

The Earthquake Generation

Maureen Allan

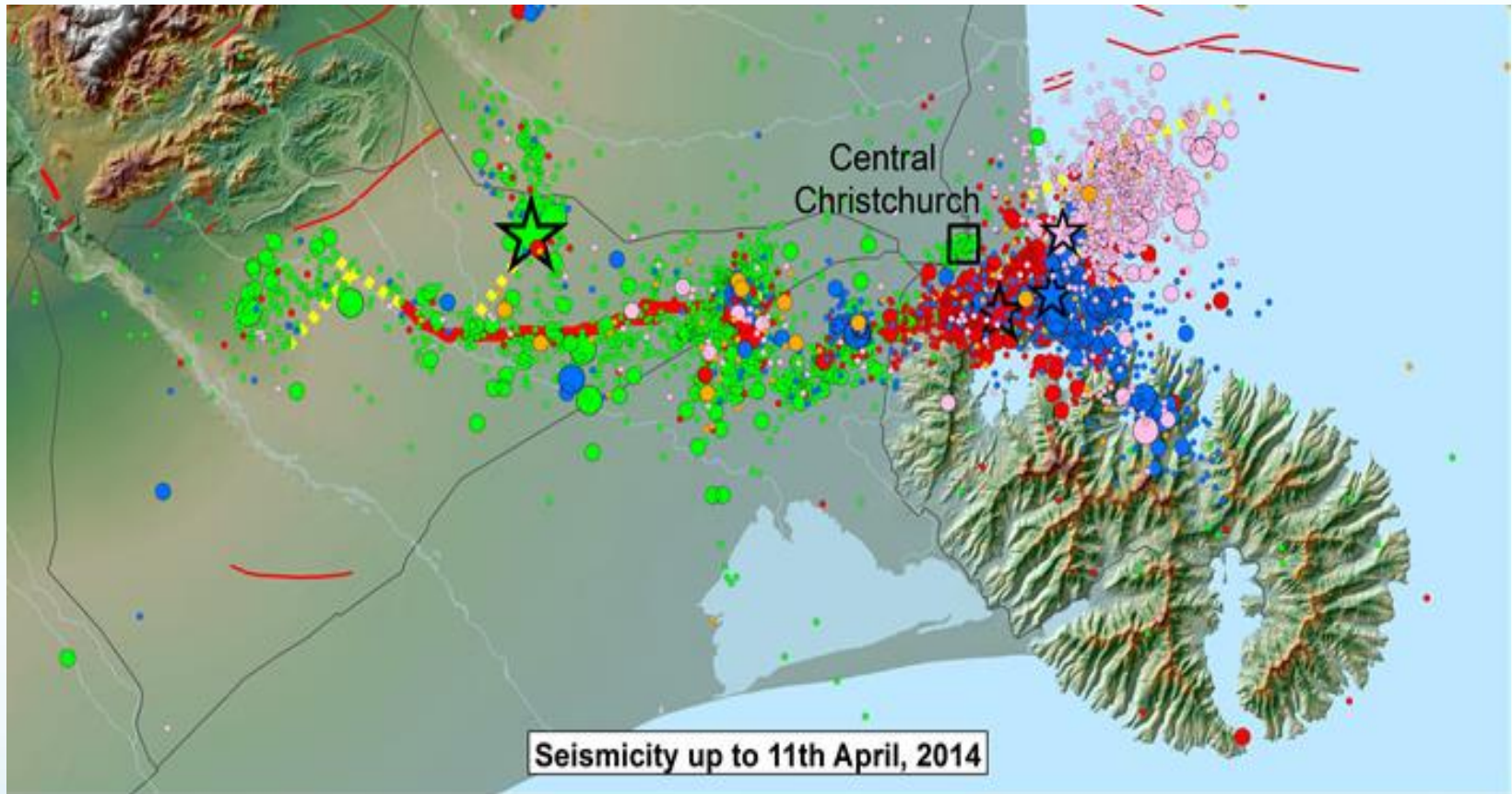
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Canterbury Earthquakes

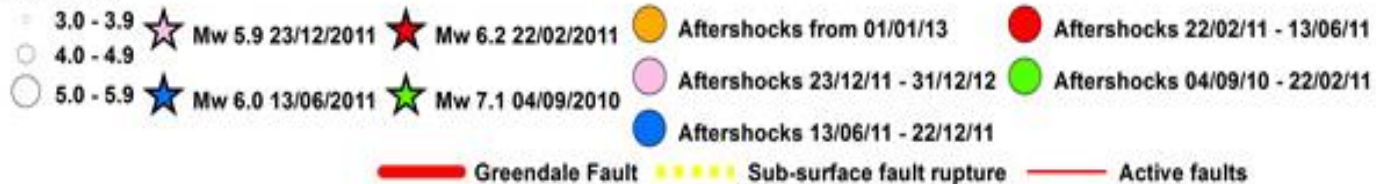
Disaster	Population	Injuries	Deaths	Pre-Disaster Poverty Levels
Hurricane Katrina	5.8 million	5698 9.8 per 10,000	1836 3.1 per 10,000	20.7% of population 30% of children (affected area)
Canterbury Earthquakes	440,000	6,600 150 per 10,000	185 4.2 per 10,000	15% of families 22% of children (affected area)
Tōhoku Japan Earthquake & Tsunami	1,585,900	27,074 170.7 per 10,000	18,500-20,000 126.1 per 10,000	16% of population 14.7% children (national data)



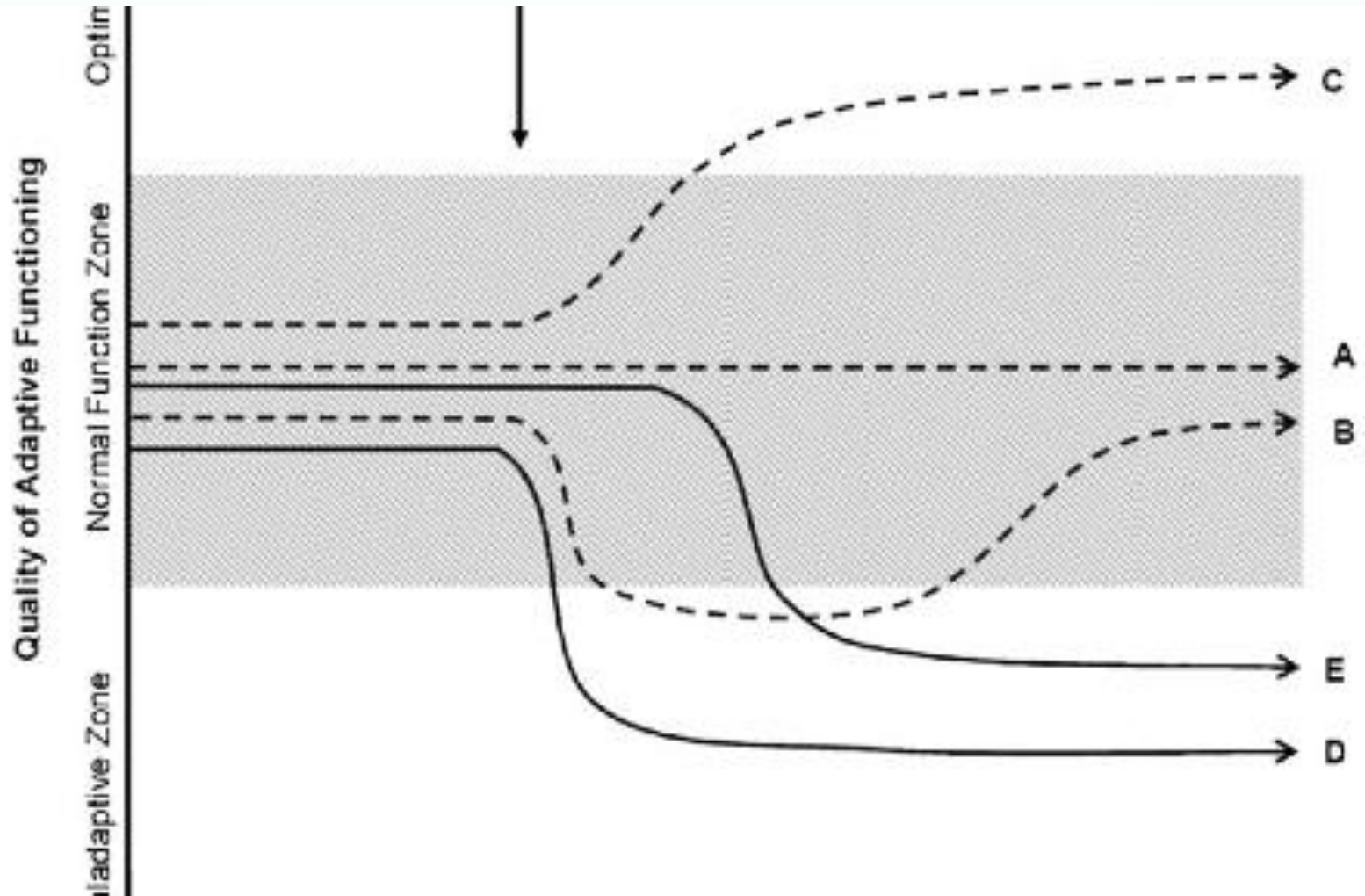
Earthquake Activity & Faults



Magnitude



Pathways of Struggling with Stress



The impact on the primary schools has been challenging.

- Significant population relocation
- 26 schools closed or merged
- Increased absenteeism
- Pre-earthquake strategies & organisation no longer worked effectively



Studying the Impacts on Children

- Evidence from our longitudinal study
- Children living in the most devastated parts of Christchurch
- Between the ages of 0-42 months at the time of the earthquake
- Compared with our pre-Earthquake children's study

Summary of Earthquake Experiences of Study Children

Earthquake Experience	% of study children
The child was injured	2.4%
Family experienced high levels of stress	51.8%
Someone the child knew was injured or died	8.3%
The house the child lived in was damaged	60.9%
Child experienced objects falling off shelves or cupboard doors opening and contents falling onto the floor	83.2%
Child experienced loss of services (water, electricity, phone)	95.2%
The child used a port-a-loo for more than one month	14.9%
Child and /or family received counselling	8.9%

Earthquake Study South and East Christchurch

- Teacher Reports of Study Children
- 231 children from 4 study schools
- Rated on behavioural problems on a 26 item scale
- Score reflects both number and frequency of problems
- Score only an indicator, because even one problem can cause impairment to social and academic functioning.

Behaviour Problems at age 5

- Pre-earthquake study
 - new entrants
 - 13.1% had scores of 8 or above

- Juniors study
 - New entrants
 - 26.7 %

Behaviour Problems of Children in Years 0-3 (end of 2015)

Score Category Presenting behaviours	At the end of 2015	Range Across Schools
None	34.3%	18.2% - 51%
1-2	16.5%	12.2% - 19.2%
3-7	20.4%	16.3% - 26%
8-14	14.3%	11% - 23.6%
15+	14.3%	8.2% - 25.5%

Impact of Extended Earthquakes and Post-Eq Trauma on Children

Reported by teachers and parents:

- **73%** have sleeping problems
- **64%** have one or more symptom of post-traumatic stress
- **18.8%** have 6 or more symptoms
- **45%** have headaches, stomach aches, or eating problems
- **42%** have nightmares
- **39%** wetting the bed
- **38%** have difficulties learning to read and write

What is Traumatic Stress

Stress associated with severe adversity

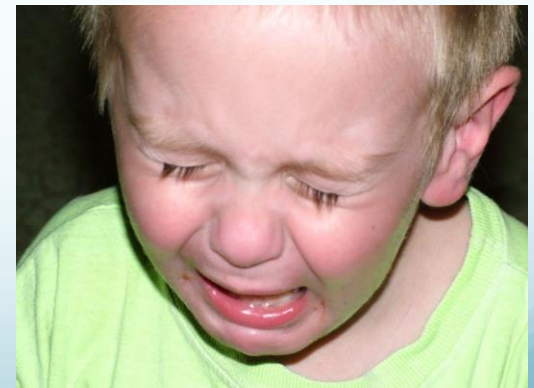
- Chronic /Extreme Poverty
- Maltreatment/ Abuse
- Family Violence
- Accidental Injuries / Accidental Death
- Death of Parent
- Witnessing /Experiencing Criminal Acts
- Hospitalisation
- Chronic Disease
- Natural Disaster
 - Flooding
 - Earthquakes

Information about Post-traumatic Stress

- PTS has important differences to behaviour problems
- Symptoms of PTS cut across
 - ADHD
 - Conduct Disorder
 - Mood Disorders of Anxiety and Depression
- Therefore, treatments based on other disorders are not likely to be effective for PTS.

What are the behaviours of traumatic stress?

- Irritable, loses temper
- Argues a lot, defiant
- Nervous, high strung, tense
- Difficulty concentrating
- Developmental regression
- Emotions may not seem to fit the situation
- Nightmares
- Trouble sleeping
- Clingy, dependent
- Fearful, anxious
- Unhappy, sad, depressed
- Sudden changes in mood
- Withdrawn, not get involved



But why is this happening so long after the EQ?

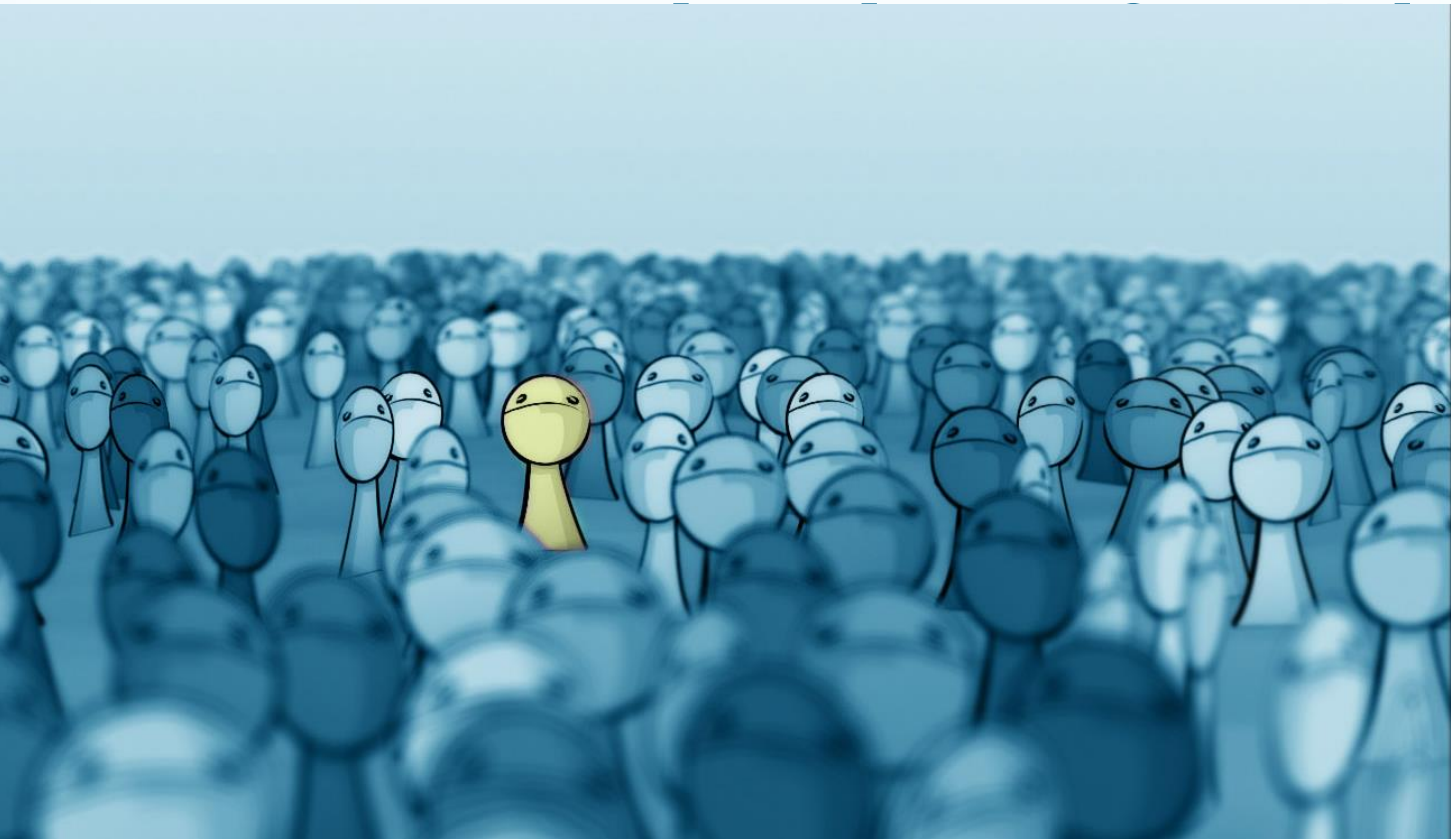
- Effects of natural disasters
- Long-term impacts on biology of the brain, with 'no relief' --
- Need for quiet environment with 'normal rearing' – this has not occurred due to the post-EQ stressors on many families
- Special vulnerability of children



Elements of the perfect storm which we have been experiencing



Innovative strategies are required to stay afloat as the storm continues



Main Takeaway

Large group of children with behavioural issues, particularly arousal dysregulation, associated with post-traumatic stress that has affected them since they were younger than 4 years of age.

Moving forward

- Recognition
- Diagnosis
- Intervention/treatment plan
- Resourcing: funding/specialists
- Preparation

This study is unique: the information collected and knowledge we have gained can be used to support young children in other situations of significant natural disaster.