Human Behaviour Under Stress

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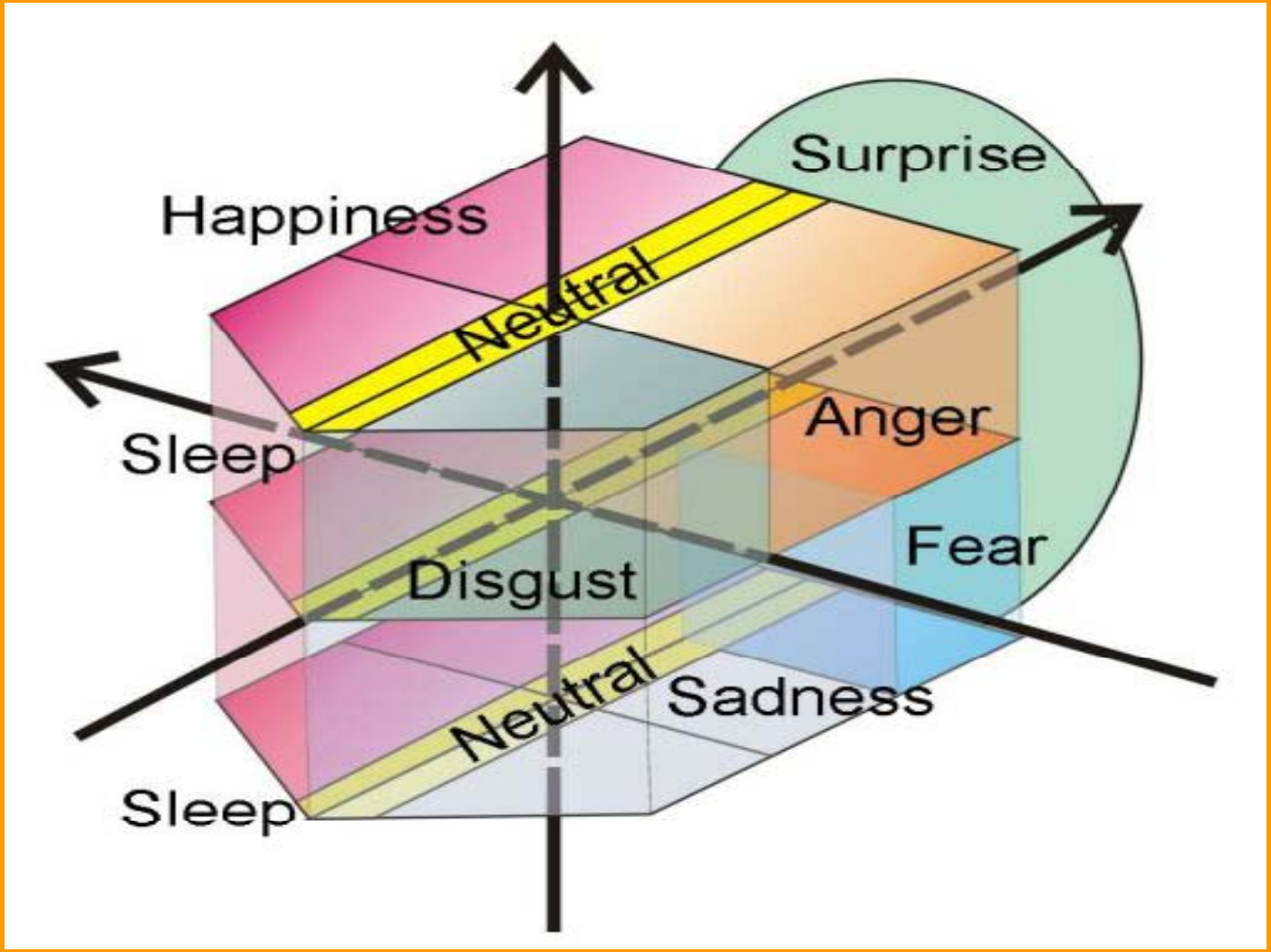
McLennan & Elliott (2010)

- Ten Lessons from Murrindindi Fire:
  - Two identified the importance of community and social context
  - Two identified the importance of information and its sources
  - One identified the role of anxiety and emotional regulation

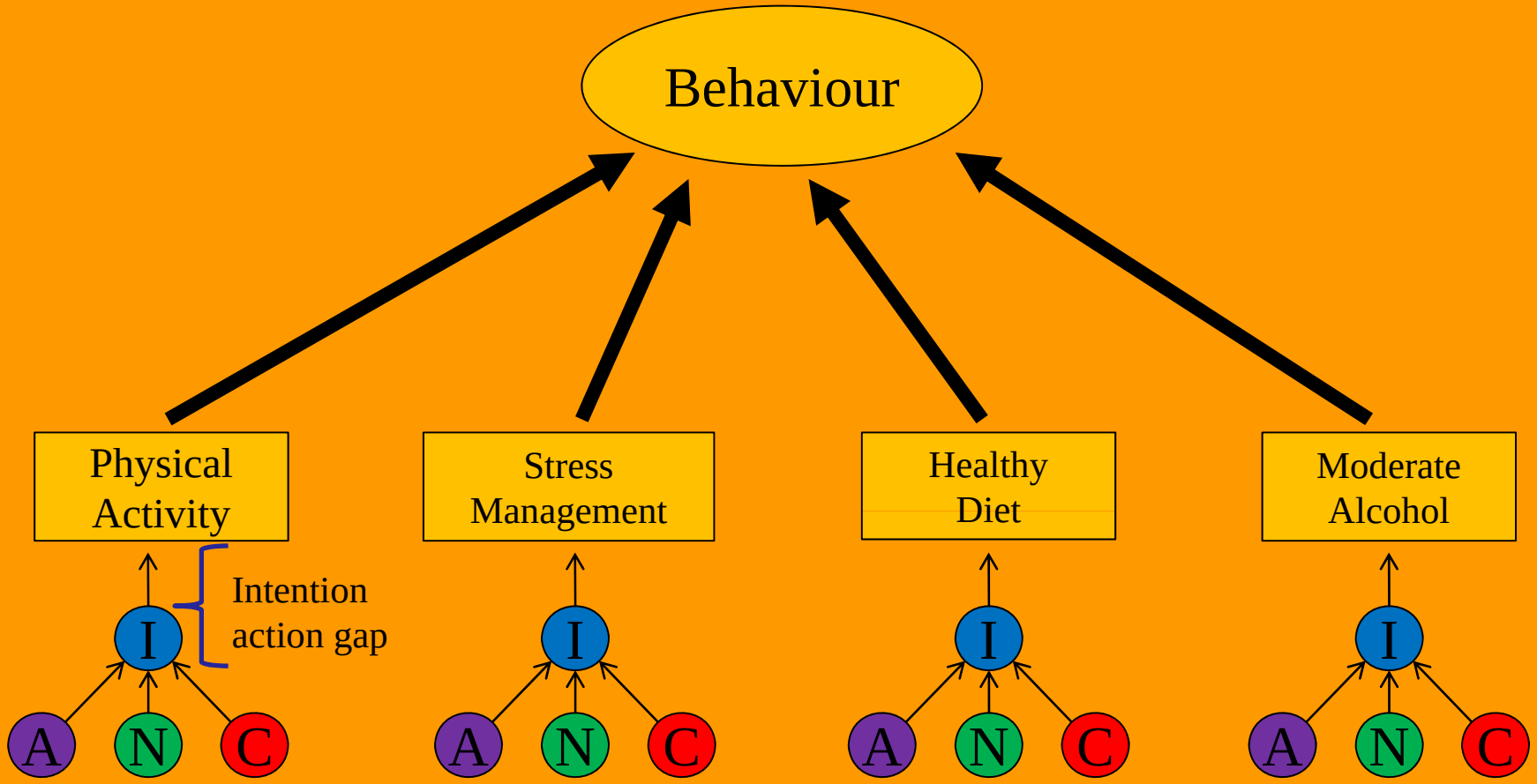
Human Decision Making

Is influenced by many things

People can behave in a rational way under some circumstances but frequently they do not

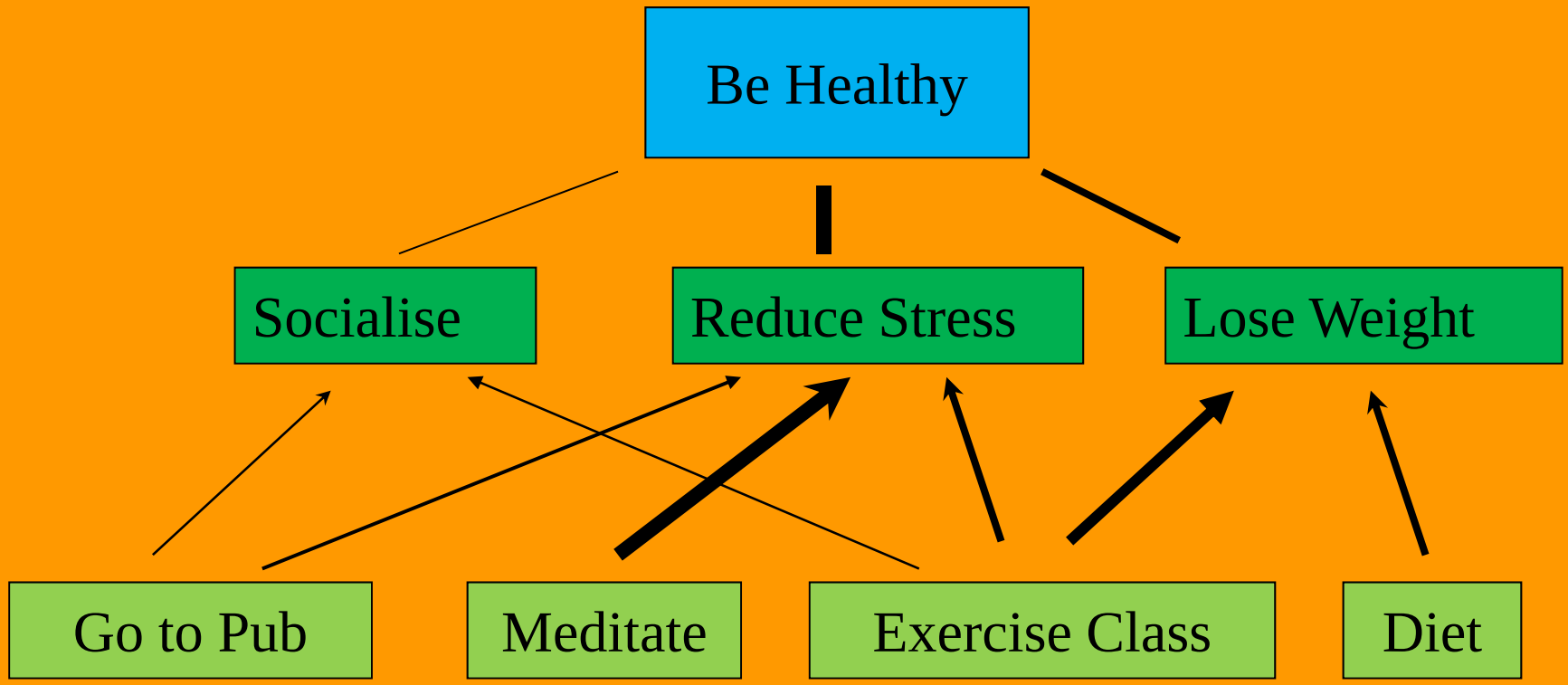


Intention to Action: I'm going to…but will I?



A=Attitudes; N=Normative Beliefs; C=Control

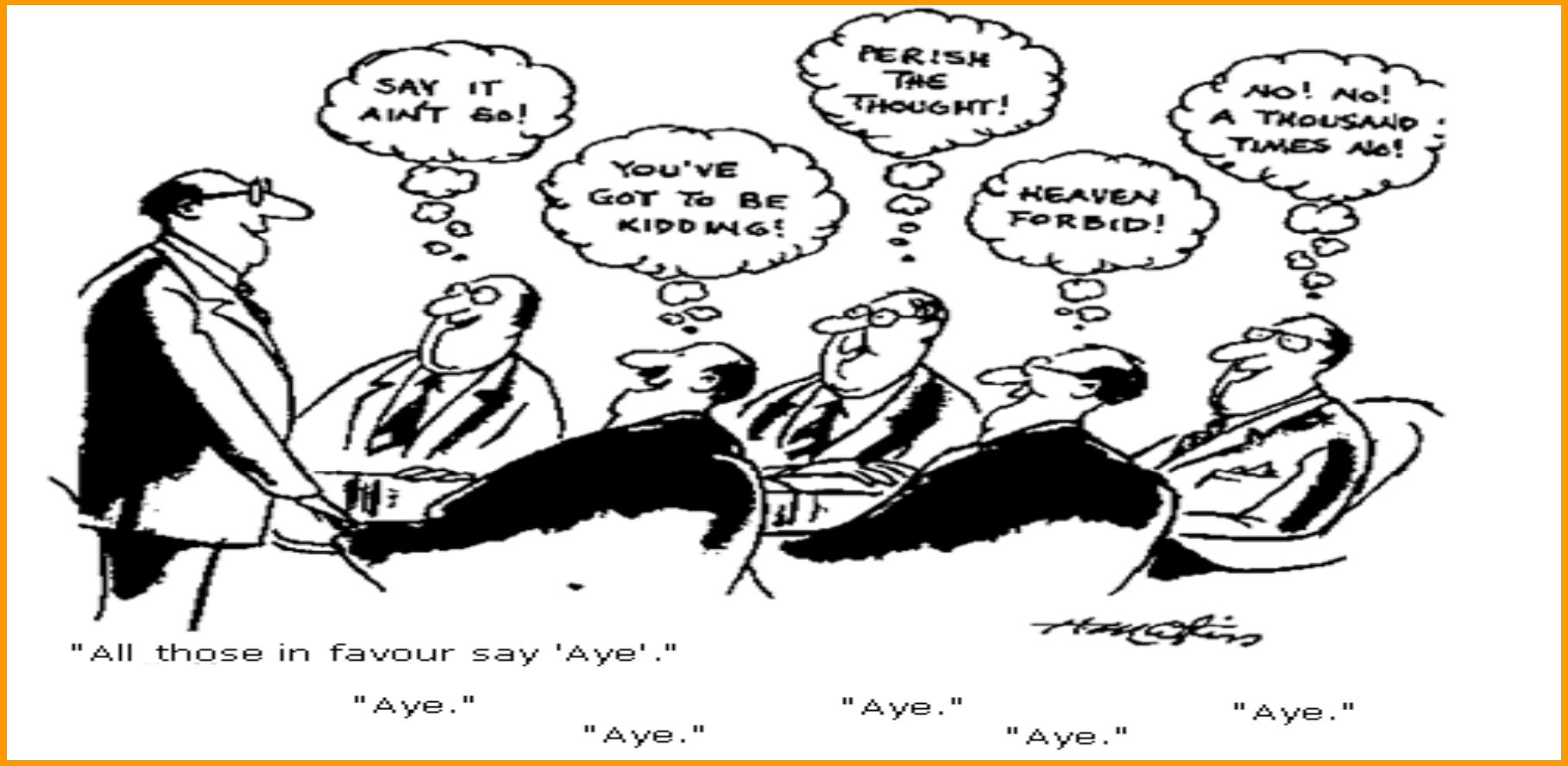
The picture is a bit more complicated than the theory of reasoned action implies



Decisions based on

- Number of higher order goals served
- Value place on goals
- Efficacy of action to serve goals

We also know that decisions are often influenced by the social context



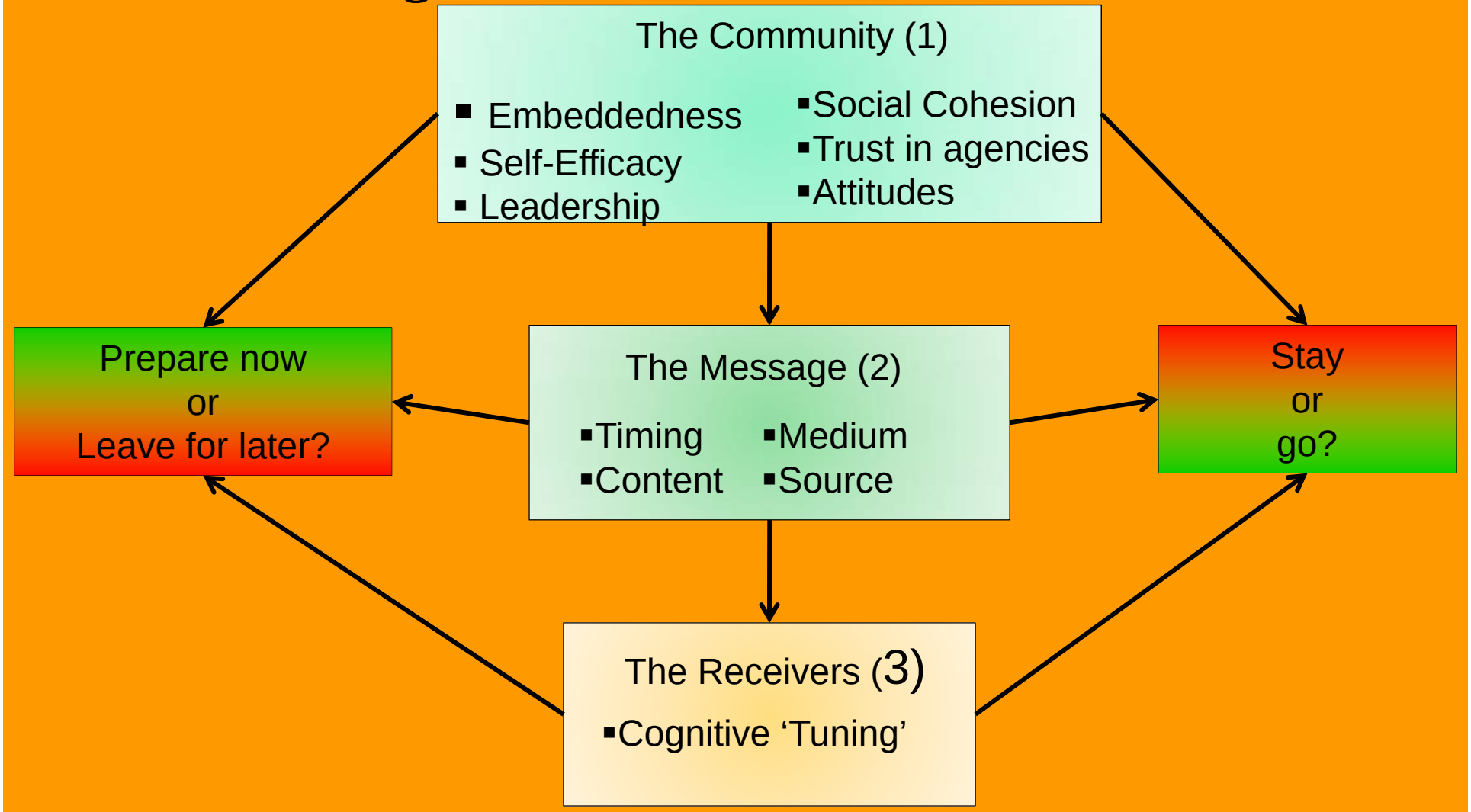
The concepts of “Groupthink” and “Risky Shift” are well known

Broad Aims

1. *Take an integrated (multilevel) approach to understanding bushfire preparation and reaction to bushfires*
2. *To apply what we know about from psychological approaches to understanding decision making, cognitive and community behaviours in a manner that reduces the risk to lives in catastrophic bushfire conditions.*
3. *To make contributions to theory in a ways that goes beyond the bushfire context.*

The Bushfire Context

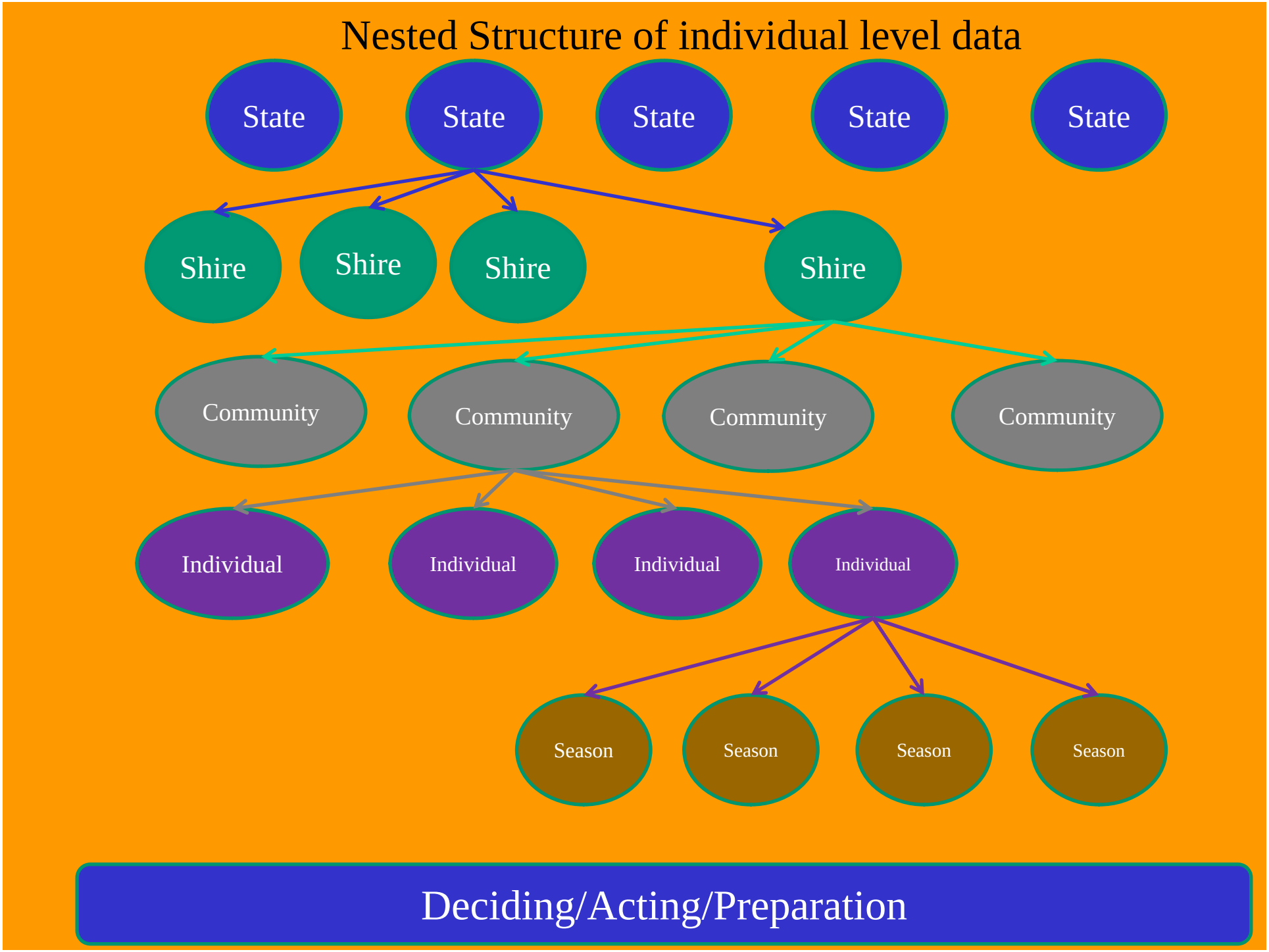
Making Decisions that **Minimise Risk**



Most research is limited in one way or another

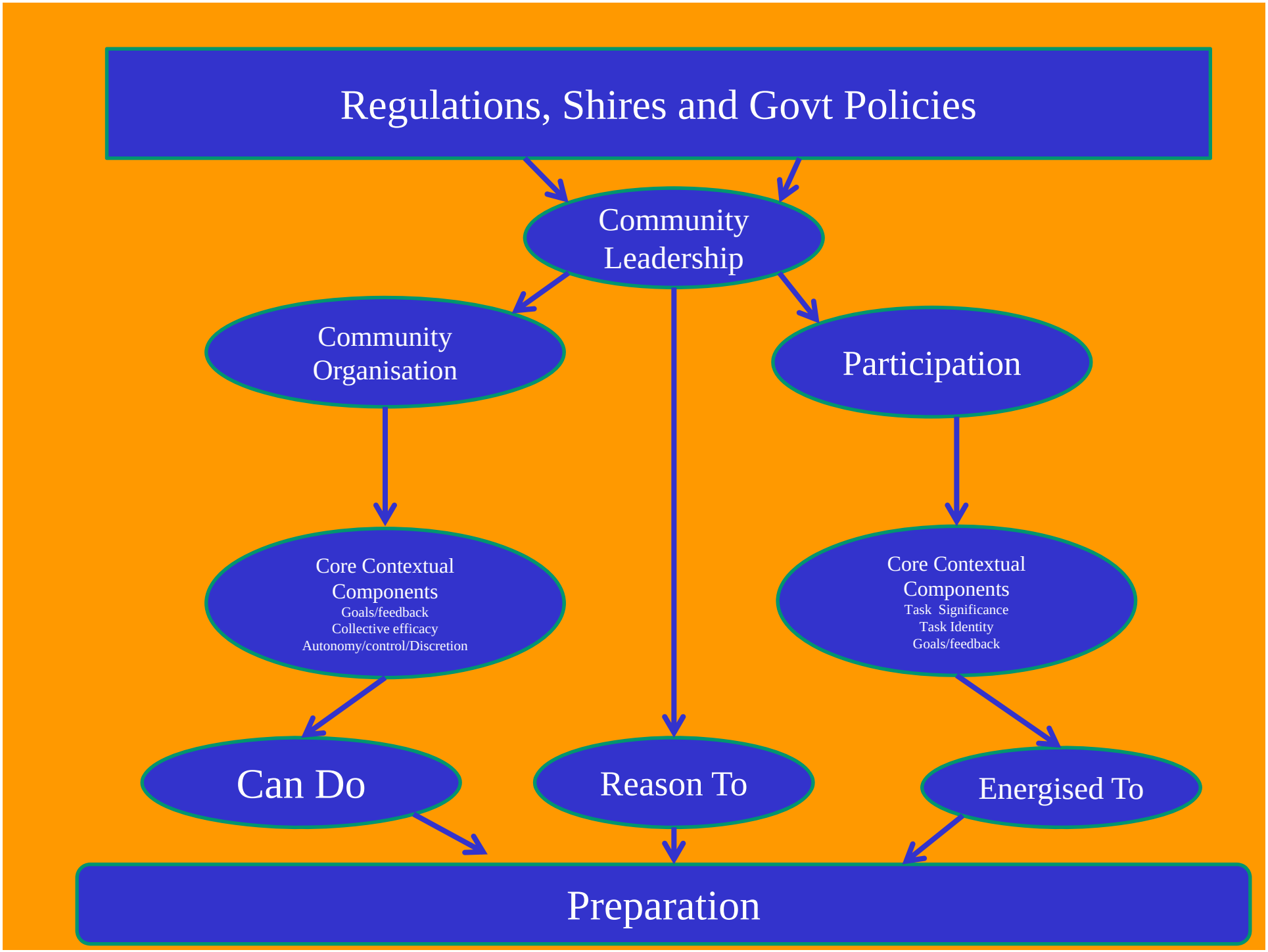
- Static as opposed to dynamic
  - ignores time and the changes that go with it
  - cross sectional and causation difficult to infer
- Theories of decision making often developed in low risk as opposed to high stakes environments (lab vs real world)
- Disaster research tends to be case study based (qualitative rather than quantitative; small samples)
- Post hoc (being smart after the event)
- Ignores natural clustering (single level of analysis) leading to incorrect statistical conclusions

Nested Structure of individual level data



Using this approach we will be able to ...

- Partition the variance into components
- Estimate the effect of changes/interventions and therefore provide a useful guide to cost benefit analysis
- Identify what it is we know from what it is we don’t know


Regulations, Shires and Govt Policies
Community Leadership
Community Organisation
Participation
Core Contextual Components
Goals/feedback
Collective efficacy
Autonomy/control/Discretion
Core Contextual Components
Task Significance
Task Identity
Goals/feedback
Can Do
Reason To
Energised To
Preparation

Using this approach we will be able to...

- Identify causal mechanisms for change
- Develop and recommend targeted intervention strategies
- Identify what it is we know from what it is we don’t know (and the extent to which we don’t know it)

General approach

- Multi-method
  - Lab & field (e.g., experiments on message content; risk perception and approach avoidance)
  - Qualitative and quantitative (explanatory concepts derived from the literature contextualised from interviews and empirically tested)
  - Extended in time to evaluate changes, infer causality and the impact of interventions
- Multi level
  - Estimates of contribution and importance
  - Identifies what is known from what is unknown

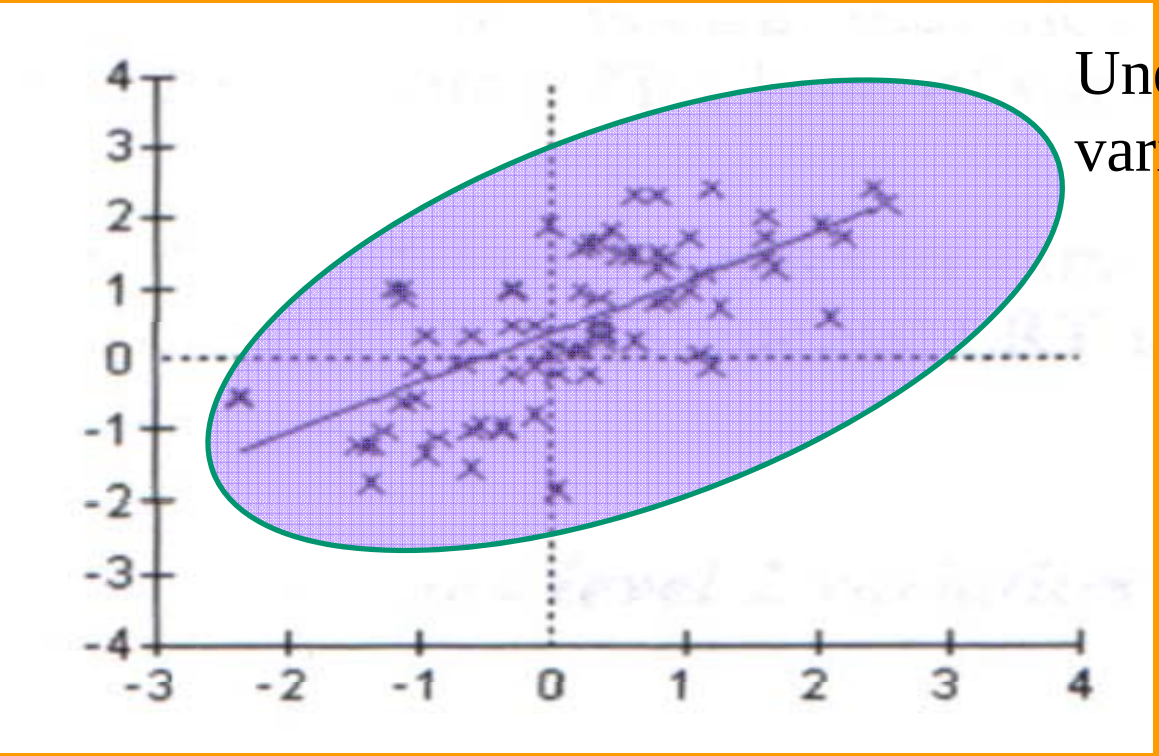
Progress

- Contracts Signed off (November)
- Recruitment –
  - 4/5 Research Fellows (CRC UWA Support) (Completed Dec)
  - 2 PhDs (APA, CRC Support pending)
- Pilot Data for Information processing project (Dec/Jan)
- Community Surveys (March/June)
  - Redhill/Roleystone fires (400 interviews, 1008 mail drop surveys)
  - Potential collaborative links identified
- Cognitive Behaviour Modification: Theoretical Development, Stimulus materials for first studies
- Research contacts established
- Disaster month

What we have learned so far

- We can’t solve all of the limitations in the time available given the funding
- From the Survey
  - Extent of community engagement
  - Willingness to participate
  - Importance of communicating and maintaining
  - The process of research impact on communities
- Complexity
  - Shires aint Shires and Communities aint Communities
  - Preparation aint preparation

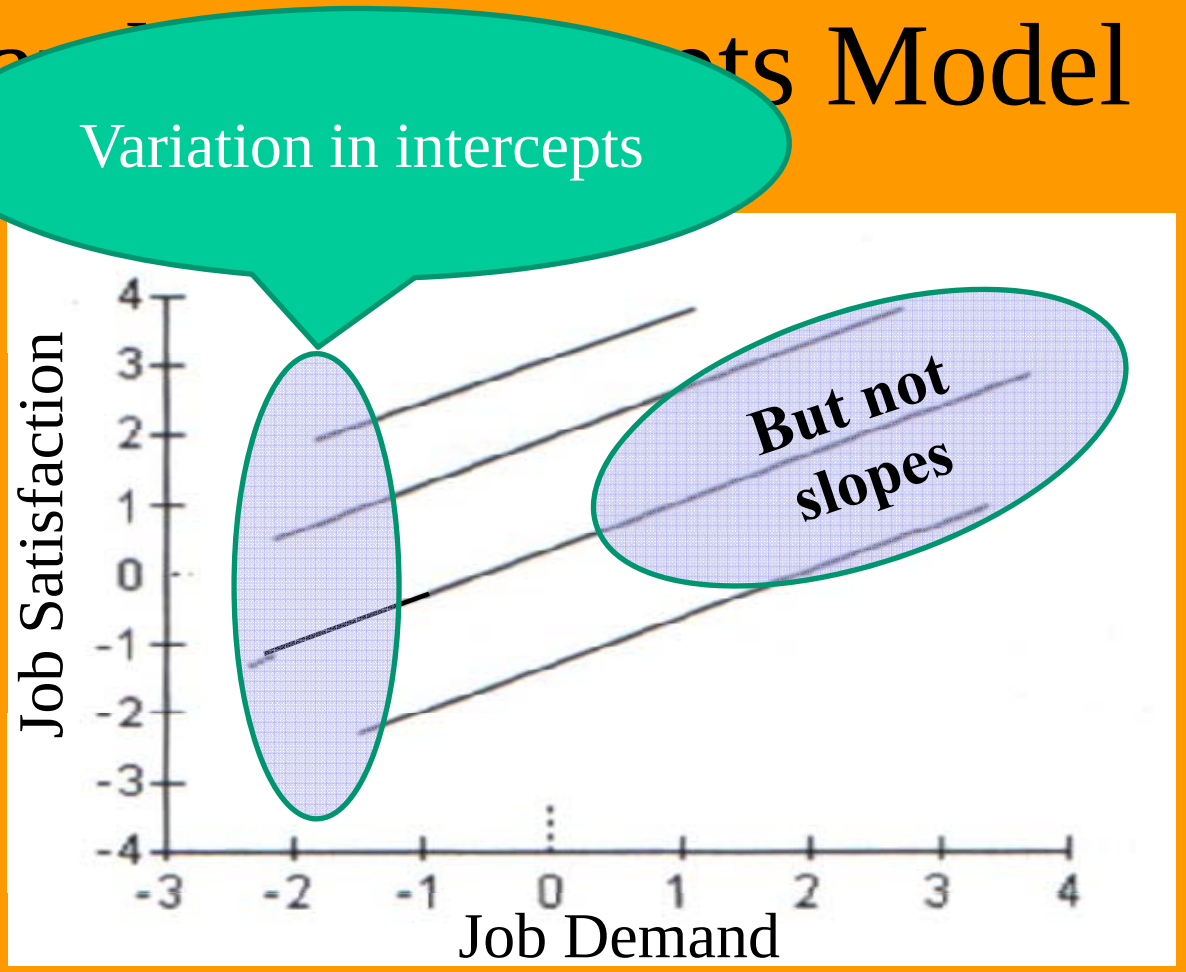
OLS Regression Model



Unexplained variation

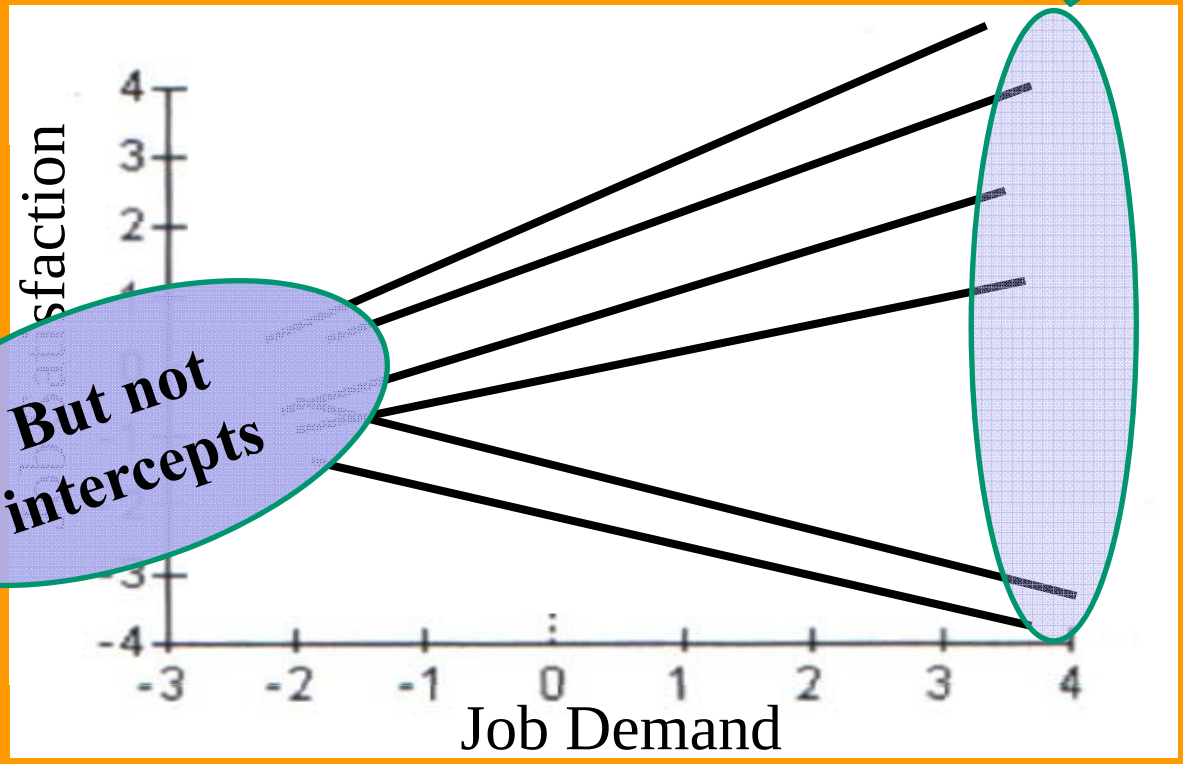
Level one variation

R…ts Model



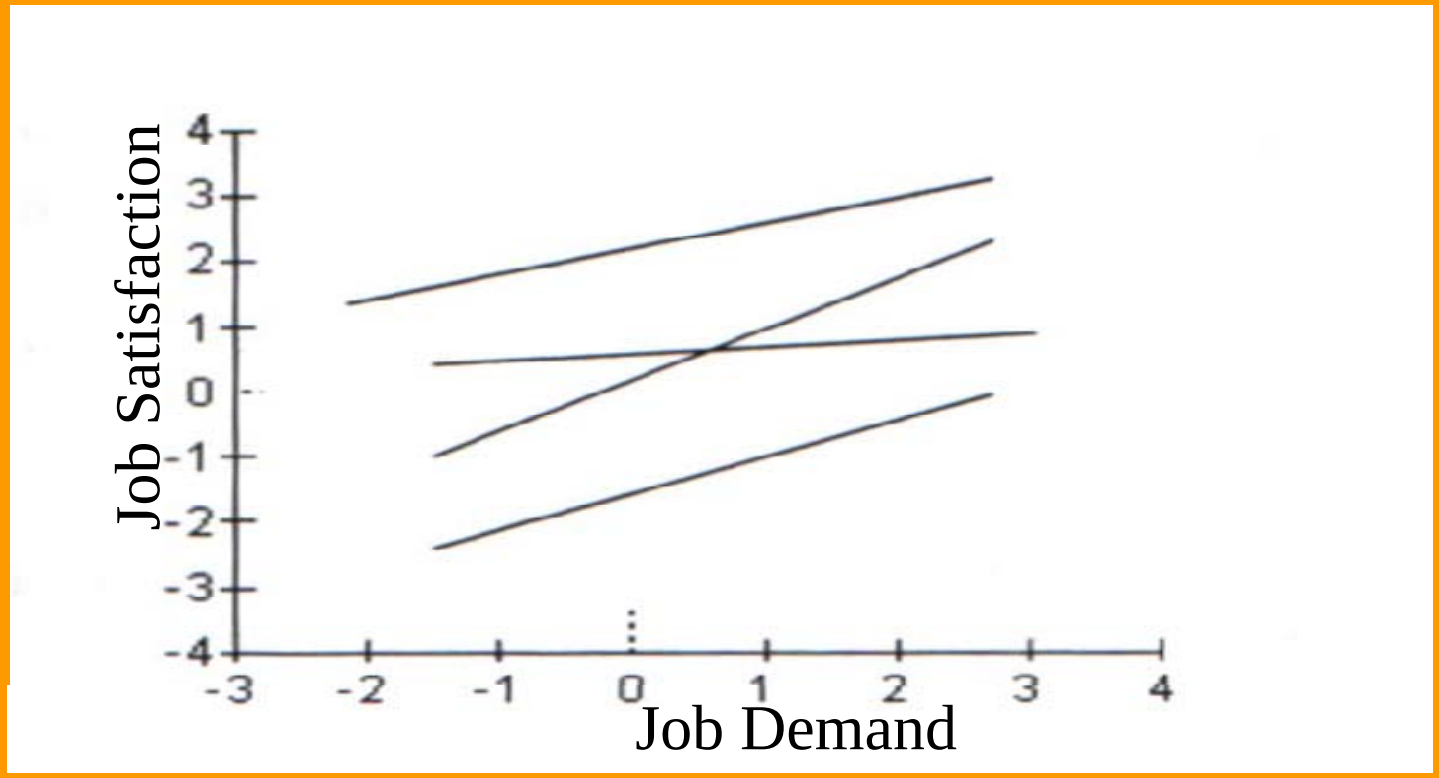
Job variation with respect to level

Random Slopes I



Job variation with respect to level

Random Slopes and Intercepts Model



Level two slopes and intercept variation

What Does an Implementation Intention 'Look' Like?

- Typically use a 'pen and paper' manipulation:

You are more likely to exercise for at least 30 minutes per day in the next week if you say when and where you will exercise and stick to your plan. In the boxes below write down when and where you plan to exercise in the next week:

When: *At lunch time after accounts meeting*

Where: *In the gym at work*