

## “To Leave Something (meaningful) Behind”: Honouring the Late Professor Douglas Paton and his comprehensive meaningful DRR legacy

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URL: [https://trauma.massey.ac.nz/issues/2024-1/AJDTs\\_28\\_1\\_Editorial.pdf](https://trauma.massey.ac.nz/issues/2024-1/AJDTs_28_1_Editorial.pdf)

### To Leave Something Behind

Sean Rowe

*I cannot say that I know you well  
But you can't lie to me with all these books that you  
sell  
I'm not trying to follow you to the end of the world  
I'm just trying to leave something behind  
Words have come from men and mouse  
But I can't help thinking that I've heard the wrong  
crowd  
When all the water is gone my job will be too  
And I'm trying to leave something behind  
Oh money is free but love costs more than our bread  
And the ceiling is hard to reach  
Oh the future ahead is broken and red  
But I'm trying to leave something behind  
This whole world is a foreign land  
We swallow the moon but we don't know our own  
hand  
We're running with the case but we ain't got the gold  
Yet we're trying to leave something behind  
My friends I believe we are at the wrong fight  
And I cannot read what I did not write  
I've been to His house, but the master is gone*

*But I'd like to leave something behind  
There is a beast who has taken my blame  
You can put me to bed but you can't feel my pain  
When the machine has taken the soul from the man  
It's time to leave something behind  
Oh money is free but love costs more than our bread  
And the ceiling is hard to reach  
Oh the future ahead is already dead  
And I'm trying to leave something behind  
I got this feeling that I'm still at the shore  
And pockets don't know what it means to be poor  
I can get through the wall if you give me a door  
So I can leave something behind  
Oh wisdom is lost in the trees somewhere  
You're not going to find it in some mental gray hair  
It's locked up from those who hurry ahead  
And it's time to leave something behind  
Oh money is free but love costs more than our bread  
And the ceiling is hard to reach  
When my son is a man he will know what I meant  
I was just trying to leave something behind  
I was just trying to leave something behind*

### Professor Douglas Paton



On the 24<sup>th</sup> of April 2023, the disaster sector lost one of its most influential leaders: Professor Douglas Paton. After “walking the talk” in the face of adversity right to the end, and healing several cancers for over 4 years, Douglas reclaimed his power and chose to pass over. As he wished, Douglas was at home surrounded in a circle and held by his mum, partner, sister, niece, and nephews listening to “Leaving Glen Affric”. Douglas passed over imbued with deepest love, content, fulfilled, and at peace. Humble as he was, Douglas’ wish was to “just fade away” - he only wanted to have a small private celebration of his life and farewell. Accordingly, his family and partner honoured and mourned Douglas following ancient Scottish traditions. For the Paton family, this poem “Epitaph On My Own Friend” by the national poet of Scotland Robert Burns is reflecting who Douglas was:

An honest man lies here at rest,  
As e'er God with his image blest:  
The friend of man, the friend of truth;  
The friend of age, the guide of youth:  
Few hearts like his, with virtue warm'd,  
Few heads with knowledge so inform'd:  
If there's another world, he lives in bliss;  
If there is none, he made the best of this.

The family and his partner bid their final farewell to Douglas by listening to the song he wanted to leave with, “To Leave Something Behind” by Sean Rowe. As with everything with Douglas, this song choice was deeply thought through. The lyrics express that Douglas believed that the predominant Western superficial materialistic, mechanical, and individualistic culture prioritises financial gain over the health and wellbeing of humans and nature. They also reflect thoughts that the predominant Western culture is increasingly eroding knowledge and wisdom regarding the profound aspects of life including our own human nature, threatening the very existence of all life. Douglas felt the deep pain of the broken state humanity is in. In response, Douglas was interested in finding and understanding life’s deeper truth and wisdom and pursued this path with tenacity. Rather than leaving a mark that is about fame and tied to the material world, Douglas desired to contribute something that truly matters and has value – that enables and empowers humans in heartfelt and substantial ways to reclaim their soul and power. To accomplish such a legacy, he worked tremendously hard and sacrificed a lot to create and leave behind a body of knowledge and wisdom. Douglas wanted to offer people and communities, especially those living in less privileged circumstances, knowledges that enabled them to (re)build their individual and collective capabilities and

capacities to restore and ensure their health and safety in the face of an increasingly broken world. He hoped people would realise what really matters and shift their choices and subsequent actions accordingly.

There were so many diverse and wonderful facets to Douglas. He and his life were tremendously rich and deep. Most of all, Douglas was and always will be a deeply loved, respected, and appreciated son, partner, brother, uncle, great-uncle, friend, collaborator, colleague, and neighbour. Besides his Scottish name, he also has a Chinese name and a Yolŋu name. His Taiwanese collaborators named Douglas 羅, 錦福 - 羅 (Lwo): the four ethical principles of propriety, justice, honesty, and sense of shame; 錦 (Jin): brocade, brilliant, gorgeous, bright; and 福 (fu): happiness, good fortune, good luck, blessing, bliss. His Yolŋu (Australian Indigenous peoples living in East Arnhem Land) collaborators call Douglas their Yinḍi Bungawa (big boss). A Senior Elder adopted him and named him Bulmanydji (shark) Munugurr. Douglas truly lived an authentic, rich, and fulfilled life. He accomplished all his dreams, learnings, and purpose. He will continue to live on in our diverse rich memories as a loving and caring, humble, strong yet gentle, authentic, gracious, and loyal human being who lived with great integrity and sense of purpose.

Douglas contributed so much to humanity and our earth. Douglas was a brilliant, humble, committed, and wise scholar – researcher; educator; supervisor for numerous honours, masters, and 34 PhD students; mentor to many early and mid-career scholars; and advisor to a wealth of national and international business, professional, and philanthropic organisations. Douglas was not only humble, but liked to help the people he met to fly and thrive - he liked “to make soldiers believe and work to become generals”.

Douglas was able to see, understand, and be with complexity, uncertainty, processes, and contradictions. He could view issues from multiple perspectives and see relationships between them. He loved learning for the sake of learning. He was inherently curious, and loved inquiring and working out how things work. Douglas’ mind became over time an encyclopaedia of disaster risk reduction (DRR) and associated bodies of knowledge. His writing was skilfully crafted – logically-flowing and concise stories that took readers on a journey exploring what facilitates and what hinders us individually and collectively developing adaptive capabilities and capacities that ensure our safety, health, and growth.

Douglas worked extremely hard and with immense commitment to create this legacy.

Douglas grew up in Scotland. When he was only 5 years old, he proclaimed to his parents upon seeing the University of St. Andrews that he would study and work at this university and so he did, foreshadowing a life that was characterised by having dreams and working with great dedication, humility, and persistence towards fulfilling them. Being present a lot in nature and a deep thinker as he grew up resulted in Douglas studying first geology and then psychology at the University of St. Andrews. His inquiring into disasters meant that he could use both his passion for earth sciences and psychology, giving him a unique perspective that appreciates both the natural and the human world. In line with the strong behaviourist focus psychology had in the 1970s and 1980s, his research started with studying the behaviours of birds. For his honours project, Douglas studied the orientation mechanisms in the juvenile Southern puffin and possible relation to their sea-finding behaviour on the Isle of May (1976, supervisor: Dr. Robert Prescott). He went on to investigate the reactor responses given by great skuas who did not attack or escape after displaying in the club areas of breeding colonies on Noss, Hoy, and Fair Island for his PhD project at the University of Edinburgh (PhD supervisor: Dr Peter Caryl; Paton, 1986; Paton & Caryl, 1986).

In the next paragraphs, we have tried to give a chronological overview of Douglas' vast body of work to show how, over the course of his academic career, he systematically developed a rare comprehensive yet nuanced interdisciplinary understanding of DRR by researching and weaving together several key lines of inquiry. This overview also provides insights into how Douglas' thinking and understanding developed over time. Given that Douglas published his work in over 300 publications, it was impossible for us to provide all the references within the limits of this editorial. We also thought that including all the references would distract from the narrative. Thus, we hope that traversing Douglas' legacy inspires readers to explore Douglas' [Scopus](#), [GoogleScholar](#), and [ResearchGate](#) accounts as well as his [publication list](#).

### ***The Early Years: From Investigating the Child as Helper to Psychological Influences on and Impacts of "Chronic Environmental Disasters"***

Following completion of his PhD, Douglas' academic career started at the University of St. Andrews in the late 1980s. Using an integrative approach, he investigated

chronic childhood illness and the child as helper in overcoming illness, perspectives on gaming and simulation, and the psychological dynamics influencing disaster helpers and implications for counselling. In the 1990s, he recognised that disasters were persisting and coined the phrase "chronic environmental disasters". Through Douglas' formal training in psychology, he realised the importance of considering the social aspects of disasters, especially organisational and community aspects.

Douglas' early disaster research explored psychosocial influences on, and impacts of, disasters focusing on preparedness, incident response and crisis/emergency management, and recovery management. In particular, he focused on assessing the impact of disasters on disaster responders, helpers and relief workers (e.g., emergency services personnel, police, fire fighters, nurses), and families of these critical high-risk occupations and communities. He also explored how to train these cohorts to develop their capabilities and capacities to prepare for and recover from chronic exposure to work-related risk and psychological traumatic stress to enhance their mental health and wellbeing. Douglas researched these aspects from the perspective of high-risk occupations and communities, as well as the emergency management and organisational perspectives. The training and support he explored included pre- and post-event interventions such as education regarding managing traumatic stress and psychological trauma, debriefing, peer support, counselling and mental health services, human resource strategies, and integrating recovery resources and the recovery environment. In terms of emergency and community disaster management, Douglas increasingly explored and integrated psychological, social, cultural, religious, economic, and technical aspects, processes, and solutions. His work aimed at promoting psychosocial wellbeing and quality of life and increasing operational effectiveness.

### ***Advancing Understanding of Long-term Processes Especially Building Adaptive Capabilities, Capacity, and Resilience***

Starting in 1995, Douglas realised the importance of processes and adapting a long-term perspective and thus expanded his investigations – considering processes in addition to influencing variables. In particular, he explored building adaptive capabilities and resilience and assessing long-term impacts of disasters on critical occupations and communities. Whilst Douglas utilised organisational and community psychology theories and research for his work, around 1997 his awareness of the



importance of comprehensive emergency management and the value of the diverse social sciences started to emerge, laying the foundations for his work becoming first multidisciplinary and later transdisciplinary. During the 1990s, after moving from Scotland to Australia in 1991 and then Aotearoa New Zealand in 1996, Douglas' work became increasingly international and started to also consider the influence of culture. His move to New Zealand coincided with the end of the 1995-96 Ruapehu eruptions. The 2000 GSA paper on the 1945 and 1995-96 Ruapehu impacts by David Johnston, Bruce Houghton, Kevin Ronan, Vince Neall, and Douglas was the first geological hazard paper Douglas published.

About 2000, Douglas started to realise that whilst preparing, responding, and recovering are imperative to disaster resilience, it is important to take a proactive long-term approach that integrates risk, vulnerability, and resilience across diverse hazards and has at its core community development. He also investigated posttraumatic stress in high-risk professionals and their families and interventions to manage this stress and increase resilience by promoting social-cognitive capabilities (especially perceptions), growth, empowerment, team resilience, and environmental resilience. Douglas explored these aspects across volcanic eruptions, tsunamis, earthquakes, and bushfires.

### ***Expanding to Comprehending Adaptive Post-traumatic Growth, Co-existence, Community Development, and Cross-cultural and All-hazard Approaches***

Around 2005, Douglas increasingly realized the critical importance of humans to reduce disasters by learning to co-exist and live in harmony with nature rather than fighting against and exploiting nature. Accordingly, Douglas continued his research with high-risk professionals (especially police), emergency management, organisational resilience, and community resilience but started expanding his thinking from the predominant focus on the "dark" side of disasters to the "bright" side of disaster by focusing his research on adaptive and growth outcomes, posttraumatic growth in high-risk professions, community sustainability, developing adaptive capacity, and building capacity to live in co-existence with hazards and reducing the risk. Knowledge gained from moving from Scotland to Australia and New Zealand, experiencing diverse hazards and working with academics, students, and practitioners living in different countries and working with different hazards, led to Douglas developing

increasingly an appreciation of citizens and communities being at risk from multiple hazards and hazards sharing similarities. As a result, he realised the great value of preparing for diverse hazards simultaneously. Douglas also increasingly realized the critical influence of culture on all disaster phases and the great value of learning from diverse cultures. These two aspects led to Douglas being interested in and passionate about developing knowledge that holds across hazards and cultures. Consequently, he started engaging in an iterative cycle of developing-testing-refining disaster theories in many different countries to develop all-hazard and cross-cultural theories.

### ***Gaining More Nuanced Understandings of Evolving of the Many Components of Capable and Adaptive Citizens, Communities, and Societies***

Douglas dedicated the next 15 years to building upon, expanding, deepening, and integrating increasingly diverse aspects influencing DRR to develop and test increasingly comprehensive DRR models that are valid and applicable across hazards, phases of the disaster cycle, and cultures and societies. To do so, he increasingly used an inter- and transdisciplinary approach and employed diverse quantitative, qualitative, and mixed methods research designs. Douglas expanded disaster resilience to integrate individual, community, institutional, and environmental/ecological perspectives and community resilience to include individual, household, community, and societal aspects. Douglas identified the characteristics of a disaster-resilient society and explored the complexity of social and ecological resilience to hazards. His research covered tsunamis, bushfires, earthquakes, and typhoons as hazards in different countries including Australia, New Zealand, USA, Japan, Taiwan, Indonesia, Portugal, and Thailand. With regards to the research with colleagues in the USA, it was Douglas' ideas that allowed them and him to get a US National Science Foundation tsunami proposal funded, which involved work in six Pacific and Atlantic coastal states (Hawaii, Alaska, Washington state, Oregon, California, and North Carolina). Douglas also worked on better understanding and enhancing community development and engagement, man-made and natural tsunami warning systems, child and family resilience, the police resiliency stress shield, and culturally-competent health systems.

From 2010, Douglas worked on developing more nuanced understandings of all-hazard and cross-cultural perspectives, developing sustained resilience in high-risk environments, cultivating household and

community capacity, building community preparedness and resilience (especially for bushfires), and engaging communities from the ground up. He also worked on distilling lessons and learning from them, planning for resilience in incident command personnel and systems in hospitals, developing response and recovery capabilities, evaluating disaster education, engaging and empowering communities, communicating uncertain scientific advice, self-esteem and sense of mastery influencing preparedness, multi-agency community engagement during recovery, earthquake information and its influence on household preparedness, and decision-making under conditions of uncertainty. Douglas also developed and tested his all-hazards theory for disaster resilient communities and developed a model of household preparedness for earthquakes, an evidence-based framework for psychosocial recovery, a research framework for complex multi-team coordination in emergency management, a conceptual framework for responses to natural hazards focusing on risk interpretation and action, and an ecological theory of resilience and adaptive capacity. His work included mainly the Christchurch earthquakes, bushfires in Australia and Portugal, and volcanic eruptions in Hawaii. Douglas also engaged in Antarctic psychology research.

### ***Starting to Weave Understandings and Knowledges with Transformative Learning to Sustainably Reduce Disaster Risks and Increase Quality of Life***

From 2015 to 2022, Douglas continued to conduct research in all the strands he had worked on to develop comprehensive, nuanced, and multifaceted models, applying and using the Sendai Framework for Disaster Risk Reduction priorities and principles (United Nations Office for Disaster Risk Reduction [UNDRR], 2015). He increasingly became aware that humans developing the adaptive capabilities and capacities required to sustainably reduce the risk by living in harmonious relationships with nature necessitates transformative learning. Thus, he inquired into how to best accomplish these individual and collective sustainable transformations. This shift in awareness arose mainly from and led to Douglas working increasingly with Indigenous peoples in Taiwan, Australia, Aotearoa New Zealand, Pakistan, and Indonesia. These systematic in-depth qualitative research projects led to him realising the great value of learning from and with Indigenous worldviews, knowledges, and practices in different countries and collectivistic cultures and societies. His work increasingly integrated and linked environmental, spiritual, psychological, cultural, and social dimensions

across the scales (local to global) and phases of the disaster spiral (reducing the risk-preparing/getting ready-responding-recovering-rebuilding/regenerating-reducing the risk). Furthermore, Douglas increasingly started linking the phases of the disaster cycle. In all his work, he always made sure that he linked and built bridges between theory and practice by working with practitioners. He also detailed the implications of his work for practice applications including policies for developing the individual and collective adaptive capabilities and capacities of citizens/community members, first responders, organisations, and government. Douglas expanded research to Iran, Pakistan, Nepal, Myanmar, and Antarctica.

### ***Leaving a Legacy: Weaving Together the Comprehensive Transdisciplinary Cross-cultural All-hazard DRR Theories Across the Disaster Cycle for Creating a Direction for the Future of DRR***

In the last 3 years of his life, Douglas focused his publications on weaving together the various theories containing the large bodies of knowledges in the parallel strands he had worked on for 30 years to provide answers to the UNDRR (2015) Sendai Framework calls for DRR, identify critical gaps in knowledge, and recommend future research directions. He expressed the essence of this work in his last book (Paton, 2022) and in the publications in this special issue.

Douglas wrote his latest book *Advanced Introduction to Disaster Risk Reduction* (Paton, 2022) under extremely challenging circumstances. That he managed to complete the book is a miracle and testimony to him “walking his talk”. His aim was to contribute to creating a systematic foundation for DRR by “providing evidence-informed insights into understanding people’s (individual and collective) reticence to engage with DRR process and identifying how to reverse this trend and facilitate people’s active participation in DRR in ways that support realising the SFA goals” (Paton, 2022, p. 2). To this end, Douglas details in this book how the Sendai Framework can be put into action in practice to develop and implement cost-effective whole-of-society approaches that increase individual and collective adaptive capabilities and capacities that increase resilience. Utilizing the comprehensive knowledges he systematically built up with about 300 colleagues from around the world for over 30 years, and knowledges put forth by diverse disaster scholars, he offers a comprehensive discussion of the core areas of DRR. The book includes an overview of the Sendai Framework for DRR, disaster risk, the environmental context of DRR,

hazard characteristics and behaviours, anticipation, preparedness, international context of DRR and cross-cultural issues, DRR in response and recovery settings, assessing the effectiveness of DRR using cost-benefit and evaluation perspectives, transformative learning, capacity development, and building back better.

Douglas concludes this book – and his life-time work – emphasising the importance of “knowing DRR for the first time” (Paton, 2022, p. 136). That is, whilst he and we have substantially increased our understanding of DRR, with the world and our understanding of the world constantly changing, and with natural processes exponentially growing and becoming more damaging, it is critical that we stay open to transformative learning ourselves. In Douglas’ words: “developing ways to know DRR for the first time must become the norm” (Paton, 2022, p. 136). He offers some ideas for these explorations by discussing a socio-cultural-environmental framework, community development and DRR, transformative learning, transdisciplinary strategies, adaptive governance, cost-benefit analysis and evaluation, organisational continuity planning, learning and collaboration in international settings, and working together with Indigenous peoples.

The DRR knowledges Douglas shares integrate all hazards, all phases of the disaster spiral, cultural similarities and diversities, research-theory-practice including development and evaluation of DRR policies and programmes, individual to collective scales, individual and collective learning, and capability and capacity development. The wisdom offered goes beyond DRR – it is applicable and useful for transforming our cultures and societies at large in ways that ensure harmony and health.

The comprehensive DRR ecosystem Douglas created is especially valuable in a world in which we are individually and collectively increasingly lost and overwhelmed because most of us are stuck in formal operational thinking that prevents us from being open to, exploring, seeing, and understanding the big picture, complexity, visible and invisible aspects, and processes. Humanity can choose to use Douglas’ wisdom to reduce the risk of disasters, to empower and enable people to be safe, and to use the disasters as transformative opportunities to lift humanity to its next level of evolution as he intended. We researchers and practitioners can choose to use, build upon, and further expand his work individually and collectively to continuously “develop... ways to know DRR for the first time” to transform our culture and society (Paton, 2022, p. 136).

### ***Leaving Behind an Extraordinary Wealth of Contributions and Wisdom for Reducing the Risk of Disasters***

The late Douglas dedicated this book – his lifetime work and legacy – to his parents to express his eternal gratitude to them. He says, “They nurtured my love of learning, showed me how to apply knowledge with integrity, humility and compassion, and instilled in me the importance of never stopping asking questions” (Paton, 2022, p.iii). Douglas’ life and work, his extensive contributions to and empowerment of the many people who had the great fortune to know and interact with him, and the valuable legacy he leaves for humanity at large, are a demonstration that he embodied these qualities.

Douglas was truly a world class researcher, who is highly respected nationally and internationally. His professional career traversed many institutions and communities around the world. Douglas was a professor at several universities. When he passed over, he was an Adjunct Professor at the University of Canberra, a Research Fellow at the Joint Centre for Disaster Research, Massey University (Aotearoa New Zealand), and a Senior Research Fellow at the Bandung Resilience Development Initiative (Indonesia). In 2005-2006, he was the Australian delegate to the United Nations Educational, Scientific and Cultural Organization Education for Natural Disaster Preparedness in the Asia-Pacific. He was a member of the UNISDR (now UNDRR) RIA sub-committee (2012-2016) and served on the Psychosocial Advisory Committee for the Christchurch earthquake (2011-2013). In 2014 his role as a Technical Advisor on Risk Communication with the World Health Organization helped develop the community engagement programme for the Ebola response in Sierra Leone.

Douglas has been listed in the Stanford University/ Elsevier BV list of the top 2% most cited researchers worldwide in the last years. In 2021, 2022, and 2023, the Australian Research Review listed Douglas as the top Australian researcher in the Emergency Management/ DRR field of research. Douglas has an h-index of 50 on Scopus and 65 on ResearchGate. Douglas published 24 books and about 300 peer-reviewed papers and chapters with approximately 300 collaborators from across the world. Douglas founded this journal and has served as Editor of the *Australasian Journal of Disaster and Trauma Studies* (AJDTS), *Disaster Prevention and Management*, and the *International Journal of Mass Emergencies and Disasters*. He greatly contributed to several journal editorial boards, including the *International Journal of*



*Environmental Research and Public Health, Disasters, and the International Journal of Disaster Risk Reduction.*

Douglas leaves behind an extraordinary body of knowledge and wisdom that will be increasingly valuable for humanity as disasters and climate change continue to increase. The body of knowledge and wisdom he created is rare and unique in many respects. It is a comprehensive yet nuanced transdisciplinary DRR knowledge ecosystem that weaves together systematic quantitative and qualitative research findings from multiple disciplines and practice using high-level conceptual post-formal thinking into coherent and concise theories and publications. This DRR knowledge ecosystem considers and weaves together the influence of all the key aspects and dimensions that influence DRR and ultimately health, wellbeing, survival, and growth:

- all hazards – bushfires, volcanic eruptions, cyclones/typhoons, earthquakes, tsunamis, pandemics;
- all phases of the disaster cycle and how they interact over time in a spiral-like manner to either increase or decrease DRR – preparing/becoming ready/planning-responding-recovering-rebuilding-regenerating-preparing/becoming ready...;
- all key players – high-risk professions linked to hazards (especially police, nurses, emergency management personnel, firefighters, relief workers, responders, Antarctic expeditioners), adults, children, families, communities, organisations, and government;
- diverse aspects of individual (psychological, spiritual) and contextual (natural, built, cultural, social, religious/spiritual, technological, economic, political, media) dimensions or parts and how they interact over time (historical and future dimension);
- the individual and contextual dimensions within and across the diverse scales (families, households, communities, and organisations and governments at the local to global international scale) and how they interact over time;
- cultural similarities and diverse ways of being-knowing-doing that facilitates DRR – Aotearoa New Zealand, Australia, USA, Taiwan, Portugal, Indonesia, Japan, Thailand, Pakistan, Iran, Nepal, Ethiopia, Fiji, Netherlands, Nepal, Antarctica;
- the wisdom of ancient Western, Asian, and Indigenous ways of being-knowing-doing;
- how the parts and the systems learn and adapt, and how this learning and adapting can be facilitated to induce individual and collective transformative learning that sustainably (re)builds individual and collective

adaptive capabilities and capacity required for surviving and thriving; and

- offers evidence for diverse practical and cost-effective pathways for not only increasing DRR and all associated benefits but creating a more functional harmonious culture and society.

### ***A Joined Legacy that Emerged from Mutually Benefiting Collaborations and that is Ensuring that Douglas' Legacy is Living on and Expanding***

Douglas would be the first to emphasise that this extraordinary comprehensive DRR ecosystem is not his work alone but the outcomes of wonderful, enriching collaborations with about 300 researchers, practitioners, and public servants from around the world he was blessed to work with. Douglas interacted with, experienced, learned from, contributed to, developed, and touched a great variety of friends and colleagues around the world from a wealth of diverse walks of life (belief systems, countries, cultures, organisations). He always valued, allowed, empowered, and honoured unique and diverse ways of being-knowing-doing. Douglas was highly open and receptive to, and built upon and expanded, new and contradictory ideas. Douglas supported and brought people together to achieve their and his respective visions and aims, and to create and accomplish shared common goals. Only Douglas has the overview of these collaborations, but we thought he would have loved for us to concisely provide examples of how we collaborated to demonstrate the importance of the international and transdisciplinary nature of his collaborative approach, and to acknowledge and honour all the colleagues who collaborated with him throughout his career. Thus, we are offering brief snapshots of our personal experiences of collaborating with Douglas as exemplars:

**John Violanti** (Professor of Epidemiology and Environmental Health, USA):

*Douglas and I first met in New Orleans at a conference on traumatic stress in 1990. We immediately became friends and collaborated in research over many years. Douglas and I wrote and edited many books and articles together. Douglas had keen sense of knowing; he grasped the problem of stress, trauma and recovery quickly in the law enforcement profession which we studied together most often. His understand of a profession he never worked in amazed me. The idea of CET stands out. I find it difficult to speak of Douglas as not here. To me, his spirit and caring for humankind will always be here. Somehow, his*

*loss was also my loss. I have little doubt that Douglas's contribution to humankind will forever be etched in time. He truly "left something behind". We developed the stress shield theory together, which provided a new first look at the development of resilience among police officers.*

**David Johnston** (Distinguished Professor of Disaster Management and Director of the Joint Centre for Disaster Research, Aotearoa New Zealand):

*Douglas joined Massey University in 1996, in the final year of my PhD. I had been studying the impacts of volcanic eruptions and was writing up my research when he joined the staff of the School of Psychology. Although not a formal supervisor he was a great mentor in my final stages and then began our friendship, partnership and fellowship. For the next 28 years we worked together on many projects. For a decade he was closely associated of our research programme at GNS Science, involved in the plotting to establish the Joint Centre of Disaster Research at Massey University and many other initiatives. We jointly supervised many PhD students, presented at many conferences and workshops and co-developed many research projects. Always available for a quick call or a lengthy discussion. Through Douglas I also met many others, for which I am grateful.*

**Chris Gregg** (Professor Physical Volcanology & Risk Management, USA):

*I first met Douglas shortly after beginning my doctoral studies in Geology & Geophysics at the University of Hawai'i in 2000. Douglas and David Johnston had recently published with my dissertation advisor (BF Houghton) on social and behavioural issues affecting responses to the 1995-96 explosive eruptions of Ruapehu volcano, Aotearoa New Zealand. These three and two other committee members provided me the opportunity to learn about Douglas' social cognitive approach to understanding and modelling human decision making in response to geological hazards. Douglas was influential in providing research guidance to me—a geologist learning to use social science research methods to better understand factors affecting decision making other than the characteristics of the hazards themselves. Our work together greatly expanded in the years following the 2004 earthquake and tsunami in south Asia. We went on to explore tsunami preparedness in south Asia and in the USA and its territories, which subsequently led to several US federal grants to translate research findings to risk reduction actions in these countries.*

**Petra Buergelt** (Associate Professor – social sciences and health; Germany, Aotearoa New Zealand, Australia):

*Douglas and I met at Massey University in New Zealand in 2000. Because of my qualitative research skills, he engaged me for various research studies regarding the psychosocial factors influencing individual and community tsunami and pandemic preparedness, and risk management for natural hazards. Over the ensuing years, we had regularly deeply insightful, critical, expansive and meandering conversations whilst we worked together on numerous joined projects and publications, and supervised many honours, MA and PhD students together. We complemented each other like yin and yang. For example, Douglas held a tremendous wealth of disaster and other knowledges, had the quantitative research skills, synergised vast amounts of knowledges and wrote concisely. I brought qualitative research skills, and new fresh perspectives (e.g., diverse holistic and critical philosophical paradigms, living in harmony with nature, transformative learning, ancient and Indigenous ways of being-knowing-doing) that fitted with and expanded his thinking in these areas. Together, we developed, expanded and applied the ecological risk management and capacity building model. In the last 10 years, we worked with Indigenous peoples in Taiwan and Australia, exploring together two-way transformative learning and other transformative pathways including ancient Western and/or Indigenous ways of being-knowing-doing, nature, arts, and governance for reducing the risk of disasters together, and with colleagues and PhD students. Douglas had the very special gift of creating a space in which one could be completely oneself and express oneself. He genuinely honoured everybody as a special person and saw everybody as holding vital knowledges. Douglas valued these knowledges, deeply listened and expanded these knowledges through dialogue. Often, he didn't even have to say much – already his presence was sufficient to reassure, strengthen, lift up and inspire to raise one's game. There is nobody like him; he was tremendously special - a highly valuable academic and human being.*

**Julia Becker** (Associate Professor – social sciences, Aotearoa New Zealand):

*I met Douglas as a Masters student at the University of Waikato, when I attended the first GNS Science Volcano Short Course. When I joined the GNS Social Science team Douglas was already a close associate. Like David I work with Douglas for the next two decades on topics related to preparedness and resilience. Douglas was*



also my PhD supervisor, and was a supportive mentor, always interested in what my unique findings were, and how they contributed to theory. Douglas was fun to work with and always challenged me to think about aspects of disaster risk reduction I hadn't considered. As a wider team of researchers and practitioners we worked across many locations in New Zealand including Auckland, Hawkes Bay, Manawatū, and Canterbury.

**Li-ju Jang** (Associate Professor – social work, Pingtung, Taiwan):

I first met Douglas in person in 2007. However, I knew him in early 2004 through his articles on promoting wellbeing (1996) and disaster and community resilience (2001 & 2003). At that time, I was working on my dissertation proposal on the impact of the 921 Earthquake on survivors. In Douglas and colleagues' articles, I found the disaster resilience and post-traumatic growth I witnessed in Taiwan. My advisor, Dr. Walter LaMendola, encouraged me to email Douglas and discuss my observations with him. Douglas answered every question I had in great detail. We soon became pen pals and discussed disaster and community resilience through emails. Several months later, Douglas agreed to serve as my dissertation committee member. In 2007, I invited Douglas to lecture on disaster resilience at our university and introduced him to the research team in Taiwan. From then on, our cross-culture all hazards collaborative project began. Together, we visited the National Fire Agency and local fire stations in the affected areas to understand Taiwan's disaster rescue and relief system. We visited severely affected areas by the 921 Earthquake of 1999 and Typhoon Morakot of 2009. We visited and talked with disaster survivors, witnessed levels of disaster resilience of various ethnic groups in Taiwan, such as Indigenous and Hakka groups, and made friends with them. Those survivors taught us how to co-exist with disaster and live in harmony with nature. Douglas and I co-organized the "New Directions in Disaster Recovery and Reconstruction: Livelihoods, Resilience and Sustainability" conference in 2014 and the "Community-Based Disaster Risk Reduction and Recovery" conference in 2017. Thank you, Douglas, for your support and companionship on my academic journey.

**Fantina Tedim** (Professor – Human Geography, Portugal):

I started working with Douglas in 2006 when I was beginning my research on the social dimension of

wildfires. After meeting Petra at a conference in Brisbane, she introduced Douglas to my work and I received an email from Douglas. We started discussing community preparedness and resilience, and sharing ideas. In only one month, we finished a proposal of a research project on wildfire preparedness in Portugal, which was approved by the Portuguese Science Foundation (FCT). We only met in person when our project started. During Douglas' visits to Portugal we had amazing scientific discussions. He never made me feel uncomfortable because of my limited expression in the English language and knowledge on the topic. Our discussions were extremely interesting, challenging and so illuminating. Douglas listened to my ideas, supported me and motivated me to grow scientifically in a very gentle and never invasive way. He never demonstrated that he was such an internationally important scientist and never made me feel that I was far below him in terms of knowledge. We published a book together with the results of the project in Portuguese. This book remains an important piece of work with ideas capable of improving some aspects of fire management in Portugal. Douglas was the scientist who most influenced my scientific career and my time with him was always a wonderful journey under blue skies.

**Emma Hudson-Doyle** (Associate Professor – geophysics, natural hazards, communication, and disaster social sciences, Aotearoa New Zealand):

I first became interested in Douglas' work as I branched from the physical science of volcanic hazards and crisis response, into how we effectively communicate this science with decision-makers tasked with that response. Douglas developed a set of seminal studies from the Ruapehu 1995-1996 eruptions that mapped out the information flow between key agencies during the response. This work identified the crucial challenges of distributed team response during a natural hazard event, and led the way to a body of research exploring individual and team response performance, high risk environments, stress risk management and effective communication mechanisms. I was privileged to draw on Douglas's expertise when I entered this research area in 2010, and through his advice and co-authorship we embarked on numerous studies building on his early work: including reviewing the science advice response mechanisms of recent exercises to compare to his early work on Ruapehu, developing experimental scenario exercises to explore team decision making in response to uncertain scientific advice, exploring lessons for communicating forecast statements and people's understanding of time,

and most recently adapting his early shared mental models research to conduct a study exploring how scientists, decision-makers, and others conceptualise uncertainty. Throughout this journey, Douglas was always so generous in sharing his knowledge and his time, helping to shape ideas, and encouraging different directions and reflections. He supported colleagues and students with equal enthusiasm and kindness. It was always such a gift to receive his extensive comments on manuscript drafts. I still return to this legacy of comments, to revisit the many valuable insights he shared, and through them I find that Douglas is still steering my thinking and future directions. What a privilege that is.

We are all eternally grateful to Douglas. He made us fly higher than we thought we could fly, because he was, and he always will be, the gentle yet powerful wind beneath our wings. He has been and always will be influencing our work.

#### **Douglas Passing Over: An Extreme Sense of Loss and Heartfelt Sadness Around the World**

Because of Douglas being such a rare, wonderful human being and scholar, many people across the world felt and still feel an extreme sense of loss and heartfelt sadness after he left. They deeply grieve for, celebrate, and honour Douglas in meaningful and culturally appropriate ways as individuals and groups around the world. The following excerpts from some of the many condolence letters and online vales give representative insights from different angles into Douglas and his work:

**Professor Dame Sally Mapstone** DBE, FRSE (Principal and Vice-Chancellor University of St Andrews):

*I am writing to express my sincere condolences, both personally and on behalf of everyone at the University of St Andrews. [...] Douglas enjoyed a phenomenally prolific and successful academic career that allowed him to improve the lives of so many, particularly those most vulnerable, across the world. His outstanding body of work will stand as his lasting legacy. [...] We are very glad to have counted Douglas as an alumnus and an Honorary Senior Lecturer of our University.*

#### **Editorial Board of the *Disasters Journal*:**

*Douglas was a sage and insightful editorial advisor on *Disasters journal* from 2014 to 2022, reviewing papers on community resilience, volunteer responses, psychological well-being, disaster preparedness and*

*recovery. He will be much missed by everyone on the journal's board, as well as the editorial staff.*

**Dr. Rey-Sheng Her** (Deputy CEO of Tzu Chi Foundation; Associate, Harvard University FAS CAMLab; Associate Professor Tzu Chi University):

*I had the privilege of knowing and working with Professor Douglas Paton for nearly a decade. [...] I was struck by his compassionate spirit, which is rare to find in the academic world. [...] His research was full of insights and compassion, reflecting his love for the world. Through his outstanding philanthropic research work, he will continue to shine a light on the world and inspire people to contribute their love to those who are suffering. On behalf of the Tzu Chi Foundation's millions of members, I extend my deepest condolences to Professor Douglas Paton's family, friends, and colleagues. He will be dearly missed but remembered as an exceptional scholar and a compassionate human.*

**John Richardson** (Australian Red Cross and the Australian Institute for Disaster Resilience):

*It was combining these 2 inquiries into natural processes [geology and psychology] that lead him to be a world leader in helping us understand how we need to understand the mind as the barrier and enabler to people getting prepared for, coping with and recovering from disaster events. He was really the first person to realize that it is the human brain that gets in the way of making decisions about getting prepared, and he was able to explain it in a way that we could all understand. We can't underestimate his impact and influence on how we go about the complex beasts of preparedness and resilience building. Not only in Australia, but globally. [...] He was a wonderful person who was very generous with his time to Australian Red Cross at the beginning of its preparedness journey in 2008. [...] We have been fortunate to have Douglas and his immense intellect guiding us along the way. We have lost a titan. RIP Douglas.*

#### **Natural Hazards Research Australia:**

*It is with sadness that Natural Hazards Research Australia received the news of the passing of Prof Douglas Paton in late April. Douglas was a friend to many in the natural hazards research space through his involvement in the both the Bushfire and Natural Hazards CRC and Bushfire CRC. [...] Douglas' insight, knowledge and mentorship will be greatly missed.*

**Rosalyn H. Shute**, PhD (Adjunct Professor of Psychology, Flinders University, South Australia):

*[...] his research focus shifted to disasters and risk management, a field in which he was a leading light for over 30 years. [...] Thanks to his work, the world is in a better place to prepare for and address disasters such as wildfires, tsunamis, floods and earthquakes.*

To honour Douglas and to continue his critically important work, his family, partner, and closest collaborators created the “Professor Douglas Paton Legacy Fund”, which will finance three scholarships and awards they believe are aligned with Douglas’ interests and values. Douglas’s family and partner gifted NZ\$160,000 to start the fund. Massey University’s Joint Centre for Disaster Research (JCDR), which Douglas co-created and which houses the *Australasian Journal of Disaster and Trauma Studies* that Douglas established, will host the scholarships and awards. We will gather annually in person and online to award the scholarships and awards to honour and expand Douglas’ work. We invite you to donate to the “Professor Douglas Paton Legacy Fund” so we can support more students.

Professor Douglas Paton’s passing has been and still is immensely sad and painful for all of us who had the great honour, privilege, and joy to travel parts of his journey here on Earth with him. We all will miss Douglas terribly – and Douglas will live forever on in our hearts and minds, and live on through us. Douglas’ legacy will continue to impact people today and into the future.

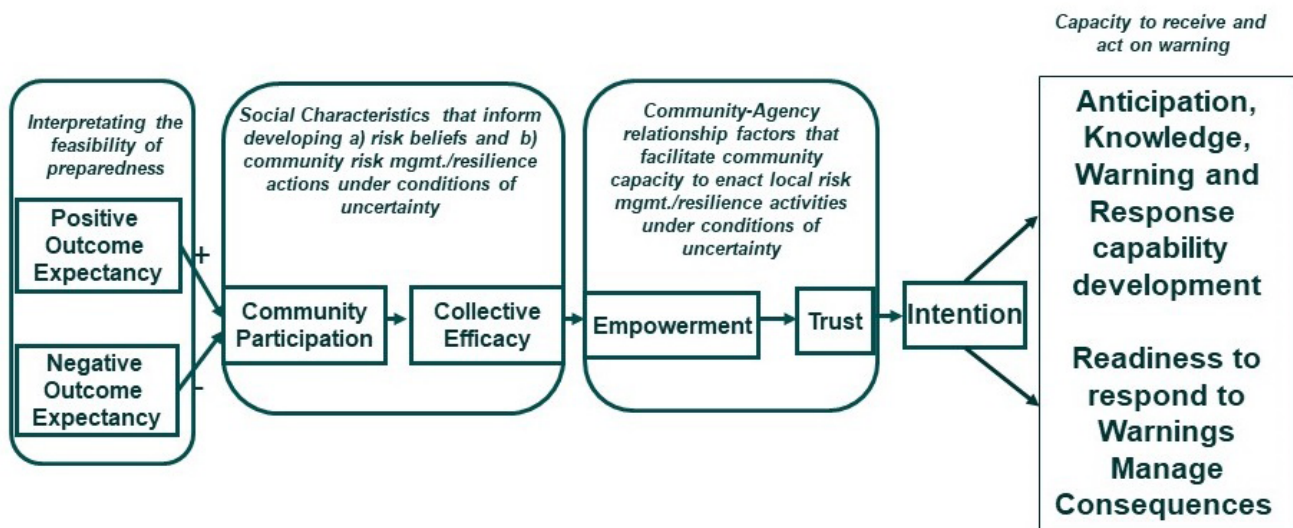
## Introduction to This Special Issue: Community Resilience to Disaster - Community Engagement Theory and Beyond

When Douglas was diagnosed with cancer in 2019, we suggested for all of us to gather in monthly Zoom meetings to travel his challenging path together with him and keep his mind occupied with things he loved – investigating into and talking about DRR. Douglas graciously accepted. During one of these gatherings, we had the idea to create a special issue focusing on Douglas’ work to continue writing up research we had done collaboratively with Douglas and to further develop ideas. This special issue, especially our joined papers, is the outcome of this deeply challenging yet profound collaborative journey.

In reviewing the impact of Douglas’ work, the many interwoven strands of his inquiry throughout his life, and the knowledge he co-developed with researchers, practitioners, and communities, we finish this editorial with a review of one of the most impactful aspects of his work: the Community Engagement Theory (CET). The following overview of the evolution of the CET sets the scene for the papers in this special issue that start exploring, utilizing, and building upon important aspects Douglas’ work.

The original CET is depicted below (Figure 1). The origins of this model and a summary of the research that supports CET having all-hazards and cross-cultural utility can be found in the paper by Paton, Becker, Johnston,

**Figure 1**  
*The Original Community Engagement Theory*





Buergelt, Tedim, and Jang, *The development and use of Community Engagement Theory (CET) to inform readiness interventions for natural hazard events*. The original conceptualization was intended to constitute a starting point for the progressive understanding of the relationship between adaptive capacities (represented by the independent variables) and resilience (represented in the dependent variable). The intervening years have witnessed the addition of several variables from both theoretical and empirical investigations. Some of the advancements are discussed below to illustrate previous approaches to evolving the CET. The contents of this special edition add to this developmental process.

### **Interpreting Risk**

In its original conceptualization (see Figure 1 and Paton, Becker, Johnston, Buergelt, Tedim, & Jang paper in this issue for additional information), the CET describes the starting point of the preparedness process as one that comprises two preparedness cognitions: Positive Outcome Expectancy (POE) vs Negative Outcome Expectancy (NOE). These variables have been supported in several preparedness studies. The potential to include other variables in this component of CET emerged from Adhikari et al.'s (2018) work. Adhikari and colleagues introduced the potential benefits that accrue from theoretical integration; in this case, how Protection Motivation Theory and CET could be integrated. In their study, roles for risk perception and coping efficacy demonstrated a predictive capacity of preparedness in recovery settings in Nepal. Other work has demonstrated the utility of anxiety and affect in the CET as factors that influence people's motivation to prepare (Kerstholt et al., 2017). Work on people's thinking about highly unfamiliar hazards (e.g., tsunami risk in Australia) led to a need to develop a "risk rejection" variable to capture people's dismissal that the risk existed (Paton et al., 2010).

### **Social Construction of Risk and Preparedness**

The development of the CET derived from work demonstrating that, when faced with uncertainty, people's risk beliefs and risk management choices and actions are socially constructed through interaction with "like-minded" social network members (community participation). This process facilitates the development of shared meaning about the uncertain events and circumstances people could experience in ways that facilitate developing socially constructed plans and actions (collective efficacy). Community participation and collective efficacy are not, however, the only variables that could be included in this component of the CET.

Other variables that could make relative, interrelated, and/or complementary contributions to how DRR beliefs develop and how they lead to the formation of action plans include critical awareness (Paton, 2022; Paton et al., 2005; Paton et al., 2006), social norms (McIvor & Paton, 2007), social responsibility (McIvor et al., 2009), sense of community (Paton, Buergelt et al., 2008), and place identity and attachment (Frandsen et al., 2012), to name a few. How these diverse variables could be accommodated calls for additional work on how the CET could be developed (Paton, 2019). Paton (2022) identifies gaps and offers ideas for further developing the CET.

The CET argued that these "social characteristics" could be instrumental in helping people construct the risk beliefs appropriate for their circumstances and commence the process of developing the hazard knowledges and capabilities required to manage their risk. However, the CET acknowledges that, given the complex and uncertain circumstances within which preparedness decisions are made, people remain reliant on, for example, risk management and scientific agencies for the information and resources needed to fully develop their preparedness. This led to the inclusion of the empowerment construct within CET. Empowerment played an important mediating role in the preparedness process.

### **Empowerment**

Within the CET (Figure 1), empowerment played an important role in providing a mechanism that influenced community-agency relationships in ways that allow them to play complementary roles in the preparedness process, including it acting as a mechanism for enacting shared responsibility principles in DRR. The CET described how the quality of empowerment was a determinant of trust, with the latter acting as a measure of community capacity to respond to uncertain events and circumstances. There are several ways in which knowledge of the origins, development, and implementation of this central component of the theory could be developed and tested.

An important direction for this part of CET development would be exploring how community-based leadership facilitates inclusivity and actively engages their constituents in functional preparedness roles, and the complementary roles of local and national governance in leadership action (Paton, 2022; Paton & Buergelt, 2019). The special issue discusses such a transformative approach in the paper by Paton, Buergelt, Becker, Doyle, Jang, Johnston, and Tedim, *Transformative*

*approaches to disaster risk reduction: Social, societal, and environmental contributions to post-disaster capacity building.*

**Practical Applications of CET**

The bushfire version of the CET was used to inform the development of a community engagement-based DRR strategy in Australia (Frandsen et al., 2012; Paton, Kerstholt, et al. 2017; Skinner, 2016). Independent evaluation of the effectiveness of this community engagement-based strategy demonstrated the capacity of the CET to inform how DRR preparedness strategies could be enacted in community settings. More work on the application of CET could be added to future research. For example, the bushfire preparedness strategy was conducted in rural and semi-rural settings. Additional work in the more challenging urban context would be valuable. Applications of CET could also be developed and tested for other hazards and across hazards, diverse cultures and across cultures, and other stages of the hazard cycle and across all cycles.

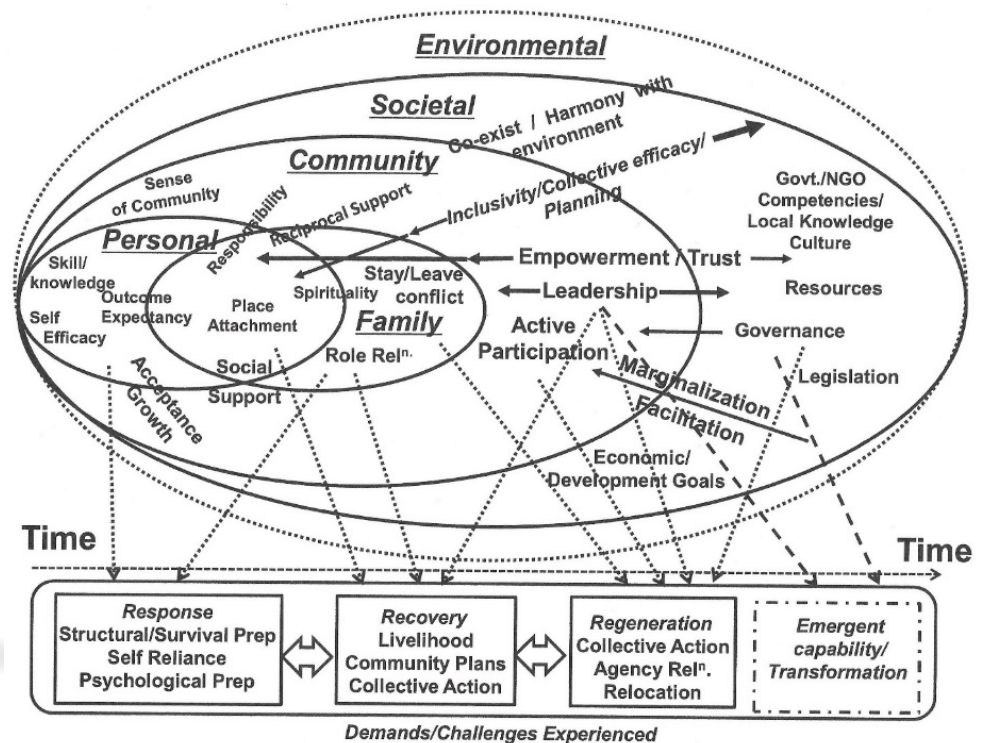
Furthermore, CET could serve as a generic evidence-based foundation from which community members and researchers could be continuously co-constructing, co-complementing, co-evaluating, and co-refining/adapting DRR strategies most suitable for their specific location and circumstances in an action learning spiral over time using participatory action research (PAR). The continuous findings generated could feed into further refining CET, linking research-education-practice in ways that facilitate two-way learning at and between all scales from the local to the global. This approach is taken by the long-term participatory and emancipatory “Waka Durrkanhayŋu - Regenerating the existence of life” Indigenist PAR initiative requested by, and co-led and co-designed with, Dgorrudawalŋu (clan leaders) and Djunggayas (Guardians/CEOs) of diverse Yolŋu clans living in the very remote Indigenous Galiwin’ku on Elcho Island in Northern Australia in response to the devastating impacts of two

category 4 cyclones in 2016 (Maypilama et al., 2023; Maypilama et al., under review).

Research in Portugal has also investigated community engagement in wildfire preparedness as highlighted in the paper by Tedim et al., *Wildfire communication from municipalities to communities in Portugal: An exploratory analysis*. Tedim and colleagues argue that in Portugal, interactive communication is required between municipalities and the community, to develop preparedness that enables people to effectively anticipate, respond to, and recover from the impacts of a wildfire. A quantitative survey was undertaken to understand how municipalities communicate with communities regarding wildfires, which found a lack of community interest combined with ineffective communication strategies, leading to limited preparedness. They suggest that a more interactive communication and engagement process, akin to “participation” in the CET, is required to achieve more trust, empowerment, and effective community preparedness outcomes.

Additional support for the CET, as well as indications how the CET could be expanded, comes from work on analyses of recovery experiences and the processes and capacities that emerged in family, social network, and societal settings. This work (Figure 2) provided support for roles of several CET variables, including

**Figure 2**  
 A Developmental Conceptualization of the Community Engagement Theory



Note. Based on response and recovery analyses in Aotearoa New Zealand and Taiwan.

trust, empowerment, active participation, collective efficacy, outcome expectancy, place attachment, and sense of community. This work also identified other variables that play a role during recovery (e.g., inclusivity, leadership, governance, agency culture and competences, socio-environmental beliefs, stay-leave conflict, family dynamics). This provides options for future CET development. As introduced above, once its utility had been supported, the CET was intended to act as a framework and platform for expanding understanding of the complex individual and collective diverse influences on preparedness and recovery to gain the holistic and procedural understanding necessary for effectively reducing the risk of disasters. The papers in this edition of the *AJDTs* provide insights into how this goal might be pursued.

For example, Rudkevitch, Vallance, and Stewart’s paper entitled *Where’s the community in community resilience? A post-earthquake study in Kaikōura, Aotearoa New Zealand*, considers the CET in a recovery context. Their paper uses qualitative methods to examine collectives in Kaikōura, Aotearoa New Zealand following a  $M_w$  7.8 earthquake to further understandings of what is meant by community in community resilience. They argue, based on their research, that the CET might continue to expand, to consider not only individuals, family, and community as concepts, but also “collectives” as a distinct component of community, given the importance that networks of collectives play in the recovery process.

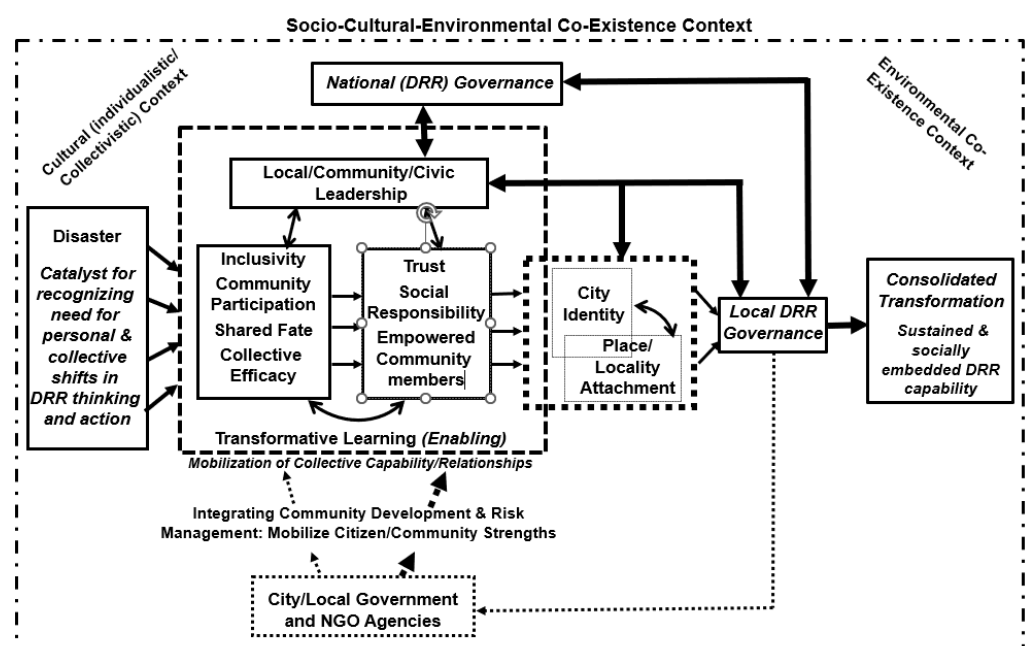
Another example comes from Taiwan by Jang et al., in the paper *Utilizing, testing, and expanding Community Engagement Theory: The Disaster Resilient Communities Project in Taiwan* (to be published at a later date). They undertook a local qualitative study in Pingtung County investigating how social services and leaders might build preparedness and resilience. The research results endorsed the existing CET variables as being important to the preparedness process, but also generates evidence for the DRR transformative

learning process model (see Figure 3) and the pivotal role of local community leaders in converting emergent learning to transformational learning (Paton, 2022). This paper also expands the model by providing insights into how community leaders mediate this conversion and the capabilities and conditions that enable community leaders to generate transformative learning. Important aspects related to leadership included the disaster experience and expertise leaders bring to the table, and the role of leaders in strengthening community cohesion and driving local solutions. Such qualitative studies can help with developing and expanding the CET further and improving practice.

The pivotal construct in the CET is empowerment. At the same time as community engagement theory was being developed to explore how select social capacities and capabilities influence preparedness behaviour another model, the stress shield model was being developed by Paton and Violanti to provide a framework for understanding stress management and stress resilience capability in members of high-risk professions likely to be involved in response to critical incidents and major disasters (e.g., protective and emergency services, police, medical professionals, volunteer search and rescue workers, prison officers, Antarctic expeditioners).

The late Professor Douglas Paton advances the most comprehensive version of the CET and various models that focus on specific aspects of CET in detail utilizing a wealth of research in *Advanced Introduction to Disaster Risk*

**Figure 3**  
*DRR Transformative Learning Process Model*



Note. Figure source Paton (2022).



Reduction (2022). Throughout the book, but especially in the conclusion, he also elaborates on what he believes valuable future directions are.

**CET and the Stress Shield Model (SSM)**

The SSM provided a new first look at the development of resilience among police officers. The model followed Antonovsky’s definition of resilience, built on the view that a person’s resilience reflects the extent to which individuals and groups can call upon their psychological and physical resources and competencies in ways that allow them to render challenging events coherent, manageable, and meaningful. The model posits that police officers’ capacity to render challenging experiences meaningful, coherent, and manageable reflects the interaction of person, team, and organisational factors. The model calls for the accommodation of learning from past experiences to build resilience in ways that increase officer capacity to adapt to future risk and uncertainty and builds adaptive capacity to sustain police officer resilience.

While the CET and SSM were developed and applied in very different contexts (i.e., citizens, volunteer and professional responders), they shared a common foundation; both were developed around the pivotal constructs of empowerment and trust (Figure 4). Major points of departure between the two were the focus on the dependent or outcome variables being stress resilience/adaptive capacity/posttraumatic growth in high-risk professionals and on including organisational culture as a pivotal construct. Organisational culture represents a significant context in which empowerment

and trust is forged, enacted, and translated into adaptive beliefs, attitudes, and behaviours.

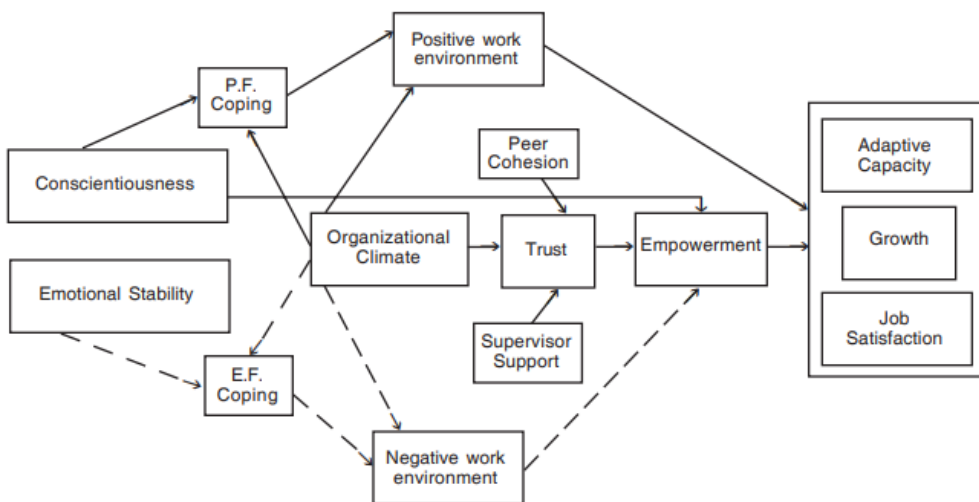
The development of the SSM was based on earlier empirical work (e.g., Burke & Paton, 2006a, b). The SSM has been subjected to a process of development (e.g., Paton, Violanti et al., 2008; Paton, Moss et al., 2017; Violanti & Paton, 2017). The resultant revised model (Paton, Moss et al., 2017) depicted in Figure 5 also affords a role for family relationships and processes and has a more developed team focus and a new inter-agency level of analysis. While the overall objective remained understanding precursors of stress resilience and growth, an intermediary has been introduced in terms of the need for analysis to explore how stress resilience and growth unfold over time as responders progressively navigate the alarm/mobilization, response, and reintegration phases of professional response (Figure 5).

Current research using the SSM to explore stress resilience in nurses working in disaster zones provides support for the conceptual model outlined in Figure 5. In particular, this work identified the benefits of including leadership characteristics and processes in developing stress resilience and adaptive capacity in disaster nursing settings (Scrymgeour et al., 2020). One paper in this edition offers ways to expand this conceptualization.

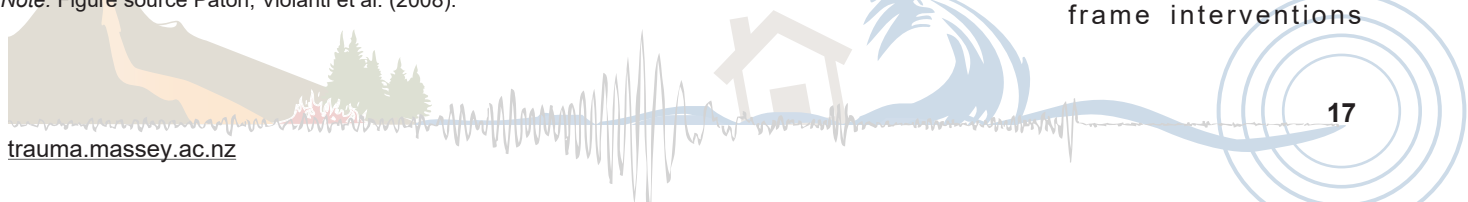
In *Truck drivers are also lay rescuers: A scoping review*, Andrews, Paganini, and Sweeney introduce the significant psychological impacts experienced by truck drivers who also often find themselves in situations where they need to play “lay rescuer” roles. They discuss the findings of

their qualitative scoping review of both published and grey literature on what is already known generally about the effects of being a “lay rescuer”. From the nine papers they reviewed, they conclude that truck driver lay rescuers experience symptoms similar to post-traumatic stress disorder, however few interventions are available to help with these symptoms. The discussion of their findings is used to frame interventions

Figure 4  
 The Stress Shield Model



Note. Figure source Paton, Violanti et al. (2008).



and organisational policy changes that better ensure truck drivers receive the care they need.

### Conclusion

We hope that this special issue will contribute to the legacy the late Professor Douglas Paton created being utilized and further expanded to contribute to not only alleviating the deep and growing pain we experience, but to (re) building our individual and collective adaptive capabilities and capacities. Only by (re)building our adaptive capabilities and capacities will we be able to utilize the transformative opportunities that the experiential crises offer us to restore our soul and power, and transform in ways that reestablish harmony and thus the health of all creatures, including us humans.

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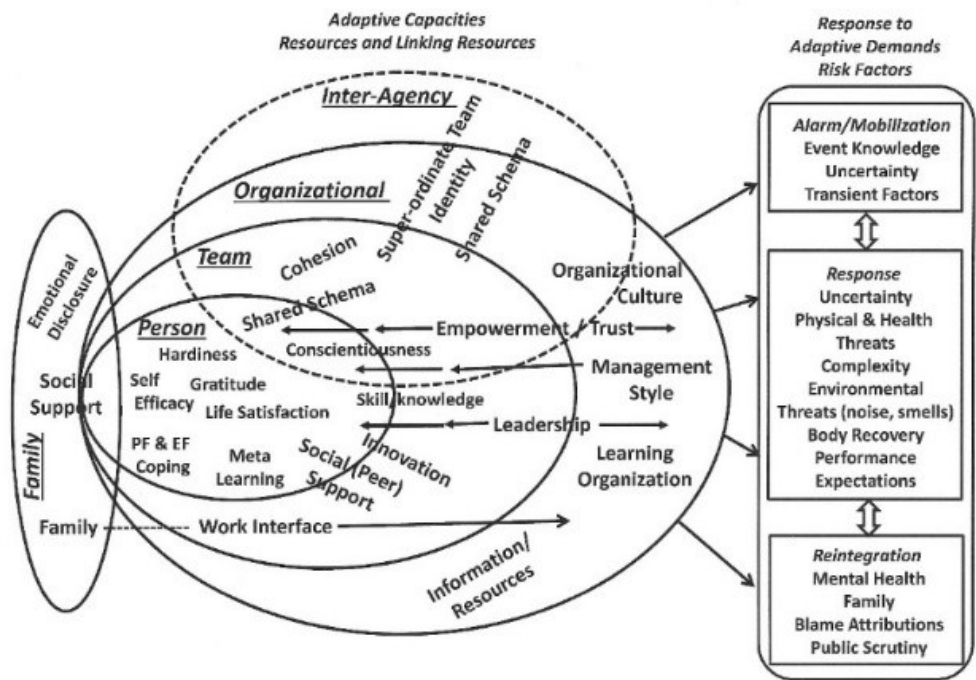
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**Figure 5**  
*The Revised Conceptualization of the Stress Shield Model*



Note. Figure source Paton, Moss et al. (2017).

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