon to capture a pengamok" (p. 345, 6). Amok has been described by different authors throughout history with various definitions. In 1894 the English physician Dennys defined amok as "a form of psychosis characterized by multiple violent acts and peculiar to the Malaysians" (p. 252, 8). Seven years later the physician Gimlette proposed yet another definition. It included four elements: "prodromal brooding, homicidal outbursts, persistence of homicide without an apparent motive, and a claim of amnesia" (p. 252, 8). Zaguire in 1957 described the phenomenon as a state of murderous frenzy in which the individual runs through the street with a sword or dagger and indiscriminately slashes everyone in his way until he is either placed under control or killed on the spot (9). More recently, scholars have critically examined the earlier definitions. Bradley (8) questioned the pengamoks' lack of motive and claims of amnesia. The necessity for the onset of the homicidal attack to be sudden has also been questioned (10).

Method

Cases from Asia

In his 1971 study in Laos, Westermeyer (5) compiled data on 18 cases of "grenade amok" which occurred between 1959 and 1971.

He gathered information regarding the premorbid state, precipitating events, social context and other demographic factors of the perpetrator. He operationally defined grenade amok as the “sudden wholesale killing and maiming of unsuspecting victims with hand grenades” (p. 251, 5). Westermeyer obtained information from hospital personnel, police records, village leaders, friends, neighbors, relatives of amok perpetrators, the victims, Buddhist monks, and prison officials. Three surviving amok perpetrators were also interviewed.

Cases from North America

SMASI data were retrieved from 30 perpetrators described by Hempel, Meloy, and Richards (4), who operationally defined mass murder as a single adult (≥ 18 years) perpetrator who intentionally kills at least three victims other than himself in a single incident. Data were limited to individuals who used a firearm with or without other weapons. Individuals were excluded who had used only explosive devices, arson, poison, planes, or cars. Individuals who fit other categories of homicide such as serial, spree, felony related, gang motivated, or politically motivated were also excluded. Cases occurred between 1949 and 1998.

Multiple psychiatric, psychological and criminological databases were searched over the past half-century to identify cases which met the inclusion criteria. Data sources included scientific articles, books, videotapes, audiotapes, newspaper articles, and phone interviews with law enforcement officers, victims, and acquaintances of the perpetrators.

Findings

All perpetrators in both studies were men. Among the North Americans, 23 were Caucasian (77%), five were black (15%), and the remaining two were Asian or other. The range of ages in the amok and SMASI studies was 17 to 35 and 18 to 59 years old, respectively. The mean and median age of the SMASI perpetrator was 38.3 and 37 years, respectively, versus 26.2 and 27 years for the amok perpetrator ($z = 2.10$, $df = 47$, $p \leq 0.018$). The majority of perpetrators in both studies were single. Ten SMASI perpetrators (33%) were married at the time of the event. Seven perpetrators (39%) in Westermeyer’s study were married.

Nineteen SMASI perpetrators (63%) were unemployed at the time of the mass murder. Nine had professional occupations (30%) which required a four-year degree. Fifteen (50%) were blue collar workers, the most common being a postal worker, in which the job required no college hours and primarily involved physical labor. Three perpetrators (10%) were white collar, which was nonphysical labor or a desk job that did not require a college degree. Three subjects (10%) were college or high school students at the time of the mass murder. Fifteen amok perpetrators (83%) were soldiers (Laos was at war). Two (11%) were farmers and one (5%) was a merchant.

Fourteen North American perpetrators (47%) had served in the military. The majority of perpetrators in both studies were familiar with the use of weapons. Alcohol consumption at the time of the event was noted in 13 (72%) of the amok perpetrators versus 3 (10%) of SMASI ($\chi^2 = 4.689$, $df = 1$, $p \leq 0.04$).

In the North American group 16 perpetrators (53%) committed suicide after the mass murder, 11 (36%) were captured and 3 (10%) were killed. In the Laotian group 10 (55%) suicided.

Both studies noted the psychological states which existed prior to and after SMASI or amok. Twelve (40%) SMASI perpetrators exhibited signs of psychosis at or preceding the homicidal event.

The signs were auditory hallucinations, paranoia, or delusions. Depressive, paranoid, narcissistic, and schizoid features were also common in the SMASI perpetrators. The vast majority of SMASI perpetrators were described as loners. Westermeyer’s description of premorbid state was significant for an absence of convulsions, mental retardation, and psychosis. After the event one of the perpetrators became very psychotic during his incarceration, precipitating a release to his family. Nine (50%) of the amok perpetrators were described as having problems with interpersonal relationships and personality problems. Other descriptors used were “emotionally unstable” and “immature.”

The Event

Precipitant—In the SMASI study 26 (90%) had an identified precipitant. The most common precipitating event was job related ($n = 15$, 50%) and involved termination, envy of another’s promotion, confrontation by an employer, denial of a job reinstatement, bankruptcy, denial of tenure, and anger at employers for employment disability leave. The second most common precipitant was related to a spouse, girlfriend, or female acquaintance ($n = 7$, 23%), and involved actual or perceived abandonment, jealousy, paranoid delusional beliefs, or child support issues. Other precipitants ($n = 4$, 13%) involved school stress and anxiety, belief that a gate was stolen, anger at boys playing in the subject’s yard, and alleged incest. Gambling loss, marital discord, and public argument each accounted for four (22%) of the precipitating events in the amok study. Three perpetrators (17%) had problems with their girlfriend, one (5%) was distraught over his wife’s death and the precipitating event was unknown in two (11%) of the cases.

Location—In SMASI the most common location was the workplace ($n = 11$, 37%) followed by a public street ($n = 6$, 20%), a school ($n = 4$, 13%), a home ($n = 4$, 13%), a restaurant ($n = 2$, 7%), a building top ($n = 2$, 7%), or a church ($n = 1$, 3%). In grenade amok 11 cases (61%) occurred in crowded areas (festivals, street, theater, army camp). Six events (33%) occurred in private homes with one (5%) occurring in a forest. The majority of perpetrators in both groups committed the killings in towns different from their hometowns.

Time of Day—Virtually all cases of SMASI occurred between the hours of 6:00 a.m. and 6:00 p.m. ($n = 28$, 93%). Thirteen (72%) cases of amok occurred between 6:00 p.m. and 6:00 a.m. ($\chi^2 = 5.275$, $df = 1$, $p \leq 0.025$).

Day of the Week—SMASI typically occurred on a weekday ($n = 27$, 90%). Amok rarely occurred on a weekday ($n = 3$, 17%) but commonly occurred on a weekend or holiday ($n = 15$, 83%) ($\chi^2 = 6.050$, $df = 1$, $p \leq 0.015$).

Elapsed Time per Event—SMASI ranged from three minutes to 2160 minutes (36 hours) with a median length of 20 minutes. Amok typically took seconds to occur.

Weapons Used—The number of weapons brought by the SMASI perpetrator ranged from 1 to 11, with a mean of 3. All perpetrators used a firearm, but other weapons were used such as knives, swords, hand grenades, homemade bombs, and lighter fluid. The most common type of gun was a semi-automatic pistol or rifle. In amok the grenade was used in all 18 cases (100%). One perpetrator used two grenades. (Although other weapons were used

during amok assaults in Laos, this study focused on an epidemic of amok violence with hand grenades).

Relationship of Victim to Perpetrator—In 15 (50%) SMASI incidents, all victims were known by the perpetrators. In seven (23%) of the incidents all the victims were strangers to the perpetrators. In six cases (20%) the victims were mostly strangers, in two (7%) cases the victims were mostly known. Nine (50%) of the amok incidents occurred with all victims being known by the perpetrator. Six (33%) events consisted of all victims being strangers and three (17%) cases comprised both strangers and known victims.

Morbidity and Mortality—The number of victims killed in SMASI ranged from 3 to 22 (mean = 8.5). The number wounded ranged from 0 to 30 (mean = 7.6). Combining mean values for dead and wounded, there were 16.1 casualties per event. The number of victims killed in grenade amok ranged from 1 to 16 (mean = 4.9). The number wounded ranged from 0 to 30 (mean = 7.5). Mean casualties were 12.4 per event.

Discussion

Male gender is a constant in both amok and SMASI, even more so than most forms of homicide (11). One case of amok by a female has been documented in the literature (12). SMASI by a female is also a rare event but there have been two documented cases (13,14). Westermeyer (15) hypothesized how the virtual absence of amok women from studies over the past 150 years could best be understood by virtue of their socially subordinate status to men. He reported that they were not so vulnerable to social upheaval and a loss of prestige, and a stable, secure social role was available to them in the home. The rarity of female SMASI has also been explored. Levin and Fox (16) reported that, “men are especially vulnerable to the affects of joblessness because they are generally still expected to be the bread winners in the family, those basically responsible for the families economic well-being” (p. 47). They reported that the perception in society is that women hold jobs while men are more career oriented, thus when the man loses a job he suffers a loss of self-regard and self-control which he can hardly compensate for in other ways.

The genders may also manifest different behaviors when suffering from particular psychiatric disorders. Males have a greater tendency to externalize their anger when depressed or psychotic, whereas females tend to be more self-punishing. Likewise, the physiological and behavioral response to alcohol may be different between the sexes (17,18). The differences in hormonal systems between the sexes may also help explain the gender disparity. Raine (19) suggested that there is a potential causal relationship between testosterone and violence.

In the SMASI group there did not appear to be an overrepresentation of a particular race. The SMASI perpetrator was significantly older than the perpetrator of grenade amok. This disparity could be caused by differences in age distribution between Laos and North America, and also that 15 of the amok perpetrators were soldiers with access to grenades. Laos, at the time of Westermeyer's study, was at war. Carr and Eng (20) studied and interviewed 21 amok perpetrators in West Malaysia. The mean age in their study was 34. Another amok study by Schmidt et al. (12) found the mean age to be more similar to the North American perpetrators. These two amok studies had more typical occupations with few soldiers in their samples.

Military training was common in both groups. Such training may play a role by introducing a potential SMASI or amok perpetrator to lethal weapons. Many of the weapons used by both groups were military issue. Military experience could have the effect of desensitizing an individual to homicide. The desensitization process could occur by training and it may not be necessary for a soldier to actually kill for this process to occur (21).

Social alienation of the perpetrators was found in both studies. Most perpetrators were single and living away from their hometown. A significant percentage were described as “loners” or had problems with interpersonal relationships. Alienation could have been a stressor putting the perpetrator in a situation where he lacked sufficient social support to nullify painful emotions. The alienation could also be a consequence of poor interpersonal skills or more severe psychopathology. Whether this caused or resulted from psychological disturbance is not entirely clear. One might hypothesize that alienation was an important premorbid stressor of the perpetrators of grenade amok since many were involuntarily away from home due to their military requirements. This, in combination with the precipitating events so commonly seen in both studies, appears to be the final stressor in the life of a disturbed individual. The perceived loss inherent in the precipitating events may be acute, but many of these perpetrators had experienced or perceived chronic losses throughout most of their lives.

The grenade amok study did not mention any findings of psychosis pre-event, but did report one case of post-event psychosis. This lack of psychosis may be explained by the observation that Laotian informants tended to gloss over premorbid problems and to typify any subject as a “good person” or a “hard worker” (22). None were called *baa* or crazy before the event. Westermeyer has indicated a reluctance of Laotian families to do this. It is thus possible that psychosis may have existed but was not recognized or reported. Criteria or methods for diagnosing psychopathology are different in Laos compared to North America. The younger age of the amok perpetrator may account for the lack of obvious psychosis due to a possible prodromal state or the early stages of the disease. Another explanation could be that psychotic men would not be in the military or have access to grenades in Laos. Westermeyer (22) observed that paranoid, sociopathic, depressive, and narcissistic traits were commonly seen in the perpetrators he studied, possibly prepsychotic features, for some subjects. Similar personality characteristics can be seen in North American perpetrators (4). The lack of psychosis in Westermeyer's study also could be the result of an inability to interview most perpetrators, because they had died. There were no psychiatric services in Laos at the time so a recorded history of psychiatric problems was not available.

In contrast to the grenade amok population, 12 (40%) of the SMASI perpetrators showed definitive evidence of psychosis at or preceding the homicidal event. Persecutory delusions and paranoia were predominant, with auditory hallucinations occasionally occurring. Several studies (12,20) of amok perpetrators found different results from those of Westermeyer concerning psychosis. Carr and Eng's study (20) in Western Malaysia of 21 amok survivors found that 13 (62%) of the perpetrators exhibited psychotic symptoms around the time of the event. Schmidt et al. (12) found a significant number of pengamok in their Eastern Malaysian study ($n = 24$) suffering from psychosis; 7 (29%) were diagnosed with paranoid schizophrenia, 2 (8%) with chronic schizophrenia and 5 (21%) with predominately paranoia. In Kua's historical review (23) of amok he states, “There is a high probability that many perpetrators of amok suffered from a psychotic disorder like

schizophrenia" (p. 434). It should not be surprising to find psychosis associated with these homicidal outbursts because recent literature shows that active psychosis may be a risk factor for violence, particularly when it contains paranoid features (24).

In the grenade amok group Westermeyer did point out that the first perpetrator was obviously psychotic. Being the innovator, he suggests, may be related to the subsequent perpetrators' psychiatric disturbance in that his successors may be more reality oriented (15) and imitate him. The earlier perpetrators in the SMASI study were also psychotically disturbed. One such perpetrator, the University of Texas tower sniper Charles Whitman, is considered by many to be the first of an epidemic of 20th century mass murderers in North America. This first killer we will term the "*innovative perpetrator*." In support of this theory we note that Robert Smith committed his mass murder only 3½ months after Whitman's killings in Texas (25). Smith had "claimed that he had been inspired by Charles Whitman" (p. 112, 13). The innovator may become infamous, with the syndrome taking his name, such as the "Whitman Syndrome" (6). The later SMASI perpetrators, especially the job site killers, tended not to be psychotic.

We lowered the SMASI requirement from three killed to two and found six females who suddenly assaulted others. Data for five SMASI females and one pengamok female exhibited a high prevalence of what appeared to be psychotic symptoms. Most indiscriminately attacked strangers in public places, with two targeting predominantly children. These findings are typical of the North American perpetrator who exhibits psychotic symptoms (4). More extreme psychiatric disturbances may be necessary for females to commit mass homicide. The higher prevalence of psychosis is consistent with the innovative perpetrator, one who is not following the actions of others involved in an epidemic or clustering of events.

Sudden mass assault in Southeast Asia and North America may be caused or precipitated by organic conditions. A brain tumor and heavy metal poisoning have been found postmortem in several SMASI perpetrators (4). In amok, malaria, syphilis (12,23), meningitis (23), hypoglycemia (12), and epilepsy (8,9) have been documented as possible contributors.

Depressive features were also commonly seen in both amok and North American perpetrators, and this may account for the prevalence of suicide in both groups. The intent to die may be much higher than the suicide rate suggests since most perpetrators put themselves in a hopeless situation at the mercy of an angry mob or a SWAT team. Many pengamoks were Muslim, a religion which strongly prohibits suicide. The act of amok may be seen as an indirect way of terminating one's life (6) without offending the teachings of Islam. Behavior typical of depression was noted in other amok studies (8,12).

The extreme assaultive behavior against others as noted in both these groups, however, is not predictive in the depressed subject who commits suicide. These perpetrators decided to include others in their act. The data showed that the North American perpetrators had a history of perceiving and blaming others for their problems. Carr (7) similarly reported that the Malaysian pengamok typically has "perceived insults upon his self-esteem and these may accumulate from a variety of individuals" (p. 217). Carr (7) also underscored the effect that total obedience, conformity, and nonconfrontation has on the Malaysian citizen. His concept of self is highly dependent on his perceived view of himself in relation to others. Insult therefore equates with a form of embarrassment or shame (Mendapat Malu). Striking out at the group that he has been avoiding all of his life would be an act of desperation which, at an unconscious level, is worse than suicide.

The ages of the perpetrators in these various studies could be further evidence for this to be a suicidal act. Felthous and Hempel's review (26) on combined homicide/suicide found a mean age of 33.2 years for the perpetrators. Their study suggests that in combined homicide/suicide, the homicide is an extension of the suicidal act. Demographically the act has more in common with suicide than homicide; like suicide, but unlike homicide, the perpetrator tends to be an older male (26). Further evidence for depression can be seen in suicide notes left by SMASI perpetrators (25) and the prodromal brooding that is so well noted in the amok population (8).

A variety of motivations are evident in SMASI, including a desire to right a perceived injustice or a hope of achieving social recognition. Perceived injustices result in great anger. This anger and desire for infamy are quite evident in the emotion-laden statements that many SMASI perpetrators yell at the beginning of their killing, which have been termed "psychological abstracts" (4). Commonly the anger is caused by paranoid delusion or a severe overreaction to a real event. Anger would also appear to be a motivating factor in many of the grenade amok events due to the nature of the precipitants. Carr and Eng (20) also noted anger as a motivating factor in amok. Shame may also play a more significant role in amok when there is a gambling loss, public argument, or problem with a female.

Killing also allows the perpetrator to achieve both societal and historical recognition, the gratification of a pathologically narcissistic desire. Bradley expressed this by paraphrasing the typical mode of thought consistent with the pengamok in New Guinea and Papua: "the exchange is in my favor so I shall not only kill you, but I shall kill many of you, and at the same time rehabilitate myself in the eyes of the group of which I am a member even though I might be killed in the process" (p. 243, 8). The spirit of amok has been described as "if you are driven to slaughter, slay as many people as you can, the more you kill the more you will be remembered" (p. 212, 7).

In both Carr's study (20) and in the SMASI study (4), a significant number of perpetrators exhibited a marked degree of intent and targeting. For example, some amok perpetrators targeted certain victims due to their race or ethnic background. In several North American events, victims were targeted due to hair color, job, sex, religion, and race (4). An example of this is illustrated in Canada's worst mass homicide. On December 6, 1989, Marc Lepine walked into a University of Montreal engineering class armed with a hunting knife and a semiautomatic rifle. He told all the males to leave and then opened fire, killing the female students. Lepine had a deep hatred for feminists, as illustrated by his psychological abstract immediately prior to the killings. He yelled, "I am fighting feminism" (p. 152, 25). Intent was also exhibited by the use of the psychological abstract in a case of amok. Westermeyer (22) discussed a Laotian perpetrator who, one hour after being excluded from a dance, threw a grenade into a dance circle (Lamwong) killing 4 and wounding 21. After throwing the grenade he jumped into the mayhem and yelled that he had done it and that, "These people deserved to die because of their insult to me" (p. 227).

Intent was also common in the SMASI group of perpetrators, evidenced by verbal threats and predictive statements made prior to the event. James Huberty, on the day of his mass killings at the McDonald's restaurant in San Diego, had remarked "society had their chance" (p. 124, 25), and minutes before his walk to McDonald's, he said he was going hunting (25). It came to no one's surprise when postal worker Thomas McIlvane killed four of his supervisors at the Royal Oak Michigan Post Office the morning after he re-

ceived news of being fired. He had made many threats predicting his homicidal actions if he were not reinstated (25).

Alcohol played a large role in grenade amok; it was involved in a significant number of these events. The drinking was described as social: "none of the perpetrators were chronic alcoholics and drunkenness was less evident than extreme emotionality" (p. 255, 5). It may be that alcohol acted as a disinhibitor and was a factor in precipitating the mass homicide. Alcohol did not appear to be used prior to the event by most SMASI perpetrators (4) or amok perpetrators in other studies (12,20).

A large variety of weapons have been used throughout time in amok and in SMASI. There are various reasons which could explain why particular types and numbers of weapons were chosen by the perpetrator: familiarity and easy access, religious belief, fantasy-driven grandiose image, and high lethality.

A common first factor in both groups was a familiarity with weapons and easy access. Many of the North American perpetrators were obsessed with weapons. Both groups had become familiar with weapons in the military. The other two studies on Malaysian amok noted easy access and familiarity as significant in the pengamoks' choice of weapons (12,20).

Religion may have been a second significant factor regarding the amok perpetrator's choice of weapon. In Westermeyer's grenade amok study his conversations with several Laotian soldiers revealed the notion that "they felt that direct shooting of the enemy went against their Theravada Buddhist tenets to preserve all life unless their own life was threatened" (p. 226, 22). Thus their choice of a grenade may have been related to their Buddhist beliefs on killing. By throwing a grenade it was the responsibility of the individuals to not be in the space where the grenade would land. Westermeyer concluded that the shrapnel weapon (such as a grenade) decreased their moral sense of personal responsibility for killing humans. He points out a parallel line of reasoning concerning the Laotian concept of killing nonhumans. "Many Lao would not hurt animals because of the stricture against killing, but would go fishing because they felt they did not kill the fish with net or hook but the fish only died because it could not live in the air" (p. 227, 22). The illogic of these statements is evident because benign circumstance (space, air) become the cause of death while the destructive object (grenade, hook) is ignored. A similar paleologic is found in the statement "guns don't kill people, people kill people."

The perpetrator's fantasy life prior to the event may have played a third major role in determining what weapons the perpetrator brought to the event (4). Many SMASI perpetrators brought weapons to the killing site that were considered effectively lethal in other eras, such as large bowie knives, samurai swords, and ninja stars, but were scarcely used in the event, and in some events was not realistic to believe that they would have been used. The perpetrator who shoots victims at great distances will never get close enough to need such a weapon, and even at close proximity the utility of these weapons would be questionable at best. These weapons, along with the congruent mode of dress (army fatigues, camouflage outfits, and ninja outfits), suggest an image that the perpetrator wishes to display, one that may have been played out through fantasy many times prior to the event. This compensatory and grandiose fantasy life portraying the powerful ninja warrior or modern day "Rambo" is in stark contrast to the true psychological profile of the SMASI perpetrator, a man who is impotent, hopeless, and helpless in his own world. It is our belief that the less control the perpetrator has had in his life the more consumed and invested he becomes in fantasy. One day the fantasy is not enough and he feels compelled to act it out. This aggressive and narcissistic dis-

play has been described as a "Warrior Mentality" (4). The Malay amok perpetrator has also been described in terms consistent with this warrior mentality: "Consider the concept of courage which to the Malay is equated with a willingness to face up to a hopeless situation, to take on an adversary beyond one's capacity" (p. 211, 7).

The fourth factor in choice of weapons appears to be lethality. The grenade and the semi-automatic gun are both very lethal weapons. It has been noted that over the last half of the 20th century, weapons such as rifles and machine guns with a higher lethality have been used in cases of amok in Malaysia and the Philippines (22). Westermeyer stated that the weapon used is generally the most destructive implement available (5). The semiautomatic rifle and pistol were the most commonly chosen weapons of the SMASI perpetrator (4). The choice of such an arsenal would suggest that the perpetrators in both cultures from the outset planned to kill many people. A careful analysis of the most recent weapons purchased by the SMASI perpetrator prior to the mass homicide is consistent with a plan to kill many. Typically, as the mass homicidal event approaches, the perpetrator becomes less interested in revolvers and sporting guns, preferring instead sophisticated semi-automatic weapons capable of holding and firing many bullets (13). Some SMASI perpetrators brought enough weapons to the event to stand off a small army (4). Charles Whitman brought 11 weapons, mostly high-powered semiautomatic rifles, with him to his mass homicide.

The desire to kill a large number of people is also supported by the location of the event, day of the week, and time of day in which the event occurred. Location of the event differed in both groups, but one factor that was consistent was the high number of people (potential victims) found in these different locations. The crowded areas made it easier for the perpetrator to kill a large number of victims in a shorter period of time. The time of day and day of week are quite different, with amok predominately occurring on holidays, weekends, and evening hours. This is a time in Laos when people leave their fields, shops, and small village industries to congregate at home, in a public place, or at festivals (5). In the U.S. routine nighttime gatherings are not as common. Restaurants, schools, and the workplace routinely have large numbers of people during the daytime hours. Most school and workplace activities in the U.S. occur on weekdays, the day when SMASI typically occurred. Ninety-three percent of SMASI occurred between 6:00 a.m. and 6:00 p.m. Another explanation for SMASI to occur at these times and places is that job loss was a significant precipitating event and the job site was also a common location where revenge against boss or co-workers could occur. These are also typical hours when children's playgrounds and college campuses are the busiest.

The daytime hours typical of the SMASI event serve several other functions for the perpetrator. These hours conveniently have good lighting for spectators and the news media to observe and record the event. This is consistent with the idea that the perpetrator wants "the world" to witness the event. The good lighting would also make it easier for the perpetrator to accurately target his victims (4).

The time elapse per event was not recorded in Westermeyer's study nor could it be found in the literature on amok. The SMASI study showed a range of four minutes to seven hours with a 20-minute median. These times would be greater than those which occur in the majority of amok. The time that elapsed in grenade amok would be limited by the nature of the grenade blast and destruction it caused. In other studies, the amok perpetrator who attacks with a kris or machete would have to be in close proximity to his victims

and would risk self-injury from both victims and bystanders. This could end the event quickly. His knife would be much less efficient at sudden homicide. The SMASI perpetrators, with the use of high-powered semi-automatic firearms, could keep their victims at great distances and still be very lethal. This perpetrator could kill many without being in close proximity to victims and police, therefore decreasing the immediate danger to himself and allowing more time per event. The amok perpetrator using the kris or dagger would have great difficulty in continuing the attack due to the physical exhaustion inherent in running and slashing. Finally, several SMASI perpetrators used motorized vehicles in moving from one killing site to the next. This allowed for short-term escape so the perpetrator could arrive at the next crime scene, adding more time to the event.

Is Amok a Culture-Bound Syndrome?

“The term culture-bound syndrome denotes recurrent, locality-specific patterns of aberrant behavior and troubling experience that may or may not be linked to a particular DSM IV diagnostic category” (p. 844, 27). “The culture-bound syndromes are generally limited to specific societies or culture areas and are localized, folk, diagnostic categories that frame coherent meanings for certain repetitive, patterned and troubling sets of experiences and observations” (p. 844, 27). The evidence suggests that amok is not a culture-bound syndrome. It is not limited to specific cultural areas much less specific countries. Mass homicide is a ubiquitous phenomena encountered all over the world. Both SMASI and amok perpetrators exhibit diagnoses from all three axes and the motivations and psychopathology behind both appear to be inherently similar. Depression, anger, narcissism, loss, failure, social isolation, and psychotic symptoms (usually paranoid) are typically seen in most samples. Similarities in motivation, psychopathology and possibly fantasy are probably core features of the generic mass murderer.

In a culture-bound disorder there needs to be an identification of the “presence of cultural criteria which clearly delineate the form of the disorder and its symptoms, affective changes and behavioral responses” (p. 791, 28). The era and culture do affect the form of the SMASI, but only in its presentation. In Southeast Asia there are differences in religion, laws, economics, and group psychology when compared to North America. These differences cause a change in presentation, but the core features of the perpetrators remain fairly constant. One explanation for the use of grenades by the Laotians, for example, is their unique Buddhist beliefs, but overall it appears that the differences in weapons, time and location depend on the perpetrators’ goal to kill and maim as many people as possible.

Carr and Eng (20) reported that all perpetrators of amok, if caught, are sent to a psychiatric hospital. Amnesia is traditionally claimed by the pengamok, and this likely results in hospitalization. The fate of the North American perpetrator is usually prison. North American courts typically don’t accept amnesia as a mitigating factor, especially in mass murder!

Public shame could cause a nonrehearsed impulsive act which would add a cultural uniqueness to amok. But the fact is that there have been noted dramatic decreases in the rate of amok when the consequence was changed from hospitalization to hanging (6). This suggests that amok may be an act of predatory violence rather than affective violence (29), at least in terms of planning and intent, similar to SMASI.

Many have reported that amok is a culture-bound syndrome occurring mainly among the Malay ethnic group in Malaysia, and

very rarely among other ethnic groups. However, as Teoh noted, newspaper reports state otherwise: “Chinese amoks occur with a frequency that is approximately equal to that for the Malay ethnic group and other ethnic groups, e.g., Indians, British, and even Negro Africans—are not excluded” (p. 346, 6). Likewise, SMASI perpetrators represented different racial and ethnic groups. Approximately six perpetrators (20%) were not born in North America.

There are similarities that can be seen in the subclassification of perpetrators in both phenomena. Several authors of amok point out different subtypes of pengamok (6,23). One killed due to revenge; the other’s motive was not known and was difficult to comprehend. Two studies on mass murder also noted similar findings. Felthous and Hempel (26) described the indiscriminate pseudocommando who kills randomly versus the killer whose motives are at times more obvious, such as the adversarial or consortial (possessive subtype) killer. The SMASI study (4) described mass killings in which the motive was obvious and killings where no motive was apparent. These latter killers were psychotic and paranoid.

Fantasy has been shown to play an important role in the SMASI killer (4). These data were not available in the amok studies, therefore the role of fantasy is not clear. The prodromal brooding, psychological changes noted, the intent shown for particular victims, the choice of lethal weapons, and the maximization of casualties all suggest that fantasy may also have played a role in amok. Rational planning through the use of fantasy, of course, may have a delusional motivation.

Finally, the context of the disorder should be delineated to specify whether the case occurs in an isolated instance or during an epidemic. Gaw and Bernstein (28) suggested that the epidemic nature of amok homicide is part of the cultural specific syndrome. The literature supports the epidemic nature of amok (6,15,22) and also supports the epidemic nature of SMASI (3,14), typically begun by an innovative perpetrator who may be more psychotic than his subsequent imitators.

Conclusion

An analysis of the data for both SMASI and amok suggests that amok is not a culture-specific syndrome. There are many more similarities between the two phenomena than differences. The most compelling similarities are the core features of the perpetrators of amok and SMASI: motivation (anger and compensatory narcissism) and psychopathology (depression and/or paranoia; often to a psychotic degree).

There are several inherent problems in our study. The operational definitions for amok and SMASI are different. Three victims must die at once to meet criteria in SMASI; this was not the case in amok, just a sudden attack. The similarities and differences between SMASI and amok would also have been clearer if the same categories of data (dependent variables) could have been retrieved for both. Certain details are more available in the SMASI group (4) such as pre-event behaviors and psychological symptoms. Examples of this included information on the perpetrators’ preoccupation with weapons, war regalia, and psychotic symptoms. The grenade amok study does not mention preoccupation with weaponry and no findings of psychosis pre-event. This lack of psychosis may reflect a different cohort, or be an artifact of data collection. Limited information was available to the authors regarding the lives of the amok perpetrators both before and after the mass homicidal event, whereas whole books have been written on individual SMASI perpetrators (30–32), allowing for a more detailed description of the perpetrator.

Another difficulty was that the data in Westermeyer's study (5) were based on greater than 80% of the perpetrators having the occupation of soldier. The authors attempted to offset this bias by including data from other amok studies (6–8,12,20). All samples were nonrandom.

Although neither amok nor SMASI will ever be amenable to prediction due to their extremely low base rates, threat management of such cases is possible. Mental health and law enforcement should pay particular attention to males who are socially isolated and angry, have recently experienced significant social and/or occupational loss, attribute all their problems to others—suggesting paranoid ideation—and evidence a “warrior mentality” fantasy life which is both entitled and grandiose. Accumulation of weapons, practicing with weapons, and articulation of their intent to third parties should trigger a quick, efficient, and effective threat management response, restraining their freedoms within the limits of the law.

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