

The Role of Emotions on People's Behaviour in Emergencies

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The triple disasters in Japan in March, 2011 (Earthquake & Tsunami)



The triple disasters in Japan in March, 2011 (Tsunami)



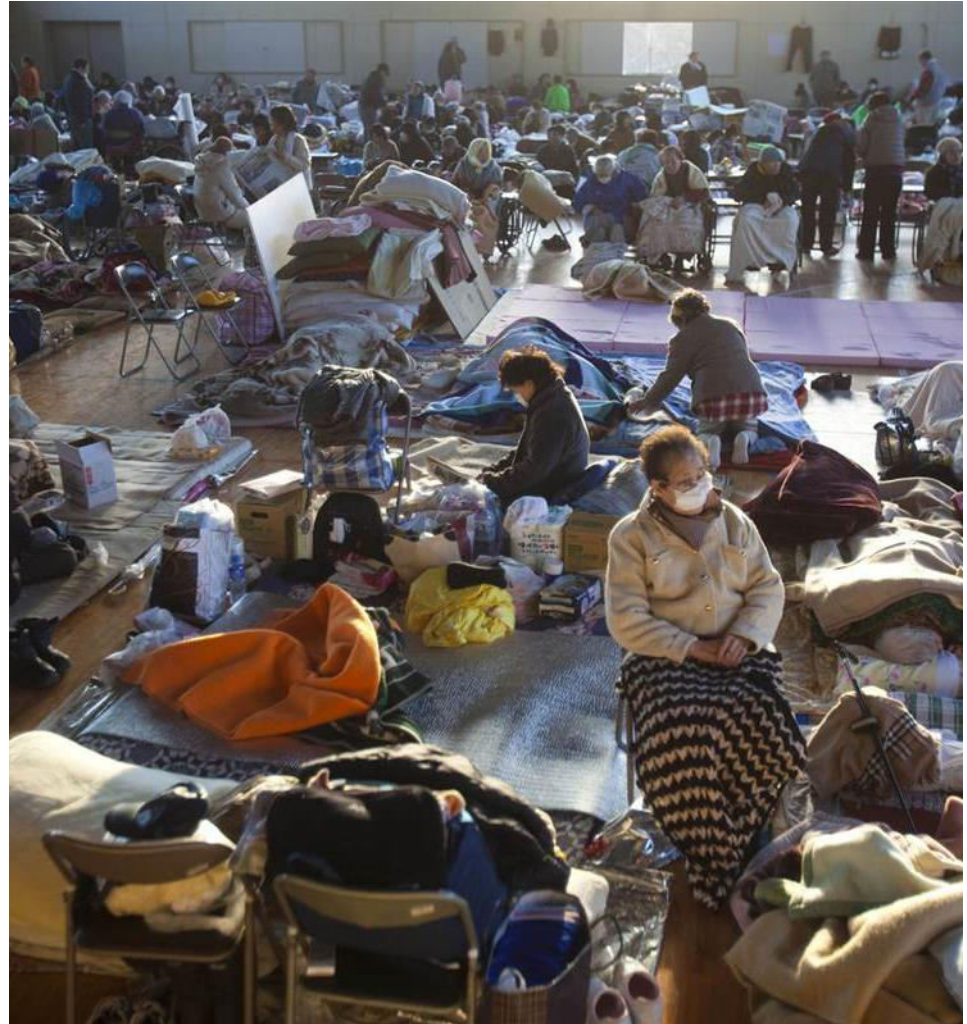
The triple disasters in Japan in March, 2011 (Fukushima Nuclear accident)



Casualties

(National Police Agency, October 10, 2013)

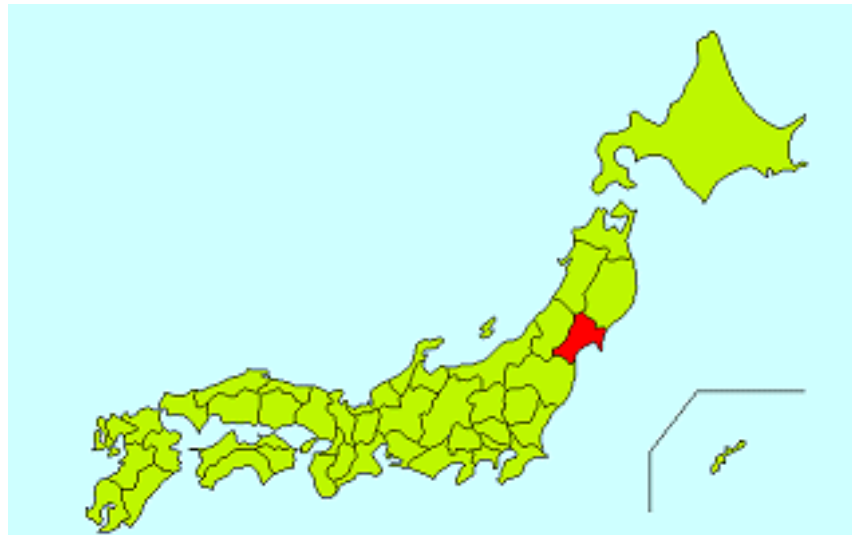
- 15,883 dead people
- 6,149 injured people
- 2,652 missing people



NHK's Study (2011)

Miyagi Pref. where Yuriage town is located

- 2:46 pm – Earthquake
- 3:55 pm – Tsunami
- 700 out of 5600 residents failed to escape.
- Survivors (n=600) interviewed



Map of the distribution of casualties

- Blue-household with no casualty
- Yellow- household with some casualties
- Red-household with no survivors



Map of people's behaviour in Yuriage

(2:00) http://v.youku.com/v_show/id_XMzEwMTQzNTUy.html



Factors that influence individuals' decision-making

- External factors
 - ▣ (e.g., infrastructure, financial issues)
- Psychological factors
 - ▣ (e.g., fear, relief)
- Cultural factors
 - ▣ (e.g., commitment to the family)

The Role of Emotions (Fredrickson, 2001)

Positive emotions (PE)

Broaden our sense of what we can do.

A sign that things are going well.

Look for opportunities.

Try new experiences.

More willing to take risks.

Encourage creativity.

Negative emotions (NE)

Narrow our focus to the potential threat.

A sign that there is something wrong and we had better attend to it.

See details.

Have restricted sense of options.

The role of negative emotions

- Make people focus on the issue at hand.
- Get people on board with issues.
- Grab our attention
- Most effective when the information is new.
(when people are not previously aware of a problem)

The optimal ratio of positive to negative emotions

- Losada and Heaphy (2004)
 - The optimal ratio is 3:1.
 - The benefits of positive emotions start to break down when a ratio go higher than 11:1.
 - Help stay realistic and self-correct, if necessary.

Rationale

- Few studies on the role of positive /negative emotion when people face an emergency
- Few studies on factors that determined people's decision-making and their behaviour in the triple disasters.

Research Questions

- To what extent did positive emotions broaden the sense of options of the participants who were in Japan at the time of the triple disasters?
- To what extent did negative emotions restrict their sense of options?

Our study (Work-in-progress)

- Prospective participants
- Instrument
- Data collection procedure
- Data analyses

Prospective participants

- Japanese people who are in Japan at the time of the triples disasters
- to be identified through social media

Instrument (Questionnaire)

- Emotions
- Options
- Decision-making (Final decision made)
- Demographic data

Instrument (Questionnaire)

e.g., The official information helped me feel positive about my situation.

Strongly
disagree

1

Tend to
disagree

2

Slightly
agree

3

Somewhat
agree

4

Usually
agree

5

Strongly
agree

6

Data collection procedure

- Ethics approval
- Pilot study
- Web survey

Data analysis

- Statistical Product and Service Solution (SPSS)
- Nvivo Version 10

Potential web survey tools

- Mr. enquête
- CubeQuery
- Survey Monkey

The role of positive emotions

Grawiych et al (2003)

	The effect of positive emotions induced
Participants	180 undergraduate students - divided into groups of 3.
Method & Findings	By simply imagining a recent event that put students in a good mood, They increased creative performance when designing a hotel to be built on the moon with cards & a masking tape

The role of positive emotions

Isen et al (1987)

	The effect of positive emotions induced
Participants	65 university students (male + female)
Method	<ul style="list-style-type: none">• A group watched bloopers from RV Westerners• Another group watched <i>Area Under a Curve</i>, a maths film.
Results	<ul style="list-style-type: none">• 75% of G1 got the solution(pin the match box to the wall & stand the candle in it to catch the wax)• Only 20% of G2 did so.
Findings	<ul style="list-style-type: none">• A little imagination was required to do the task.• It was promoted by humour than geometry.• People in a positive state are more creative.

Research Question

- To what extent does the theory of the role of positive / negative emotions discussed by Fredrickson (2001) apply to Japanese people who were in Japan at the time of the triple disasters?