

Mass hysteria: two syndromes?

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SYNOPSIS On the basis of a literature review it is concluded that mass hysteria can be divided into two syndromes. One form, to be called 'mass anxiety hysteria', consists of episodes of acute anxiety, occurring mainly in schoolchildren. Prior tension is absent and the rapid spread is by visual contact. Treatment consists of separating the participants and the prognosis is good. The second form, to be called 'mass motor hysteria', consists of abnormalities in motor behaviour. It occurs in any age group and prior tension is present. Initial cases can be identified and the spread is gradual. Treatment should be directed towards the underlying stressors but the outbreak may be prolonged. In mass anxiety hysteria the abnormality is confined to group interactions; in mass motor hysteria abnormal personalities and environments are implicated.

INTRODUCTION

Collective psychogenic illness has been reported since medieval times, and accounts continue to appear regularly in both popular and scientific literature. Many forms of behaviour are described, ranging from 'biting nuns' (Rosen, 1968) and tarantists (Mora, 1963), to fainting school-girls and gassed factory workers. These diverse outbreaks are usually described by the all-embracing title of mass hysteria. Usage of this term implies that these disparate phenomena constitute a single entity. This assumption is challenged in this paper, which provides a framework for the division of mass hysteria into two distinct forms.

Hysteria remains a controversial term. It may refer to a histrionic reaction, a personality or a specific psychiatric diagnosis (Merskey, 1979). Modern authors tend to view hysteria in its narrower psychiatric sense, avoiding the pejorative overtones of other usages. Central to this version is the implication that hysteria must involve the adoption of symptoms not explained by physical disease but corresponding to a notion of physiological or psychological dysfunction. This view at least has the virtue of clarity. The so-called 'classic' features, now less emphasized in the diagnosis of individual hysteria, are even more unusual in mass

outbreaks, although precise examination of single cases is rarely possible. Secondary gain may occur, but is indistinguishable from the advantages of the sick-role (Kendell, 1983). 'Belle indifference' is extremely rare; the notable feature of mass hysteria is the lack of indifference.

Considered in these terms, it is possible to use the label of hysteria when reviewing the collective behaviour that forms the subject of this paper. However, a single descriptive label should not be taken to indicate that identical psychopathological mechanisms are involved in individual and mass hysteria (Colligan & Murphy, 1979). The word 'hysteria' itself remains a problem (Mann & Rosenblatt, 1979). Lewis has pointed out that it is unlikely ever to be abandoned in individual cases (Lewis, 1975), a comment that is even truer of mass outbreaks. Introducing a different term would only add to the confusion; consequently, 'mass hysteria' is retained in this paper.

There exists no satisfactory definition of mass hysteria. A wide variety of crazes, panics and abnormal group beliefs, including the medieval Flagellants (Rosen, 1968), the panic that followed the Orson Welles broadcast of 'The War of the Worlds' (Cantril, 1940) and contemporary accounts of moving statues in Eire (Toibin, 1985), have all been labelled as mass hysteria. The boundaries of collective behaviour and mass hysteria have yet to be

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drawn. Some authorities avoid the problem by choosing to ignore its existence – out of the 187 references cited by Milgram & Toch (1969) in their otherwise comprehensive review of collective behaviour none refer to mass hysteria. Although not providing a definition Zilboorg (1941), and later Gruenberg (1957), are aware of the need to separate mass hysteria from both collective delusions, such as witch burning (Rosen, 1968) or millenarian cults (Cohn, 1957), and ecstatic phenomena, such as prophetic trances or 'shaking' (Rosen, 1968). As stated by Zilboorg (1941), 'These epidemics, while definitely of a pathological order, are certainly psychosocial phenomena rather than manifestations of individual mental illness. The inaccurate terms applied to these phenomena, such as 'mass hysteria' or 'mass psychosis', are merely descriptive literary phrases and not diagnostic terms'.

Mass hysteria will be regarded as a phenomenon with certain characteristics. First, it is an outbreak of abnormal illness behaviour

that cannot be explained by physical disease. Secondly, it affects people who would not normally behave in this fashion. Thirdly, it excludes symptoms deliberately provoked in groups gathered for that purpose, as occurs in many charismatic sects (Douglass, 1944; Massey *et al.* 1981; Sargant, 1948). Fourthly, it excludes collective manifestations used to obtain a state of satisfaction unavailable singly, such as fads, crazes and riots. Finally, the link between the participants must not be coincidental (Watson, 1982).

This concept is an attempt to limit the scope of mass hysteria. By emphasizing the role of abnormal illness behaviour it excludes episodes of false group rumours, such as the reports of a madman engaged in blood sacrifice (Jacobs, 1965) or the epidemic of windscreen pitting blamed on the 'H-bomb' that affected Seattle (Medalia & Larsen, 1958). In these episodes the abnormality was a belief, not a behaviour, and the participants neither regarded themselves as ill nor sought medical attention.

Table 1. *Symptoms recorded during outbreaks of mass anxiety hysteria*

| Author | Abdominal pain | Chest tightness | Dizziness | Fainting | Head-aches | Hyper-ventilation | Nausea | Palpitation | Anxiety* |
|---------------------------------|----------------|-----------------|-----------|----------|------------|-------------------|--------|-------------|----------|
| Bebbington <i>et al.</i> (1980) | + | . | + | + | + | + | + | . | + |
| Bell & Jones (1958) | + | . | + | + | + | + | + | + | + |
| Colligan & Murphy (1979) | . | . | + | . | + | . | . | . | . |
| Figueroa (1979) | + | . | + | + | . | + | + | . | . |
| Forrester (1979)† | + | . | . | . | . | . | + | . | . |
| Goldberg (1973) | + | + | . | . | + | + | . | . | + |
| Helvie (1968)‡ | . | . | . | + | + | . | . | + | + |
| Kerchhoff & Back (1965) | + | . | . | + | . | . | + | . | + |
| Levine <i>et al.</i> (1974) | + | . | . | . | + | + | . | . | . |
| Levine (1977)§ | + | + | + | + | + | + | + | . | . |
| Lyons & Potter (1970) | + | . | + | + | + | + | + | + | + |
| McEvedy <i>et al.</i> (1966) | + | . | . | + | . | . | + | . | . |
| Modan <i>et al.</i> (1983) | + | . | + | + | + | . | . | . | . |
| Moffat (1982) | + | . | + | + | . | . | . | . | . |
| Moss & McEvedy (1966) | + | + | + | + | + | + | + | . | + |
| Nitzkin (1976) | . | + | . | . | . | + | . | . | . |
| O'Donnell <i>et al.</i> (1980) | + | + | . | . | + | + | + | . | . |
| Phoon (1982)¶ | . | + | + | + | . | + | . | . | + |
| Polk (1974)§ | + | . | . | + | + | + | + | . | . |
| Pollock & Clayton (1964) | + | . | + | + | + | . | + | . | . |
| Sleigh (1965) | + | . | + | + | . | + | . | . | + |
| Small & Nicholi (1982) | + | + | + | + | + | + | + | . | + |
| Small & Borus (1983) | + | + | + | + | + | + | + | . | + |
| Smith & Eastham (1973) | + | . | + | + | + | . | + | . | + |
| Stahl & Lebedun (1974) | . | . | + | + | + | . | + | . | . |
| Tan (1963) | . | . | . | + | . | + | . | + | + |
| Wason & Bausher (1983) | + | . | + | . | + | + | + | . | . |
| Wong <i>et al.</i> (1982) | + | + | + | . | + | + | + | . | . |

* Anxiety is listed as present only if mentioned in the original report.

† Symptoms described by Forrester (personal communication).

‡ Included laughter.

§ Included itching.

¶ Covers outbreaks numbered 5 and 6 in the original report.

Table 2. Features of outbreaks of mass anxiety hysteria

| Author | Age (yrs) | | Pre-existing tension recorded | Initial case recorded | Duration of episode | | | Spread | | |
|---------------------------------|-----------|------|-------------------------------|-----------------------|---------------------|------------------|-------------------|----------|---------------|---------------------|
| | ≤ 18 | > 18 | | | Hours | 1 Day to 1 month | 1 month to 1 year | > 1 year | Line of sight | Via social networks |
| Bebbington <i>et al.</i> (1980) | + | | . | . | + | . | . | . | + | . |
| Bell & Jones (1958) | . | + | . | + | . | + | . | . | * | . |
| Colligan & Murphy (1979) | . | + | + | + | + | . | . | . | + | + |
| Figueroa (1979) | + | . | . | . | + | . | . | . | + | . |
| Forrester (1979) | + | . | . | . | + | . | . | . | + | . |
| Goldberg (1973) | + | . | . | + | + | . | . | . | + | . |
| Helvie (1968) | + | . | + | . | + | . | . | . | + | . |
| Kerchhoff & Back (1965) | . | + | + | + | + | . | . | . | + | + |
| Levine <i>et al.</i> (1974) | + | . | . | . | + | . | . | . | + | . |
| Levine (1977) | + | . | . | . | . | + | . | . | + | . |
| Lyons & Potters (1970) | + | . | . | + | + | . | . | . | + | . |
| McEvedy <i>et al.</i> (1966) | + | . | . | . | . | + | . | . | + | . |
| Modan <i>et al.</i> ‡ (1983) | + | . | . | . | . | + | . | . | + | . |
| Moffat (1982) | + | . | . | + | + | . | . | . | + | . |
| Moss & McEvedy (1966) | + | . | + | . | . | + | . | . | + | . |
| Nitzkin (1976) | + | . | . | . | + | . | . | . | + | . |
| O'Donnell <i>et al.</i> (1980) | + | . | . | . | . | + | . | . | + | . |
| Phoon (1982)† | . | + | + | + | + | . | . | . | + | . |
| Polk (1974) | + | . | . | . | + | . | . | . | + | . |
| Pollock & Clayton (1964) | + | . | . | . | . | + | . | . | + | . |
| Sleigh (1965) | + | . | . | . | + | . | . | . | + | . |
| Small & Nicholi (1982) | + | . | . | + | + | . | . | . | + | . |
| Small & Borus (1983) | + | . | . | . | . | + | . | . | + | + |
| Smith & Eastham (1973) | + | . | . | + | + | . | . | . | + | + |
| Stahl & Lebedun (1974) | . | + | + | + | + | . | . | . | + | . |
| Tan (1963) | + | . | + | + | . | + | . | . | + | . |
| Wason & Bausher (1983) | + | . | . | + | + | . | . | . | + | . |
| Wong <i>et al.</i> (1982) | + | . | . | . | . | + | . | . | + | . |

* No information.

‡ Although not recorded in the published report, it cannot be assumed that tension was absent.

† Covers outbreaks labelled 5 and 6 in the original report.

A further consequence of the proposed definition of mass hysteria is the support it gives to the view that such behaviour is maladaptive. Many authors consider all forms of collective behaviour to be successful ways of coping with stress (Asch, 1956). The loss of internal restraints permits the release of previously suppressed behaviours (Festinger *et al.* 1952), and contagion leads to fear reduction (Wheeler, 1966). Sirois (1982) concludes that mass hysteria is a form of

abreaction to resolve conflicting situations. This may have validity in the individual, as in the example of Helen, a class leader who developed twitching to avoid her feared activity, dancing (Schuler & Parenton, 1943). It does not explain why the rest of the group, who did not fear dancing, followed her example.

There is a failure to make a distinction between actions that lead to group satisfaction, as in the charismatic sects, and those in which

satisfaction is absent, and the participants come to medical attention. Far from being cathartic, mass hysteria adds new strain to an already tense environment. It ensures that the attention of the onlooker is directed towards the mythical excuse and not the true source of anxiety, and it may disrupt group solidarity and well-being (Lee & Ackerman, 1980).

In view of the extraordinary diversity of mass hysteria, encompassing differing times, behaviours and cultures, it is important to impose a structure to facilitate study of the phenomenon. Few such attempts have been made. Colligan and his co-workers have provided two authoritative accounts of mass hysterical outbreaks in factories (Colligan & Murphy, 1979; Colligan *et al.* 1982). Sirois (1974) has published the only overall account of the topic, which he called 'epidemic hysteria', and which remains invaluable. However, Sirois encountered many problems due to the inclusion of episodes spread over at least two centuries and the difficulties of definition. This paper extends his work, and attempts to answer Boruch's request for more information on the symptoms and severity of mass hysteria (Boruch, 1982).

At first glance the symptoms of modern mass hysteria seem only slightly less varied than those of the medieval era. However, more detailed assessment suggests that two broad groups may be identified. The first consists of episodes featuring some or all of the symptoms of acute anxiety (Tables 1 and 2). The second group consists of episodes involving symptoms more recognizably 'hysterical' in nature, demonstrating alterations in motor function, such as pseudoseizures, pseudoparesis and changes in psychomotor activity (Tables 3 and 4). Anxiety is occasionally present, but is not a prominent feature. These groups will be called 'mass anxiety hysteria' and 'mass motor hysteria' respectively.

It is insufficient to postulate a division on the basis of one variable unless other factors can be identified which follow a similar distribution. It will therefore be argued that the two groups are also divided by the presence or absence of pre-existing emotional tension. Further differences will be demonstrated between the mode of spread and the duration of the outbreak. The features of the two groups are summarized in Table 5.

THE CONTENT OF MASS HYSTERIA

The first category, mass anxiety hysteria, covers outbreaks demarcated by the phenomena of anxiety; abdominal pain, chest tightness, dizziness, fainting, headache, hyperventilation, nausea and palpitation. A typical account is given by Wong, describing the sudden collapse of hundreds of Hong Kong schoolchildren who, apparently overcome by gas, developed hyperventilation, nausea and dizziness. All the schools involved were closed and the outbreak ceased. Despite every effort the mysterious gas was never identified (Wong *et al.* 1982). This pattern is well recognized, covering most of the reports of mass collapse or 'hysteria' appearing in the popular press and subsequently in the medical and public health literature (Tables 1 & 2).

The second category, mass motor hysteria, covers those outbreaks more often encountered in the psychiatric literature. These rarer episodes

Table 3. *Symptoms recorded during outbreaks of mass motor hysteria*

| Author | Symptoms |
|--------------------------------|-------------------------------------------------------------------|
| Ackerman & Lee (1978) | Seizures, agitation, terror, stomach pain |
| Armstrong & Patterson (1975) | Seizures |
| Benaim <i>et al.</i> (1973) | Drop attacks |
| Dhadphale & Shaikh (1983) | Running, laughing, twitching, reciting poetry |
| Ebrahim (1968) | Running, laughing, seizures |
| Ikeda (1966) | Psychomotor retardation, depression |
| Johnson (1945) | Pseudoparesis, collapse |
| Kagwa (1964) | Psychomotor agitation |
| Knight <i>et al.</i> (1965) | Seizures, drop attacks, tremor, catatonia |
| Lee & Ackerman (1980) | Seizures, trances, hallucinations |
| McEvedy & Beard (1970) | Pseudoparesis, seizures, anaesthesia, headaches, hyperventilation |
| Mohr & Bond (1982) | Drop attacks, seizures |
| Muhangi (1973) | Psychomotor agitation, grimacing, swearing |
| Muluka <i>et al.</i> (1985) | Seizures, trances |
| Nandi <i>et al.</i> (1985) | Pseudoparesis, seizures |
| Olczak (1971) | Seizures, tremor, abdominal pain |
| Phoon (1982) | Seizures, agitation, trances, screaming, anxiety |
| Rankin & Philip (1963) | Laughing, running |
| Rawnsley & Loudon (1964) | Seizures, psychomotor agitation, choking |
| Schuler & Parenton (1943) | Leg twitching |
| Shimazono <i>et al.</i> (1966) | Seizures |
| Taylor & Hunter (1958) | Parturition |
| Teoh & Yeoh (1973) | Trances, possession, anxiety |
| Teoh <i>et al.</i> (1975) | Trances, agitation, possession, breathlessness |

Table 4. Features of outbreaks of mass motor hysteria

| Author | Age (yrs) | | Pre-existing tension recorded | Initial case recorded | Duration of episode | | | Spread | |
|--------------------------------|-----------|------|-------------------------------|-----------------------|---------------------|------------------|-------------------|----------|---------------|
| | ≤ 18 | > 18 | | | Hours | 1 Day to 1 month | 1 month to 1 year | > 1 year | Line of sight |
| Ackerman & Lee (1978) | . | + | + | + | . | + | . | . | + |
| Armstrong & Patterson (1975) | + | . | + | + | . | . | + | . | + |
| Benaïm <i>et al.</i> (1973) | + | . | + | + | . | . | + | . | + |
| Dhadphale & Shaikh (1983) | + | . | + | + | + | . | . | . | + |
| Ebrahim (1968) | + | . | + | + | . | . | + | * | . |
| Ikeda (1966) | . | + | + | + | . | . | + | . | + |
| Johnson (1945) | . | + | + | + | . | + | . | . | + |
| Kagwa (1964) | + | . | + | + | . | + | . | * | . |
| Knight <i>et al.</i> (1985) | + | . | + | + | . | . | + | + | . |
| Lee & Ackerman (1980) | . | + | + | + | . | + | . | . | + |
| McEvedy & Beard (1970)† | . | + | + | . | . | + | . | * | . |
| Mohr & Bond (1982) | + | . | . | + | . | . | . | + | + |
| Muhangi (1973) | + | . | + | + | . | . | . | . | . |
| Muluka <i>et al.</i> (1985) | + | . | + | + | . | . | + | . | + |
| Nandi <i>et al.</i> (1985) | . | + | + | + | . | . | . | + | + |
| Olczak <i>et al.</i> (1982) | + | . | + | + | . | + | . | * | . |
| Phoon 1982‡ | . | + | + | + | . | + | . | * | . |
| Rankin & Philip (1963) | . | + | + | + | . | . | + | . | + |
| Rawnsley & Loudon (1964) | . | + | + | + | . | . | + | . | + |
| Schuler & Parenton (1943) | + | . | + | + | . | + | . | * | . |
| Shimazono <i>et al.</i> (1966) | + | . | + | + | . | . | + | . | + |
| Taylor & Hunter (1958) | . | + | + | + | . | . | + | . | + |
| Teoh & Yeoh (1973) | . | + | + | + | . | + | . | + | + |
| Teoh (1975) | + | . | + | + | . | + | . | . | + |

* No information.
 † Initial case recorded in contemporary account.
 ‡ Covers outbreaks numbered 1 to 4 in original account.

Table 5. The distinctions between mass anxiety and mass motor hysteria

| | Mass anxiety hysteria | Mass motor hysteria |
|----------------------|-------------------------|---------------------------------------|
| Symptomatology | Acute anxiety symptoms | Changes in motor function or activity |
| Initial case | Rarely identified | Usually identified |
| Duration | Hours (may be repeated) | Weeks to years |
| Spread | Rapid, by line-of-sight | Slow |
| Pre-existing tension | Absent | Present |
| Age-group | Under 18 | Any age |

present with so-called 'conversion' symptoms (Tables 3 & 4), and may persist for months or even years. A typical outbreak is described by Benaïm *et al.* (1973). Over a period of 8 months,

8 members of a class of girls aged 16–17 developed drop attacks, often associated with dramatic behaviour. According to those involved a 'spiritual battle between God and the Devil' lay at the root of the outbreak, and all agreed on the 'electric' atmosphere of the class, preoccupied with issues of religion, love and death. Powerful feelings of sexual guilt were associated with the outbreak; one member of the class had recently died in childbirth and the two most influential members of the group were experiencing anxiety following various sexual encounters. Both these girls had psychiatric histories, and one subsequently triggered an epidemic of phantom pregnancies in a hospital ward.

It is significant that few reports of mass anxiety hysteria contain any reference to

external stress or tension. This is surprising, for Merskey's (1983) comment that mass hysteria is 'an indication of psychopathology in an institution' is echoed by Sirois (1974) and Smelser (1962). The occurrence of collective behaviour cannot itself be taken as proof of pre-existing tension, this can only be inferred if emotional difficulties or stresses are identified prior to the outbreak. These are rare in mass anxiety hysteria, and can be found in only two of the twenty-two reports of such episodes in school-children (Table 2). The exceptions are the report from Blackburn, where the authors note that an earlier outbreak of poliomyelitis served to elevate tension in the school studied (Moss & McEvedy, 1966), and the observation by Helvie (1968) that a similar episode was preceded by the death of a child in a road accident. Only in factory epidemics, which appear to be a distinct subgroup, can such stressors as poor labour relations and inadequate working conditions be recorded (Colligan & Murphy, 1979; Kerchhoff *et al.* 1965; Phoon, 1982; Stahl & Lebedun, 1974). Most authors state that no cause could be found, or they mention short-term discomfort of a trivial nature: band uniforms were too tight (Levine, 1977), a church service too long (McEvedy *et al.* 1966), the weather too humid (Bebbington *et al.* 1980; Moffat, 1982; Wong *et al.* 1982), or too hot (Levine, 1977; Smith & Eastham, 1973). It is possible that serious disaffection was present in the afflicted groups but was either not investigated or not admitted, but neither possibility accounts for the striking contrast with mass motor hysteria.

It is important not to make the error of accepting the false group explanation as possessing any significance in its own right. Once mass anxiety hysteria is in progress participants seize on any suitable excuse, be it gas or food poisoning, for 'rumour is rife when an air of uneasiness pervades any collectivity' (Lang & Lang, 1961). Anxiety even precedes rumours, for many will succumb long before they know they have been 'gassed' or 'poisoned'. What is communicated in mass anxiety hysteria is not any single behaviour, or a 'fantasy idea' (Sirois, 1974), but a collective feeling: anxiety. It is not the idea of anxiety that is contagious but anxiety itself.

Table 4 highlights the importance of long-term stress in mass motor hysteria, the reverse of the

situation encountered in mass anxiety hysteria. The only notable exception is the apparent absence of group tension in the school studied by Mohr & Bond (1982), where 63 pupils developed drop attacks or pseudoseizures over two years (Mohr, personal communication). Many causes of tension are identified, usually of a diffuse nature. Stress may have been due to a coincident infectious epidemic (McEvedy & Beard, 1970; Schuler & Parenton, 1943); sexual guilt, precipitated by accusations of promiscuity (Knight *et al.* 1965; Lee & Ackerman, 1980), death of a classmate (Benaim *et al.* 1973) or preoccupation with sexual matters (Taylor & Hunter, 1958) were all common, as are status problems, such as the arrival of a newcomer (Teoh & Yeoh, 1973) or inter-family tension (Armstrong & Patterson, 1975; Rawnsley & Loudon, 1964). These stressors often occurred in combination.

In wider, less cohesive groups newspaper coverage increases tension and may facilitate spread (Hefez, 1985). In the prowler epidemics of Mattoon and Taipei, cases could be linked to the amount of newspaper coverage (Johnson, 1945; Jacobs, 1965). Such headlines as 'First Victims of Anaesthetist Prowler' or 'Mad Anaesthetist Strikes Again' clearly exacerbated group fears.

Many of these epidemics have been ascribed to sociocultural stress, including the wave of outbreaks across Malaya (Ackerman & Lee, 1978; Lee & Ackerman, 1980; Phoon, 1982; Tan, 1963; Teoh & Yeoh, 1973; Teoh *et al.* 1975), motor hysteria in East African mission schools (Dhadphale & Shaikh, 1983; Ebrahim, 1968; Kagwa, 1964; Muhangi, 1973; Rankin & Philip, 1963), and the outbreak of pseudoseizures in a Canadian Indian village (Armstrong & Patterson, 1975). Similar theories are advanced to explain these geographically widespread episodes (Murphy, 1961). Thus Teoh, writing of the Malayan group of epidemics, describes the frequent finding of local breakdowns of authority, usually associated with an incompetent headmaster, set in the context of a society in transition (Teoh & Yeoh, 1973). All the Malay authors note how the twin threats of modernization and government schooling have led to the break-up of the organized structure of traditional society. Stress results from the ambivalence with which the Malay adolescent

views the relaxation of conservative orthodoxy. Similar situations are described in East Africa and the north of Canada. Parallels are also found in the cargo cults, not just confined to the South Seas (Cohn, 1957), which are held to result from the collision of a non-literate and a technologically superior society, the cultists expressing similar aspirations but being unable to achieve them (Burton-Bradley, 1973).

More speculative reasons have been advanced for the occurrence of motor hysteria on an epic scale in medieval Europe (Rosen, 1968). In his still classic account of psychic epidemics Hecker (1844) ascribes dancing mania and tarantism to a reaction to the horrors of the Black Death. Gallinek (1942) regards medieval hysteria as the inevitable result of the tension generated by the concept of salvation as the only goal of life and the fear resulting from the impossibility of ever achieving it. However, he does not appear to distinguish between hysteria as a form of adaptive behaviour when demonstrated individually by medieval religious figures, and the behaviour of the tarantists (Russell, 1979) and dance maniacs, which, far from leading to 'ecstatic maturity and great visionary experience', could result in the death of those involved.

The common feature of the stressors underlying outbreaks of mass motor hysteria is an inability on the part of the subjects either to comprehend the true nature of the threat facing them or to avoid it. On Tristan da Cunha, 'a monotonous, isolated island' (Rawnsley & Loudon, 1964), stress could not be relieved, while nurses at the Royal Free would have been failing in their professional duties if they had refused to treat the victims of the real poliomyelitis epidemic, and thus avoid exposure. Stress is also reinforced by the frequent finding of a lack of channels of protest, as occurs with repressive headmasters (Knight *et al.* 1965; Tan, 1963; Teoh *et al.* 1975), employers (Colligan *et al.* 1982; Kerchkoff & Back, 1965; Stahl & Lebedun, 1974) or a matron (Ikeda, 1966).

The nature of Koro, the fear that the penis may retract into the abdomen, has attracted speculation (Murphy, 1982). It often occurs in epidemics (Dutta, 1982; Ngui, 1969; Suwanlert & Coates, 1979), and is the only form of mass hysteria that for obvious reasons predominantly affects males. The symptoms experienced by sufferers, such as fear, breathlessness, palpita-

tions and fainting, are those of acute anxiety. The belief that the penis is shrinking is analogous to other false group explanations of perceived anxiety such as toxic fumes or food poisoning. The illness spreads by visual contact, and those affected recover in hours. Epidemics can be terminated by public health statements (Suwanlert & Coates, 1979), although there is often a background of inter-racial strife. Koro may be viewed as a local variant of mass anxiety hysteria.

THE SPREAD OF MASS HYSTERIA

It has often been assumed that the spread of all forms of collective behaviour can be accounted for by a single mechanism. The unitary approach to group behaviour began with Le Bon (1895), who saw the crowd as more than the sum of the behaviours that could be expected of its constituents. He suggested that a synergistic crowd psychology, with concepts differing from those of individual psychology, was required.

Later writers proposed that group reality replaces external reality, and the group isolation prevents adequate verification of perceived threats (Festinger, 1950; Gruenberg, 1957). Numbers bestow anonymity, decrease the restraints on the individual and lessen the risks of unwelcome consequences. Pressure to conform to deviant behaviour and the desire to remain a group member is itself a stressor encouraging participation (Asch, 1956; Couch, 1970). This occurred during the Salem witch trials, when the varied conducts of the affected girls gradually coalesced into the uniform adoption of 'diabolical' behaviour (Spanos & Gottlieb, 1979). The pressures intrinsic to any group encourage the exhibition of similar behaviours, no matter how bizarre, in order to adapt to the 'emergent norm' (Gehlen, 1977; Turner & Killian, 1957). Once started it is difficult to abandon - 'those participating in an outbreak of collective behaviour do not stand back and wonder how something can be done in a different fashion' (Couch, 1968).

A different approach involves the tempting analogy between the spread of mass hysteria and the spread of an infectious disease. Penrose (1952) proposed that those who accepted the fantasy idea (the 'infecting agent' of Back) will succumb to the epidemic, those who reject it will

be resistant and those who ignore it will be immune (Back, 1971).

All these theoretical models of group behaviour are designed to apply to all forms of collective behaviour. It is this very universality that prevents such models from being a complete explanation of the observed differences that occur between the spread of the two proposed forms of mass hysteria.

In mass anxiety hysteria common to all episodes is the transmission of the outbreak along 'line of sight'. Those who do not witness the outbreak are never involved. Moss and McEvedy (1966) attempted to define diagnostic features of epidemics, and wrote that 'the contagion in a hysterical epidemic being behavioural, the epidemic should disseminate more rapidly when the social group is unified than when it is subdivided....similarly the majority of cases should occur in public places'. Pollock and Clayton (1964) showed relapses of a fainting epidemic occurred whenever the girls assembled at school, but never at home. Others have reported how outbreaks spread during break periods when the victims were lying in the corridors (Moss & McEvedy, 1966), in the canteen (Goldberg, 1973), the playground (Tan, 1963), the lunch break (O'Donnell *et al.* 1980), and in a hospital waiting area (Levine, 1977). To describe this phenomena Sirois (1974) has aptly applied the term 'explosive spread'. These episodes are always of a benign nature, lasting no more than a few hours. Occasionally, further episodes may occur in a similar explosive fashion within a few days, but only if the group recongregates.

The spread of mass motor hysteria depends upon the interaction that occurs between the initial case preceding the main outbreak and the rest of the group. Such an initial case is recorded in 23 out of 24 episodes of mass motor hysteria, but only 12 out of 28 episodes of mass anxiety hysteria. An initial case exists in all outbreaks, for someone must be first; but why the difference in numbers recorded? Perhaps this reflects the explosive spread of anxiety hysteria rendering subsequent recall difficult, or perhaps bizarre motor behaviours are more memorable than simple faints. However, the differential ease of recall is itself important, because it raises the question of identification. If a belief is to be propagated and sustained over a prolonged

period then it must have relevance to the group, and all involved must be able to identify with the behaviour chosen. Without the perception of a common shared quality the episode will either be transient or may not take place at all. 'The role of identification is crucial' (Gruenberg, 1957).

Certain factors render such identification easier. In an experimental setting children high in prestige were found 'to be the most effective models for contagion' (Polansky *et al.* 1950). This has been confirmed in many outbreaks; fifteen authors comment on the high status of the index case, and none describe an initial case viewed as low status. McEvedy & Beard (1970) do not mention an index case in their reappraisal of the still controversial Royal Free epidemic of 'neuromyasthenia', but the contemporary official report (Medical Staff Report, 1957) begins: 'On July 13th 1955 a resident doctor and a ward sister on the staff of the Royal Free Hospital were admitted with an obscure illness'.

Social networks also facilitate the spread of mass motor hysteria. In the episode described by Benaim and his colleagues (1973), not only did the involved girls belong to the 'in-group', those immune to the epidemic were the Greek, Jewish and black members of the class. A tendency for the outbreak to be confined to friendship groups is found in 19 further episodes, of which 16 are of the motor form.

INDIVIDUAL FACTORS IN MASS HYSTERIA

There have been several attempts to identify factors that distinguish participants from non-participants in mass hysteria, summarized in Table 6. No consensus has emerged. In investigations of mass anxiety hysteria there has been frequent use of inappropriate techniques, such as personality questionnaires partly derived from data drawn from individuals with specific psychiatric diagnoses. Hence only two of the four studies of mass anxiety hysteria that used the Eysenck Personality Inventory showed the predicted increase in neuroticism scores.

Small & Nicholi (1982) proposed that early loss in childhood would increase susceptibility to mass hysteria. In a well conducted survey of an episode of mass anxiety hysteria they showed a significant difference in rates of family disruption between hospitalized and non-hospitalized chil-

Table 6. *Individual factors in mass hysteria*

| Author(s) | Outbreak | Method | Results (significant differences between affected and controls) |
|-----------------------------------------------|----------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Colligan & Murphy (1979) | Anxiety | MMPI EPI Questionnaire | Increase in 'hysteria' Decrease in extraversion Increase in absenteeism |
| Goldberg (1973) | Motor | MMPI | Increase in 'paranoia' and 'maladjustment' Increase in absenteeism |
| Knight <i>et al.</i> (1965) | Motor | MMPI EEG Rorschach Interview | 'Higher scores on items related to conversation of psychic to bodily complaints' but no results published |
| McEvedy & Beard (1973) 13 year follow-up | Motor | EPI Interview | Difference in neuroticism at the 5% level. Increase in absenteeism No difference in parental death or separation |
| McEvedy <i>et al.</i> (1966) | Anxiety | EPI | Increase in neuroticism No statistical analysis |
| Moss & McEvedy (1966) | Anxiety | EPI | Increase in neuroticism and extraversion |
| Olczak <i>et al.</i> (1971) | Motor | MMPI | None |
| Rawnsley & Loudon (1964) 23 year follow up | Motor | Ques. | Increase in medical consultations |
| Small & Nicholi (1982) | Anxiety | Ques. | Increase in parental divorce and death within the family |
| Small & Borus (1983) | Anxiety | Ques. | No difference in parental divorce, family death or rates of chronic illness |
| Tam <i>et al.</i> (1982) | Anxiety | Junior EPQ Autonomic functioning, hypnotic susceptibility | Increase in baseline heart rate |
| Teoh & Yeoh (1973) | Motor | EPI | None |

EPI/Q = Eysenck Personality Inventory/Questionnaire.
MMPI = Minnesota Multiphasic Personality Inventory

dren. However, the results were less striking if the comparison was between affected and non-affected, suggesting that the effect was on severity rather than involvement. None of these findings could be replicated in a similar outbreak (Small & Borus, 1983). Tam and his colleagues tested autonomic function in another outbreak of mass anxiety hysteria, but were only able to demonstrate a significant difference in baseline heart rate (Tam *et al.* 1982).

Research into mass motor hysteria is even less common, and there is no sound cross-sectional study. If, however, the individuals involved are predisposed to abnormal illness behaviour, then such predisposition should remain after the outbreak has ceased. This is confirmed by the findings of increased rates of absenteeism and

medical consultation in the only two follow-up studies of mass motor hysteria, performed at 13 and 23 years respectively (McEvedy & Beard, 1973; Rawnsley & Loudon, 1964). No follow-up study of mass anxiety hysteria exists, but it is expected that such a predisposition would be far less evident.

All forms of mass hysteria may be considered as an interaction between the individual and environment (Mayou, 1975), but the nature of this interaction differs between mass anxiety and mass motor hysteria. In the former the abnormality lies within the group interaction itself, not in the personality or external environment. Bearing in mind that mass anxiety hysteria may affect the majority of a class, the inability to identify factors that will predict involvement is

to be expected. This is in contrast to outbreaks of mass motor hysteria, where abnormalities may exist in both the individual and the environment to which he or she is exposed.

TREATMENT

When facing an outbreak of mass hysteria of either form it is important not to waste time in a fruitless search for environmental precipitants, which, by reinforcing the behaviour, may serve to prolong the episode. Modan's view that 'only after all physical, chemical and biological factors have been ruled out should a diagnosis of mass hysteria be made' is the exception, not the rule (Modan *et al.* 1983). Mass hysteria is not a diagnosis of exclusion.

In dealing with mass anxiety hysteria all that is necessary is the reduction of group anxiety. A statement denying the role of the presumed agent, be it gas or offended spirits, is needed. Stahl took the opposite approach of providing a bogus explanation, that of 'atmospheric inversion', but declaring that the hazard had ceased (Stahl & Lebedun, 1974). Levels of anxiety may be so high that a temporary school closure is often necessary, and Teoh instituted a ban on further press coverage (Teoh *et al.* 1975). Bearing in mind the spread of mass anxiety hysteria along 'line of sight' a policy of 'divide and rule' may be successful. The advice of Johann Weyer cannot be faulted: 'It is necessary first of all that they all be separated and that each of the girls be sent to her parents or relatives' (Weyer, 1600).

The treatment of mass motor hysteria is more complex. Steps must be taken to remove the advantages of the sick-role by the withdrawal of social validation. If the emotional nature of the contagion is pointed out the reaction of onlookers, who may be potential participants, becomes negative. Dr St. Clare cured persistent collapse amongst Lanchashire mill girls in 1787 by administering galvanic shocks and declaring the disease to be 'merely nervous, easily cured and not introduced by cotton' (St. Clare, 1787).

Should social validation be granted, the epidemic may persist. This can occur when onlookers have a vested interest in supporting the authenticity of the hysteria. In 'The Devils of Loudun' those demoniacs who confessed to faking were told that the confessions were *ipso*

facto a sign of possession (Huxley, 1952), and when Mary Warren in Salem attempted to withdraw her charges of witchcraft, such was the pressure brought by the authorities that she would have been hanged had she not reverted to the demoniac role (Starkey, 1952). Jaspers noted that the arrival of a priest to perform a ceremony of exorcism often led to a worsening of mass hysteria (Jaspers, 1962). The native healer called to deal with 'The Mysterious Madness of Mwinilunga' blamed the outbreak on the local cook. The unfortunate man was nearly lynched but the madness continued (Dhadphale & Shaikh, 1983). Contemporary society does not knowingly reinforce hysterical behaviour but may do so inadvertently, as in the coverage of 'prowler' epidemics or imaginary gas leaks. An exception is the Arjenyattah epidemic, when gains were made from accusations that the mass collapse of West Bank schoolchildren was due to nerve gas, a belief reinforced by local doctors. Until this could be disproved in the local and international press the epidemic continued to spread (Hefez, 1985; Modan *et al.* 1983). McEvedy & Beard (1970) view the introduction by the Royal Free staff of the label 'benign encephalomyelitis' as an inadvertent validation that reinforced the outbreak.

Until the abnormal illness behaviour is confronted and the true causes of the epidemic exposed, mass motor hysteria may be impossible to eradicate, a recent episode persisting for ten years (Nandi *et al.* 1985). Many authors show that the simplest and most effective measure is the restoration of communication between those affected and authority.

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