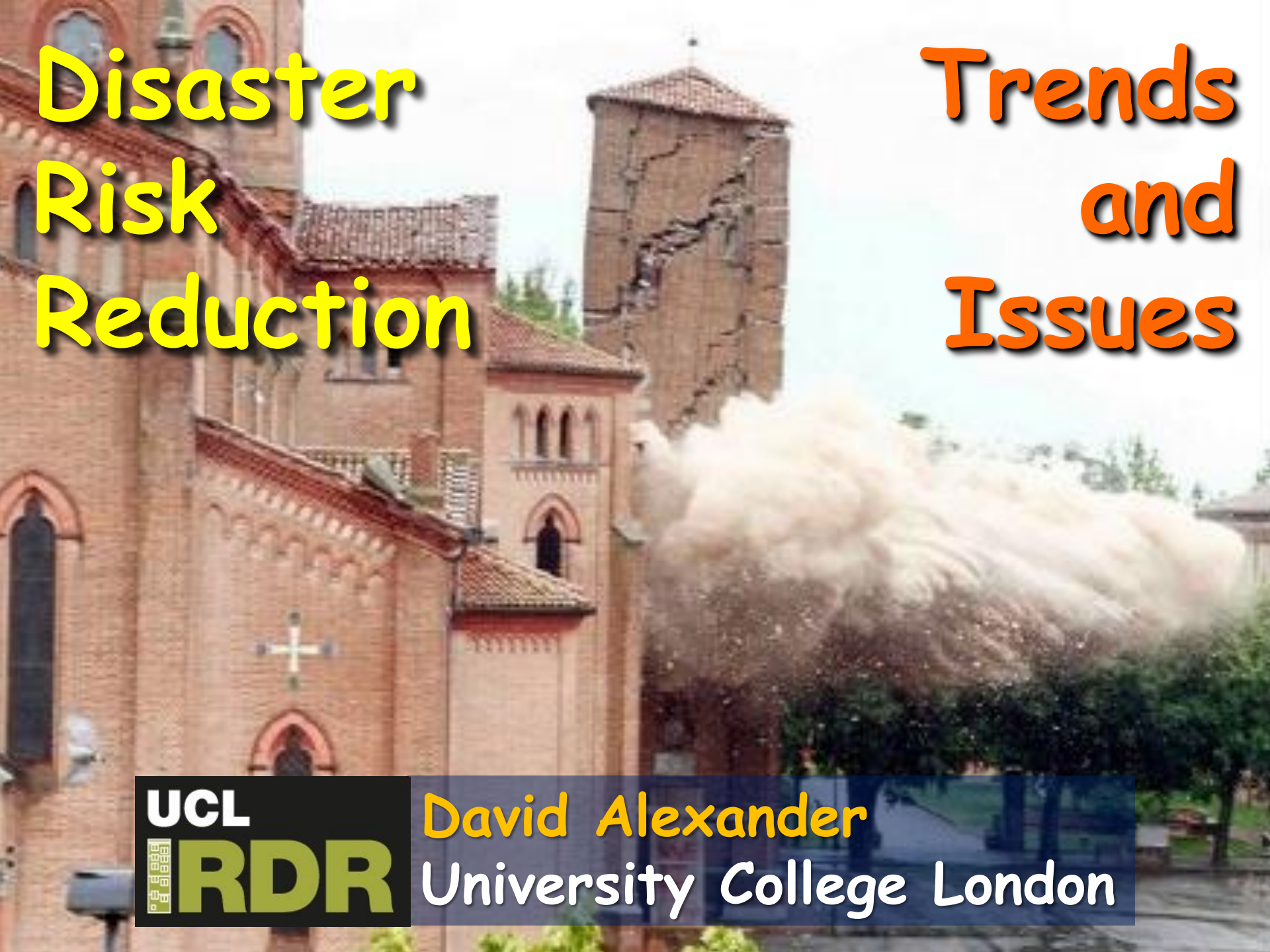
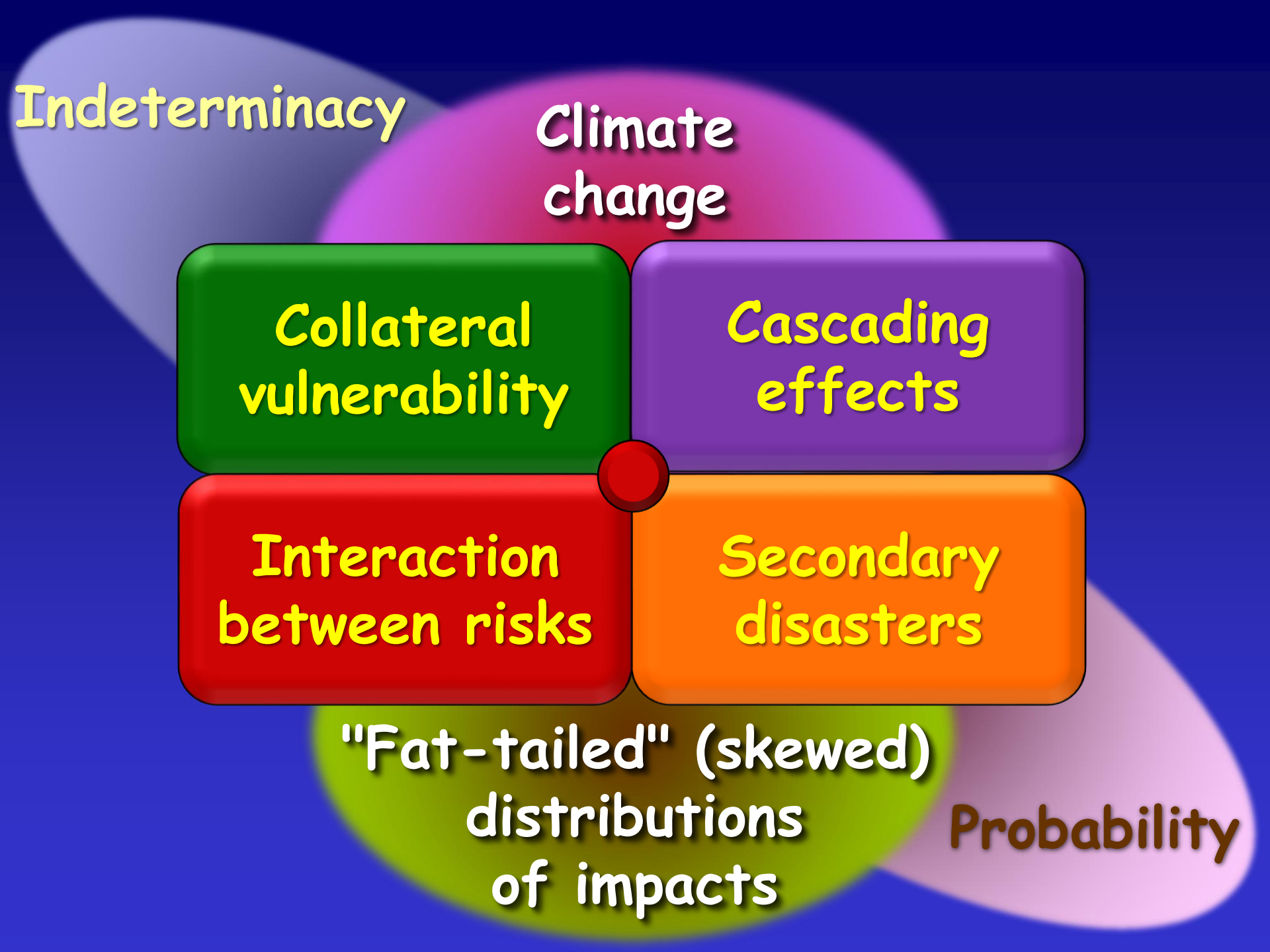
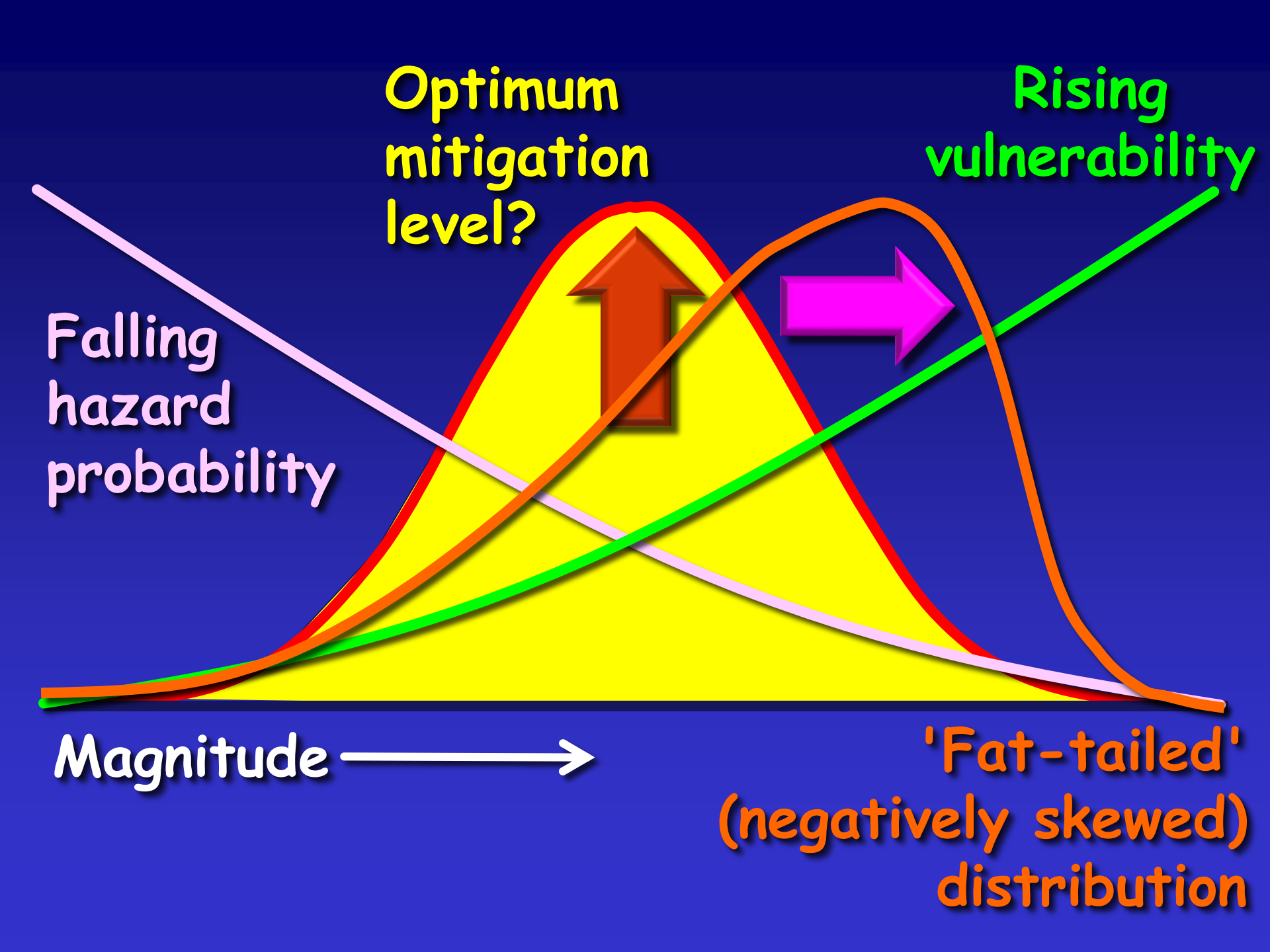
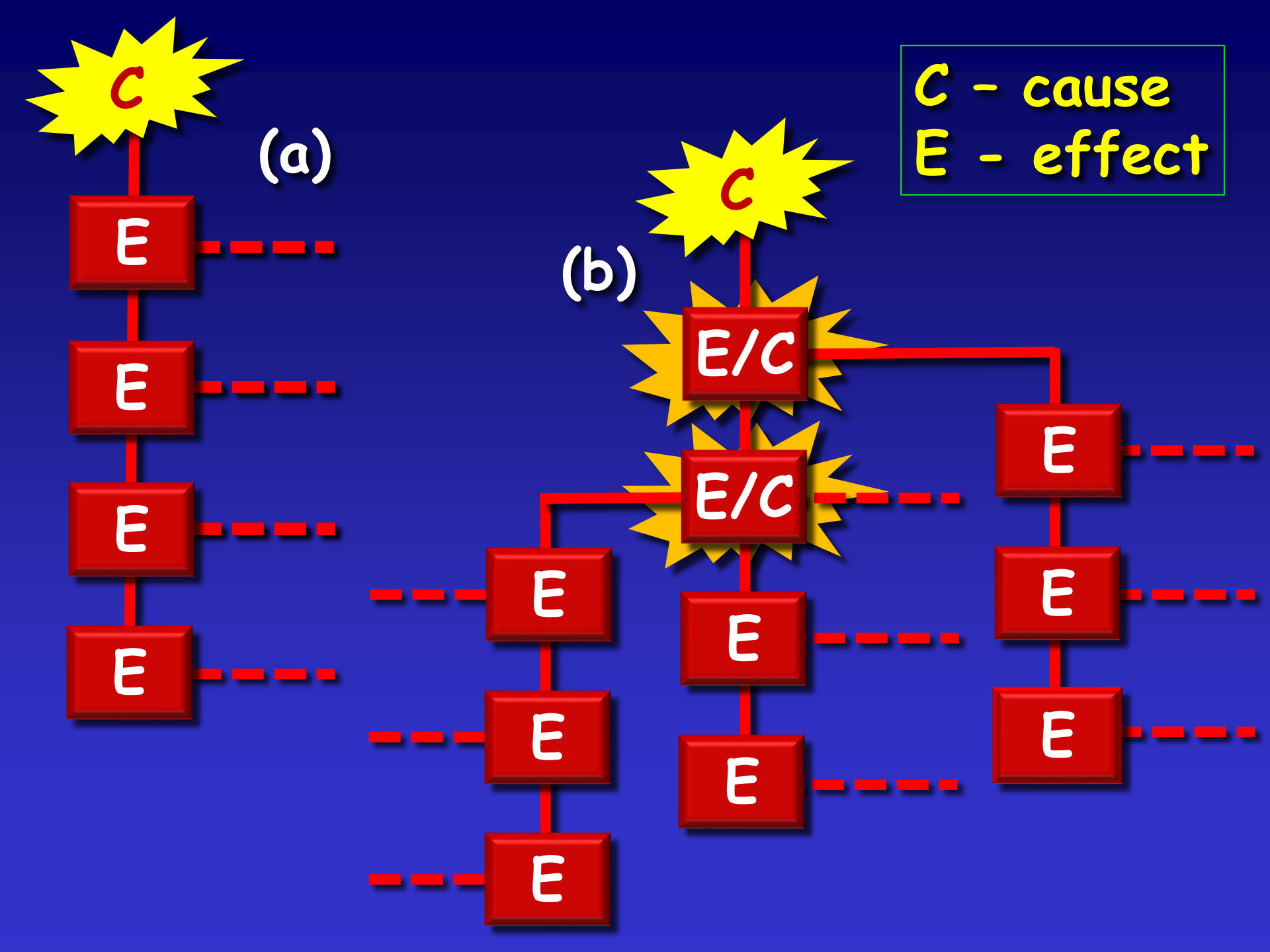

Disaster
Risk
Reduction
Trends
and
Issues
UCL
IRDR
David Alexander
University College London


Topics:-
• uncertainty
• corruption
• resilience
• sustainability
• culture
• 'futurology'

Uncertainty


Indeterminacy
Climate change
Collateral vulnerability
Cascading effects
Interaction between risks
Secondary disasters
"Fat-tailed" (skewed) distributions of impacts
Probability

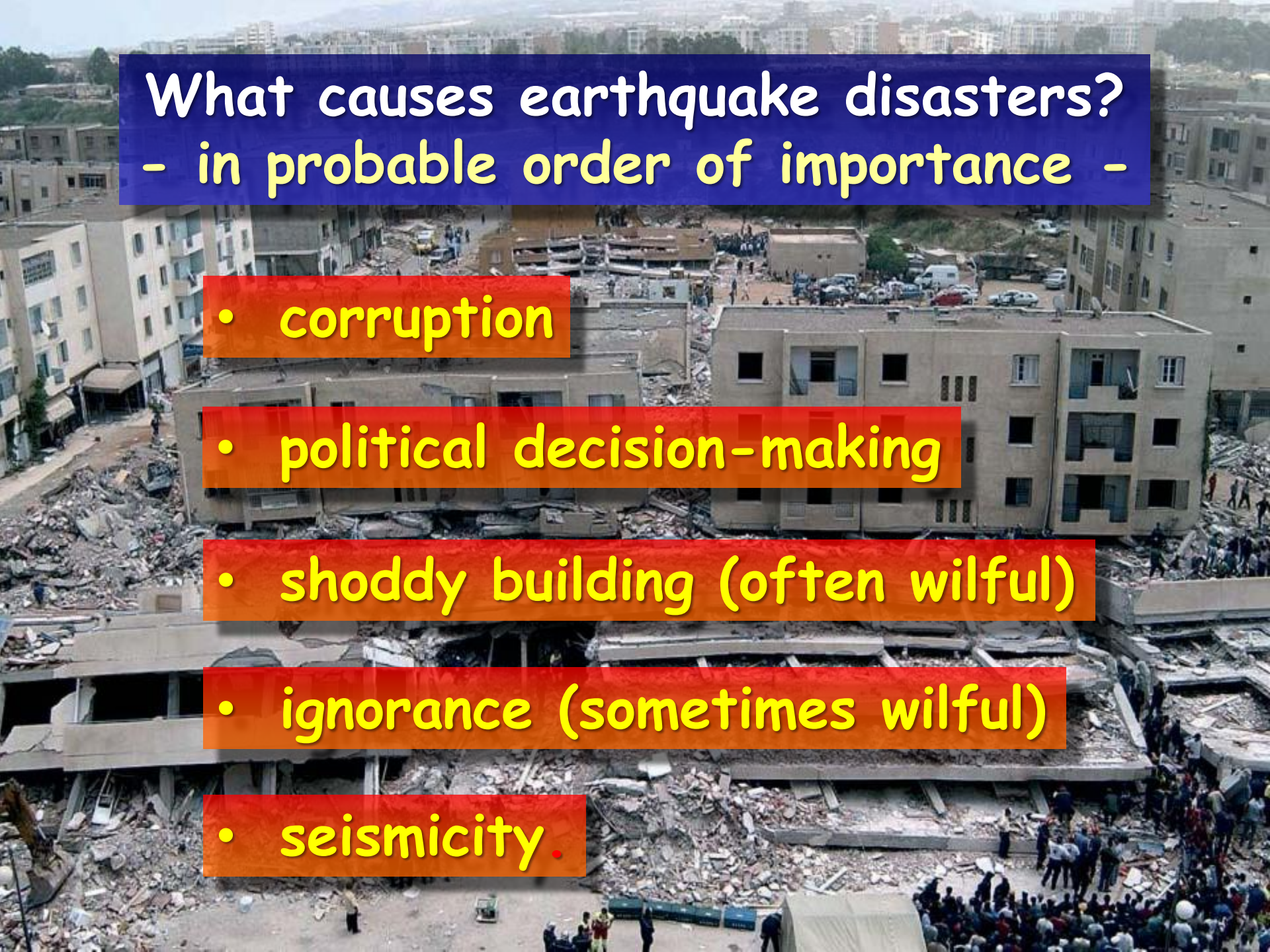

Optimum mitigation level?
Rising vulnerability
Falling hazard probability
Magnitude
'Fat-tailed' (negatively skewed) distribution


C - cause
E - effect
(a)
C
E
E
E
E
(b)
C
E/C
E/C
E
E
E
E
E
E
E
E

Corruption

Vulnerability

- **Total:** life is generally precarious
- **Economic:** people lack adequate occupation
- **Technological/technocratic:** due to the riskiness of technology
- **Delinquent:** caused by corruption, negligence, etc.
- **Residual:** caused by lack of modernisation
- **Newly generated:** caused by changes in circumstances



What causes earthquake disasters?
- in probable order of importance -

- corruption
- political decision-making
- shoddy building (often wilful)
- ignorance (sometimes wilful)
- seismicity.

NATURE | COMMENT

Corruption kills

Nicholas Ambraseys & Roger Bilham

Nature **469**, 153–155 (13 Januar
Published online 12 January 2011

Public Choice (2007) 132:209–230
DOI 10.1007/s11127-007-9148-y

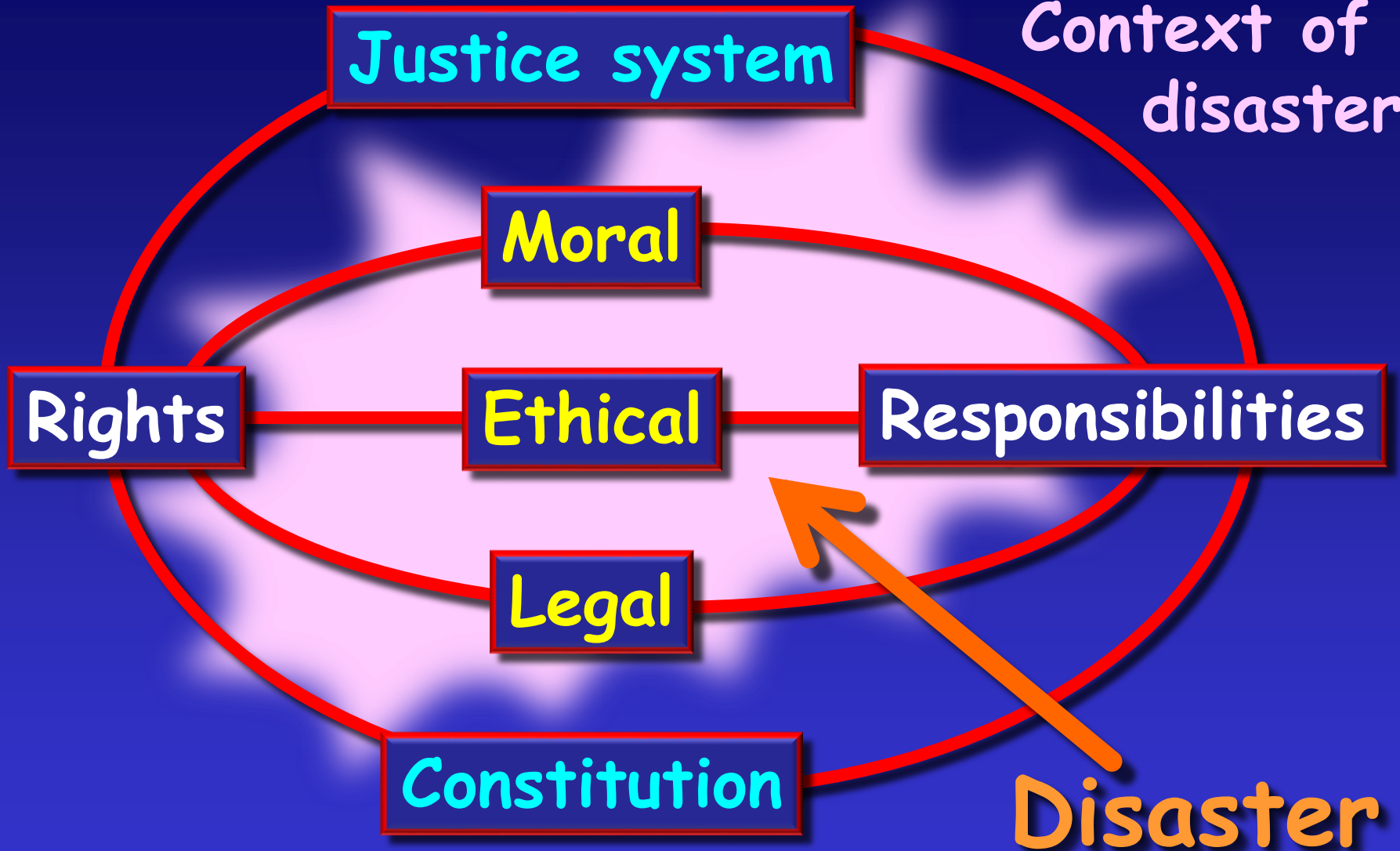
ORIGINAL ARTICLE

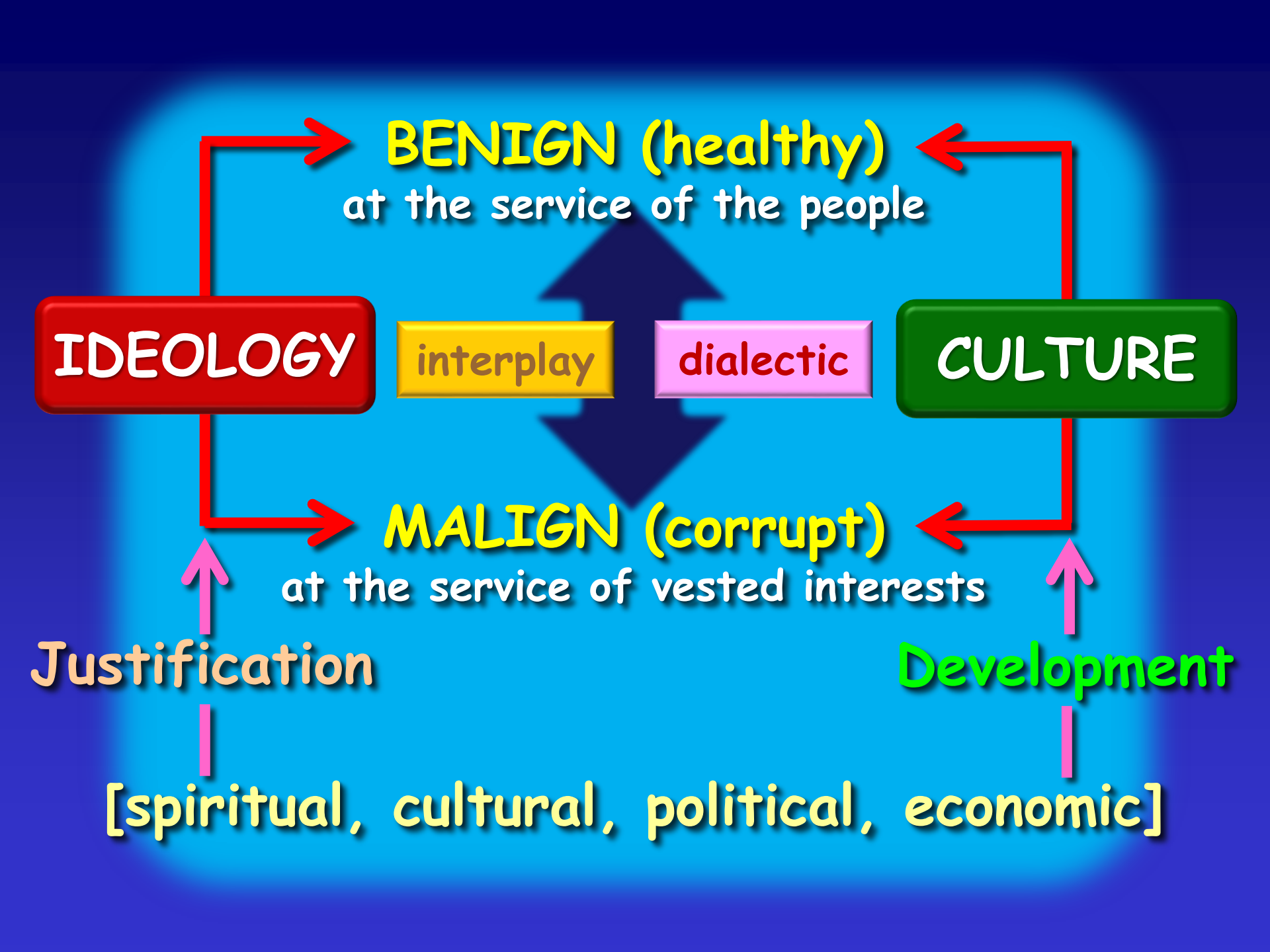
Public sector corruption and major earthquakes: A potentially deadly interaction

Monica Escaleras · Nejat Anbarci · Charles A. Register

NB: Correlation does not prove causation, but....

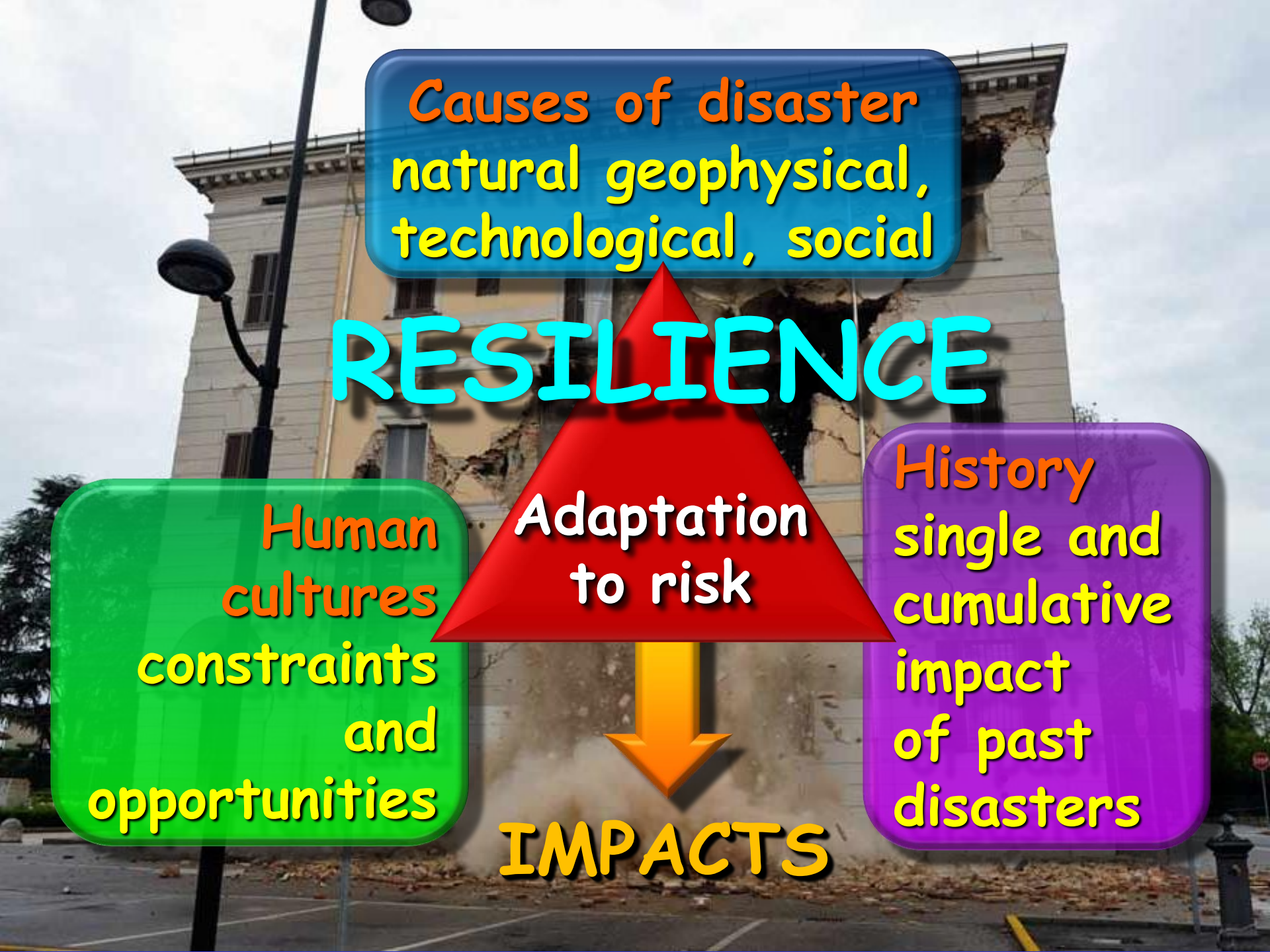
Compared to the original plans, this hospital lacked more than 500 concrete beams. In the earthquake, there was mass mortality in the maternity wing.

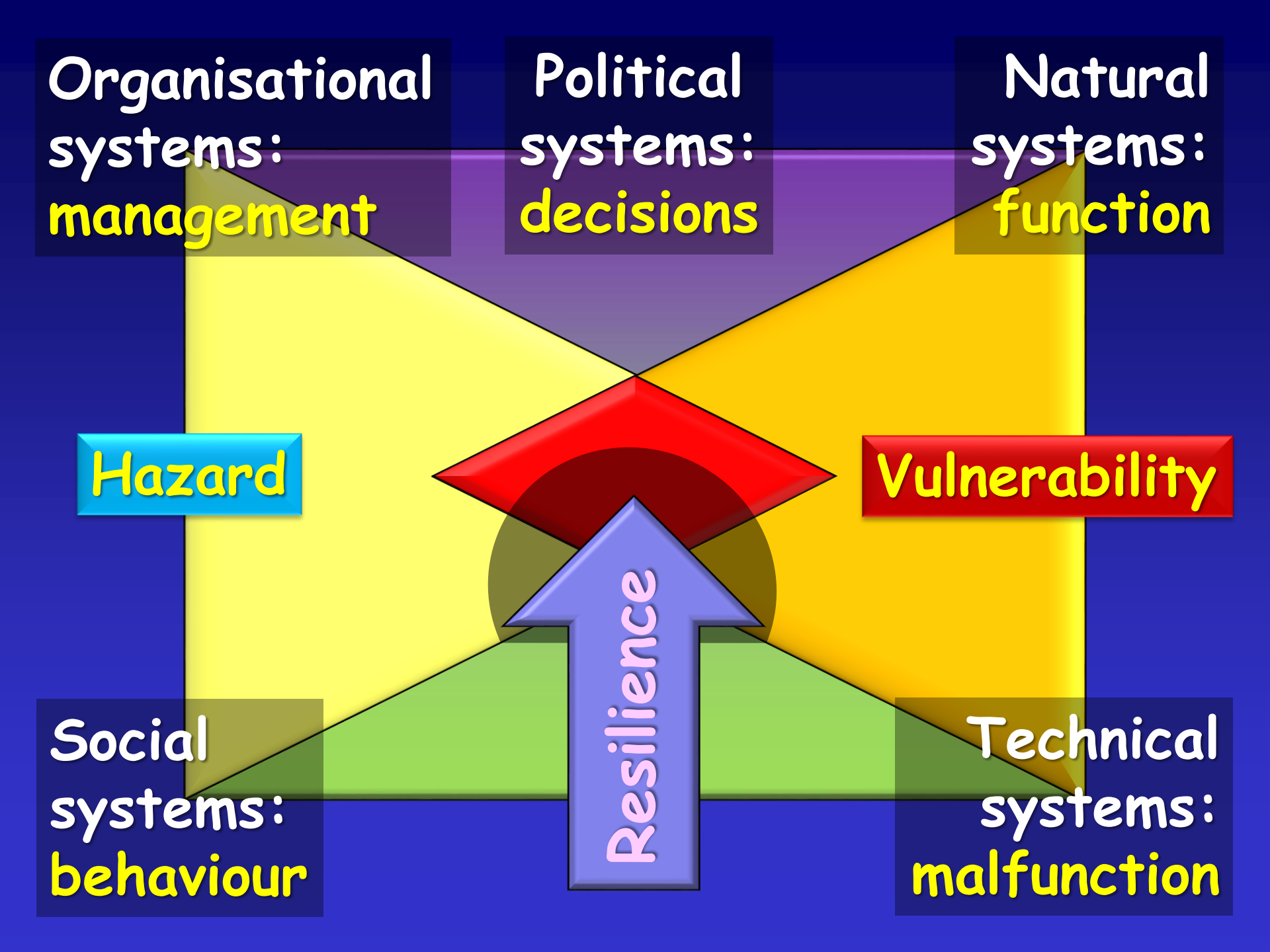

Context of disaster
Justice system
Moral
Rights
Ethical
Responsibilities
Legal
Constitution
Disaster

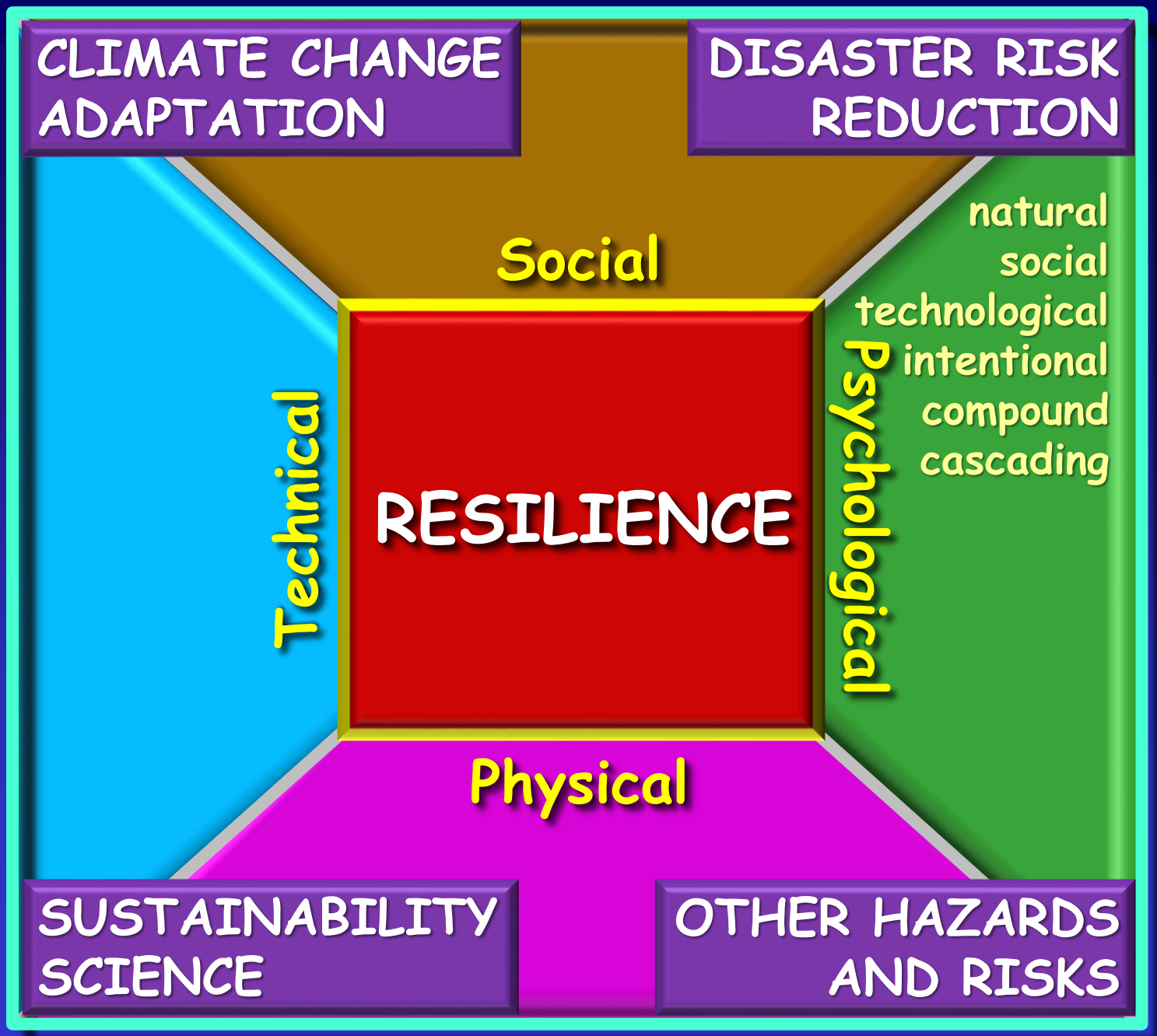

BENIGN (healthy)
at the service of the people
IDEOLOGY
interplay
dialectic
CULTURE
MALIGN (corrupt)
at the service of vested interests
Justification
Development
[spiritual, cultural, political, economic]

Resilience

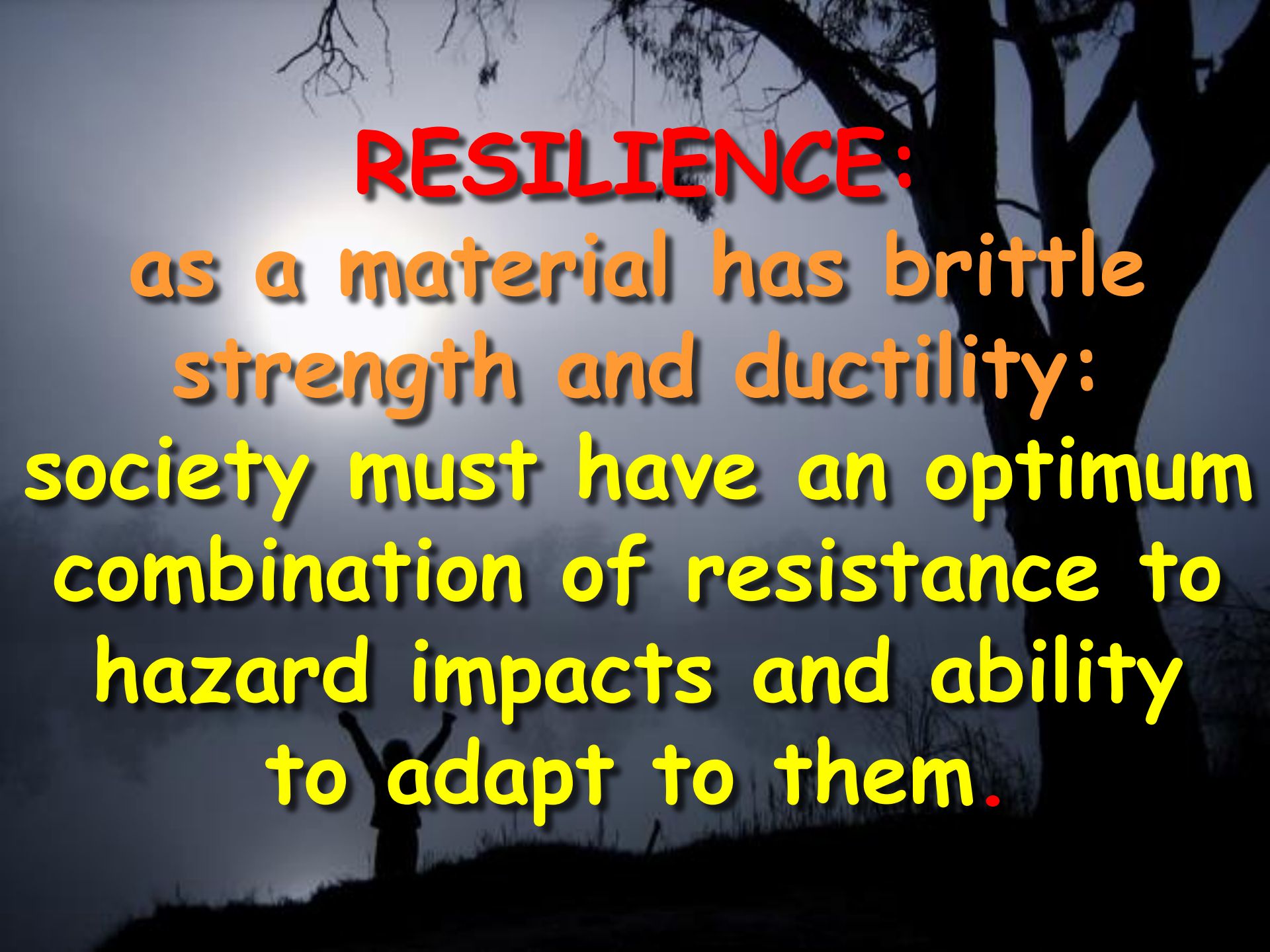
The entry onto the stage of resilience 1981-2015


Causes of disaster
natural geophysical, technological, social
RESILIENCE
Adaptation to risk
Human cultures constraints and opportunities
History single and cumulative impact of past disasters
IMPACTS


Organisational systems: management
Political systems: decisions
Natural systems: function
Hazard
Vulnerability
Resilience
Social systems: behaviour
Technical systems: malfunction


CLIMATE CHANGE ADAPTATION
DISASTER RISK REDUCTION
Social
natural
social
technological
intentional
compound
cascading
Technical
RESILIENCE
Psychological
Physical
SUSTAINABILITY SCIENCE
OTHER HAZARDS AND RISKS

The ingredients of resilience


RESILIENCE:
as a material has brittle strength and ductility:
society must have an optimum combination of resistance to hazard impacts and ability to adapt to them.

Sustainability

The myths

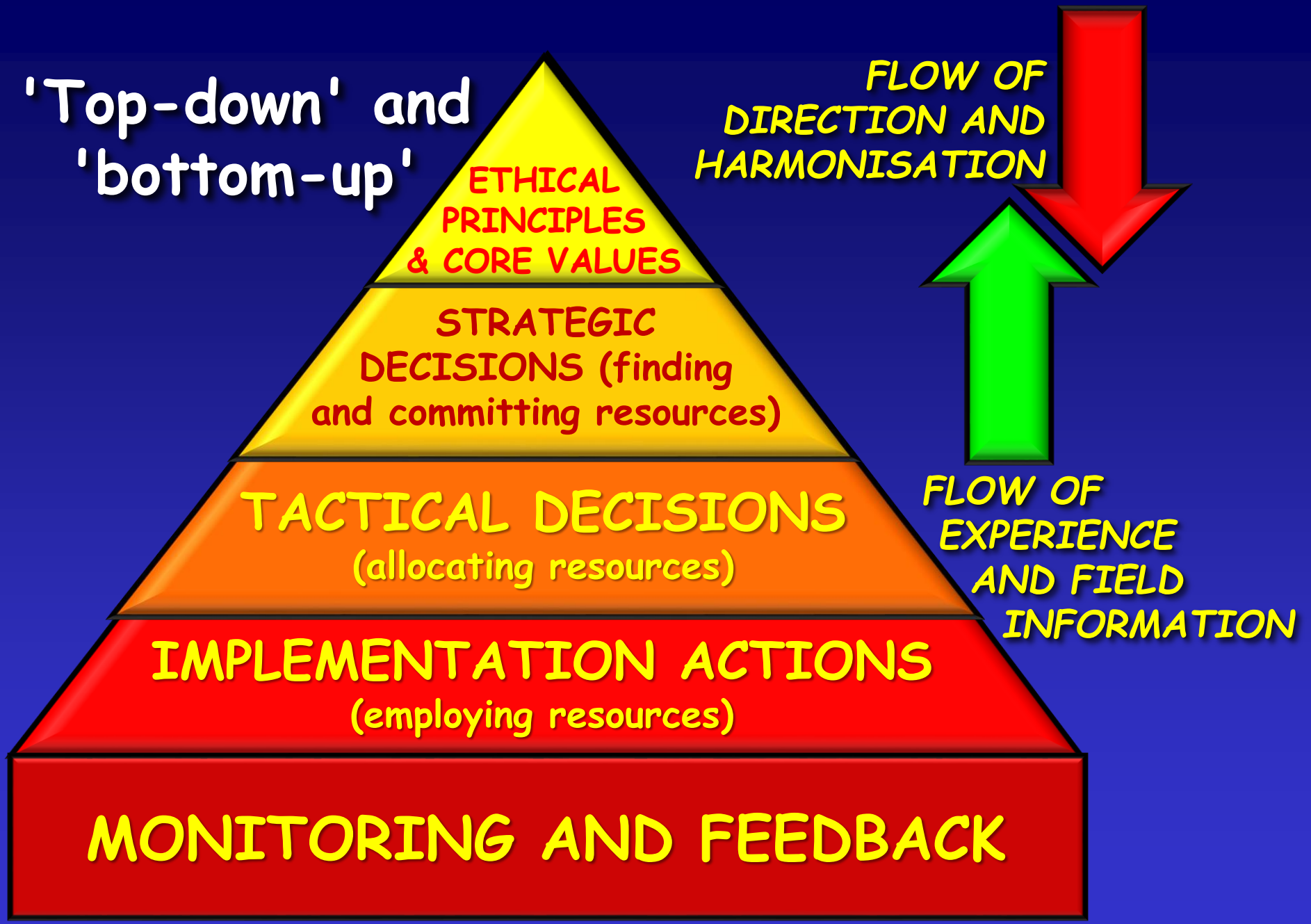
- governments are easily persuaded by evidence
- DRR is a priority for society
- community preparedness will save society
- governments are spending wisely on reducing risks (cure-to-damage ratios are negative)
- 'top-down' approaches can solve the disasters problem.

Emergency management: an evolutionary approach

Civil defence.....Civil protection

Command and control	Collaboration
Vertical chain of command	Task forces
Population excluded	Population consulted and included
Law and order	Problem solving
Secrecy	Openness

Disaster Risk Reduction (DRR)


'Top-down' and 'bottom-up'
ETHICAL PRINCIPLES & CORE VALUES
STRATEGIC DECISIONS (finding and committing resources)
TACTICAL DECISIONS (allocating resources)
IMPLEMENTATION ACTIONS (employing resources)
MONITORING AND FEEDBACK
FLOW OF DIRECTION AND HARMONISATION
FLOW OF EXPERIENCE AND FIELD INFORMATION

SUSTAINABILITY

disaster risk reduction

RISKS

daily: unemployment, poverty, disease, etc.

major disaster: floods, storms, quakes, etc.

emerging risks: pandemics, climate change

resource consumption

stewardship of the environment

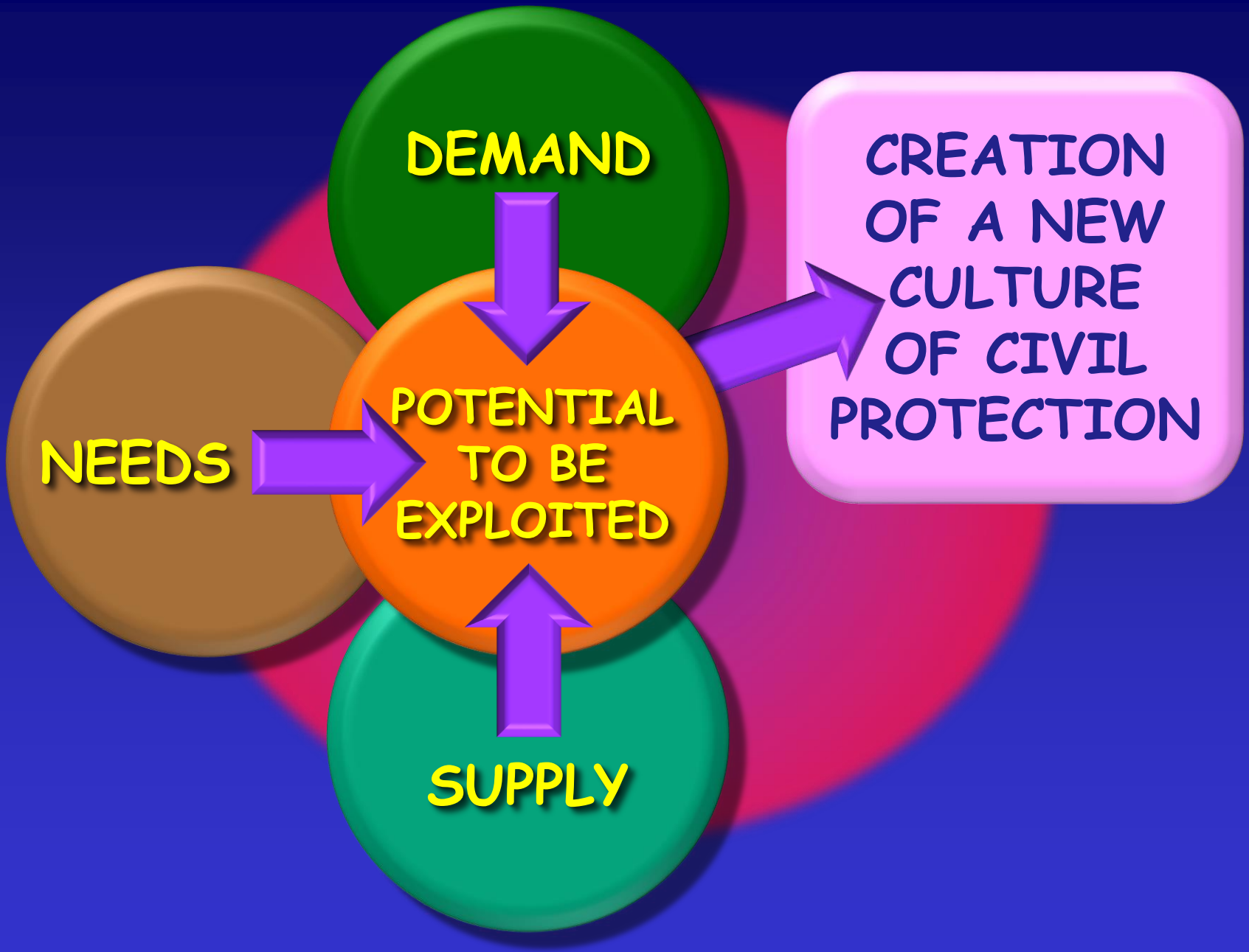
economic activities

lifestyles and communities

SUSTAINABILITY

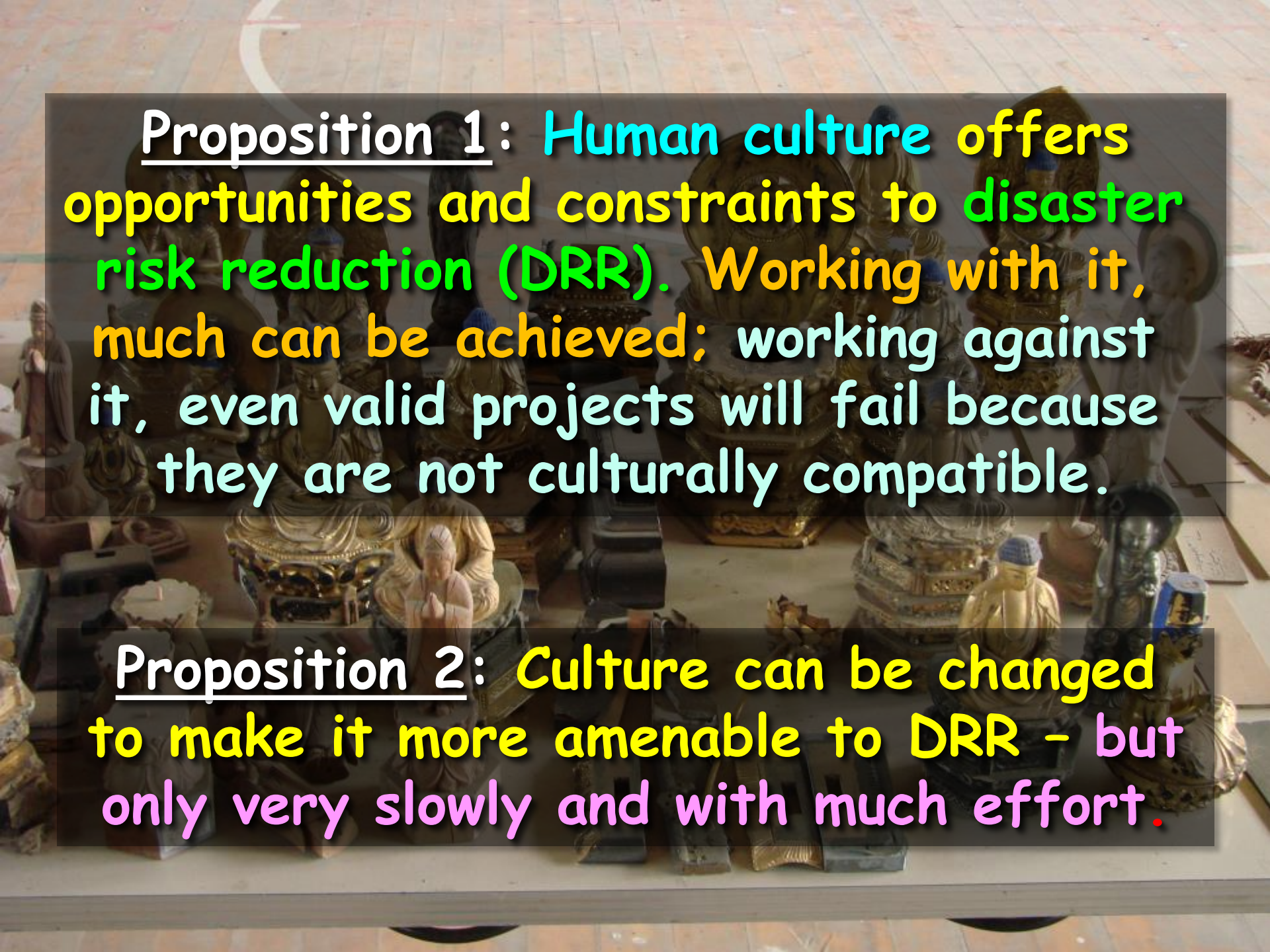
Sustainable disaster risk reduction:-

- is centred upon the local level (but is harmonised from above)
- has the support and involvement of the population
- is based on plans that are fully disseminated and frequently revised
- is a fundamental, every-day service for the population and is taken seriously.


DEMAND
NEEDS
POTENTIAL TO BE EXPLOITED
SUPPLY
CREATION OF A NEW CULTURE OF CIVIL PROTECTION

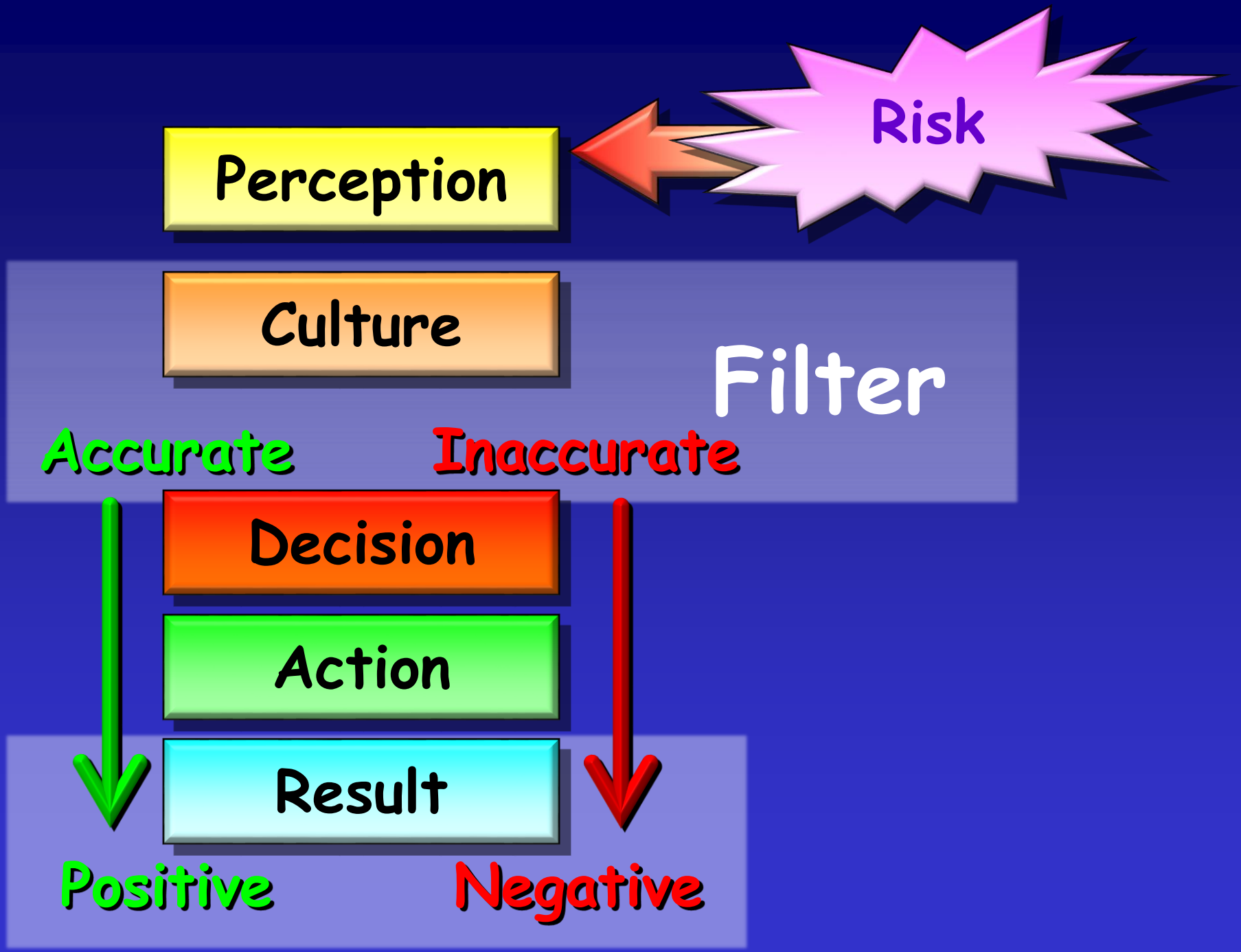

BBC
Sign in
News
Sport
Weather
iPlayer
TV
NEWS
Home
UK
World
Business
Politics
Tech
Science
Health
Education
Asia
China
India
Malaysia official blames nude tourists for deadly quake
By Jennifer Pak
BBC News, Malaysia
8 June 2015
Asia

Culture



Proposition 1: Human culture offers opportunities and constraints to disaster risk reduction (DRR). Working with it, much can be achieved; working against it, even valid projects will fail because they are not culturally compatible.

Proposition 2: Culture can be changed to make it more amenable to DRR – but only very slowly and with much effort.


Risk
Perception
Culture
Filter
Accurate
Inaccurate
Decision
Action
Result
Positive
Negative

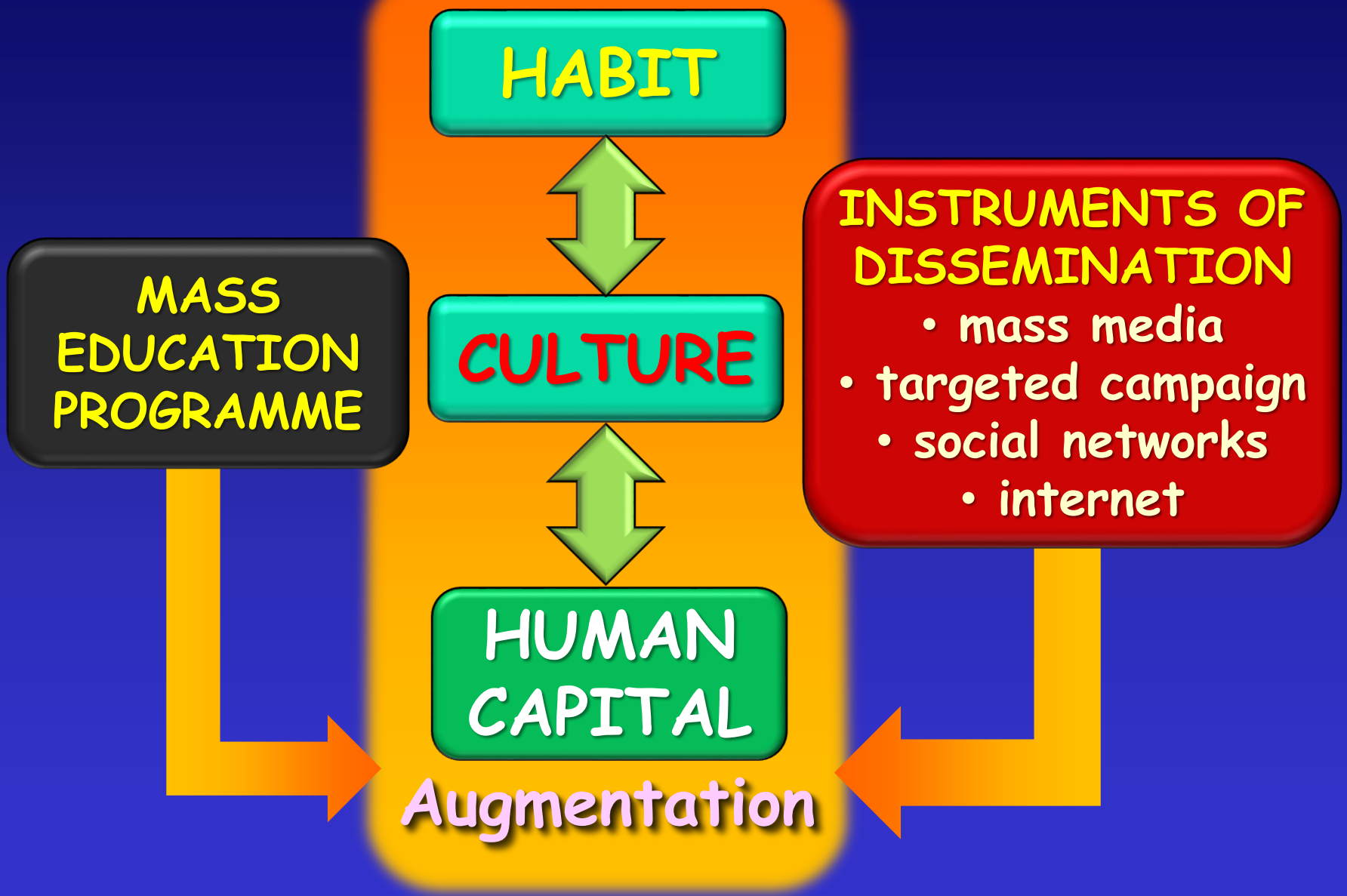
Nepal 2008 - DRR

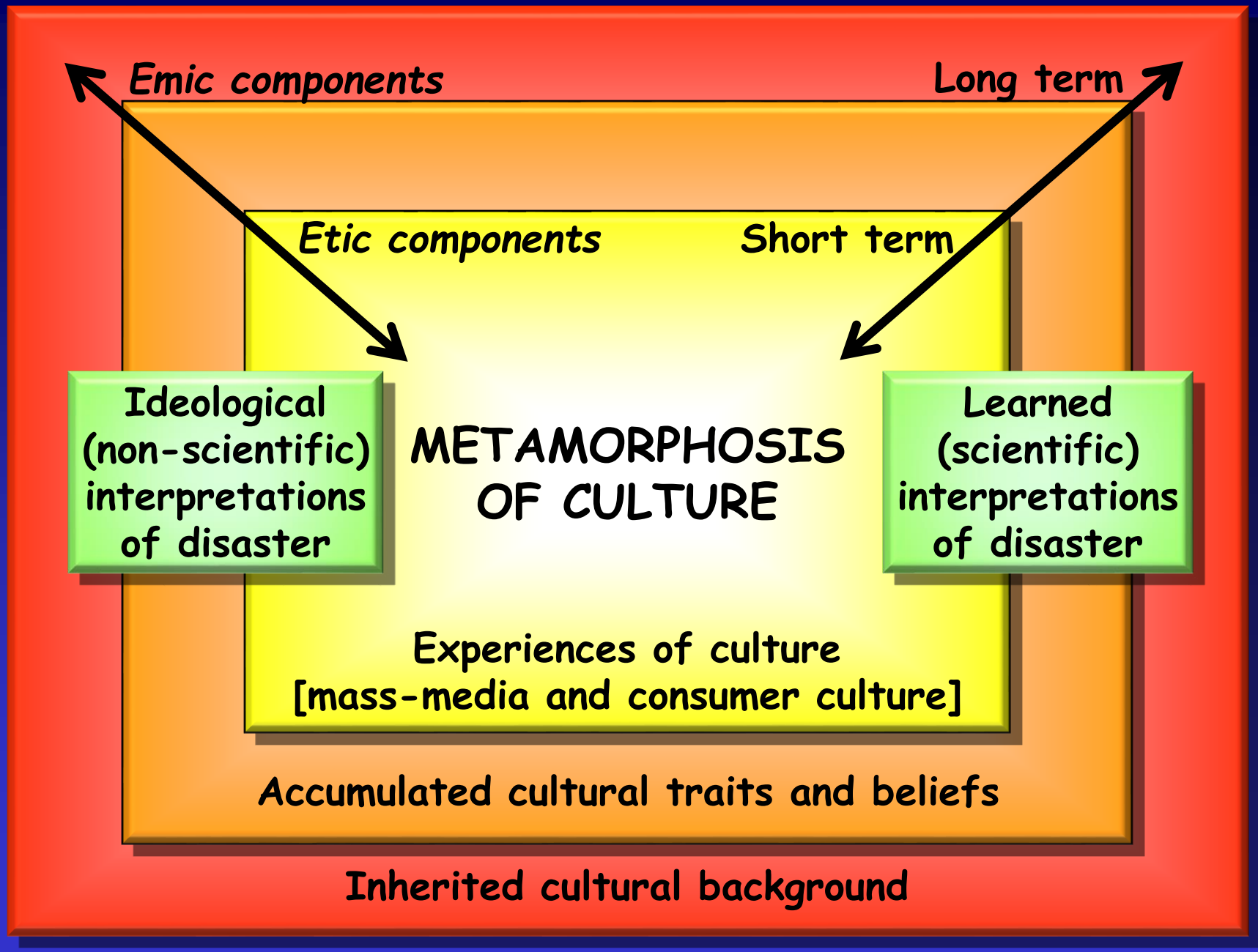
- society was politically polarised
- disasters were not a priority
- everyone knew about the earthquake risk
- building codes meant very little and vulnerability was being reproduced everywhere
- international responses were feeble.

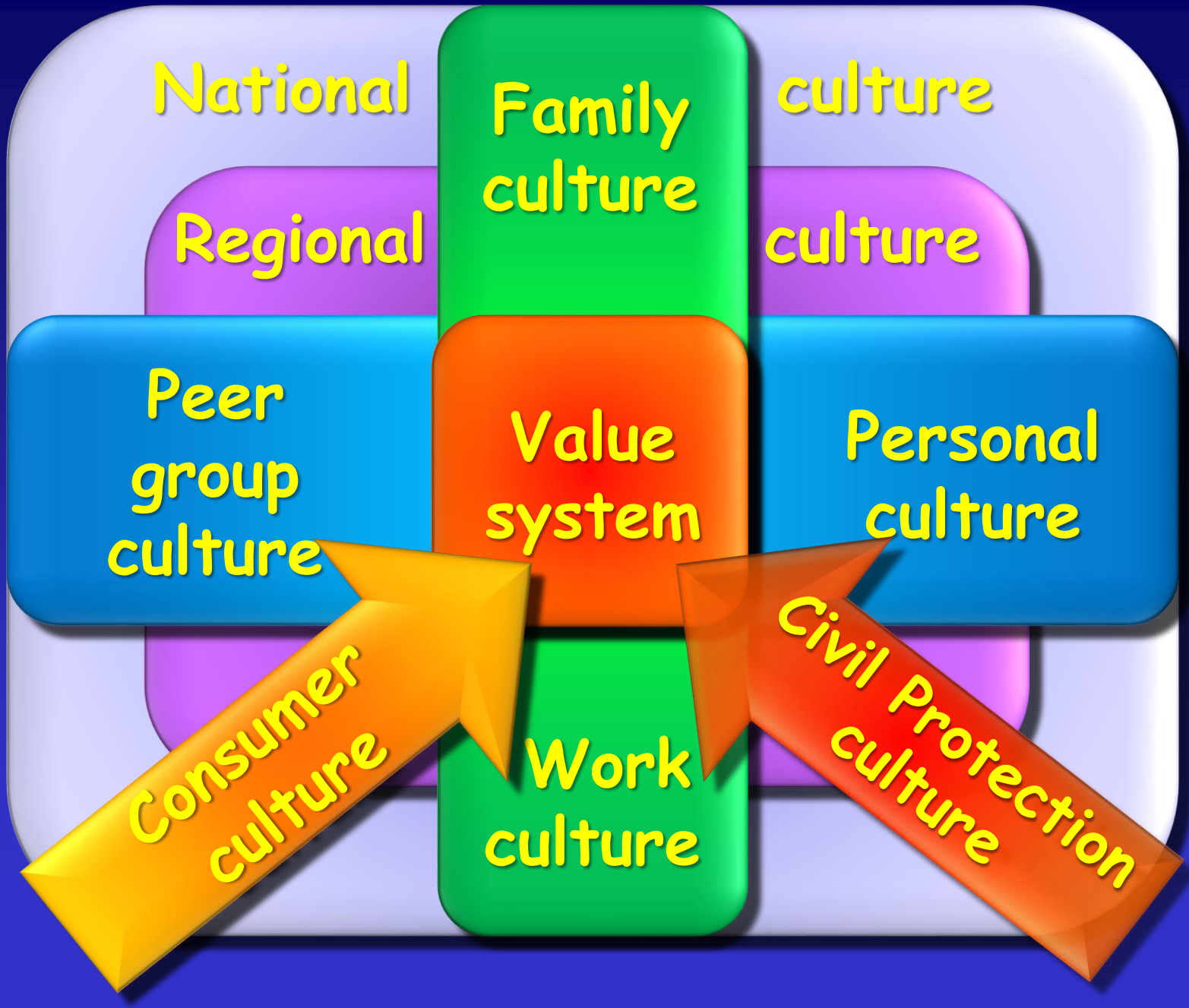

Nepal 2015 - DRR
• some good work and positive changes
• less polarisation, more focus on DRR
• the usual mistakes are being made
• what will be the fate of building codes?
• will vulnerability be rebuilt?


The solution
• reorientation of priorities
• a more equal and democratic society
• human rights and anti-corruption
• slow but steady cultural change
• reduce abuses of power.

The creation of a culture of civil protection



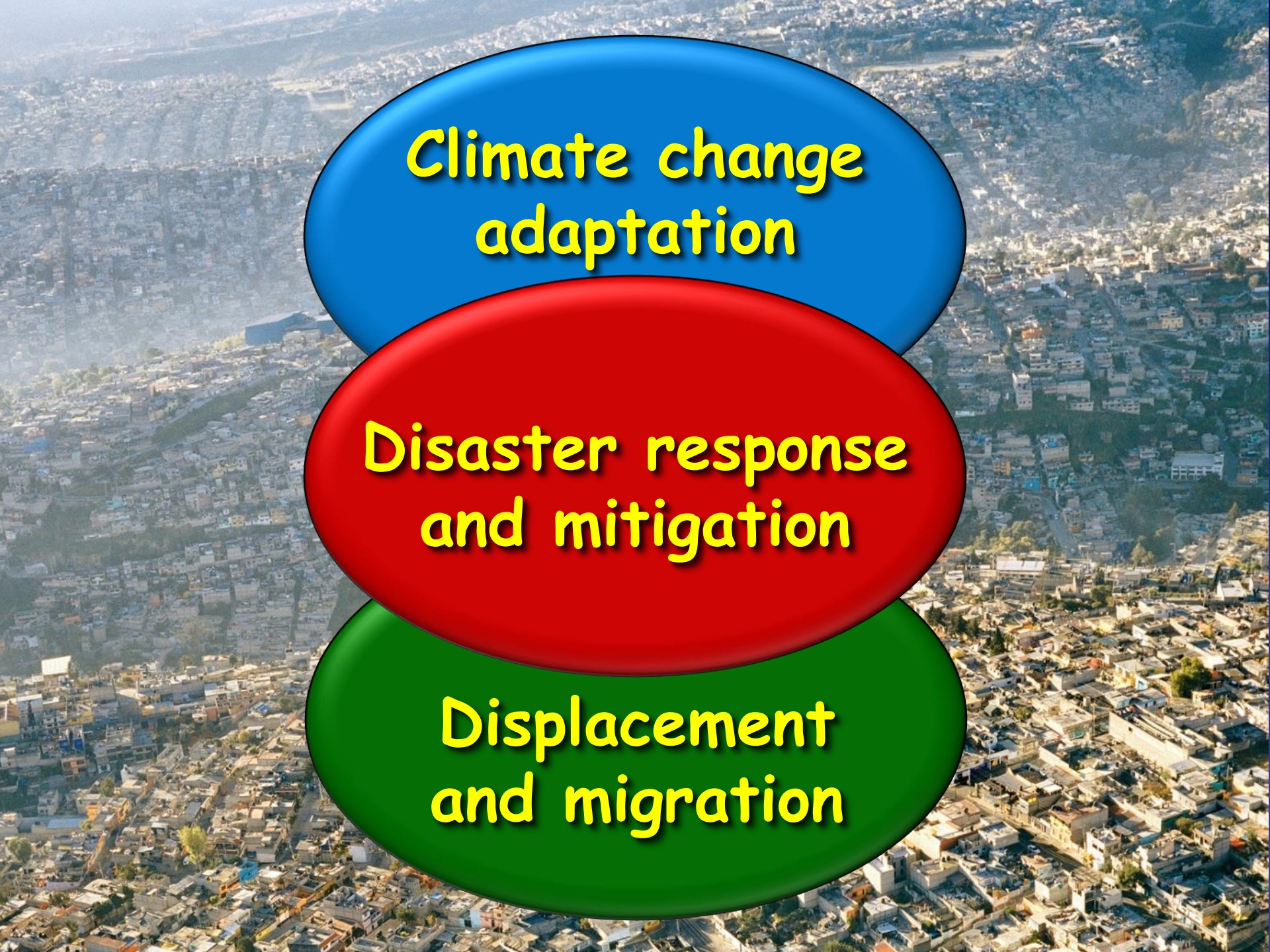

Emic components
Long term
Etic components
Short term
Ideological (non-scientific) interpretations of disaster
METAMORPHOSIS OF CULTURE
Learned (scientific) interpretations of disaster
Experiences of culture [mass-media and consumer culture]
Accumulated cultural traits and beliefs
Inherited cultural background

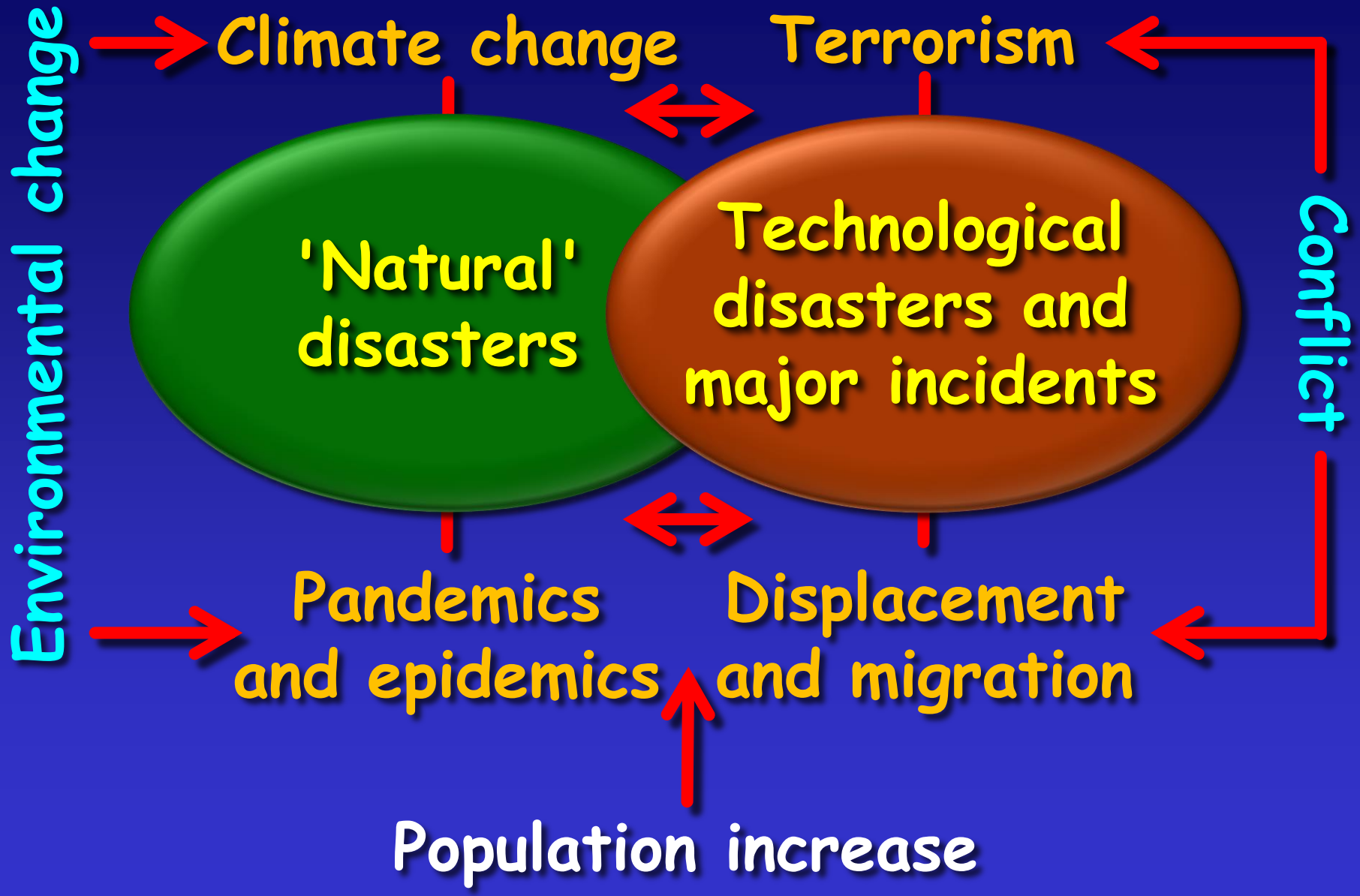

National culture
Family culture
Regional culture
Peer group culture
Value system
Personal culture
Consumer culture
Work culture
Civil Protection culture

The future

The future

- disaster risk reduction and climate change adaptation will partially merge
- global mobility will become a major factor in disaster risk reduction
- resilience will disappoint and be dropped
- the weight of key concepts: vulnerability
- sustainable DRR, sustainable lives.


Climate change adaptation
Disaster response and mitigation
Displacement and migration


Environmental change
Climate change
Terrorism
'Natural' disasters
Technological disasters and major incidents
Conflict
Pandemics and epidemics
Displacement and migration
Population increase

The potential catalysts for change

System is...	Example of catalytic disaster
Substituted	Economic catastrophe after mega natural or anthropogenic event
Threshold of economic sustainability	
Redirected	Indian Ocean tsunami, 2004 (?)
Threshold of political and public tolerance	
Static	Earthquakes: Sichuan 2008, Nepal 2015
Threshold of sustained political and public attention	
In decline	No significant major events

david.alexander@ucl.ac.uk
www.slideshare.net/dealexander
emergency-planning.blogspot.com

Ishinomaki, Japan