A “Social Biopsy” of social process and personal responses in recovery from natural disaster

R. Gordon

GNS Science Report 2008/09
February 2008

GNS SCIENCE
TE PŪ AO

BIBLIOGRAPHIC REFERENCE

Gordon, R. 2008. A “Social Biopsy” of social process and personal responses in recovery from natural disaster, *GNS Science Report* 2008/09 14 p.

R. Gordon, 921 Station Street, Box Hill North, Victoria, 3129, Australia

ISSN 1177-2425
ISBN 978-0-478-19616-0

CONTENTS

ABSTRACT ..... **II**

KEYWORDS ..... **II**

1.0 THE COMMUNITY CONTEXT OF EMERGENCY RECOVERY **1**

2.0 THE RESEARCH PROJECT **1**

2.1 The flood affected communities 1
2.2 The interviews 2
2.3 Organisation of interview material 2

3.0 SOCIAL PROCESSES **3**

4.0 OVERVIEW OF SOCIAL PROCESSES **4**

4.1 The consequences of the social environment for recovery 5
4.1.1 Recovery Assets 5
4.1.2 Recovery Liabilities 6
4.2 Personal influences 7

5.0 CONCLUSIONS **8**

6.0 RECOMMENDATIONS **10**

7.0 REFERENCES **11**

ABSTRACT

A series of community-based interviews was conducted about one year after information meetings in three Eastern Bay of Plenty, New Zealand flood-affected communities, (Waiotahi, Awatapu and Matata). The interviews were considered as "social biopsies" of recovery. Interview material was categorised to reveal evidence of the influence of social processes in the effectiveness of recovery, and maintenance of community members' capacity for cognitive activity such as integrating information, planning and problem solving. Social processes decisive affected them by provoking disorganising emotions or creating an environment supporting social and personal recovery. The personal and social interventions undertaken in Matata had both positive and negative outcomes; however, in some cases they provoked disorganising emotions. Conclusions and recommendations for recovery policy emphasise the importance of the role played by stress in disrupting the ability to tackle problems of recovery and manage emotional responses. Providing increased social support in the aftermath, designing social communication processes to support people's understanding and decision-making and the availability of a fund of collective knowledge about recovery were identified as important recovery resources.

KEYWORDS

Matata landslide
Psychosocial impacts
Community recovery
Interventions

1.0 THE COMMUNITY CONTEXT OF EMERGENCY RECOVERY

Recovery policy and recovery processes after natural disaster are intended to remedy social and personal consequences of the emergency. The impact of an emergency is not only a result of the event, but also of the disruption during recovery. Recovery policy and strategies intended to minimise impact, promote restoration and intercept long-term destructive consequences need to be based on understanding the disruptive effects of the recovery period.

The research presented here explores the experience of recovery and the role of community consultation and information provision in three communities after flood events in 2004 and 2005. Data for this research was collected in interviews of disaster-affected members of the three flooded communities.

2.0 THE RESEARCH PROJECT

The floods that are the subject of this research occurred in the North Island of New Zealand in July 2004 (Awatapu and Waiotahi) and May 2005 (Matata). The author was invited to conduct meetings with community members in September 2004 and October 2005 to discuss community processes and recovery stresses, based on some twenty years' experience of emergency recovery in Victoria, Australia. Local recovery workers arranged the research interviews through personal contact with community members. One interview was conducted with two residents of Awatapu, two interviews (one with two residents; another with a married couple) were conducted in Matata and a focus group was conducted in Waiotahi with about thirty community members. Interviews were also conducted with the CEO of Whatatane District Council and the recovery coordinator of Matata.

2.1 The flood affected communities

Three communities were visited.

1. *Awatapu* is a low-lying urban subdivision within Whakatane. During the2004 flooding, some 450 houses were affected and 75 houses inundated. Some warning of the flooding was given, and a systematic evacuation took place when the nearby river broke its banks. The interview with two unrelated residents was conducted two years and four months after the flood event. Both interviewees lost all their possessions, and were living in alternative accommodation for many months, but at the time of the interview were back in their houses.
2. *Waiotahi*, a rural community, was flooded in 2004, causing extensive stock losses and environmental damage across a wide area, though few houses were affected. A focus group (unstructured group interview) was conducted in the community hall two years and four months after the event where about thirty local people attended by invitation from the agricultural recovery adviser. Most suffered extensively from the flood and had attended meetings with the author on a previous occasion.
3. *Matata*, a small town of some 700 residents was inundated with a flash flood in 2005 from

the adjacent hills, causing extensive destruction to houses and the environment along two streams. This exceptionally violent, 1 in 200 year event destroyed a number of houses and severely damaged infrastructure and the environment. It exposed continuing risk to parts of the community that required expensive mitigation works (which in 2005 had not been implemented) and some people's recovery was held up by delays in funding and planning approvals about their houses and environment. Two interviews were conducted in this community one year and six months after the event.

In addition to the interviews and focus group meetings with community members, two local government staff were interviewed mainly in relation to the Matata event.

2.2 The interviews

A set of questions was prepared to ask interviewees; however, participants immediately began talking intensely about the issues important to them. There was little opportunity to ask prepared questions or direct the interviews as intended by the protocol. The structured interview was dispensed with and their issues were recorded. The pressure of speech gradually subsided and there were opportunities to direct their attention to matters they may not have discussed. Their conversation was loose and associative rather than providing a temporal narrative. At times they were incoherent and showed tearfulness and distress around specific topics, suggesting unresolved stress about events that had not been talked about before.

2.3 Organisation of interview material

The purpose of this research is to examine how an emergency alters the social environment of the communities and to the trace consequences for the social fabric that underpins the recovery efforts. It considers the relationship between social disruption and disruption of people's capacity to undertake activities involved in recovery.

The research draws on qualitative research methodologies (Denzin and Lincoln, 2000), particularly techniques such as grounded theory (Strauss and Corbin, 1998), purposive sampling (Silverman, 2005) and unstructured group interviews (Fontana and Frey, 2000). The interviews are considered as a "social biopsy" of the psychosocial continuity. They demonstrate the nature of processes occurring in the social fabric, though not their extent. As with medical biopsies, they are part of a range of techniques and provide a starting point for further investigations.

In the first section of this report, interview material has been collated and organised according to five themes: impact, evacuation and relocation, intensified social involvement in the recoil, conflict and divisions that emerged during recovery, and constructive social organisation for recovery. The themes are derived from the material of the interviews, but also draw on the definition of community processes observed during recovery as described in a series of earlier publications (Gordon, 1989, 1997, 2004a, 2004b, 2004c, 2005).

In the second section, interview material has been collated to show influences that facilitated or impeded recovery. These recovery "assets" and "liabilities" were related to psychosocial continuity.

For the third section collated material has been organised to describe evidence of disruption of cognitive capacity and overload of emotional responsiveness. *Cognitive Disruption* describes the state when an otherwise competent person's cognitive capacity is temporarily disrupted by situational factors to the degree that it interferes with their thinking, understanding, planning, decision-making and other cognitive tasks required to recover from the emergency. *Emotional Overload* describes the state when the intensity and complexity of the emotions generated by circumstances of the emergency or recovery reach the point where they can no longer be managed and interfere with the capacity to undertake the physical and mental activities required for their recovery.

3.0 SOCIAL PROCESSES

The first set of themes concern social processes initiated by the emergency and during the recovery period.

The impact of the flood on the social environment. The suddenness of the flood replaced the existing social system and its associated roles by placing an exclusive focus on monitoring threat and ensuring survival. Informants' awareness is generally restricted to their own experience and lacked an overview or awareness of the community as a whole. Their cognitive competence was interfered with where they needed to act immediately and had no time to plan. They lacked time to think or make decisions, but were instructed what to do by emergency service personnel. Media representations of the flood disaster elevated anxiety. There were moments of high emotion including anxiety about safety, stoic humour, and shock. New and improvised roles experienced during the emergency were disorganising and prevented confident thinking and decision-making.

Evacuation, relocation and aftermath. Upon reaching the evacuation centre, interviewees described continuing disruption of social roles that support intentional action and personal decision-making, resulting in a diminished sense of self-control and autonomy. Disruption of social fabric caused cognitive disruption and simple tasks such as collecting medication failed. There was loss of self-awareness and shock when they received information with high emotional significance for which they were unprepared. Cognitive disruption was associated with reduced self-awareness. In the rural context, the intensity of the reparative work disrupted social roles that maintain family groups and the flow of vital emotional communication is suspended, disrupting relationships. As long as people were in an unstable and unfamiliar situation, they had constantly to adapt to change.

Social processes in the recoil. The loss of normal social roles and interpersonal distance stabilised as recovery proceeded, but unresolved issues, including returning to their houses and insurance, generated a communication system responsive to rumour, assumptions, increased emotionality and interpersonal closeness at the expense of rational evaluation of information and respect for difference. Emotions were amplified and people came together around common judgements. While initially supportive, this social system enhanced

cognitive disruption by multiplying rumour, increased the load of emotions and imposed restrictions on what could be communicated, since everything was analysed and commented upon. Many distressing experiences had not been talked about until the interviews. Loss of social structure and interpersonal space occurred by focussing on material assistance at the expense of psychological support processes that would maintain cognitive functioning and assist in managing emotions. Social roles and distance were re-established as threats such as financial problems, rebuilding, permits to return and mitigation works were resolved. Rural community interviewees showed less evidence of these processes; this may be attributable to collective knowledge of floods and their ability to activate an alternative social order of mutual help to meet recovery needs.

Social tension and conflict. As recovery progressed, the disaster's consequences became a social organiser, establishing new affiliations between those affected. Inter-group conflicts circulated emotionally laden information and judgements made in the context of narrowly circumscribed survival concerns. Recovery frustrations organised emotions along the divisive lines and were expressed as conflict or antagonism. They cut across previously existing support networks and promoted emotional overload and cognitive disruption. A further source of division was lack of community commitment to recovery activities. This may reflect low morale and focus on individual survival, but it also indicated stress and exhaustion in people engulfed in recovery concerns. The combination of emotionally charged conflictual relationships and social withdrawal interfered with circulation of recovery information and formation of social networks to support recovery.

Social organisation for recovery. Social structures to counteract divisive tendencies were established by the formal recovery system and emerged from the community. Less formal structures faded as recovery tasks were accomplished; formal recovery services were most effective when integrated with informal community social systems. This was only achieved in the rural community where the locally appointed advisor was accepted as a full community member with access to communication networks and collective knowledge. In the small town, the fragmentary impact and pre-existent divisions necessitated coordination of community structures to meet the complex mitigation and planning problems, and local government sponsored consultations were required. Cognitive disruption, emotional overload and social divisiveness were greater where informal recovery social organisation was less developed and formal recovery not as integrated into informal social networks. Early provision of targeted assistance engendered confidence and optimism that modified stress and enhanced resilience by reducing anxiety and emotion. It also discouraged cognitive disruption by rumour, contradiction and misunderstanding. Assistance that included advisors or coordinators with access to informal social support systems activated social capital towards recovery needs.

4.0 OVERVIEW OF SOCIAL PROCESSES

The interviewees indicated that the social environment is suddenly changed by the disaster and initiates a period of social turbulence. Affected people are deeply engaged with community, responding intensely to fluctuations as various influences come to bear on them. Aspects of pre-disaster structure are disrupted, then replaced by improvised systems that cause tensions and divisions as disaster-related differences emerge. Community members

are buoyed up and dragged down by this turbulence. The disorderly nature of these functions stimulates disruptive emotions that disrupt their cognitive capacities to understand issues and manage recovery. Alongside this, a range of constructive social adaptations and formal and informal organisations deliver support and services.

4.1 The consequences of the social environment for recovery

The social effects can be divided into those that assist recovery (Recovery Assets) and those that interfere with it (Recovery Liabilities).

4.1.1 Recovery Assets

Interviewees described influences that assisted their recovery, provided support, compensated for cognitive disruption and emotional overload and helped restore a sense of competence.

1. *Unaffected people* helped manage recovery tasks. People took evacuees to their homes; an insurance agent, sister-in-law arriving for a scheduled holiday and adult daughter took over tasks which evacuees could not perform.
2. *Local people and neighbours* from the affected community including local businesses gave assistance.
3. *Cooperation from agencies involved in restoration.* Insurance companies, loss assessors, local government agents, inspectors of various sorts were assets when they were cooperative, facilitating, advocating, supportive and valuing of interviewees. They provided hope and reassurance.
4. *Confidence* in assistance measures and support from bankers were psychological resources enabling interviewees to work with confidence they would be recompensed. Funding coming within two weeks of applying allowed them to relax so they became aware of how stressed they had been.
5. *Optimism about the future* followed from confidence in being able to recover. Optimism was attributed to financial assistance measures, material assistance, psychological support and collective knowledge.
6. *Collective knowledge* of floods and recovery was a recovery asset. Advisors who gave effective advice supported confidence. Advisors from another flood-experienced community were helpful.
7. *Stress information meetings* brought people together around considering their personal and family welfare and offered information to help understand their current condition and how to manage through the recovery process.
8. *Managing stress and exhaustion* was a recovery asset, by getting away from the flood environment after about six months and making opportunities to reconnect with children and enjoy being with each other.
9. *Symbols of support.* Actions of recovery authorities related to perceived needs became symbols of support that empowered them. Earthmoving equipment symbolised care, support and restoration of the environment. Timely assistance for restoring farm works showed the government was behind them
10. *Time passing* was a helpful recovery influence. Rural community interviewees said between six and nine months when they felt they were “up to speed” again. This was

dependent on the reappearance of grass. However, time itself can only be an asset in the presence of confidence and optimism.

Recovery assets derive from coordination of social systems that support cognitive activity tackling recovery problems and reduce emotional load. Unaffected people enhanced cognitive capacity and reduced interfering emotions; influences that engendering confidence and optimism aroused helpful emotions that increased energy. Assistance measures were a psychological asset for the rural community, but their effectiveness depended on them being integrated into the social context. Collective knowledge was an asset derived from adapting and disseminating knowledge to recovery tasks; effective knowledge restored cognitive capacity, provided self-understanding, reduced stress and emotional overload and put things into perspective.

4.1.2 Recovery Liabilities

In contrast to influences supportive of recovery, interviewees described influences not specifically related to the disaster event or its impact, but to the recovery environment that interfered with their recovery.

1. *Lack of a support person*. A single parent interviewee felt at a great disadvantage and meant she "did not get set up" until much later.
2. *Supporters who did not understand recovery.* They varied from less affected neighbours to family and friends outside the area who offered misguided and unhelpful advice, or showed simplistic and unrealistic assumptions such as: "you must be getting back on your feet now the grass is growing."
3. *Lack of facilitated social processes to address stress and conflict.* In the small town, failure to follow up the stress information meeting with a social process to manage the community fragmentation that had been identified was a lost opportunity for reducing emotional load.
4. *Unrelated personal crises.* Two interviewees were notified that a medical operation for which they or a relative was waiting had been scheduled a few weeks after the flood. They did not feel they could postpone it, but it added to the problems of recovery.
5. *Lack of control over restoration, rebuilding and replacement.* Rebuilding and insurance contacts caused constant distress and frustration, and gave interviewees a sense they had no control over their affairs. Inaction or not knowing what was happening created emotional load.
6. *Cognitive disruption and emotional overload.* Being unable to make decisions, confront complex issues, negotiate with government agencies or understand the complexities of recovery issues created a sense of being out of control and at the mercy of other forces. Emotional exhaustion and feeling they could not cope created a sense of crisis and loss of confidence. The damaged environment was a source of emotional load confronting interviewees whenever they stepped outside.
7. *Unhelpful advice from advisors inexperienced in disasters.* A profusion of advisers provided common sense or general advice that lacked specific understanding of disasters. Their advice was "off the mark" and ineffective. Anxieties about finance and recovery were only alleviated by disaster experience.

8. *Not being listened to, being preached at by experts.* Experts tended to "come in and preach" instead of finding out what farmers needed and relate it to their knowledge. Advice given before they had come out of shock or assessed their situation was unable to be used. Agricultural advisors had no time to listen; they only talked and their visits added to stress.
9. *Lack of cooperation from agencies involved in restoration.* Insurance companies, loss assessors, local government agents and various inspectors were liabilities when they were perceived as uncooperative, delaying, demeaning, avoiding responsibilities, protecting themselves and obstructing restoration of lost assets. Dealing with them caused emotional load, demoralisation and despair. They often did not understand the roles and responsibilities of various agencies and misinterpreted their actions.
10. *Uncertainty about the future.* Lack of certainty about laws, by-laws, planning permits and regulations, together with perceived confusion and contradiction by authorities responsible for determining whether they could stay in their houses, increased emotional load and undermined cognitive competence.
11. *Loss of confidence in recovery agencies.* Lack of action, delays or changes in arrangements caused pessimism about what would happen and distrust of authorities. Perceived contradictions and changes of position were interpreted as lies and dishonesty. Officials' inability to carry out what was wanted was seen as betrayal of trust. While the person in contact with them was seen as trustworthy, higher authorities were felt to be opposed them. This created emotional crisis and despair.
12. *Symbols of abandonment.* The actions of recovery authorities took on symbolic meaning unrelated to actual circumstances. When uncertainty about the mitigation and risk reduction works led to withdrawal of earthmoving equipment without warning, it felt like abandonment. When community members did not understand the roles and responsibilities of different agencies and authorities, their actions became symbolic of indifference and lack of support.

Recovery liabilities are features of the social environment with a direct and disruptive impact on interviewees' attempts to recover. Absence or misunderstanding of support people, lack of a coordinated approach to social divisions or control over agencies managing recovery tasks, point to the social system being unsuccessful in interfacing with affected people to complement their recovery activity. Unhelpful advice, not being listened to, uncooperative agents, uncertainty and loss of confidence indicate that normal relationships are no longer effective. A mismatch between roles in the provider/client relationship means providers undertake normal activities without recognising the emotively laden symbolic interpretations made by affected people. This degrades social fabric so transactions between affected people, support networks and recovery agencies do not proceed according to intentions.

4.2 Personal influences

Interviews yielded information about how the personal state of interviewees affected their capacity to undertake the work of recovery and their emotional welfare. They provided information about the circumstances in which their cognitive capacity was disrupted and they felt overloaded by the intensity and complexity of emotions. The conditions of *cognitive disruption* and *emotional overload* are discussed together since they present as two facets of a single state.

Cognitive Disruption and Emotional Overload. Cognitive disruption is caused by and results in emotional overload, showing the close, reciprocal relationship between thinking and emotions in recovery. Interviewees indicated they lacked the normal degree of detachment from their experiences that allows flexibility in emotional response and preserves distance between the self and events. While they struggled for this, they often did not achieve it. The intensity matches qualities of the social environment as an over-active communication system with divisions and affiliations adding unfamiliar emotion to otherwise routine activities. Uncertainty, threats and frustration stimulate strong emotions that cannot be expressed in or absorbed by the social system in its state of overactive disorganisation.

Cognition is disrupted by the overload of threatening emotions, generated by various aspects of the recovery social environment. Inability to accept or understand many communications was because the information fell outside the narrow focus of survival-oriented thinking about specific problems symptomatic of their stressed state. They could not deal with issues that did not provide immediate solutions or strategies for specific needs; instead, they heightened emotions which led to overload and disruption. Collective knowledge aided individuals' cognitive capacity and reduced emotional load when mobilised within a social system that allowed them to focus on the information itself without having to think about who was providing it and what else might be involved. Cognitive disruption resulted from emotional overload in an environment where there was mismatch between their needs and the social systems delivering the recovery services. Once they entered this state, they were less able to make use of even well-planned consultation processes. The result was escalating stress.

5.0 CONCLUSIONS

A number of conclusions can be drawn from the material that have a bearing on policies and priorities not only for conducting recovery programs, but also for response activities such as evacuation, mitigation and risk management functions as part of longer term development priorities for affected communities. Recommendations in the next section are paired with the conclusions.

1. The urgency and peremptory behaviour of emergency service personnel during evacuation suspends evacuees' sense of control over their own destiny, fractures the psychosocial continuity, heightens shock and initiates cognitive disruption. These effects exaggerate the damaging or traumatic effects of the emergency and impede recovery. Effective warning and giving even a few moments grace to make decisions may mitigate this effect. Emergency personnel naturally prioritise physical welfare, but at times this may be at the expense of psychosocial welfare. Emergency medical procedures and first aid take care not to create further injury by over-enthusiastic or hurried retrieval. The same values apply to psychosocial care.
2. Evacuees in an evacuation centre need contact with people who can provide information, orientation and assist them to understand their own needs and help them make decisions about their own welfare. This may be provided in conjunction with meeting physical needs.
3. The shock and psychosocial disruption of evacuation only ends with the return to ordered social fabric. It cannot be ensured if this will occur by evacuees making their own

arrangements. Early return to social order minimises disruption. It may be as important to ensure that returning to social order is facilitated as it is to provide medical follow up after administering first aid. Recovery agencies need to ensure those people disrupted by the emergency are aware that further assistance to help manage the disruption of the emergency is available.

4. The immediate post disaster period is one of high emotion and changed social structure with intensified interaction and reduced interpersonal distance. This promotes rumour and emotional communications that are disorienting to those needing information and impeding planning and decision-making. While emotions need to be expressed, they also need to be managed to ensure they do not overload the capacity for self-regulation and disrupt cognition.
5. The successful adaptation of formal and informal community structures to the requirements of recovery does much to manage unregulated emotional communication; having key local informants integrated into the formal recovery system helps this.
6. Divisions and conflict are inherent in the aftermath as excitement subsides and differences in impact and responses emerge and are known in the community. Divisions significantly degrade community fabric and create tensions in the community that contribute to emotional overload and cognitive disruption in its members.
7. A strong social recovery program oriented toward community development values and the community's future provides an effective buffer to the natural tendency for divisions to become the *de facto* social organisers.
8. Divisions between the members of the affected community and their external personal support systems occur as recovery becomes more complex and protracted. Information and education provided to the wider community about the real problems and lengthy time frame of recovery is necessary if these systems are to be maintained as supportive.
9. People have strong bonds of identity and responsibility to their community. These form the basis for coordinating socially helpful endeavours provided there is a social infrastructure for them.
10. Shared information and experience contribute to a fund of collective knowledge that is a major source of assistance for affected people regarding the practical problems of recovery.
11. Social processes and the social impact of personal, financial and other influences operate as assets and liabilities to the recovery process. Often the difference is related more to *how* things are done and *how* they are communicated. Whatever is done can be an asset or liability depending on how well it integrates with social processes and the personal state of members.
12. A wide variety of influences contribute to emotional overload and cognitive disruption from the moment of impact and throughout the recovery period. These states are a major liability and become the mediating factor for many long-term stress responses and cause deterioration in quality of life during recovery. Both of these personal states are intimately related to the quality of the social process and communication with responsible agencies. The management of social processes and communication is a major area for intervention to reduce the personal cost of recovery and augment their own capacity to recover.

6.0 RECOMMENDATIONS

The following recommendations flow from the conclusions drawn above.

1. To whatever extent possible under the circumstances, agencies and personnel conducting evacuation should consider assisting evacuees to make decisions and act out of their own volition, even if this is done with only moments of consideration, rather than peremptory orders.
2. Trained personnel should offer "personal support" to evacuees to assist them recover their sense of agency and orient themselves to the situation.
3. The psychosocial disruption of the response needs to be terminated by restitution of social order; this can be ensured by recovery agencies providing the earliest possible follow up and continuing personal support of affected individuals.
4. In the post impact period, there is an important role for active communication and information processes to structure the exchange of information and expression of emotion so those affected can be oriented to the event and recovery arrangements. It is important to complement recovery skills of recovery teams with expertise in the management of social communication and collective emotion to ensure these aspects are addressed.
5. The early formation of community based recovery structures integrating influential local personnel forms the nucleus of effective social process management.
6. The implementation of support programs as recovery proceeds should anticipate possible divisions in impact and recovery factors that are likely to be the basis for social tensions. These programs need to provide opportunities for group support and communication to help community members place differences in their circumstances in context.
7. The recovery program needs to ensure that community development values and future goals become points of common acceptance to counteract divisions that otherwise disrupt community cooperation.
8. Recovery management includes facilitation of supportive relationships between members of the affected community and their external support networks. Wider support systems need to receive information to enable them to understand the full impact of the emergency, the needs of affected community members and provide suggestions about how they may be helped.
9. Community members need facilitated social systems based on pre-disaster community structures to provide opportunities to express community solidarity.
10. The formation of a fund of collective knowledge about management of the disaster and recovery problems within the recovering community is a high priority and requires facilitated communication. This will contribute to community cohesion, confidence and identity.
11. The potential for interventions to operate as recovery assets or liabilities needs to be the basis for designing them and the developing social communication and consultation systems needed to integrate them into the social fabric. This aspect has to be integrated with whatever other purpose they may have. Interventions should be planned as part of a social process designed to ensure that they are understood and effective.
12. Since cognitive disruption and emotional overload are consequences of unsupportive social processes, the management of the social environment, especially through attention to information and communication processes constitutes an important method of assisting recovery and mitigating its effects.

7.0 REFERENCES

Denzin, N. and Lincoln, Y., Editors, (2000). *Handbook of Qualitative Research*, 2nd Edition. Thousand Oaks, Sage Publications.

Fontana, A. and Frey, J. (2000). The interview: from Structured questions to negotiated text. In Denzin, N. and Lincoln, Y., Editors, (2000). *Handbook of Qualitative Research*, 2nd Edition. Thousand Oaks, Sage Publications, pp. 645-679.

Gordon, R, (1989). Community process and personal responses in disaster. Chapter 1 in C. A. Ackehurst, D. Beggs, R. Gordon, J. Isherwood, M. B. O'Connell and G. D. Smith, *Engineering Aspects of Disaster Recovery.* Australian Counter Disaster College Manual No.1. Mt. Macedon, Australian Counter Disaster College.

Gordon, R, (1997). Theory and Practice of Early intervention in Trauma and Disaster. *Psychotherapy in Australia,* Vol. 3, No. 2, Feb., pp. 44-51.

Gordon, R, (2004a). The Social Dimension of Emergency Recovery, Appendix C in *Emergency Management Australia, Recovery*, Australian Emergency Management Manuals Series No 10, Canberra, Emergency Management Australia, pp. 111-143.

Gordon, R, (2004b). Community Process and the Recovery Environment following Emergency. *Australian Journal of Environmental Health*, Vol. 4, No. 1., pp. 19-34.

Gordon, R, (2004c). The social system as site of disaster impact and resource for recovery, *Australian Journal of Emergency Management*, Vol. 19, No. 4, November, pp. 16-22.

Gordon, R, (2005). Recovery from Emergencies: Social and Personal Dimensions. In *Civil Care and Security Studies*, Edited by Rod Gerber and John Salter, Kardoorair Press, Armidale, NSW, pp. 335-367.

Perry, R. and Quarantelli, E., (2005). *What is a Disaster?* International Research Committee on Disaster. New York, Routledge.

Silverman, D. (2005). *Doing Qualitative Research: A practical handbook*, 2nd Edition. London, Sage Publications.

Strauss, A. and Corbin, J. (1998). *Basics of Qualitative Research: Techniques and procedures for developing grounded theory*. Thousand Oaks, Sage Publications.

www.gns.cri.nz

Principal Location

1 Fairway Drive
Avalon
PO Box 30368
Lower Hutt
New Zealand
T +64-4-570 1444
F +64-4-570 4600

Other Locations

Dunedin Research Centre
764 Cumberland Street
Private Bag 1930
Dunedin
New Zealand
T +64-3-477 4050
F +64-3-477 5232

Wairakei Research Centre
114 Karetoto Road
Wairakei
Private Bag 2000, Taupo
New Zealand
T +64-7-374 8211
F +64-7-374 8199

National Isotope Centre
30 Gracefield Road
PO Box 31312
Lower Hutt
New Zealand
T +64-4-570 1444
F +64-4-570 4657