CHAPTER 6

ENTRAPMENT AND SHELTER LIVING

Summary

People who are trapped or confined to fallout shelters for some time are subject to special stresses and problems. Sources of anxiety and fear include the threat of abandonment and death, uncertainty about the future, anxiety about family members, fear of emotional breakdown, and fear of things like lack of oxygen and running short of food and water. Human needs which may be denied to some degree in confinement include needs for physical elements, for security, for social interaction, information, self-esteem, and variety of experience. If these are not met, a person may react with aggression, depression, regression, avoidance, denial, superiority behaviour, or bodily symptoms. Living in a fallout shelter would involve special problems of lack of space, crowding, lack of conveniences and comforts, interpersonal problems, supervision, and environmental conditions. Principles for the management of human behaviour in such circumstances include realistic appreciation of the individual as a person, leadership, modification of stressful conditions, provision for information and communication, purposeful activity, religious assurance, use of physical restraint, provision for controlled expression of emotions, role playing techniques, and preparation for emergence from the shelter. Preventive measures include adequate leadership, organization, provision for information and communication, care of physical needs, use of group decisions, use of occupants' personal resources, maintaining natural groupings, mealtime routines, provision for personal hygiene and exercise, and a programme of preparation for post-shelter living.

Waiting for Rescue

Special problems are created when a group of people are confined together for some period, whether in prison camps, in submarines, when trapped in a mine, or confined to a fallout shelter. Living conditions in such circumstances produce a multitude of stresses which have an effect on physical health, on emotional reactions, and on coping behaviour. Limitations of space produce restriction of movement, crowding, loss of privacy, as well as inconvenience and discomfort as far as sleeping and sitting are concerned. Physical factors like limited supplies of food and water, and deviations in temperature and humidity level, together with the presence of such intrusions as noise and odors, add to the difficulties. In addition, separation from loved ones and from the outside world, together with the uncertainties of the future, produce fear and anxiety, grief a and apathy, and irritability. Knowledge of the manner in which such conditions and stresses affect behaviour will enable us to know what to expect and provide a basis for preventive and remedial action in the event we are faced with such circumstances.

There are three main sources of stress when human beings are confined or trapped in crowded conditions for a time: (1) factors which produce fear and anxiety. (2) deprivation or being without necessities and conveniences that one is used to, and (3) frustration or being denied what one was expecting, due to the intervention of some person, thing, or event.

Sources of Fear and Anxiety

One of the main sources of fear and anxiety for people who are trapped in some situation like an underground mine is the threat to their personal survival. Will they get out or be rescued? Or will they run out of supplies and become progressively weaker, lose consciousness and die? This is to be faced rather directly with the threat of death, a very disturbing experience for most people. It may not be quite so upsetting in the case of persons who have become ill and gradually got worse over a period of time, because the possibility of death presumably comes upon them more slowly and also because everything possible is typically being done to help them. However, when the threat of death occurs suddenly and unexpectedly, to people who are healthy and had only an expectation of life, and in circumstances where little can be done by them or others to avert the possibility, the prospect may be catastrophic. Apparently the threat of death is particularly upsetting among people in our culture because we have a strong tendency to live, not for today, but for the future. Our future-oriented value system makes the thought of death less acceptable than it is to the more present-oriented attitudes of, for instance the Islamic peoples. Nevertheless, studies of men who have been rescued after entrapment in underground mines indicate that, when confronted with such a direct threat and in circumstances where they can do little about it, the threat of death is not nearly so disturbing as it appears to the outsider. In the Springhill disaster, non-trapped miners expressed more horror about the situation of the trapped miners than the latter did.

Another common source of fear among people who are waiting to be rescued is the thought that they may be abandoned. The trapped miners in the Springhill disaster had no way of knowing whether they were thought to be alive, whether the mine was so dangerous that it had been sealed, or whether rescue work would continue until they were found, dead or alive. This was a frightening thought, and the men were torn between the faith and hope that their fellow miners would finally reach them and the fatalistic thought that they would be abandoned. Man does not give up hope easily, but when hope is overwhelmed by the nature of the circumstances, despair may take over.

It has been emphasized repeatedly that when a man is faced with the dangers of an emergency his thoughts typically turn from personal survival to concern for his family. Much the same thing happens when

men are trapped in a mine. Although they are helpless to do anything about it at the time, they experience much anxious concern for the welfare and future of their families. The trapped miners in Springhill spent a considerable part of their time talking about their families, wondering how they were, hoping they would be well, and wishing that they had done better by them.

Another fear which some people suffer under conditions of enforced confinement is that they may lose control of their feelings and break down. Powerful emotions of anxiety, despair, guilt and occasionally self-pity press for expression. On the other hand, the individual may feel that if he lets go at all he will be unable to stop. Even in such circumstances, however, self-control and self-respect are strong and enduring characteristics of most men. The trapped miner in Springhill generally handled this problem by retiring to a corner of his hole and having a little cry by himself. This often happened when one other person was with him and this person usually rose to the occasion by offering his comfort and support.

Men who have been trapped alive have usually experienced a number of other more specific threats like fear of gasses, of lack of oxygen, of running out of supplies, and fear that others might lose control and go beserk. They are relatively helpless in the face of the threat of lack of oxygen, and they are uncertain of what to do and lack confidence in their ability to cope with deviant behaviour on the part of others.

Confinement in a fallout shelter following a nuclear explosion would add to the weight of these fears and produce other threats. While there may be no immediate threat of death, this will loom large as a future possibility because of radioactive contamination and because of the thought that the outside world may not support life. Uncertainty and fear of what the future holds will be special sources of apprehension. The threat of being abandoned may also come to the fore, especially if there has been an extensive nuclear strike and widespread destruction and death. A group of people in a shelter may find themselves isolated from other living beings, with no communication and no way of knowing if other groups of emergency and rescue units have survived or are in the area. If a nuclear explosion occurred while families were separated, with the father at work and the children in school, separation anxieties will be particularly intense and widespread. Claustrophobia or dread of enclosed places may bother a few people. Others may find that the physical intimacy produced by crowded conditions makes them apprehensive and anxious.

It is quite clear that apprehension, anxiety and fear would be a major problem in shelter living following a nuclear strike. Indeed, it is difficult to estimate the effects of these because studies of confinement have not been "real" in the sense that the individual's survival and future and that of his family have been really threatened in experimental situations. Nevertheless, we do know how fear affects a person, making him jumpy and irritable, apathetic and espairing, and making it difficult to concentrate and display coping and cooperative behaviour; and we can predict that these problems would be exaggerated in people who are confined to a shelter following a nuclear explosion. We also know what means will help to reduce and control anxiety and fear in such circumstances, like adequate communications and other preventive and remedial measures which will be discussed later in this chapter.

Basic Human Needs

A convenient way to discuss the deprivations and frustrations which may arise in shelter living is .. think of them in terms of the human needs which are involved. The term frustration refers to that situation in which a person is prevented from satisfying a need when he fully expects to do so, or to the mixture of feelings and reactions which are produced by such a situation. Frustration should be distinguished from deprivation, the latter referring to being without or having to do without things like food, information, conveniences, and comforts. The difference between the two concepts is that no particular hope or expectation is involved in the case of deprivation while these are active in the case of frustration.

As might be predicted, frustration typically leads to much more vigourous reactions on the part of the individual because he not only has to do without but he also suffers disappointment. The distinction between frustration and deprivation is rather important for shelter living, because deprivation will be more important as a source of stress. In general, people will hardly have definite expectations of satisfying their various goals and desires. Because doing without things will be more a matter of deprivation than of frustration, we can expect less disturbing reactions than might have been expected.

As a complex living system, man must have some minimum of various inputs and outputs if he is to function adequately. The necessary inputs and outputs are based on given physiological needs for things like food, water oxygen, and for the elimination of waste products; and on acquired psychological needs for security, social interaction, information, and so on. If a person is deprived of normal and expected inputs, or if he is deprived of the opportunity to produce certain outputs, the equilibrium of his system is disturbed with resulting deviations in functioning and behaviour. For purposes of convenience, man's needs will be grouped in six general catagories:

1. **Physical Needs.** In order to function well, and even survive, the body requires a certain range of inputs of oxygen, water, food, temperature, humidity, exercise, rest and sleep.

2. **Security Needs.** To be relatively free from disabling anxiety and fear, people need to feel that they are or can be protected from all sorts of uncertainties and danger. On the one hand they need to feel confidence in their own coping ability and on the other they need some assurance that they can depend on other individuals and groups in their social system for support, help, and protection when these are called for. The need for water when we are without that liquid; and we become uncertain and anxious and look for reassurance when our own coping abilities and the protective supports of society are threatened or in question. One of the most important ways in which the security need is met is by the presence of a well integrated group around the individual. The child may feel completely secure in the midst of danger if it is with the primary family group—providing the family members are not themselves upset.

3. **Social Needs.** Man is essentially a social being; it is difficult for him to live in isolation from other people. Not only are many of his physical needs met by other people in our society, but he typically develops a psychological need for interaction with others. Furthermore, he has a need to feel accepted by other people, to feel that he is a member of some group that he can identify with, and to feel that he can give and receive friendship and love. On the other hand, nearly all of us can get too much of even the best things, and social interaction is no exception. That is, the individual also has a need for some reduced input of social stimulation; he needs privacy, quiet, and even darkness by times.

4. **Information Needs.** The need to receive informative and meaningful communications and to have the opportunity to share information is an aspect of man's social needs. However, it assumes such importance in our modern society and especially in emergency situations that it warrants separate treatment. In the most general sense, information is made up of all the inputs which reach us in the form of stimuli or cues through our five senses. However, we shall be more concerned with information as it is conventionally understood, that is, as meaningful and largely verbal signals and communications which we deal with on a conscious level. In an emergency situation man's feed for information is not a need for any kind of information but for communications that clarify and reassure on the one hand, or that alert and give appropriate warning without undue threat on the other hand.

5. **The Need for Self-Esteem.** The individual has a need to think that he counts for something, that he is appreciated and has some worth, that he has some unique qualities and special abilities. A man virtually ceases to be a man when he is so humbled that he has lost every semblance of self-esteem. When a man feels that he counts for nothing, he may lose the will to live. There is evidence that belief in physical survival is not enough to maintain the will to live—this is illustrated by suicide attempts in severe depressions and by the fact that American Prisoners of war in Korea frequently died when they lost the will to live. They were so humbled and alienated from their fellows, and their self-esteem so undercut and devalued that they lost hope of surviving as the persons they believed themselves to be.

6. **The Need for Variety of Experience and Stimulation.** Recent studies have shown that without some variety of stimulation a person not only gets bored but suffers a loss in the ability to concentrate and to carry out skilled tasks, and may even experience physical symptoms and psychological disturbances like hallucinations. The need for variety may be in part a physical need of the organism, but it is clear that it is also acquired. The individual who has been raised on rice and only experienced limited kinds of stimulation has a small need for variety as compared to the individual who is used to a great variety of foods and other kinds of experiences. In one study in which six young men lived for seven days in an 8 x 8 foot shelter, with only emergency crackers to eat, the subjects developed an intense and chronic preoccupation with food, a nauseous dislike for crackers, and a tendency to fast rather than to eat them.

Reactions to Deprivation

Although there are a variety of individual reactions to deprivation, most of them can be classified under one or another of a few main categories, including: aggression, depression, regression, avoidance, denial, superiority, and bodily symptoms.

Aggression. Some form of aggression is often exhibited in response to either deprivation or frustration. Fortunately, this does not often take the form of fighting and killing in human beings, as it typically does in animals. In our society, the socialization process has made these extreme forms of aggression relatively infrequent. Nevertheless, the possibility of their occurence should not be ruled out. When they do occur, they are usually directed against members of some group which is the object of prejudice and scapegoating. For example, the incidence of lynchings in the southern United States some years ago was correlated with the occurrence of poor crops— presumably aggression was instigated by deprivation and frustation and directed against the low-status Negro group. However, aggression is more often expressed as irritability, verbal anger, laughing at and devaluating others and their behaviour, disgust, and negativism or refusal to respond and cooperate. While not openly dangerous in themselves, these kinds of behaviour could create serious problems when people are living in enforced and crowded confinement.

97

Depression. Depression is another common reaction to deprivation. The individual experiences despair, loses hope, and may give up. Feelings of helplessness are common, and the person may feel that something in his own past is responsible for the tragedy and so indulge in self-blame. His movement and talk are usually slow, but occassionally he may become excited and agitated. He is nearly always apathetic and has little will to help himself or to live. An attempt at suicide is a possibility in this kind of reaction. Fortunately, however, when this condition is a function of circumstances it responds quite well to physical care, sympathetic leadership, and counselling.

Regression. When the various stimuli, rewards and reinforcements, and other conditions which maintain an individual's "normal" behaviour are missing to some extent, he may regress or adopt old habits and ways of behaving in order to get the attention and other things which he desires. What behaviours will be displayed depends on each individual's personal history. However, regression is usually characterized by childishness, pouting, unreasonableness, temper and impulsivenes, and a general lack of self-control appropriate to his age level. Children who were evacuated from British cities during World War II and separated from their families were deprived of some of their basic psychological needs; they frequently showed regression in the form of bed-wetting. A common form of regression in adults is helpless behaviour and the tendency to demand constant attention and consideration.

Avoidance. The avoidance response to deprivation is an attempt to side-step the problem and to have as little as possible to do with it. By not getting involved in the situation, a person avoids facing the stimuli and the anxieties which they would arouse. He simply refuses to face up to the problem but instead withdraws from participation in anything associated with it. His expressed view is "What's the use anyway?" This reaction to deprivation borders on that of depression and giving up.

Denial. A few individuals may exhibit the unusual reaction of denial. This is simply to argue that the problem does not exist, it could not happen, and it did not happen. Individuals with this reaction appear unaware of the problems they deny, and show no emotional reaction to them. They may stand or sit as if alone, not responding when others address them, or they may behave relatively normally, except that they ignore and overlook certain aspects of the situation. They are often unable to help themselves. Concrete and sympathetic attention to their physical needs may help to bring them into contact with reality.

Superiority. The superiority reaction to deprivation is probably a form of the aggression response but merits special mention because of its implications. This reaction is displayed by the self-righteous person who now lets people know his mind; feeling that he knows all the answers he may make endless suggestions, start to give orders, and try to put things right. He may give the appearance of being self-posessed and superior, and the danger is that he may recruit a

following as he expresses the discontents and resentments of others. Such an individual may lead in scapegoating and attacking minority subgroups or even go so far as to move against the constituted leader.

Bodily Symptoms. It will be obvious that bodily reactions can be expected when people are deprived of sufficient food, water, and other physical necessities. Man can survive without food for approximately two weeks. For the first three or four days he will experience intense hunger and this will be expressed in the form of restlessness, irritability, and anxiety. After that, he may not experience hunger, but his emotional reactions will probably include depression and apathy. A person's reaction is somewhat different when he is rationed at a level below that necessary for maintaining his normal weight. Restlessness and irritability are the more likely reactions, and these can usually be controlled and redirected by the appropriate leadership and group structure. The general solution is to divert the person's attention and involve him in meaningful and purposive activities with others. A few individuals may experience an increase in sexual urges when somewhat deprived of food. This reaction is also a matter for social controls. Another source of stress with respect to food is lack of variety. Individuals may become so sick and tired of the sight of a single food that they will eat less than is necessary to maintain their body weight, and they become irritable, and dream and talk of food incessantly.

Insufficient water is a more serious problem. A man will usually die after four or five days if he receives no water whatsoever. Complete water deprivation may induce some persons to suck their own blood and drink their own urine. The trapped miners of the Springhill disaster were without water for the last three or four days of their confinement and most of them resorted to drinking urine. They found that they had to adapt or get used to the idea, by taking a mouthful and then spitting it out, and then by taking small quantities. Some could only drink their own urine and others could only drink that of others. This measure may have contributed to their eventual survival. Limited water supplies create another set of problems in terms of personal hygiene and washing dishes and clothes. This will bother some people more than others, but is likely to be a source of irritation and interpersonal conflict.

Room temperatures above 85 and below 40 degress F. will cause problems. Constant high temperatures produce fatigue, lethargy, poor concentration, work inefficiency, irritability and unstable moods, skin irritations, and in some cases respiratory illness. Low temperatures impair manual skill and produce tension, depression, and irritability. Humidity readings above 60 per cent produce physical discomforts and psychological reactions much like those with high temperatures, especially if they combined with high temperatures.

An adequate supply of oxygen is necessary for normal functioning. A drop in the oxygen level will impair visual acuity, and affect such things as handwriting, reaction time, recent memory, and code translation. A man's judgement may become unreliable and he typically does not realize that this is happening—possibly because lack of oxygen does not produce a unique experience of craving as does lack of food or water. With further oxygen deprivation, people become irritable, lethargic, aggressive, or may show euphoria and boisterousness. Hallucinations and delusions may also occur. A severe lack of oxygen may produce brain damage and thus impair intelligence and behaviour in a lasting manner. Carbon dioxide in large amounts may produce

rather similar psychological effects Insofar as tobacco smoke and exhaust fumes give off carbon monoxide, a deadly poison, smoking and engines should not be allowed in confined quarters

Adequate rest and sleep are nature's cure for many physical and psychological problems. It follows that sleep deprivation will allow problems to accumulate on the one hand while producing its own reactions of listlessness, apathy, irritability, difficulty in concentrating, and work inefficiency on the other.

In addition to the physical reactions caused by deprivations of necessary physical elements like food, some individuals react to psychological stresses with physical complaints. These include weakness, trembling, weeping, and occassionally nausea and vomiting. These are usually temporary and respond to psychological first aid. A more serious but relatively uncommon physical reaction is what is called "conversion hysteria". This is a psychological reaction in which some body organ like an arm, the eyes, the ears or voice, loses its normal function. Expert professional treatment is usually indicated.

Special Problems in Shelter Living

Disasters which have resulted in a group of people being trapped and isolated for some time usually produce a number of the deprivations mentioned in the last section together with their physical and psychological effects. In the event of a nuclear war, large numbers of people will likely be crowded into fallout shelters of various kinds for periods of up to two weeks or so. A number of studies have shown that people can emerge from such an experience in good physical condition and without ill effects from a psychological point of view (Altman, 1960; Baker and Rohrer 1960). Stresses and deprivations are experienced and problems do arise, but the outcome for occupants is largely a function of the manner in which the experience has been managed.

In this section we will examine the sources of special problems that have been found in communal living in shelters. The problems are essentially the result of deprivation and limitations of activity, and characteristically give rise to the deprivation reactions notes above. The following conditions are the primary sources of problems in shelter living: (1) lack of space, (2) crowding, (3) lack of conveniences and comforts, (4) interpersonal problems, (5) supervision, and (6) special environmental conditions.

Lack of Space. With as little as an estimated fifteen square feet per person in many shelters, lack of space will be a constant source of restrictions. Freedom of movement and the opportunity to exercise will be severely limited, the individual's daily pattern of habits and activities will be precluded or at least greatly restricted. Such restrictions may lead to feelings of uneasiness, uncertainty about what one should do, and general restlessness because of the lack of satisfactions which are normally involved in one's daily routine.

Crowding. Crowding will be an ever-present source of problems in shelter living. While man has a strong need to interact and communicate with others, it is a selective need. That is, there are

100

times when we seek the association of others and times when we prefer to be alone. Many people will find it unpleasant and even disturbing to have to live in close proximity to other people day and night. Lack of privacy with respect to personal hygiene and sleeping will be particularly upsetting for some.

Lack of Conveniences. Most of us are used to fairly comfortable or at least familiar chairs, beds, eating arrangements, toilet facilities, and a large number of other conveniences. It is often annoying when some of these are changed, even in our own homes. Under shelter conditions the change will be more drastic and this will not be a source of cheer. For example, most people are not likely to sleep so well in a bunk, with the result that they will be tired and experience feelings of frustration and annoyance. The general lack of conveniences will tend to produce impatience, annoyance and irritations, which may be directed against other people in the shelter.

Interpersonal Problems. Members of the same primary group, like the family, friendship group, and social circle may very well be separated from one another in a nuclear emergency. This will not only cause anxious concern but deprives the individual of the familiar and meaningful inteactions and support which primary groups usually provide. Moreover, there will be the problem of living with and getting used to strangers, strangers from different socio-economic and ethnic backgrounds who have different values, attitudes, interests, and ways of behaving. Conflicts of values and practices with respect to observance of the Sabbath, sexual expression, acceptable language, sanitation and cleanliness, gambling, and quiet periods have caused problems in shelter living experiments. For example, while there was no problem of actual sexual relations among married or unmarried couples in the group studied by Altman et al (1960), teenage petting was fairly common. The teenagers themselves seemed to experience little embarrassment or guilt about such behaviour, but many of the adults and particularly older women and mothers with children were so opposed to it that they considered leaving the shelter. Strange to say, the young couples in the group without pre-trained leaders were never criticised directly for their behaviour. Apparently the adults took the attitude that "they aren't my kids and it is not my place to do anything about it".

Supervision. Life in a crowded shelter with limited supplies and facilities will necessitate much more supervision of individual activities than most of us are accustomed to in normal life. There will be rules and routines by which occupants must abide. This will produce annoyance and resentment, and problems may be created by the occasional individual who breaks the rules and becomes a nuisance. In an atmosphere in which numerous irritations are prevalent, some people may adopt the habit of watching others, picking up little infractions and making complaints. Others may rebel against every indication of supervision.

Environmental Conditions. Shelter conditions of lack of space, crowding, and limited facilities and supplies will also produce a number of problems in terms of specific environmental conditions. In addition to the factors of food, water, temperature, humidity, and oxygen supply mentioned earlier, noise, illumination and odors will be sources of stress. Although noise does not impair performance and ability to think, it does produce irritability, aggression, and fatigue. Studies indicate that noise may be one of the most annoying features of shelter living. Soundproofing of sections of a shelter may be indicated, and some children, teenagers and loud adults

may have to be suppressed. Illumination may be inadequate for some activities like reading on the one hand, while it may be disturbing to people seeking to sleep on the other. Presumably it may not be desirable to darken all of a large shelter at any one time, so this problem would have to be decided on according to the organizational and personal needs of the inhabitants. In a crowded shelter with limited facilities for cleanliness and sanitation completely adequate ventilation may not be possible, there are certain to be odours—body odours, odours from cooking, from waste products, and possibly from the dead. Fortunately, such odours tend to develop gradually and most people adapt to them to the point where they go unnoticed.

Dealing with Deviant and Emotional Behaviour

Some of the methods for handling deviant and emotional behaviour in the emergency period of disasters are applicable to problems which arise in shelter living (see Chapter 3 and 4). In this section we will focus on principles for handling problems unique to confinement situations.

Realistic Appreciation of People. The first principle in dealing with behaviour problems in a situation like that involved in shelter living is to recognize that people are not only physical but psychological, moral and spiritual beings with special needs on the one hand and great resources on the other. If we can accept the fact that problems will arise, we shall not be surprised by them. Knowing what kinds of emotional and other disturbing behaviours may occur, we can anticipate them and be prepared to meet them with preventive measures and remedial action. Accepting and understanding people as they are, we can be more patient and realistic in dealing with their weaknesses.

Leadership. Leaders and those who have a high status or are in positions of authority will often be the most appropriate persons to handle emotional or behaviour problems in the shelter living situation, whether these are rebellious in nature, involve interpersonal conflicts, or are emotional responses involving anxiety and despair. With the appropriate background of training and experience a leader will have a better idea of what kind of action is indicated, his word will carry the force of authority, and he is in the best position to mobilize and organize group support for his decision and line of action. Moreover, for those who need reassurance he should have and be able to select and convey the most appropriate information and it will be most credible coming from his lips. Finally, he is in the best position to arrange for isolation of difficult cases and to initiate those reorganization and control measures which may be indicated to maintain the social system within the shelter.

The controlling function of a leader was illustrated in the study by Altman et al (1960). When leaders admonished teenagers for petting behaviour, all such behaviour beyond hand-holding was completely eliminated with no visible expression of hostility or resentment on the part of the teenagers. As a result, teenage petting was no problem in those shelters with a structured management system, while it caused a great deal of tension and almost incited some people to leave the shelter in groups which had no such management structure.

Modification of Stressful Conditions. The most obvious way to handle a behaviour problem is to remedy the conditions which give rise to it. While it is usually not practical or possible to change all of the various conditions that have contributed to a given behaviour problem—conditions like the individual's history or genetic make-up, it often is possible to alter the immediate precipitating conditions sufficiently to bring the individual back to his previous and "normal" level of function. With reference to the problems which may occur in shelter-living, the tactic would be to change those conditions which are a source of stress to the individual, like lack of water, crowding, lack of variety of food, and inconveniences like the difficult sleeping arrangements. This would not, of course, be practical on a large scale. However, as a temporary measure in selected cases it may be feasible and have the desired effect. However, this method should be used with caution because an individual may be encouraged to expect and demand preferred and stress-free treatment. The method should probably only be used when it can be carried out under the close supervision of an official or a professional person, with the individual in question assigned to a patient role, and in a treatment atmosphere which emphasizes that the measure is temporary and conveys a positive expectation of rapid recovery and re-joining the rest of the occupants.

Provision for Information and Communication. One source of stress in shelter-living that may sometimes be corrected is lack of information or ambiguous information about outside conditions, the welfare of family members and friends, prospects for the future, and so on. If information is available on such matters, but is negative, it may be assumed that providing such information would do more harm than good. However, this is not necessarily the case. Because uncertainty be the primary source of the anxiety, giving the facts may clear up this aspect at least. Moreover, the end result probably depends more on the manner in which the information is conveyed. It should be provided by an official who has status and is a credible informant; the information should be offered in a matter-of-fact manner, with emphasis on the positive elements; expressions of uncertainty, fear and grief should be accepted with understanding and sympathy; and the sympathy and support of friends or relatives should be elicited for more worried members of the group.

Appropriate information may help to handle other kinds of behaviour problems in a shelter, problems involving jealousy, conflict, and suspicion over the manner in which supplies are being distributed or jobs and privileges allocated, and problems involving restlessness and the desire to leave the shelter. The tactic will nearly always be to provide accurate and frank information with the source specified—it may be possible to have the affected individual audit the information coming in over the radio, to have the information conveyed by an official to make it more credible, to combine reassuring information with bad news whenever possible, and to recruit the support of persons close to the disturbed one as a means of affirming the implications of the information. The latter tactic, of getting appropriate other people to participate in and support remedial measures, should be used with all kinds of behaviour problems whenever possible.

Purposive Activity. Another method of managing emotional and behaviour problems is to involve the individual affected in purposive activities, especially in the form of helping others. This will be particularly effective if used in the early stages of the development of a problem. Activities should be selected that are relevant to the interests, skills, and previous role behaviours of the individuals in question. Simple role assignment with, if necessary, assistance and supervision in getting started, will often divert the individual's attention from himself and his concerns to the

job in hand. Role assignment to helping and caring for others may facilitate the individual's reintegration into the group life of the situation.

Religion. People who have suffered disaster, lost loved ones, and faced danger and death are nearly always responsive to moral and religious reassurance and encouragement. Thus religious personnel, words, and symbols should be used whenever appropriate, and particularly in the case of individuals who are suffering grief reactions or who are losing hope.

Physical Restraint. On the rare occasions when a disturbed person becomes violent it may be necessary to use physical force to restrain him and perhaps to isolate him from the main group. A shelter manager should generally not seek to handle such problem cases by himself but use men from among the occupants. The idea here is that a violent person's strength and tactics are often unrestrained by any kind of caution or care for consequences, and the whole group might suffer if the leader were injured. Thus several able-bodied men should usually be recruited to impose physical restraint on such an individual. The people will usually settle down within a few minutes, and may be rehabilitated to the group with appropriate counselling, information, and show of social controls. However, it would be well to keep such an individual under some form of supervision in case of another outbreak, preferably by an experienced counsellor-supervisor who could communicate with the man in a way to facilitate recovery. Individual counsellor-supervisors should be used whenever possible with disturbed individuals of any kind, especially after the acute form of the disturbance has been handled and rehabilitation is in process.

Controlled Expression of Emotions. It would probably be a mistake to seek to control and supress all forms of emotional expression under conditions where stresses are many and varied. On the other hand, it might be equally disastrous to allow free expression because of the infectious and disruptive effects of emotional behaviour in what in many respects is a crowd. The solution is to provide controlled opportunities for the expression of gripes, suspicions, fears, griefs, and so on. This should be done largely on an individual basis, by an official, counsellor, or stable friend who has been briefed on the problem.

Role Playing. Role-playing or self-persuasion techniques (Frank, 1961) may be useful for individuals who have difficulty in accepting the official or group policy. For example, for the individual who wishes to leave the shelter, the idea would be to get the person to present arguments in a small group discussion, for staying in the shelter. This kind of experience usually helps the individual to see the reasonableness of the point of view which he is defending as a role-playing participant. The method would be a delicate one in a shelter situation, calling for special skills on the part of the group leader or counsellor. However, it may help selected individuals. In general, the group discussion method of assimilating information and reaching realistic decisions can be most useful if led by the appropriate man.

Preparation for Emergence. It has been found in a number of studies of shelter living that the inmates experience great restlessness and a strong urge to leave toward the end of the period. In a nuclear emergency this would present special problems because of the contamination dangers outside and because of the difficulty in providing precise predictions about when they would pass. It would probably be advisable not to make definite estimates of when people could leave the shelter

but rather to set up and carry out a schedule of periodic tests. The results of such tests should be reported to occupants in terms that will have personal meaning for them, for instance, in terms of the probable effects on their health. Another possibility is to send small reconnaissance parties out for specified and limited periods of time, provided with the appropriate protective clothing of course, and with specific exploratory objectives. The information that such parties bring back, appropriately shared with occupants, will provide a realistic basis for their expectations. In the individuals who are particularly bothered by waiting for rescue or exit, the controlled-expectations method of Alcoholics Anonymous may be very useful. The tactic here is to cultivate the practice of looking ahead no further than the day in question. Thus the individual thinks to himself, in the morning. "This is a new day and I will live it for itself, concentrating on the problems it presents so that I can look back in the evening to a sucessful day." This kind of controlled expectation can best be cultivated in small groups and on a routine basis.

Practical Preventive Measures

As with most problems, prevention is the most effective corrective measure. It precludes the occurrence of many problems and makes others less serious and more manageable. A number of practical preventive measure (for the control of emotional and human problems under shelter living conditions will be discussed in this section (cf. Staff College, Textbook for Shelter Management Instructors, 1964).

Leadership. Leadership is probably the single most important factor in the prevention and management of problems in shelter living. This is to emphasize the key role of the man and men who are in charge, or who take charge, and supervise, coordinate, initiate and control the group's policies and actions. In some situations it may involve a single individual; in others it may embrace a number of persons and so constitute a management system. It is singled out as a preventive factor because appropriate men can usually be selected and trained for leadership roles with much better results than when the situation is left to emergent leaders.

Emergency shelter experiences during Hurricane Carla illustrate the importance of planned leadership and supervision. Carla moved in from the Gulf of Mexico at a sufficiently leisurely pace that most of the people in its path had time to take protective measures or evacuate. Over half a million took the latter course of action. Many of these were cared for in some 650 shelters, from hotels to school houses, which were provided and improvised on relatively short notice (Moore et al, 1963). Out of all these shelters, trouble was reported in only 10 or 12, which illustrated the effectiveness of planning, training, and organization in such a situation. Where trouble did occur, it was attributed to either the lack of adequate supervision or the nature of the occupants of the shelter. In general, trouble occurred only when the greater proportion of the occupants were from the lower socio-economic class and included people who were inclined to be uninhibited in satisfying their urges. In one instance, 200 people went to a schoolhouse in Houston and, unsupervised, they engaged in a virtual riot, smashing windows and bottles, defacing the walls, and burning the school flag. When they left, they stole many of the articles which were still undamaged. In another instance, when supervisors arrived just after dark they discovered gambling, drinking, purse snatching, fights, fondling, perversions, and open sexual activity and prostitution. When an attempt was made to distribute anything like blankets, this nearly started a riot as people rushed to grab as much as they could whether they needed it or not. In another case, a number of cases of mumps, trench mouth, influenza, diabetes without insulin, blood poisoning, cardiac condition, and individuals with emotional problems were neither isolated nor treated until supervisors arrived. In a number of shelters, drinking proved to be a problem if supervision was not strict. When the police emptied the bottles in one instance, this created a further problem by producing withdrawal symptoms.

Little can be done about the kind of people that would end up in shelters in a nuclear emergency. People whose habits of life have been typically anti-social, immoral, and disruptive may be expected to behave in character in a confused and unstructured group situation, especially if there is not adequate supervision and control and if there is not some over-riding and continuous threat such as that from falling bombs and fires—which would serve to take their attention and so prevent such behaviour. Because we cannot change the history of such people before they enter a shelter, the only solution is appropriate leadership and supervision and these can be planned as preventive measures.

A comparative study (Altman, et al, 1960),of several groups undergoing a two-week shelter experience, some with trained shelter managers and some in which the situation was left up to emergent leaders, demonstrated the value of trained leadership. The presence of trained leaders increased the overall adjustment of the occupants and resulted in less tension at the crucial shelter entry and shelter release periods and less of the depression which often occurs in the middle of confinement. Group cooperation and morale remained generally high throughout, and there was less disagreement and resentment toward shelter managers. The occupants came out with more positive attitudes toward shelters, civil defence, and toward their fellow occupants. In addition, trained leaders were able to carry out in-shelter training programs designed to prepare the occupants for post-shelter survival. In groups in which pre-selected managers were not included, a leader did emerge in each case. However, they were authoritarian and their behaviour tended to alienate the other people in the shelter. When they suggested unrealistic procedures, which then failed, the group lost confidence in them. In general there were more conflicts, adjustment problems, and poorer morale in such groups. In one instance, the emergent leader himself became seriously disturbed and had to be removed. The findings in this study point up two advantages for a pre-selected and trained leader; first, the occupants will generally question his authority less, and second, he will be prepared to deal with the practical problems which arise in such a situation.

The selection and training of shelter managers should take account of the points mentioned under the section on *Leadership* in Chapter Four. In general, leaders should be selected on the basis of their history of experience in similar situations and on other personal qualities. Their training should be in terms of the kinds of problems which they are likely to meet. It is important to plan for a management system with subleaders, professional personnel like physicians, communications experts, counsellors, clergymen —all integrated into a working organization. The use of films and realistic rehearsals would facilitate the development of such a management structure. In essence, to be prepared with an operational management structure is to enter the situation with a pre-established social system, and this is the best means for controlling and directing human behaviour.

Organization. It is essential to provide for organization of the people in the shelter—otherwise we are dealing with a crowd situation. Organization of people into appropriate groups, with group leaders, facilitates orderly and efficient use of space, food, and other supplies, of hygiene and other facilities, and of specialized personnel like physicians and clergymen. Organization provides the framework for informal person-to-person communication on the one hand and for official communication on the other. Organization into small groups also provides the means by which people can feel more secure. Finally, it constitutes an important basis for the social control of behaviour. The size and make-up of groups will depend to some extent on the physical nature of the shelter and on the population from which occupants are drawn. In general, it is suggested that groupings include between 10 and 25 persons and that each group have at least one or two individuals who can serve as leaders or counsellors. There should be a roll call for each group with detailed registration data on each individual—including address, location before entering shelter, physical condition, skills and personal resources, and location and assumed disposition of family members and other relatives.

Organization of the occupants of shelter can best be attained by prior planning, with selection and training of leaders and specialized personnel and their integration into a management structure. Although considerable confusion and chaos are probably inevitable as people stream into the shelter, a pre-arranged organizational structure will order the situation rather quickly. The rapid development of organization would also be facilitated by such tactics as having lines drawn on floors to indicate groupings.

Information and Communication. Because lack of or ambiguous information leads to uncertainty, confusion, and anxiety, especially in emergency situations and when people are subject to separation anxieties and concerned for the future, every possible measure should be taken to provide for communication and the exchange of information within the shelter and between the shelter and the outside world. This will require, in the first place, the planned availability of communications equipment and personnel. Given the facilities, the problem is then one of policy and practice. Operational messages within the shelter and with the outside world will presumably take some precedence, but the exchange of personal messages should not be neglected as these may allay anxiety and prevent emotional problems. Messages should generally be cleared with the shelter manager or with an information officer, and they should be recorded. There should be a routine information program for occupants, as a means of stabilizing their expectations, of letting them know that they are considered important, and of simply informing them of developments. It might be well if the "official" voice or that of his deputy, always gave the important information. This could build up credibility in his information and confidence in his judgement, thus reinforcing his decisions. Information of a "conversational" and humorous kind should not be neglected as this can reassure and build up morale. Operational information should be relevant, accurate, concrete, directed to the appropriate officials and through the appropriate channels. Information which is threatening to the occupants should include or be accompanied by the appropriate amount and kind of reassurance and by specification of the actions that may be indicated.

Provision for Physical Needs. This is a matter of planning and providing for some minimum of the physical necessities for life and relatively adequate functioning. The maximum number of occupants should be predicted. Water and food, a variety if possible, are essentials. Provision should be made for the disposal of waste products, and for the control of temperature, humidity, illumination, noise, odours, and facilities for sleeping. Planning and training will facilitate the orderly use and maintenance of these physical supplies and conditions. It may be well to keep a record of the use of supplies, with periodic inventories.

Use of Group Decisions. Goals, standards, and practices within the shelter should be worked out with the consent of the group as far as possible. Whenever appropriate, occupants should be involved in making decisions, especially those which affect them. Use of the group for controls, sanctions, and discipline will prevent many problems and decrease the seriousness of others.

Use of Occupants' Personal Resources. The occupants of a communal shelter will have a variety of skills, knowledge, and roles which should be utilized. Especially important are those that would facilitate socialization, the development of purposeful and recreational activities, and the management of particular problems. People may be taught how to improvise and to improve their situation in the shelter. One possibility is to provide shelters with the tools and supplies with which to make up some of their facilities, such as do-it-yourself kits. Teachers and older children may be assigned teacher and baby-sitting roles. It may be indicated to assign some adults the role of parents to children whose parents are not present.

Use of Natural Groupings. Primary groups like the family should be kept together as much as possible. They are a powerful source of emotional support for one another as well as a basis for control. Other natural groupings like language groups, religious groups, or even professional and labour groups can provide a basis for communication, socialization, expression and control, and may indeed come to function almost like a primary family group in an emergency situation. Clergymen should be present in a shelter if at all possible because of peoples' needs and responsiveness to religious and morale encouragement under such conditions. They should be provided with the facilities to be of service to the occupants and given every opportunity to play their role. In addition to these provisions, special facilities should be planned for the care and possible isolation of particular groups of people, such as children, the elderly, the bedridden, pregnant women, and emotionally disturbed individuals.

Mealtime Routines. Mealtime is traditionally the occasion on which the family gathers in our society. It may be used to strengthen family or small group solidarity and can constitute a positively expected break in an otherwise unsatisfying situation. A number of practices will facilitate its contribution to morale and good feeling, like observing specific mealtimes, having women prepare the food and serve it gracefully, offering a table prayer, cultivating an air of dignity, and encouraging a routine of good manners.

Personal Hygiene. Provision should be made for some minimum standard of personal hygiene and cleanliness, with as much privacy as possible. As a means of ensuring this in a group it may be desirable to have routines to be followed.

Exercise. Some provision should be made for interesting and routine exercise. This can relieve boredom and also enhances physical stamina and psychological well-being

Preparation for Post-Shelter Living. Plans should be made to give instruction and training for the post-shelter and recovery periods. The social system within the shelter with its various groupings could well form a basis for coordinated rehabilitation efforts. Individual skills and knowledge should be utilized whereever possible. Lectures together with group discussions and planning would probably form the best vehicles for such a program. As the situation permits, planned brief trips out of the shelter should be initiated as soon as possible, with the specific objectives of gathering information, getting supplies and beginning recovery. Somewhat later it may be possible to work outside of the shelter during the day and return at night without undue exposure to radioactive contamination.

In conclusion, it should be emphasized that communal shelter living can have many positive aspects. When a group of people face a common challenge and fate, with risks and hardships, they generally become much closer and develop a unique sense of "community" and solidarity. Close and enduring frienships have been formed thus, between soldiers in combat, prisoners of war, and trapped miners. Individuals have realized a new sense of their toughness and staying power. And many have experienced a new appreciation of the essential humanity of man. Such positive features of shelter living can be cultivated and enhanced by the appropriate kind of planning, preparation, and management.

Suggested Readings

Altman, J.W., et al. *Psychological and social adjustment in a simulated shelter.* Sponsored by Office of Civil and Defense Mobilization. Pittsburgh: American Institute for Research, 1960.

Baker, G.W., & Rohrers, J.H. (Eds.) *Human problems in the utilization of fallout shelters.* Disaster Study Number 12. Washington: National Academy of Sciences — National Research Council, 1960.

Staff College, *Textbook for shelter management instructors.* Battle Creek, Mich.: Office of Civil Defense.