Trauma and Emergency Care

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Short Communication

The essence of a few disaster stress/trauma studies

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Abstract

Disasters are major disruptive events that are beyond the ability of communities to cope without substantial help from outside agencies. Stress/trauma is the term for severe emotional disturbance arising from sustained extraordinary pressures.

The combination is raised here in connection with a major air-crash that occurred in Antarctica and three others disasters of different kinds on a smaller scale elsewhere in the South Pacific. The purpose is not to condense the many publications they engendered into a single paper, but to draw attention to certain issues that arose from them and rarely are addressed. Above all, it affirms the role that more psychologists could play were disaster studies to be brought firmly into mainstream academic course-work, professional updating and clinical practice.

Short biography

Leaving aside the personal experience of bombing of London in the 1940's that led to membership of a committee of the NZ Institute of Public Administration to consider the organizational response to such matters, the author has a background in social work and prison psychology, academic teaching and clinical practice, plus research on social isolation and disaster studies, and long-term connections with Volunteer Service Abroad. He retired formally in 1991, and has since spread his wings further with disaster studies and penal reform.

Introduction

Four examples of different kinds of disaster are given here. Presented in chronological order, the first concerns matters arising from the adverse effects on emergency personnel after the 1979 DC10 crash on Mt. Erebus on 28th November 1979 that caused the loss of all 259 passengers and crew; the second, from the effects of the early November 1997 Cyclone Martin with the loss of 19 lives from Manihiki in the Cook Islands; the third, from a trauma service created for survivors and relatives of the 18 girls and their matron who lost their lives in the Motufoua Secondary School dormitory-fire on 8th March 2000 in Tuvalu; and the fourth, from the support provided primarily for families of parliamentarians taken hostage in the May 2000 coup in Fiji [1,2].

Massive disasters in the same Asia/Pacific region, such as the 2011 Christchurch earthquake, the 2011 Fukushima nuclear plant explosion, and the 2013 Aceh earthquake, are left aside for psychologists who were involved in the aftermath themselves to report.[1]

Collectively the selection discloses the rarely discussed methodological problems that applied psychologists encounter. It touches on negotiating access, the stages of disaster convenient for conducting research, and the modus operandi adopted. It also underlines the importance of attending closely to anecdotal reflections, respecting belief-value systems, validating clinical concepts and psychometric tests cross-culturally, and regarding justice as a basic human need.

In attending to such data, *inter alia* the paper revives the case for adopting a general systems theory that integrates the findings from diverse disciplines, and obliges psychologists to broaden their perspective accordingly [3].

Methodological problems applied psychologists encounter

Exigencies of the moment determined the response to each of the nominated disasters. None allowed for the leisurely identification, management and control of significant variables with one of two comparable groups, as the 'gold standard' for conducting research procedures would require. Neither could any follow laboratory convention and take into account the place of occurrence, time of onset and duration to suit the convenience of researchers and participants.

Consequently the approach to each of the selected examples was applied, heuristic and pragmatic. It was a) applied, despite the main emphasis in the discipline being experimental; b) heuristic, because excursions into uncharted territory invariably present fresh challenges; and c) pragmatic, because empirical solutions had to be found for the problems that surfaced.

However, gave reassurance, if not consolation, in saying that there is 'no method that gives us the royal road to truth, no rule, no technique, or set of principles (*to*) ensure that we shall not fall into error' [4].

None-the-less, when the first disaster occurred, experimental psychologists were a dominant force in academia. In becoming 'hard-

1Some 22 relevant papers on the 2011 massive earthquake in Christchurch alone gives some idea of the total number of psychologists involved.

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nosed' laboratory-based scientists, they followed the strictures of Israel and [5].[2] To them, ethno-psychology, personality theory and social psychology were passé, and the emerging domains of clinical and community psychology unworthy of support [6]. They ignored groundbreaking studies of the manifold effects of stress completely, and as a consequence left sociologists Russell Dynes and E.L Quarantelli virtually alone to address the human aspects of disaster [7-10].

Only in 2006 did the American Psychological Society yield to pressure and create a specific section on disasters and emergencies for its members and affiliates. Seven more years were to elapse before the British Psychological Society followed suit with a somewhat comparable Crisis, Disaster and Trauma Division.[3]

Nearer to home, a few applied psychologists with an interest in disasters and trauma were able to link-up with the Australasian Society for Traumatic Stress Studies and the Australasian Critical Incident Stress Association. A few with an international bent joined such organisations as the American based Disaster Mental Health Professionals or the Green Cross Academy.

In the early 1980s Douglas Paton of New Zealand's Massey University in Palmerston North, and currently of Charles Darwin University in Australia's Northern Territories, opened what proved to be a highly productive research field (cf. http://currents.plos.org/disasters/author/douglas-paton.utas-edu-au/). He buttressed the endeavor by initiating the *Australasian Journal of Disaster & Trauma Studies*. In 2006 his colleague David Johnston in the Wellington campus of Massey University introduced academic courses in the subject for front-line managers and fieldworkers, and recently John McClure of Victoria University of Wellington launched a research programme on decision-making in disaster-preparation [13,14].

To their credit, in 2014 the promoters of the 2nd International Conference on Cognitive and Behavioural Psychology did broaden their focus to include disasters, *i.e.,*: 'Going beyond the study of the human mind, academics and professionals working in the field of psychology now play a pivotal role in promoting the development as well as recovery of mental health on a global scale… Psychology professionals now more than ever are being called upon to respond to the needs of society and individuals experiencing crisis in different forms such as war, famine, economic turmoil, crime, murder, abuse, loneliness, and despair' (email of 21/3/2012 from the conference organisers to AJWT).

Should the pace quicken, psychologists with an inter-disciplinary perspective and a penchant for history, might be induced to consider in tracing the threads of modern civilization from disasters that occurred in the distant past [15-17]. The brave among them might even be tempted to focus either on previous disasters involving asteroids and comets, or on current threats from the same source. Some might even consider challenging linkage of global warning to the growth of capitalism [3,18].

Speculation aside, in 1978 when the first in the present selection of disasters occurred, there were no firm guidelines to follow from previous disaster stress/trauma studies. Hence in double-quick time it was necessary to devise a plan with limited aims, and modest requirements for staff and funding to meet the adverse reactions of those directly involved in the aftermath of the tragic air-crash.

Implementation of the plan required the recruitment of associates, a unified *modus vivendi*, careful documentation, a detailed analysis of the findings, the application and follow-up of remedies for the adversity encountered, the publication of results, and discussions with interested parties to learn from the experience.

Psychometric measures used in the clinical assessments also required cross-cultural standardization, before being made available to leave for local professionals to use thereafter.

Negotiating access

Here I should mention that I initiated the first of the selected responses to disaster, and was invited subsequently by government agencies to provide a clinical stress/trauma service for the remainder.

To be more specific, when the air-crash occurred I happened to be the honorary consultant psychologist to New Zealand's Antarctic Division of the Department of Scientific & Industrial Research [19]. As such, at the outset I was concerned with the potential effects of the air-crash on the staff at Scott Base nearby. Consequently I registered with an official help-line. Tom Clarkson, the head of the designated face-rescue climbing team, responded with a request for advice as to how long he should leave his crew on the mountain without a spell to avoid stress and fatigue.[4]

The request, together with finding that the staff from nearby US McMurdo station had stood in nobly to shield most of the Scott Base crew from having a direct involvement in the body-recovery work of their mostly New Zealand kinfolk, turned my thoughts to supporting the climbers, the US personnel, and the New Zealand Police Disaster Victim Identification Team.

Director R.B. Thomson of the New Zealand Antarctic Division, and Commission of Police R.J. Walton both gave permission readily to access their personnel as and when convenient. The chief medical officer for the police followed in support, and consultant psychiatrist to the police Alan Frazer joined me in constructing the research design and recruiting clinicians to assist with its implementation.

Commonsense soon had us extend our concern further to include other groups in the operation who were also at risk of trauma and fatigue. These included the helicopter crews servicing the Antarctic site, body-bag re-packers on the nearby Williams Field ice-runway, the US Army Chaplains who assisted there, and the R.N.Z. Air Force personnel who flew the human remains back to Auckland for coronial inquiries and burial. Then a final extension was made to encompass the augmented coronial, medical, dental, embalming and police staff at work on victim identifying victims in the Auckland mortuary.

The response overall was excellent, with 180 personnel (78.9%) of the 228 eligible taking part in the project within three months, and 100 (55.6%) in the follow-up about 20 months later.[5]

The attrition was not entirely unexpected, because the potential participants were highly mobile, with many either inaccessible on

[2]cf. Taylor (1998a) for a more forthright appraisal of the epistemological conflict [11].

[3]nb: It took 26 years for a journal of the British Psychological Society to publish an article on the effects of the 1940 Luftwaffe bombing of London [12].

[4]After discussion it was decided to replace the crew for rest and recreation every four days, logistics permitting. Incidentally, at the time stress and fatigue had yet to come under consideration in health and safety regulations [20].

[5]All sectors cooperated fully, except for Air New Zealand. At the last moment the company doctor for gave spurious reasons for the staff being unavailable, but nevertheless some of its staff obliged.

leave or working abroad at the specified times of initial inquiry and follow-up. For whatever reason some might simply not have wished to participate either initially, later, or on both occasions..

Results showed that the composition of the group with traumatic reactions varied at different stages of the project. About one third reported a variety of problems initially, one fifth after three months, and one tenth after 20 months. They reported sleep disturbance, loss of appetite, flashbacks to the mountain or mortuary scene, and a sense of social isolation. The younger and less experienced proved to be the more adversely affected.

Lessons were drawn, shared with relevant occupational groups, and duly published in professional journals. These induced the production of the first taxonomy of disasters, a differentiation of victim groups, and a flowchart for disaster-related clinical activity that subsequently proved to be useful elsewhere.[6] (cf. Figure 1 for the latest conceptualization) (Figure 1).

Self-reports led to a recommendation that in their training, future crews likely to be assigned to body-recovery and identification duties be encouraged in advance to identify their idiosyncratic perceptual defences, and to use them when engaged on grisly work[7].

For example, aside from the 'black-humour' that typically abounds within such groups, a climber spoke of the protective effect of making himself emotionally detached until routine spells allowed him to recalibrate his feelings. Similarly a policeman looked upon body-parts as pieces of jigsaw to be put together, until he finished a working shift and could consider the emotional realities of the job.

For a few others, the work aroused dorman t expectations and fears. In one instance the grim task was exactly as a physician had long held in the back of her mind as the ultimate profession al challenge she might have to face. In another, sharing the experience at home with his father helped them both - the son to unblock his emotional reactions, and the father to unlock his memories of being a prisoner of war in Poland during World War 2 made to clear the crematoria of a nearby concentration camp. For someone else it brought stories of concentration camp to life that her refugee parents had endured. For yet another it provoked a role-reversal in a dream in which, instead of his working on a body in the mortuary, the body worked on him: the dream was especially poignant because the policeman would have been on the tragic flight had he not changed his mind at the very last moment before buying a ticket.

While the disclosure of such personal anecdotes was significant in promoting the recovery of the people concerned, for two others it buttressed their emotional defences. They were devout Christians who attributed the aircraft disaster to the departure of their fellow countrymen from the paths of righteousness – notwithstanding the fact that several of the victims were of other nationalities, faiths, and Christian denominations. Then, even for those of their own particular sect who might have been on the flight, their justification for the penalty would have required evidence of the extreme transgressions the 'sinners' had committed.

Here a word must be said about the design of the mortuary. Although it was just three years old, and intended to provide for the country's biggest city with its largest airport, it proved quite inadequate

[6]The Australian Department of Home Affairs, the UK Ministry of Health in its disaster-training, and sundry personnel of the US Disaster Mental Health group adopted The resulting differentiation of disaster victim/casualties [21].

[7]Subsequent studies of students using pro-sections and cadavers in their training confirmed the need to support those experiencing emotional difficulty [22, 23].

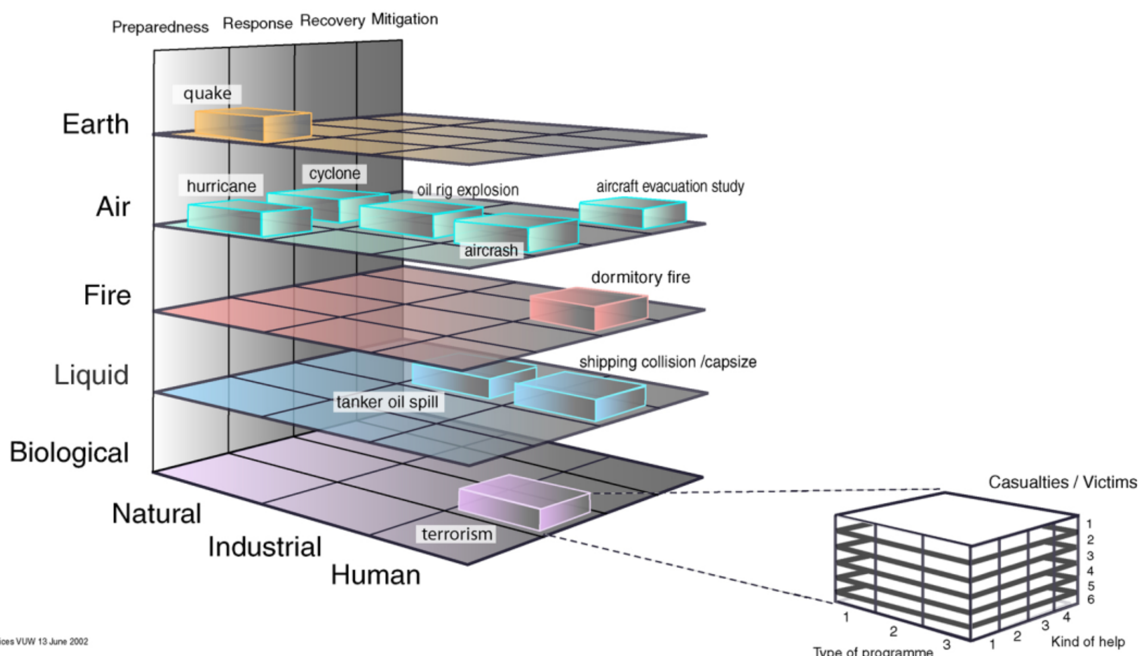

Figure 1. A Conceptual Model to Integrate Disaster Studies.

in size, layout, facilities, and equipment for the task on hand [24,25].

However, the Professor of Pathology did not take kindly to the inadequacies that so many of the augmented staff had reported, because none had had complained to him of the working conditions there. For the similar reasons he insisted that nobody had suffered stress![8] His dominance led him to demand that further reports on such matters should get his approval before being published. But that directive fell on deaf ears. It transpired that he had designed the building, and he ruled the roost.

The police chief medical officer courted similar controversy when addressing a conference on emergency management in Sydney. He claimed credit for the entire research design and its implementation. More than that, he claimed authorship of the nine-page synopsis of the project that he took word for word from one of my publications without acknowledgement and distributed to the audience. To add insult to injury, he knew I would be in attendance. The misrepresentation and blatant plagiarism led to the parting of our ways.

However, the needs of grieving relatives at the mortuary, particularly those of the 28 Japanese passengers with cultural obligations to sight the body and proceed to the crash-site, led me to propose that space and a grief counseling service be established there for the families of the deceased, and to suggest that such a service might also gather data for coronial research [26,27].

Incidentally, a decade later the Occupation and Safety Division of the Department of Labour in New Zealand found that only one of the 16 mortuaries in the country had facilities and practices that were up to standard [28]. Shortly after that, the World Health Organization [29] also drew attention to the socio-cultural aspects of handling human remains.

The other selected disasters in the South Pacific

As for accessing the other nominated disasters in the South Pacific, the relevant diplomatic agencies sketched the problems that prompted them to make the referrals for assistance. They facilitated access to the distant scenes, made arrangements for travel and accommodation, had me check my physical health, and gave advice on the appropriate clothing to be worn for the climate. A local pharmacy provided information about the endemic diseases to be found in the countries concerned, and gave helpful advice about treating common complaints.

To be more specific, the first of such other assignments in the South Pacific took me to Manihiki - a remote tropical atoll in the Cook Islands group to the North-East of New Zealand [30]. The island lies about 1200 kms from the capital island of Rarotonga, and is accessed weekly by air and irregularly by sea. It has two villages, Tukou and Tauhunu, that are set apart on a ring of land enclosing a large lagoon. At one time a total population of 500 lived there, but a shortage of resources obliged some 200 to move away. The island economy is sustained by the cultivation of pearls.

Cyclones in the region were a seasonal occurrence, but for a century none had been quite so catastrophic as the latest, named Cyclone Martin. It struck with full force of on 1st November 1997, casting enormous waves over the low-lying atoll, causing loss of 19 lives, the complete destruction of dwellings, damaged coconut-tree plantations, ruined crops, and polluted fresh water wells.

[8]A few months later US General Bill Gordon in California made an identical response when I asked him about the stress/trauma effects on the troops he had commanded when retrieving bodies from the Jonestown, Guyana massacre in 1978.

An emergency RNZAF flight with official observers had taken tarpaulin shelters, water supplies, food, blankets and clothing to the stricken community. It returned to Rarotonga with casualties for hospital treatment, and reports of a community in peril.

After a briefing in Rarotonga, I held a seminar on disaster stress with a group of social workers that was ready to support evacuees from the outer island. Providing emergency accommodation presented few problems, because Manihiki owned a community centre in the capitol, as did each of the distant islands.

When I arrived on a scheduled flight o the stricken island a few days later, a semblance of order was emerging from the chaos. The survivors had erected emergency awnings, allocated space for cooking, eating and sleeping, and were operating duty-rosters for communal existence. Men had begun to clear the tracks of fallen trees, corrugated roof-iron, and household debris. Women were running the kitchens, and caring for general family welfare. A doctor and two district nurses were treating people for cuts and bruises from the debris, as well as servicing general health needs.

Each village had structured its daily routine around meetings at which the clergy of four government-approved Christian denominations were as one in attributing the cyclone to the congregation's sinful ways, as declared in the book of Revelations. When they challenged me to state my personal beliefs, as was their practice with every visitor, I spoke of Maoridom's fourfold conception of health as having mental, physical, social and spiritual components [31][9]. It was not the moment to risk undermining their beliefs by referring to the mountain of evidence on climate-change, although later I was able to send posters on that topic in Polynesian languages to the local schools.

Normally the personal family circumstances and religious beliefs of the therapist hardly feature in clinical practice, for fear they might obstruct the development of a *tabula rasa* for clients to use in gaining insight to their emotional states. But psychoanalyst differed: he made the search for meaning the key to his own survival in Nazi concentration camps, and later the basis of his theory of logotherapy and existentialism [33][10].

In due course, on returning home I raised the religious attribution for disasters with theologians of different persuasions in New Zealand. One of whom, Dr. Nan Burgess, had taught in a theological college in the Pacific: she considered that the local clergy had yet to grasp the present-day *theological* implications of the scriptures as distinct from the biblical. Michael Abraham, her liberal rabbinical equivalent, spoke of the clergy needing to put the emphasis on the *New Testament* forgiveness of the individual transgressor, rather than on the punishment of the entire group to which the person belonged.

Another matter 'normally outside clinical practice', came via a telephone call from the central disaster-relief committee in Rarotonga. It sought my opinion as to whether the entire population on Manihiki

[9]McDonald (2000) used the term spirituality to cover religious attitudes, experiential dimensions, existential wellbeing, paranormal beliefs, and religious practices. His inclusive definition offers a cohesive meaning and purpose in life, and sets a framework for human conduct and group relationships that can engender the vital attributes for recovery from adversity [32].

[10]Then, surprising as it might seem to some psychologists, after the September 11 2011 terrorist attacks on the World Trade Centre in New York and the Pentagon in Washington D.C., even the American Psychological Association encouraged its members facing 'compelling challenges' to attend to their 'spiritual needs individually or within a community' (retrieved November 2, 2011 from http://www.apa.org/practice/ practitioner help.html).

should be evacuated.[11] I thought not, because a) the community was in the recovery mode, b) there was now no lack of essentials, c) social cohesion was very much in evidence, with tributes being paid to the heroic and Trojan efforts that some of the villagers had made during and after the storm to help others, d) humour abounded, and e) adolescents had begun to make their usual noisy presence felt. Although it was clear that in due course outside assistance would be needed for rebuilding houses, and clearing the accumulation of debris. There was even talk of the type of building that might withstand future battles with the elements.[12]

Post-disaster assignment in Fiji

There the formal request was to help the families of parliamentarians taken hostage after a coup in in Fiji in 2000. Ethnic tension had led a group of armed renegades to shut down parliament and hold a number of representatives captive. The situation could be classified as a human disaster

On site a local physician and military doctor Epeli Nailatikau and psychiatrist Henry Agwhana both warned of stress being manifest more through physical symptoms than the psychological – although in saying that they were drawing on their experience mostly of patients admitted to hospital. Subsequently the former proved most helpful in locating families of parliamentarians held hostage, and in taking part in the sessions that followed. Later, Dr Aghanwa obtained a comparable group of the local population for standardizing measures of stress, coping and the impact of events [27,37-39].

Most of the respondents were women whose husbands were parliamentarians.. Understandably they were all concerned for the welfare of their spouses. Some felt themselves to be under siege. In one instance a woman felt herself to be in so much danger that she confined herself to her bedroom, had an extra fence erected around her home, and hired watchmen to keep guard.

Dr Nailatkau prescribed tranquilizers to help the most severely affected, and kept them under his care afterwards. We supported the remainder as best we could, sometimes holding brief family group sessions to help fractious children calm down. We encouraged the flow of contact with the absentee parents though the agency of the Red Cross & Red Crescent Society.

We also made contact with the few parliamentarians who had accepted early release by agreeing to abandon politics. One of them was so unsettled initially that he summoned his friends to protect him before he would let us inside his home. He was disillusioned because he had sacrificed a career to enter politics, only to be left with a deep sense of injustice. Another was confident that a promise made under duress to abandon an interest in politics, would eventually be overturned.

Word of the trauma service provided to the families of captives must have percolated through to the captors, because the wife of a hostage-taker sought help, as did another who was visiting her home when I called. Both were as apprehensive about the prevailing political tension as parents on the other side, and as concerned about the disturbed behavior of their adolescent children.

Apart from other considerations, the project raised the underlying question of justice being recognized as a universal human need [29].

However, the assignment was not without unexpected problems. The first arose when a psychologist and a social worker, both Europeans, resented having me, an outsider, on their turf - one fearing that I might disrupt her plan to gain residential status by establishing a trauma practice, and the other thinking she should have been invited to be the consultant. The feelings of neither were easily placated, nor were those of the European head of the local branch of an international aid agency whom I admired for liaising between the hostages and their families. Quite without provocation he resented my presence, and berated me for being in the country.

While there might possibly have been some merit in the man's argument as far as I was concerned, a few days later he even failed to inform his senior international colleague that the release of hostages was imminent - although that person had obligations under international law to report on the condition of the hostages to the HQ of their organization in Geneva.

Obviously the local man was under extreme emotional stress, and he required more support on that score than his agency had provided. For that matter, the chain-smoking international representative could also have done with personal help. For about 10 years he had been a crucial intermediary between warring factions in Africa, the Middle East and the Balkans. In those places he had been constantly under emotional strain from seeing evidence of savagery and carnage, as well as from helping hordes of refugees trying to retain the semblance of family life under appalling living conditions[13].

Responding to the needs of relatives of the deceased and the survivors of the school dormitory fire

In Tuvalu, the final disaster to be mentioned here, I joined a medical group three weeks after the dormitory fire. It consisted of two local general practitioners, a surgeon, and an epidemiologist of from the country's small general hospital on the main island of Funafuti. Already it had established a clinic for the children who managed to escape the inferno, and it used the familiar criteria for diagnosing Acute Stress Disorders, Post Traumatic Stress Disorders, and extreme grief/anxiety reactions as set out in DSM 1V [40].[14] It agreed to include a local teacher who had just completed an academic course in student counseling at an Australian University – albeit without a practical component that was remedied later in New Zealand.[15]

After discussion the group extended its clinical appraisal to other children from the school, as well as to the teachers and family members both on Funafuti and Vaitupu (where the school was situated). These two islands held 70% of the Tuvaluan population, and the epidemiologist was confident about assessing the needs of anyone in the far distant and smaller islands during a forthcoming routine visit.

The central and local authorities approved the plan, and made suitable arrangements for it to be carried out. As a result, a surprising

[11]Here I pay tribute to the late ethno-psychologist Ernest Beaglehole for drawing attention to the paper by Aberle, Cohen, Davis, Levy & Sutton on the functional pre-requisites od society: it led me to coin the term 'sociotism' to describe the complete breakdown of society - comparable to psychoticism for the breakdown of individuals [34,35].

[12]For a more descriptive and complete account of the impact of the cyclone and recovery from its devastation [36].

[13]Curiosity led me later to raise the care of field staff when visiting the HQ of Oxfam in Britain. There I was surprised to find that the organization had not considered monitoring the occupational stress of its front-line workers.

[14]Apparently the fire had been caused by a pupil lighting a candle under a blanket at night to spend more time studying before a pending examination. The blanket caught light and the fire spread quickly throughout the dormitory. Some of the occupants were able to escape by smashing a door, but others were less fortunate and they perished.

[15]I wrote specifically for medical practitioners throughout the Pacific [42].

number of villagers turned up – to be precise, a total of 298 between the ages of 14 and 74: apparently the number would have been greater had some men not assumed the project was not intended for them! One hundred and twenty six were students of the secondary school, 36 were staff, and 136 were relatives of the deceased. They came not simply because of the cohesion that bound their communities, but also to fulfill their obligations under the extended family system that prevailed in Polynesia [41]. This meant that uncles and aunts had similar relationships with their nephews and nieces as birth parents in nuclear families of the West. Family ties with cousins were as close as those with brothers and sisters, as so on. No matter where they went on the island chain, everyone had close personal family ties that included the intensive sharing of grief, and joy.

After the customary formal welcomes on both main islands, local members of the trauma team explained their purpose, taking care not to engender psychopathology but drawing attention to the possibility of growth through adversity. Then, separating students from adults, they split the gatherings into groups of about ten to draw out personal reflections about the tragic dormitory fire. Should their clinical observations, or intimations of trauma from any quarter reflect the need for further attention, the group leaders referred those concerned to a group that I ran with the student counselor.

Several adults in the intensive group compared the experience with living in a horror-movie. They were distraught, tearful, suffering sleep loss and appetite disturbance. One man was recovering from a catatonic episode, but was tortured by the image of his daughter crying out for his help as she was being burned alive. Two were suicidal, thinking they no longer had sufficient reason for living. Another was homicidal, seeking vengeance against the authorities for not protecting his daughter, and against the prime minister for not allowing relatives to attend the burial. A woman trembled as she expressed her fervent hope that her deceased daughter might yet return home, as also might her son lost at sea some years before.

Despite the prevailing emphasis of the early Congregational Church missionaries, pagan beliefs were much in evidence. No matter how acceptable the behaviour of the deceased, after three days their ghosts were said to join the evil spirits that pervaded the environment [43].

Terrified adults swore that they had heard the clacking sound of ghosts at night: the ghostly noise made a middle-aged merchant service sailor cut short his long-awaited home-leave and return to his ship in Europe, made the village bell-ringer unable to perform her duty to mark the children's bedtime, and a father seek the protection of his family at the centre of his household mat before he could get to sleep. People of all ages were fearful of going outdoors to the toilets at night. By day some adults were so afraid of being alone that they stopped gathering wood and tending vegetable plots. A teacher hurried past roadside stones on his way to school, because for him they featured the faces of victims. Another attributed the tragedy to the sorcery practised a week before by a travelling circus magician in cutting and rejoining a woman on stage.

Pupils from the school seemed to be less unnerved, perhaps because little had been left to their imagination. They had joined the bucket chain to dowse the dormitory fire, and watched the recovery and laying-out of bodies, instead of being banished in bewilderment from the scene, as would be the case in many other communities[16]. They also spoke of having conversations with the ghosts of their friends who had been burned alive.

[16]Researchers in other parts of the world also found that victims of disaster benefitted from being kept together instead of being dispersed [44,45].

Normally, because of the frightening and mystical aura of ghosts associated with the scene of a tragedy, the village would have declared the whole disaster-site tapu. But since the fire had occurred in the only secondary school in the island chain, and the school had a critical function in the education of pupils for jobs abroad on which the potential economic security of their families relied, it seemed appropriate for me to raise the topic of exorcism with a local clergyman.

The Minister was already aware of such a need, and already he had conducted such a cleansing procedure. By chance, the very next day I was able to join him at a dawn service in which villagers took turns to express their grief aloud, before the rising sun bathed the whole congregation in light that symbolically brought them a new beginning Obviously it was a profoundly cathartic experience for all concerned.

To reinforce such ethereal measures, and to help to meet the needs of other islanders in the Tuvalu chain, I suggested that a memorial be created in the school on which the surviving pupils and grieving relatives might sit and retain their links with the deceased. Then, to avoid perpetual despondency, I suggested that the community might establish an annual commemorative festival both to mark the tragedy and to carry forward the high hopes the deceased would have held[17]. I also raised questions about seeking methods for protecting the adolescent girls from marauders at night other than locking them so firmly in their dormitory.

[17]Returning by invitation to the first anniversary of the tragedy showed that both suggestions had been adopted.

Overview

The foregoing vignettes indicate that disaster stress/trauma is a legitimate domain for psychologists. They also raise implications for established practitioners and researchers, quite apart from academics involved in the training of students. Already politicians, executives, and non-governmental personnel at local, regional, national and international levels pay heed to the part psychologists can play, as they prepare to face a variety of calamities that inevitably lie ahead.

The extension of service would also be consistent with the aim of the New Zealand Psychological Society 'in advancing the scientific discipline of psychology and psychology practice'.

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