



Socio-cognitive processes in hazard preparedness decision making

Tim Prior

School of Psychology, University of Tasmania, Australia



Natural hazards or naturally hazardous?

- ➔ Without people, communities or society, we don't have natural hazards
- ➔ An integral component of disaster risk reduction must be an understanding of the social aspects that make natural processes hazardous
- ➔ How do we interact with our environment, and how do these interactions make natural processes hazardous?



Encouraging people to meet the threat

- ➔ Diversity in society poses problems for risk managers and risk communicators
- ➔ In a bushfire context, current Australian risk communication aims to encourage people who are living in known bushfire risk areas to prepare for the threat of bushfire
- ➔ Australasian Fire Authorities Council (AFAC):
extracts from the 'Position Paper on Bushfires and Community Safety' (November, 2005)

"... there will be circumstances, such as on days of very high or extreme fire danger, when fire agencies are unable to provide fire-fighting resources in sufficient time and strength ... Therefore people planning to defend their properties must be prepared to be self sufficient."

- ➔ Community self-sufficiency must be a key goal in disaster risk reduction





What is effective risk communication?

- ➔ To best fight a bushfire, we must understand how it behaves, consumes fuel, and the weather conditions that encourage it
- ➔ Likewise, for effective bushfire risk communication, we must understand the factors that influence the way people make a decision
- ➔ What role does the community play?
 - Diffusion of risk information among community members
- ➔ Depends on the individual
 - how does the individual interpret the message (render it meaningful)?
 - how does the individual apply this information (do they understand it)?





What choice do we have?

- ➔ Anticipating and making the choice to prepare for a hazard is difficult because a bad choice could have severe consequences
 - we know this because we've seen it, read about it or heard from friends or family
- ➔ Because the consequences could be bad, we want to make the best choice possible
 - is this based on the information we're given? Partly
- ➔ **BUT**, the consequences are only part of the story
- ➔ Our choice depends on intrinsic factors like who we are, our attitudes, our beliefs and our experiences
- ➔ It is also based on extrinsic factors like the environment, who we associate with, and how highly we rate the risk of a hazard





The importance of preparing

- ➔ Preparation enables people to deal with hazard activity by increasing resilience and ensuring a quick recovery
- ➔ Frees up resources that risk managers may otherwise allocate to the defence of unprotected homes
- ➔ In the case of bushfire - it enables homeowners to make a choice between fleeing the fire or staying to defend - empowering the householder
- ➔ **However, despite the attention directed at achieving this goal in Australia, sustained levels of preparedness in at-risk communities remains low**
- ➔ Neither perception of risk, nor the standard approaches to risk communication seem to engender sustained preparation

Duval & Mulilis, 1999; Lindell & Whitney, 2000; Paton, 2003; Paton *et al.*, 2000

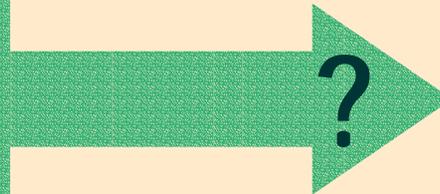




What factors at the individual level influence the decision to prepare?

➤ Several important factors identified in the hazard preparedness literature (earthquakes, volcanoes *etc.*)

- intention to prepare
- risk perception
- critical awareness
- self efficacy
- outcome expectancy
- action coping





What influences bushfire preparation?

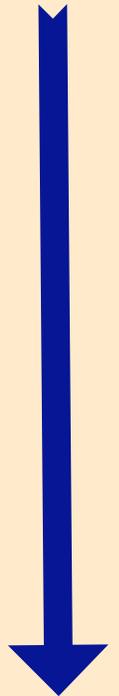
- ➔ A good question... because a good answer will help to provide information that can inform risk communicators
- ➔ Our research suggests some householder characteristics may increase the likelihood that they would consider preparing: age, gender, home ownership, residence length and previous experience
- ➔ But these characteristics aren't driving behaviour change - nor does living in high bushfire risk areas
- ➔ Antecedents of behaviour vs cognitive processes that underpin behaviour change? Paton, 2003
- ➔ What drives the decision to prepare?





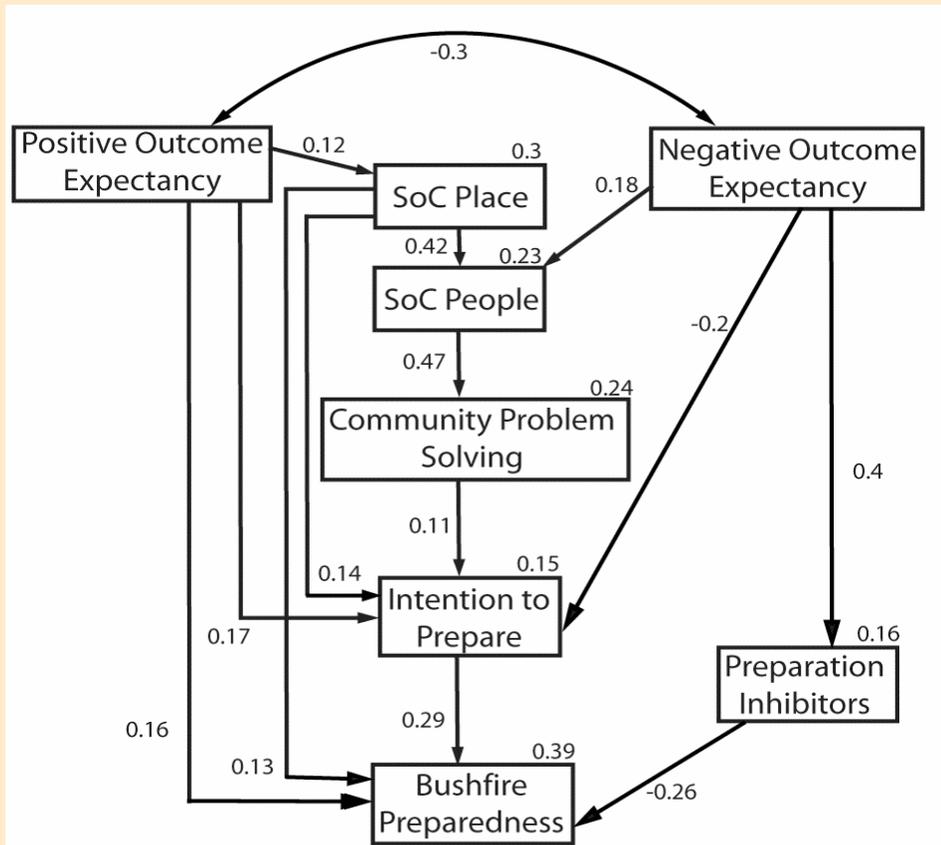
Research methodology

- What is the cognitive process behind householders' decisions about adopting protective behaviours?
- Mixed methodology of qualitative key informant interviews (N=41) and a bushfire preparedness survey (N=1106), which were undertaken in Tasmania and New South Wales, Australia
- Qualitative data used to develop a substantive model of preparedness decision making
- Longitudinal quantitative data (2006/2007) from preparedness surveys used to test and confirm model using Structural Equation modelling (SEM)





Bushfire preparedness decision making



- ➔ Predicting 39% of variability in preparedness
- ➔ Process is driven by outcome expectancy perceptions
- ➔ Key process revolves around a sense of community:
 - connection to place
 - connection to people
- ➔ Formation of preparatory intentions is very important
- ➔ Preparation behaviour is also strongly influenced by inhibitory factors (salience)

$\chi^2 = 8.519$, $df = 10$, $p = 0.578$; $RMSEA = 0.001$ (90% 0.0 -> 0.044),
P-Value for Test of Close Fit ($RMSEA < 0.05 = 0.976$; $NFI = 0.983$, $GFI = 0.995$, $AGFI = 0.984$)



Research into practice

- ➔ While cognitive processing is very complex, there are some areas that risk communicators can target to improve preparedness:

Building positive outcome expectancy gives people a sense that preparing is worthwhile

Building sense of community ensures people share information and support one another

Positive outcome expectancy and good sense of community lead people to develop strong intentions to prepare, and increase bushfire salience

- ➔ Utilising a risk communication message that incorporates information showing people preparing and defending their property successfully
- ➔ Targeting risk information to encourage community based activities
- ➔ Encouraging information transfer from old to new residents, and between community and risk management agencies
- ➔ Paton (2006) showed that individuals who intended to prepare were more likely to adopt protective behaviours
- ➔ Novel risk communication techniques that address this process should increase preparedness levels (in an all-hazards context)



Information provision or community engagement?

- ➔ Even if the probability and intensity of natural disasters remains constant, population growth is likely to place more people at greater risk in the future
- ➔ To meet this growing threat, emergency management agencies must utilise best practice communication in order to increase community preparedness and self-sufficiency
- ➔ Both communication techniques are required for effective risk communication:
 - Information dissemination should educate community members
 - Community engagement should accompany this information and help the community to interpret and understand this information relative to their particular circumstances
- ➔ Developing an understanding of the socio-cognitive processing people apply when adapting to a hazard can be an early step in the development of effective risk communication

Thank you



Bushfires on the Eastern Shore of Hobart - 12 October 2006