Natural Disasters Organisation
Department of Defence

Report of Proceedings
of a Research Workshop
on
HUMAN BEHAVIOUR IN
DISASTER IN AUSTRALIA

25 – 27 April, 1984

FOREWORD

There is little doubt that the paucity of post-disaster research into human behaviour in disaster in Australia was highlighted by the disaster events of 1983; or that, since then, the level of disaster research has been feverish in comparison. It could also be argued, quite fairly, that it took a disaster of the magnitude of Ash Wednesday bushfires to prompt the staging of this workshop, which was held at the Australian Counter Disaster College, at Mount Macedon, Victoria, on 26 and and 27 April 1984.

The Workshop was funded by the Australia Department of Defence but, as a high level of specialised professional knowledge, understanding and interest in human behaviour in disaster were required to develop it effectively, some members of the Psychology Department of La Trobe University were approached, and accepted the invitation to assist in the preparation and conduct of the Workshop.

Although the stated aim of the Workshop was to exchange research findings on human behaviour in disaster in Australia and to discuss :

* research questions which need to be addressed subsequently;

* methodology to be employed following disaster;

* application of research to the planning and provision of welfare, health and other services in and after disaster;

* possible future directions of research; and

* support required for research;

the program was designed to give a wider perspective and, in particular, to consider :

* the extent to which disaster research influences, or might influence, disaster planning and

* what the disaster planner wants from researchers.

During the Workshop, recent research findings on human and organisational behaviour in disaster were presented and the need for greater application of research findings to planning was discussed. The importance of an inter-disciplinary approach to research was emphasised and the

diversity of the interests and disaster-related experience of
Workshop participants suggests that inter-disciplinary collab-
oration in this country could be broadly based. This is of
particular benefit for disaster planners, who need to be able
to draw simultaneously on resources and expertise from a
number of different areas.

The achievements of the Workshop are:

*   it brought together a group of new-to-the-area
     and experienced disaster researchers;

*   it stimulated discussion of methodology and
     focused attention on the ethics of disaster
     research;

*   it undoubtedly prompted the documentation of
     some research which might otherwise have gone
     unreported;

*   it has stimulated some collaborative research
     since planning for the Workshop began.

*   and the Workshop provided an opportunity for
     a "scientific debriefing" for those immersed in
     recent bushfire work.

The Workshop also brought researchers into contact
with some of the planners and providers of welfare, health
and other disaster services. The hope that there might be
progress in the wider aims of the Workshop, related to the
application of research findings in planning and the formulation
of planners' needs in terms of research questions, was
frustrated by the unavoidable limitation of the Workshop
to two days.

Although the Workshop papers published here provide
evidence of considerable activity in the field of disaster
research in Australia, an unfortunate lesson of our nation's
history seems to be that funding for disaster research follows
disasters, whereas it should precede them. Too little support
appears to have been given to research into human behaviour
in disaster or support to related inter-disciplinary research.
With every disaster Australian communities will continue to
re-learn, at a cost of human suffering, the lessons of
previous disasters.

MOUNT MACEDON

December, 1984.

TABLE OF CONTENTS   page

WORKSHOP OPENING ADDRESS

by

THE DIRECTOR, AUSTRALIAN COUNTER DISASTER COLLEGE, MT. MACEDON

Although, in comparison with many parts of the world, Australia is not overly prone to disaster, we have experienced several devastating natural disasters. This was probably one reason why in February 1974, Cabinet decided that "the Charter of the existing Australian Civil Defence School at Mount Macedon, Victoria be expanded to provide research into, and training to deal with, natural disasters, and the School be appropriately renamed."

Following this Cabinet Decision the School was renamed the Australian Counter Disaster College: and, the College Charter now requires it to contribute to the development of an efficient Australian counter-disaster capability by training; by fostering understanding and co-operation; and by undertaking research. Then, on 5 April 1974, the Minister for Defence wrote to the Ministers in each of the States of the Commonwealth saying:

"My Government is conscious of the need for a scientific approach to the solution of many problems which are related to natural disasters...... and proposes, with your advice and co-operation, and in accordance with priorities assessed on a national basis, to sponsor competent institutions, or undertake with its own resources, a series of research projects which will bear directly on selected natural disasters,...... These projects will seek to identify improved means for predicting natural disasters, assessing their probable intensity, effects and passage and devising methods of avoiding them or minimising the harm they do. Apart from the scientific research mentioned above, the Natural Disasters Organisation will be concerned with operational research in the field; post-disaster reports and evaluations; seeking to improve counter-disaster planning and control techniques; developing a reliable record of natural disasters and their general effects, and other matters with operational applications......"

As a result of the Cabinet decision and following the Minister's letter to States, the Natural Disasters Organisation attempted to have a small research cell - comprising a Senior Research Scientist, an Experimental Officer and a Technical Assistant - provided at this College. In April 1980

an Experimental Officer from the Materials Research Laboratory
was assigned for duty at the College to work under
my direction; and he continues to work alone, with no
indication that further manpower resources will be made
available in the future to increase our research capability.

Before the Experimental Officer was appointed, I could
find no one who was really aware of what Australian disaster
research had been completed, was being undertaken or was con-
templated. It was apparent that disaster-related research
effort in Australia was certainly limited, and not co-ordinated
in any way. Justifiably so, you may argue - but, the need
for more disaster research and the need to establish more
exactly what Australian disaster research has been done were
obvious. Indeed, it was not possible to detect the voids
which existed in the application of research effort in
Australia until the extent of prior research effort was
established.

The Experimental Officer has attemtped to find out just what
Australian disaster research has been completed or is being
undertaken. He has compiled the Australian Disaster Research
Directory, published in provisional form in 1983. I hope it
will stimulate you to provide additional input for the
"expanded" Directory, to be published in 1985. When the
expanded Directory is produced, we should be well placed to
detect research voids and then publish a priority list of
research subjects which, in our national interest, need to
be addressed.

Insofar as research into human behaviour in disaster is
concerned, a Disaster Behaviour Seminar was held at this
College in October 1976, to study aspects of disaster behaviour,
with a view to formulating guidelines of practical application
by counter-disaster authorities. In the report of Proceedings
of that Seminar it is stated that:

> "the authorities concerned in counter-disaster response
> must recognise that psycho-social requirements extend
> across the whole field of such response..... The
> practical application of existing knowledge supported by
> continuing research, will assist materially in a number
> of areas of counter-disaster response":

That report also recommended to the Minister for Defence that
he circulate the report to his ministerial colleagues, the
Minister for Health and the Minister for Social Security,
requesting their Departments to give early attention to ensure
that:

      a.   research needs are given adequate priority. Two
            fields in which early research is required were
            suggested:

        (1)   the systematic description of the range of
              human behaviour and coping mechanisms in
              extreme adversity, and

        (2)   the effects on health of exposure to extreme
              stressor experiences.

      b.   authorities concerned in counter-disaster planning
            and operations recognise psycho-social requirements
            in disaster situations and co-ordinate their
            activities in this field."

Although there is evidence of some progress and activity
in the field of disaster research since that Seminar in 1976, I
believe it is safe to say that too little attention has been
given to research into human behaviour in disaster in Australia.
There is no doubt that the paucity of post-disaster research in
human behaviour in Australia was highlighted by the disaster
events of 1983, or that, since then, the level of disaster
behaviour research has been "feverish" in comparison. It
could also be claimed, quite fairly, that it took a disaster
of the magnitude of the Ash Wednesday bush fires to prompt us
to stage this particular Workshop.

I hope this Workshop will provide the opportunity for
those who have undertaken research into human behaviour in
disasters in Australia, to exchange findings and opinions
with a view to deciding guidelines which might facilitate
follow-up studies and research into future disasters.

✝   Although the stated aim of this Workshop is to exchange
research findings on human behaviour in disaster in Australia
and to discuss:

      a.   research questions which need to be addressed;

      b.   the methodology to be employed following disaster;

      c.   the application of research planning and provision
          of welfare, health and other services in and after
          disaster;

      d.   possible future directions of research, and

      e.   the support required for research,

the program has been designed to give a wider perspective and, in particular to consider, in addition:

    a.   the extent to which disaster research influences and might influence disaster planning, and

    b.   what the disaster planner wants from the researchers.

With this in mind, I invited Dr Anthony Michaelis, who is the Editor of the highly-regarded British publication, Inter-Disciplinary Science Reviews, to deliver the Workshop Dinner Address on the subject of "Inter-Disciplinary Disaster Research": and, Mr Barry Grear, Chairman of the Bushfire Relief Advisory Committee and Executive Director of the Bushfire Relief Unit in South Australia following the 1983 Ash Wednesday fires - and now Deputy Director-General of Technical and Further Education in South Australia - to address the: "Applications of Research to Disaster Planning." I am grateful to these two gentlemen agreeing to undertake these important tasks, and to Professor Raphael for her major contribution.

The response which Dr Meredith Wallace, from the Department of Psychology at La Trobe University, received to her invitations to people to present papers is also very heartening. The range of topics covered in the papers which are to be presented augurs well for the future and could be taken to indicate a heightened interest here, in Australia, in the subject of human behaviour in disaster in Australia.

I thank all of you who are contributing papers for your support.

Finally, thank you all for attending: I trust you will enjoy the time you spend at the College and that you will leave here believing that you have engaged in a professionally rewarding event. With the wealth of understanding, knowledge and experience you bring with you, the stage appears to be set for a successful Workshop if you will engage in frank and free discussions of human behaviour in disaster in Australia.

AN OVERVIEW AND COMMENTARY ON THE WORKSHOP,
HUMAN BEHAVIOUR IN DISASTER

J OLIVER

Honorary Research Consultant, Department of Geography,
University of Queensland

Formerly Deputy Chairman, Centre for Disaster Studies,
James Cook University

Introduction

Although people are a necessary element in disaster, it is
surprising, as was indicated by Brigadier Gilmore, Director of
the Australian Counter Disaster College, that there has been a
neglect of unified and co-ordinated research into human
behaviour in disaster. Whereas a significant body of knowledge
and understanding of the agents of disaster and of the appro-
priate engineering or technological measures to mitigate their
impact has been established, the explanation of the ways in which
people interact with disaster stress is much more tentative.
This situation arises from the complexity of the interaction
rather than from a disinclination to analyse it.

The basis of counter-disaster activities, the training of
personnel to assist disaster-affected communities, the improve-
ment of the perception of the disaster threat, the encouragement
of self-help in times of extreme environmental stress and the
mitigation or elimination of the stresses, these and many other
aspects of counter-disaster management require a clear under-
standing of the nature of human response.

The workshop, jointly sponsored by the Department of Defence
(Natural Disasters Organisation) and the Department of Psycho-
logy of La Trobe University, represents a milestone in the study
in Australia of human behaviour in disaster. While in aggregate
there is a considerable amount of individual research on this
topic, the workshop is the first occasion since 1976 in which it
has been the specific focus of attention of a group of
contributors.

In the final session of the workshop, discussions centred upon
ways by which future research could concentrate on the most
essential areas of enquiry. This, of course, necessitated the
identification of the main gaps or inadequacies in the existing
knowledge and a determination of the directions which future
research could most valuably follow. Indicative of the current
state of knowledge the resulting discussion revealed a range of
divergent opinions on how the papers presented in the workshop
could be welded into a form which could provide the foundation
for research and a contribution to disaster management and the
training of counterdisaster personnel. Time ran out before the
discussion could be completed and it was proposed that an over-
view of the workshop should be attempted with these aims in
mind.

This paper is an individual assessment by someone who might be
described as a social scientist but who is not a professional
psychologist, psychiatrist or sociologist. It seeks to examine
the outcomes to the workshop that can usefully answer the
questions, "How do we (practitioners and trainers) most
effectively identify and deal with the behavioural problems
caused by disaster?" "What issues arising in the workshop will
aid the counter-disaster planner?" An element of translation in
involved. As Clayer and Bookless-Pratz remarked, "A number of
problems exist in transforming the research that has been
conducted into the psychological impact of disasters into the
practical provision of mental health services". The disaster
manager or trainer has neither the time, nor always the back-
ground, to disentangle the matters under debate and to reach
decisions on what should be incorporated into actual counter-
-disaster operations. The material presented here reflects the
bias explicit in the above comments and may not always harmonise
with some of the more specifically academic or scientific
inclinations of the workshop participants.

Professor Beverley Raphael, examining the rationale for research
into human response, identified three areas of interest: (i)
counter disaster management, (ii) dealing with problems of
disaster morbidity and (iii) the establishment of a stress/
stimulus model based on the actual circumstances caused by
disaster. The third of these can exist independently as a field
of fundamental research or can be used to reach a better working
understanding of the first two.

The Field of Concern

A number of definitions of disaster have been advanced. Several
of the authors of papers touch on this important question (for
example Britton, Chamberlain and Leivesley, and Michaelis).

Most, if not all, definitions are vague or ambiguous to a degree,
involving unquantified or qualitative statements. The problem
is exacerbated by the use of like terms such as catastrophe,
emergency, accident or a general term such as environmental
stress. Many of the authors interpreted disaster in different
ways from each other. This divergence relates to the scale of
event, scale of impact, frequency of occurrence, area affected,
suddenness of onset, type of impact, (material disruption, death
and injury, economic, psycho-social), characteristics of the
impacted community (social systems, technological sophistication,
resource base). There are considerable differences between urban
and rural societies and economies, or between Third World and
post-industrial countries. In addition to the distinction
between natural and man-made disasters, there are many different
individual types of disaster under each of these headings. The
pattern of disaster onset varies from a gradual "creeping" type
such as drought to events of great suddenness such as bushfire.
Some disasters are predictable, and it is certain that they will
occur at some time in the future. Others are possible but not
certain. Not all disasters produce the same amount of stress
(Cook, Wallace and McFarlane).

It is also relevant to note Professor Budd's abstract,
"Disasters, like disease and trauma, result from the interaction
of multiple causes. The causes are associated with three factors:
the host (ie the victim), the agent (physical, biological or
chemical) and the environment, which may intensify or diminish
the impact of the agent upon a sensible host. Human behaviour
profoundly influences all these factors".

It is clear that disaster implies a diversity of possible
circumstances. Introducing the question of human response adds
to the complexity of the problems.

Social scientists are sometimes criticised because of an
apparent inability to provide simple, precise and unequivocal
statements on how humans will perform in different situations.
Humans display a complex range of mental and personality
characteristics. These may well differ between individuals and
groups. Human activities are set in a total environment which
influences behaviour but also derives some of its qualities from
man. Cultural, ethnic, demographic, religious and other aspects
of society mediate in any adaptive situation, normal daily life
or disaster.

It is difficult to unravel the many elements that make up human
behaviour. It is even more challenging to establish general
laws of behaviour, and it may well be more misleading than help-
ful. Such a situation may frustrate those who have to organise
counterdisaster operations or have to train the personnel
involved. It may be unavoidable however.

There are further complications. We are not looking at the
response of one group in a given disaster. Within a disaster-
affected community some have borne the full brunt of the event,
while others in a peripheral location escape the full impact.
In either of these situations not every individual suffers
similarly.

A number of different categories of persons are at risk in a
disaster-affected community. From the general public come the
traditionally recognised victims who are served by the counter-
disaster organisation. Those who work in that organisation
(unless they come from outside the stricken area) are also
members of the general public. They are made up of many sub-
groups with different responsibilities, outlooks, training and
types of disaster exposure. The decision-maker, the planner, the
administrator and the bureaucrat have different roles, are
involved at different times and are subject to different forms of
stress. Practitioners are at the forefront of relief delivery
and operate in a variety of ways as fire-fighters, police,
emergency, medical and welfare services, mental health and other
counsellors. They will be exposed to a wide spectrum of
stressors. Clearly human response will relate to many different
types of people. The complexity of our study is therefore even
greater, yet as Grear pointed out the basic criterion for all
areas of disaster planning is a need for simplicity.

Response to Disaster

Attempts to understand the problems and needs of disaster-affected communities have concentrated until recently upon the victims from the general public. It is now recognised that the stress and welfare of disaster workers in the field demands attention. As yet the impact of the abnormal conditions of disaster on those who are in some way involved with planning, directing or evaluating counter-disaster operations receives little recognition. Even researchers in the field are not free from stress.

Professor Singh raised the important issue of ethics in research. He examined the principles of the least harm to the respondent, the need for informed consent and confidentiality. Research should be objective. Its justification should be the improvement in the understanding of the matter under enquiry, but it should neither cause undue stress to the individual nor fail to maintain strict confidentiality. This should be the sole motivation but other motives creep in. There may be an additional desire to help the stricken community, to take advantage of what is a natural research laboratory, to find exhilaration from the experience or even to seek some form of personal advancement.

Those who are being investigated are already likely to be suffering some form of stress and do not welcome being asked to recall past trauma or undergo interviews or complex questionnaires. In this context the desirability and suitability of long questionnaires is debatable. Those exposed to these sorts of enquiry find it difficult in the stresses of the time not to group together the do-gooder, the voyeur, the researcher and the offical inspector. Researchers can become part of the disaster impact and add to the stress. Commonly the counter-disaster officials and worker, with other matters on their minds, see the researcher as an impediment
and a nuisance.

Research Problems

The preceding comments have sought to demonstrate the problems of data collection. There are additional methodological problems.

A disaster situation is highly dynamic. Ideally research should begin from the moment the disaster is identified (were it possible, of course, one would like to anticipate the disaster and start still earlier). Quickly, as time passes, evidence is lost, behavioural patterns cannot be observed directly and have to be reconstructed, ideas or beliefs change or are concealed. In the presented papers, where interviews or questionnaires were involved, the first enquiry in a sequence often took place weeks or months after the event. While in some cases this was dictated by the research design, in others valuable time seems to have been lost. Funding delays or unavailability of personnel because of other commitments can often prevent a rapid start.

It has been, and to a large extent still is, a feature of counter-disaster activity to concentrate on the few days following the emergency, and then to hand over the problems and the disaster affected 'community to the normal community services, such as welfare, couselling, psychiatric and health services. It has become increasingly apparent that those at risk in physical and, even more, in psychiatric terms suffer for months, perhaps years, after the event. Post-disaster stress disorders are not necessarily resolved by the passage of time (McFarlane and Croft). If they are untreated, long lasting mental or personality harm may occur. The volunteer mental health team that worked in Victoria (Macedon) after the bushfires were still displaying psychological effects 11 months after the fire (Berah et al). However it was observed that of the 2000 initial contacts with South Australian Community Welfare Services after the fires only 50 were on the books in midAugust. Clayer and Bookless-Pratz consider that a large proportion of psychiatric morbidity is resolved within a year of disaster. It is nevertheless clear that human behaviour must be considered in a longitudinal time sense, even though the percentage of the overall affected community experiencing more persistent effects is small. It is difficult to obtain funding or uncommitted personnel for this longer research.

In many of the papers presenting the outcome of specific studies a proviso is made that the results are tentative and preliminary, and that it is premature to make generalisations. The caution is understandable, but from the viewpoint of those wanting to apply up-dated knowledge the situation is frustrating. The samples in the questionnaire or interview surveys are small. Research on specific disasters rarely permits the establishment of a perfect, statistically random sample. Hence there are risks of unrepresentativeness or distortion. The scale of the investigation and the time available often make it difficult to undertake an appropriate control survey for comparison.

Evaluation techniques applicable to data on human behaviour are often difficult to apply. The very fact that data must be collected in the field introduces a new dimension into the situation. Apart from the fact that interviews may be harmful there is always the problem that respondents may seek to please with 'socially desirable responses' (Singh refers to 'attribution theory'). The respondents' own perceptions colour their response and situations may well be rationalised as time elapses after the disaster. Systematic forms of questionnaire analysis, such as various symptom scales, the General Health Questionnaire or Impact of Events Scale, assist the cross-comparison and standardisation of data. Professor Budd suggested that classical epidemiological methods, (medical ecology), have great merit. On the other hand these various approaches may be constraining, and for particular enquiries special diagnostic criteria may be better, though the findings may be difficult to equate with other studies and general conclusions are less easily reached. It is difficult to assess whether the results of individual case

studies, though providing valuable information, are unqiue to a given set of circumstances
or can permit widely applicable general conclusions. Anecdotal and descriptive statements are much less readily assessed than quantitative data.

The question of the correct techniques of statistical analysis is important, but was not pursued as a major theme at the workshop. Some of the studies had used correlation coefficients, multiple regression and principal components analysis. Reliable hypothesis testing is another aspect that merits attention.

Disaster Myths

The general community, and indeed many counter-disaster personnel, hold popular beliefs, which researchers consider at variance with the truth (see Blong's reference to Quarantelli and Dynes, 1972) such as panic, looting, anti-social behaviour, inability to think or plan after disaster.

Only through careful objective surveys of different disaster impacts
can correct judgments be reached. There is a danger when researching human behaviour, though this criticism in not directed at any of the workshop participants, that preconceived beliefs are perpetuated by enquiries which assume that conclusions that agree with earlier work are necessarily validated. Provided objectivity can be maintained, a growing weight of common findings increases the confidence in general-isations based upon them. However the possibility that all researchers started from the wrong premises cannot be auto-matically dismissed.

The Format of the Workshop

The opportunity to exchange the results of research undertaken on the 1983 Ash Wednesday bushfires was the initial stimulus for the workshop. Further planning broadened this aim to incorporate other, wider aspects of human behaviour in disaster.

Several broad issues provided the framework for grouping the presentations. An examination of fundamental issues in behavioural research related to disasters provided an introduction for the reports on the Ash Wednesday fires research which looked at their impact and the provision of welfare and other support services. Following these specific discussions some broader aspects of the organisational structure of the counter-disaster set-up and welfare delivery in Australia were examined. The section with papers on case studies of disasters provided comparative material from stress or disaster situations other than bushfires. Examining helpers and workers in disasters, particular emphasis was placed by several participants on the nature and significance of the effects of stress on this group. One paper in the section on broad issues in disaster response analysed more widely the underlying influences of major

disruptions upon human response. Others looked at broad aspects of the public awareness of disasters and at the organisational structure of Australian counter-disaster organisations. The address at the workshop dinner placed the subject into an inter-national perspective, and in particular highlighted the importance of supporting in a positive way the inter-disciplinary character of disaster research. (Michaelis, 1984).

Review of Workshop Proceedings

This section attempts a general overview of the ideas and material presented in the workshop. It is not intended to cover comprehensively all the discussions but rather to seek to identify areas of widespread agreement, where divergent views prevailed, or where significant gaps in understanding still remained.

i.   The impact of disaster

Allowing for some differences in the interpretation of disaster, a range of effects upon both the individual and the group, material, economic, psycho-social and medical, were identified. Some studies focused upon specific groups, but it was recognised that a rigid distinction between victim and helper, especially where the latter came from the affected community, was unrealistic. The significant point was that for all those directly or indirectly affected, disaster caused disruptions which differed from normal day-to-day experiences. The impact was very apparent amongst those who had specific and stressful duties in or after the emergency, such as fire-fighters, mental health teams and counsellors, insurance assessors etc. "A small but significant minority of disaster relief workers can suffer significant psychological morbidity as the result of their experience" (McFarlane and Croft). The view was also expressed that psychiatric disorders were a function of individual vulnerability rather than of the environment (McFarlane).

With varying emphasis there was considerable agreement about the nature of the reactions, amongst which were mentioned denial, apathy, complacency, undue confidence in relief workers, frustration, anger, helplessness, anxiety, depression, numbness, loss of self-respect, feelings of guilt, intrusive thoughts and recurrent memories of the event, fantasising, loss of confidence in ability to weather a future disaster, social upheaval, family tensions. How far, if any, a distinction exists between non-disaster and disaster stress, except that the scale and spread of effects of the latter are greater, was not determined. "Is it possible to establish a generic grouping of human responses applicable to all disasters or are response patterns a function of disaster type and community characteristics?" Assuming the latter alternative implies that training or support systems should be flexible and adjustable to each particular set of circumstances. Two general groups of respondents were distinguished: 1. those who were passive and felt that external factors controlled their fate, 2. those able to call on

internal resources to control their own lives and meet directly
most environmental challenges. The former group tend to be more
susceptible to stress. An important area for study is the
identification of coping problems and the basis for improving
coping capacities. It is a challenging task and, of course,
extends beyond purely disaster response.

The belief was expressed that disaster-affected communities had
a higher coping capacity than many people, including relief
workers and the organisers of support systems, were inclined to
accept (Kearney and Britton). The question of the predictability
of the consequences of disaster, particular with respect to
psychiatric disorder or physical health, was considered though
the emphasis and conclusions varied. Either on a short- or
long-term basis the vulnerability of victims or helpers showed
individual variations,. If a sufficiently reliable prediction of
vulnerability were readily available prior to disaster, it would
help to determine the selection criteria to be used in vetting
trainees for counter-disaster or relief operations.

Predictability depends on the identification of the high risk
groups. A range of potentially relevant factors has been
canvassed including age, sex, ethnic group, genetic suscepti-
bility, cultural background, family structure and work pattern.
Higher risk groups included children between 8 and 12 years old,
especially from unstable homes, older people, those with a prior
history of medical or emotional illness. Some claimed that
females were more susceptible than males. The underprivileged
have also been identified by some as a high risk group, but it
seemed that social class was not a valid indicator. A reliable
guide to those most likely to need help would be invaluable, but
at this stage their identity is rather elusive.

It was suggested that the Ash Wednesday events indicated that
general medical practitioners and social workers showed a low
level of detection of post-disaster stress disorders (McFarlane;
Innes and Clarke). This led to the conclusion that there was
need for a professional input and the establishment of planned
psychiatric services within the counter-disaster organisations
so as to permit early detection and treatment.

ii.   Planning counter-disaster activities

An essential part of effective response is a pre-planned
organisation able to operate smoothly and promptly, however
infrequently or irregularly it may be called on. It was
suggested that in Australia there were a number of limitations in
the present structure of counter-disaster response at different
levels. A conceptual framework made up of cardinal, controlled,
conditional and constrained elements in the response network was
presented and its weaknesses analysed (Britton). Up to now
little attention has been devoted to the over-all evaluation of
the existing organisation and the roles of personnel within it.

It is unfortunately the case that similar response problems recur in different disasters, which suggests that more attention is required in the pre-disaster stage to the philosophies of the organisation and appropriate patterns of action, so that the most effective structure for the mitigation of disasters and the provision of help can be established.

In a more specific context, it was claimed that little attention is being devoted in Australia "to the ongoing development of a policy for the social welfare services" (Chamberlain and Leivesley). McFarlane and Frost pursued a similar point, "A review of the literature field failed to find any systematic audit of disaster welfare services that allowed the drawing of objective conclusions". Assessments had to rely mainly on anecdotal accounts.

A number of aspects of human behaviour in the pre-emergency and post-disaster phases received attention. Some of the main questions are considered below.

a.   The matters that concerned disaster-affected communities or individuals included loss of life and injury, loss of relatives, loss of property and possessions, fears of looting, evacuation and restrictions on early return to homes, financial needs. The community includes the relief workers and their identified areas of concern and need. The planning of relief organisations and training schedules requires reliable information on community priorities. These must be derived from a study of the communities themselves. It is dangerous to make blanket decisions about the needs of victims. There is still further research to be undertaken before an authoritative guide to the needs of disaster-impacted communities can be drawn up. An inventory is needed of stress situations. Identification of their effect, and agreement on ways to minimise or eliminate these effects and to strengthen the coping mechanisms of the individual and of the society are also required.

b.   "What emphasis should be placed on community awareness?" Some researchers felt that the general public displays a poor capacity to learn from experience. A well informed community (or relief worker) should be able to deal better with the problems of disaster. It is important to know the nature of the potential hazards and their probable effects. The receptivity of advice from the police, emergency service personnel, relief workers or counsellors is facilitated if the situation is understood. Those who aim to help the community must be able to decide whether their advice should be given in an authoritative or persuasive manner. The question of self-help requires information and understanding.

c.   The information base is important at all stages from planning for through to management of a disaster. It was indicated in the workshop that there was often a deficiency of information for the relief workers in the field or for the branches of the counter disaster organisation. Interim audits

with field workers during the post-disaster phase serve a double
purpose. The workers themselves understand the position better
and better documentation of the disaster is possible. It is also
important that, so far as circumstances permit, careful records
should be maintained by relief workers in the field. Data
collection however usually takes a second place to the provision
of relief. Valuable information can be derived from post-
disaster impact surveys, especially if they are extended
longitudinally over a sufficient time. More attention is needed
to evaluate the operation and achievements of the counter-disaster
services once the disaster is over. The media are a major source
of information but the material collected reflects their judgment
of what is of interest. There is also benefit to be gained from
the information feedback from exercises (which should be held
more frequently) designed to test the effectiveness of disaster
plans.

d.   Support to a disaster-impacted community can take a variety
of forms - material or tangible help, social and emotional
support, information. Its value and character will reflect the
characteristics and needs of the involved community. A thorough
appreciation of the nature of psychological reactions to disaster
is a prerequisite to the delivery of relief. Different sorts of
disaster stress will require different forms of help. It is
necessary to examine the organisation of support and the means of
providing it. The outcome of such studies must then be the basis
for the education and training of those who have to provide the
support. Support systems need constant re-evaluation since needs
themselves change.

At a time when the daily routine is in a state of upheaval those
in need of material help or counselling must be protected from
too complex a relief system. The operation of the Bushfire
Relief Team in South Australia (Grear) demonstrated an
encouraging awareness of this. Relief agencies located at a
variety places, acting in isolation from each other, with limited
periods of operation, can prove frustrating to those seeking
assistance. If a single centre (or a limited number) at which
all the required help is obtainable were set up this in itself
would help to reduce stress.

e.   The value of self-help was emphasized at the workshop which
recognised the merits of the 'therapeutic community'. Conversely
there is a danger that help imposed from outside, especially if
from outside the disaster area, may be counter-productive. The
view was expressed that only the disrupted community can re-
establish itself (Kearney and Britton), while it was also stated
that to be effective relief operations need the sanction of the
community (Buckingham and Grigor). External help should be
viewed as a resource to be drawn on by the community when
required. These remarks imply that the community can make the
necessary judgments, but Blong's findings suggested a poor level
of understanding of behavioural response in disaster by the
general public. Some victims welcome the support systems

provided from external sources, while others prefer to call for help from those they would normally resort to. The family is often a valuable support unit. The help required may be just an opportunity to talk about the disaster experience. This and other help may be derived best from within the community from those known to and respected by the victims. In the case of the fire-fighters suffering from stress, emotional support from their co-workers was often the most valuable (Innes and Clarke). These attitudes, and the possibility of emergent self-help groups, should be taken into account in planning disaster relief. However, in specialised areas, such as mental health, skilled professionals may need to go out early into the community and not wait for people to come to them (Berah et al). There still remains a debate concerning the relative merits of self-help and imposed help.

f.   The importance of debriefing those involved in relief delivery was emphasized both for information and as an aid to minimising the psychological stress of the relief tasks. A significant point was made by Innes and Clarke, "The implications for 'debriefing' procedures after an emergency, or for the training of coping devices, are very different if we have to aim to change the social forces within a group, as against changing the behaviour patterns of the individuals within the group".

g.   Interagency and interpersonal conflicts too often characterise disaster relief operations (for example the experiences of the Mental Health Team in the Macedon area, Berah et al). Careful pre-planning and job specification may help to remove some of the potential causes of friction. Job specification can also help to ensure more uniform procedures between one relief worker and another. In addition 'scapegoating', as an excuse for non-performance or incorrect action can be minimised if responsibilities are clearly understood in advance.

One such area of conflict in disaster operations results from the role of bureaucracy in disaster management which is criticised for being too cautious, passive or divorced from the urgency of disaster situations which often require quick decisions in the field. A happy medium between adequate control and unrestrained action is needed.

h.   A number of other aspects of human behaviour in disaster were omitted from the workshop discussion, or received limited attention, or cannot be dealt with here because of space. Problems of registration and failure to register, evacuation and temporary accommodation, warning problems, the administration of relief funds and goods, the difficulties of those who have escaped the impact of the disaster in appreciating the difficulties of those which have suffered, appropriate work schedules for relief workers to permit essential rest periods are but some of these aspects. In several of these areas there is a need for considerably more research. Longer term political, economic or social implications of reconstruction were not examined.

iii. Research

Many of the workshop papers were either preliminary or
provisional reports of field investigations, qualitative and
generalised in their findings or narrow in their scope, so that
it is difficult to derive general principles from them. In one
of the areas to which the workshop gave considerable attention it
was stated that, "Psychological investigations tend to be
relatively datadriven rather than theory-driven" (Innes and
Clark). Considerably more research is required before basic
concepts can be formulated and validated. Some of this research,
however, must still aim at adding to the body of comparative
data. A data bank of appropriate questions for particular
disaster surveys would be a valuable aid.

The greatest need is to co-ordinate the range of research being
undertaken, and in the process, to reduce the repetition of
research which it is difficult to avoid, unless it is known what
has been done or is in hand.

The workshop participants recognised the value of the Australian
Disaster Research Directory (1983) and strongly supported the
need for its up-dating, in particular in the area of psycho-
social research. A Newsletter was also proposed, to appear about
three times a year, to improve the awareness of work in progress
and to facilitate the collaborative work of disaster researchers
over a wide range of disciplines. The importance of a focus and
a continuity for future disaster-studies was recognised and
support was advanced for an extension of the disaster research
capacity of the Counter Disaster College.

Academics jealously guard their freedom to research in directions
they choose. Kearney raised the question whether the emphasis
should be on data collection and evaluation or on the development
of fundamental concepts. A distinction was also made between
controlled research based on accepted standardised methodologies
and free ranging enquiries based on methodologies chosen for the
particular task. In any case there is need to know where the
main gaps in knowledge and understanding are. "Who is to provide
the guidance on these fundamental research policy decisions?"

Apart from a more concerted follow-up from the aspects raised in
this workshop, there are other ways in which progress could be
achieved. A single research funding body would permit broad
guidance to be given, through the funding policy, on the
selection of appropriate research projects, as well as improving
the support for research. A single body which could stimulate,
advise on and assist disaster research, an idea mooted in the
Canberra Symposium on Natural Hazards in Australia in 1976, could
do much to coordinate the research needed. Many research
investigations require an input from interdisciplinary or multi-
disciplinary teams. Workshops at regular intervals on similar
lines in order to up-date knowledge, report on research achieve-
ments, unify ideas and examine future research directions, would
help to maintain the momentum of interest and activity. They

would assist the presentation of findings in a form that make them more assimilable
in the improvement of counter-disaster plans and the training of personnel to implement them.

Conclusion

To achieve the aim of improving counter-disaster organisation, education and training, the result of research must be translated into a form that it can be applied to these activities. Grear provided a useful list of matters of practical relevance on which further research would be productive. Perhaps no more is needed than to emphasize this responsibility of researchers. Those who research on disasters and particularly on human behaviour in disaster generally hope to see the results of their studies being not only academic but also of practical value. Those whose research interests lie in the study of human behaviour in disasters should, in addition to maintaining their own special areas of concern, think about the over-all aspects of the subject and consider the gaps that still remain to be filled and the integration of the whole body of knowledge.

References

Australian Counter Disaster College, 1984   Australian Disaster Research Directory. Provisional - 1983

Michaelis, A R., 1984   Editorial : Interdisciplinary Disaster Research.

Interdisciplinary Science Reviews, 9, No 3, 193 - 195.

WORKSHOP CLOSING REMARKS

by

THE DIRECTOR, AUSTRALIAN COUNTER DISASTER COLLEGE

During the last two days we've covered a lot of ground. We've heard the results of research recently conducted into individual, community and organisation behaviour in disaster. Indeed, we've had so much information provided to us that I'm sure we all need much more time to mull it over in our minds before we can determine its potential value and application.

Even though this wealth of information has been presented, it behoves us all to remember that we have merely applied the under-coat on a vast canvas which portrays the disaster research field. Many other disciplines will be involved in research into the various aspects of disaster before the canvas is properly covered. Indeed, Dr Michaelis' dinner address focussed on the need for inter-disciplinary research, and called for the establishment of an international disaster research laboratory. I believe that this particular proposal warrants further close consideration, with a view to working towards the establishment of such a research facility. Perhaps, through the various avenues available to you, you might care to further discuss this matter.

But, have we achieved the stated aim of this workshop or even the broader aim which I mentioned in my opening remarks? Not entirely, I would suggest - but we have made considerable progress. We certainly have exchanged recent research findings on recent human and organisation behaviour in disaster and discussed the need for the application of research to the planning and provision of welfare, health and other services before, during and after disaster and we've looked at some possible future directions of, and the support required for, research. However, I feel we did not discuss adequately the research questions which need to be addressed and the methodology to be employed following disaster. Even so, some useful views were expressed on this matter.

I detect a feeling amongst you that you lack confidence in your credibility as researchers. You seem to believe the planners and combat authorities won't acknowledge the importance of the research work which you and others are doing. If my suspicions are correct, I suggest that it is important that you act positively to prove the importance of your research efforts to them as planners and combat authorities. In particular, it seems that there is a need to establish the importance of research in the minds of the bureaucracy at all levels of government, but particularly at local government level,

and with the disaster-affected community. Based on the record, this will be no easy task, but it is a task that I believe you must concentrate on.

I'll be bold and suggest that you - the researchers - must be seen to be providing an _essential_ service (by the cogent results of your research) to the planners and operators to improve your credibility.

I believe also, that you should heed the advice which Dr Leivesley offered, that we don't want to waste our relatively meagre research effort by re-proving earlier research efforts or re-learning. There are too many unresearched areas of Australian disasters to allow this to occur; and, you will recall that Professor Raphael called for collaboration and co-operation. While many researchers feel that co-ordination of their efforts in the national interest could be an impediment, I don't share their views. Co-operation, co-ordination and close collaboration between all researchers - particularly on an inter-disciplinary basis - is surely essential.

Your deliberations have highlighted the importance of researchers becoming involved in the planning process. While it is up to you to ensure that this occurs, this College will play its part in indicating the importance of using the talents of those who are involved in disaster research to assist in the planning processes.

Many times during our discussions the importance of conducting research over an extended period has been emphasised and, yet, it seems that insistence on confidentiality, which was highlighted in Dr Clayer's presentation, inhibits the researcher in this regard. It seems that steps need to be taken to ensure that the genuine efforts of the researcher should be facilitated by the bureaucracy rather than impeded. In the wake of disaster, the attention of those who are charged with bringing about the recovery of the disaster-affected community tends to concentrate on operational aspects. These individuals normally have so many immediate problems on their mind that the intrusion of researchers at this time is regarded as an unnecessary and intolerable luxury. For this reason, it is absolutely vital, in my opinion, that you must attempt to become involved in the planning processes and to improve your credibility - and, if you do become involved, you must make sure your contribution is really worthwhile. It is unfortunate that we did not have time to engage in small-group discussion, to form special interest groups to exchange views formally or, even, to do justice to any of the papers which were presented. However, this is the first of what I believe will be an on-going

series of disaster research workshops. Having opened the
batting with this one, we will be endeavouring to ensure that
we continue, at reasonable intervals, to conduct follow-up
research activities.

I believe it is important that machinery should be
established to permit the exchange of research information by way
of a news letter. In addition to merely exchanging information,
I believe that the news letter could also assist in closing the
gap between the researchers, planners and operators.

From my point of view, I thought that Professor Budd
highlighted the importance of looking at the total system when
he spoke to us on epidemiology. He suggested three steps:

*Look closely at what is going on.

*Draw conclusions from your observations, and

*Apply the lessons which are drawn from your conclusions
 in practice.

There is no doubt that the papers which have been presented,
have looked closely at what is going on and drawn very useful
conclusions from their observations. It is important, however,
that the lessons drawn from those conclusions should be applied
in practice.

I can't close without mentioning the vexed question of
funding. Prof Kearney's view is, I'm sure, valid: "funding
for research follows disasters whereas it should precede it."

Thank you all, once again, for your attendance and for
your contribution to the success of this Workshop.

AUSTRALIAN COUNTER DISASTER COLLEGE

RESEARCH WORKSHOP – HUMAN BEHAVIOUR IN DISASTER IN AUSTRALIA

25 – 27 April 1984

LIST OF ATTENDEES

Dr E F Berah	Dept Psychological Medicine Monash University Prince Henry's Hospital, Melbourne
Mr P E Berry	Ministry of Civil Defence, Wellington, New Zealand
Assoc Prof R Blong	School of Earth Sciences, Macquarie University, North Ryde, NSW
Dr B Boman	Dept of Veterans Affairs, Repatriation General Hospital, Concord, NSW
Mrs C Bookless-Pratz	Mental Health Research & Evaluation Centre, Glenside, SA
Mr N R Britton	Dept of Behavioural Sciences, James Cook University, QLD
Mr W J Buckingham	Mental Health Division Health Commission of Victoria, Melbourne
Assoc Prof G M Budd	Commonwealth Institute of Health, The University of Sydney, NSW
Prof E R Chamberlain	Dept of Social Work, University of Queensland
Mr P Cheney	CSIRO Division of Forest Research, Yarralumla, ACT
Miss A J Clarke	Dept of Psychology, University of Adelaide, SA
Dr J Clayer	Mental Health Research & Evaluation Centre, Glenside, SA
Dr P G Cook	Sunshine Hospital & Health Services Complex, St. Albans, Vic.
Mr G Croft	C/-Flinders Medical Centre, Bedford Park, SA
Dr J R Cronin	Royal Park Hospital, Parkville, Vic

LIST OF ATTENDEES (continued)

Dr M J Fairly	Royal Alexandra Children's Hospital, Camperdown, NSW
Mr W N Frehse	Psychology Honours Student, La Trobe University, Bundoora Vic.
Dr M Frost	Royal Adelaide Hospital, SA
Mr B J Grear	Deputy Director General, Dept of Technical & Further Education, SA
Dr J McL G Grigor	A/Director, Metal Health Division, Health Commission of Victoria, Melbourne
Dr J M Innes	Dept of Psychology, University of Adelaide, SA
Dr H J Jones	Royal Children's Hospital, Parkville, Vic.
Prof G E Kearney	Dept of Behavioural Sciences, James Cook University, QLD
Mrs S Leivesley	Consultant Social Scientist, Rainworth, QLD
Mr L R Lester	Insurance Council of Australia, Melbourne, Vic.
Dr A C McFarlane	Dept of Psychiatry, The Flinders University of South Australia, SA
Dr A R Michaelis	Interdisciplinary Science Reviews, Hillview Gardens, London, England
Mr E P Milliken	Psychologist, Research Consultant, Darwin, NT
Mr J A Nimmo	Australian Red Cross Society, East Melbourne, Vic
Prof J Oliver	Hon Research Adviser, Dept of Geography, University of Queensland, QLD
Mr D R Packham	National Centre for Rural Fire Research, Chisholm Institute, Vic.
Dr J Price	Head, Dept of Psychiatry, Royal Brisbane Hospital, QLD

LIST OF ATTENDEES   (continued)

Prof B Raphael	Head, Dept of Psychiatry, University of Newcastle, NSW
Mr J D Scroope	A/Assistant Director General, Commonwealth Dept of Social Security, ACT
Prof B Singh	Monash University Dept of Psychological Medicine, Royal Park Hospital, Parkville, Vic.
Dr P Valent	Psychiatrist, Jolimont, Vic.
Dr M Wallace	Dept of Psychology, La Trobe University, Bundoora, Vic.
Mr D J Withers	Commonwealth Dept of Health, ACT

AUSTRALIAN COUNTER DISASTER COLLEGE

WORKSHOP ON HUMAN BEHAVIOUR IN DISASTER IN AUSTRALIA

25 - 27 APRIL 1984

PROGRAM

Wednesday, 25 April 1984
By 6.30 pm   Assemble at ACDC
   7.00 pm   Dinner

Thursday, 26 April 1984

8.30 am -	SETTING THE SCENE	
11.30 am	Introduction to the Workshop	Brig I G C Gilmore
(includes		Dr M Wallace
morning tea)		
	"Psychological Response to	
	Disaster: What are the key	Prof B Raphael
	Parameters for Research."	
	"Applications of Research	
	to Discussion Planning"	Mr B J Grear
	"Ethical Aspects of Disaster	
	Research"	Dr B Singh
11.30 am -	STUDIES OF RECENT BUSHFIRES	
2.15 pm	"Psychiatric Disorder in	Dr A C McFarlane
(includes	Primary School Children	
lunch	following a Natural Disaster"	
	"The Effects of Bushfire	Dr M Wallace
	Disasters on Firefighters"	Dr P G Cook
	"Preparedness for Bushfire"	Dr J Price
	"Social Support and Adjustment	Dr M Wallace
	following Disaster"	Dr P G Cook
		Mr W N Frehse
2.15 pm -	ORGANISATION OF WELFARE SERVICES	
	"Twelve Months after the	Dr J R Clayer
	Bushfire a Follow-up Study	Mrs C Bookless-
	of the 1983	Pratz
	South Australian Bushfires"	
	"Planning for Mental Health	Mr W L Buckingham
	Counter Disaster Services:	Dr J McL G Grigor
	Victoria's Experience on	
	Ash Wednesday"	
	"Assessment of the Bushfire	Dr M E Frost
	Relief Unit"	Dr A C McFarlane

"Welfare Policy and Disaster"	Prof E R Chamberlain Dr S Leivesley
"Public Views on Disaster Response and the News Media - Some Australian Examples"	Assoc Prof R Blong
"Conceptual Alternatives for the Analysis of Counter-Disaster Organisational Networks"	Mr N R Britton

6.00 pm for 6.30 pm	WORKSHOP DINNER Dinner Address - "Inter disciplinary Disaster Research"	Dr A R Michaelis Editor, Inter-disciplinary Science Review (UK)

Friday, 27 April 1984

8.30 am - 10.15 am (includes morning tea)	GENERAL ISSUES IN DISASTER "The Vietnam Veteran as Disaster Victim"	Dr B Boman
	"Tropical Cyclone Oscar (1983): Psychological Reactions of a Fijian Population"	Dr M J Fairley
	"People who Experienced Cyclone Tracy: Human Responses"	Mr E P Milliken
	"The Southland Flood: an Organisational Approach to Disaster	Mr P E Berry

10.15 am - 12.30 pm	HELPERS AND WORKERS IN DISASTER	
	"The Role and Reactions of a Mental Health Team involved in the Victorian Bushfire aftermath"	Dr E F Berah Dr H J Jones Dr P Valent
	"The Response of Fire Fighters to Disaster and the Possible Role of Social Support"	Dr J M Innes Ms A J Clarke
	"Post Traumatic Stress Disorder in Fire Fighters: Ash Wednesday"	Dr A C McFarlane Mr G Croft
	"The Epidemiology of Disaster	Assoc Prof G M Budd
	"Insurance Response to Natural Disaster"	Prof G E Kearney

```
12.30 pm - LUNCH
 1.30 pm

 1.30 pm   SUMMING UP
 3.30 pm   General Discussion        Chaired by Prof B Raphael


           Close of Workshop         Brig I G C Gilmore


           Vote of Thanks            Dr A C McFarlane

 4.00 pm   DISPERSAL

           Bus departs for Airport
```

HUMAN BEHAVIOUR IN DISASTER IN AUSTRALIA

PAPERS PRESENTED