



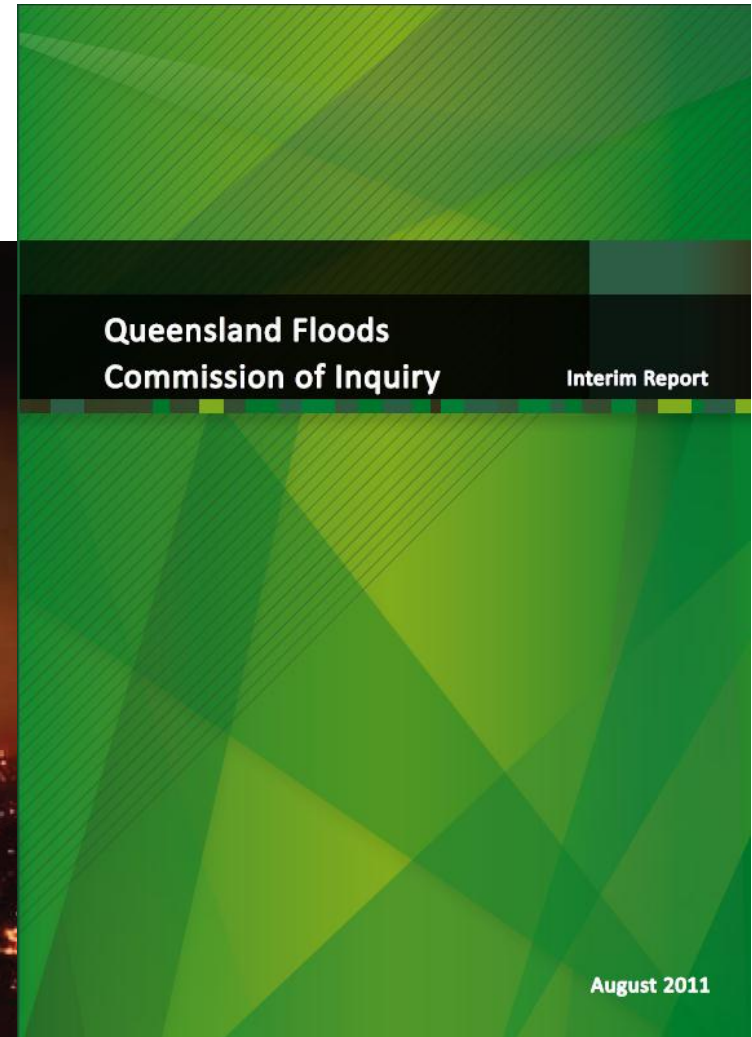
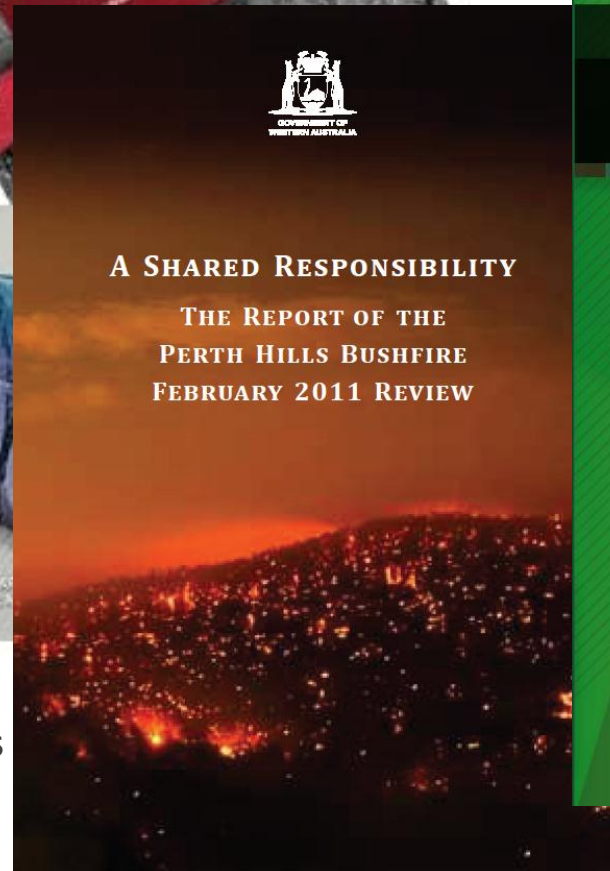
THE CHANGING NATURE OF EMERGENCY MANAGEMENT COORDINATION

Dr Christine Owen

Department of Education, University of Tasmania

Why is it that in every overwhelming emergency event, there is almost inevitably a failure of organisation?

RECENT INQUIRIES INTO EMERGENCY EVENTS



2009 VICTORIAN BUSHFIRES

1: Review how has emergency services work changed

2: Examine what we know now about the challenges of multi-agency EM coordination

3: Consider implications for the future

Research undertaken:

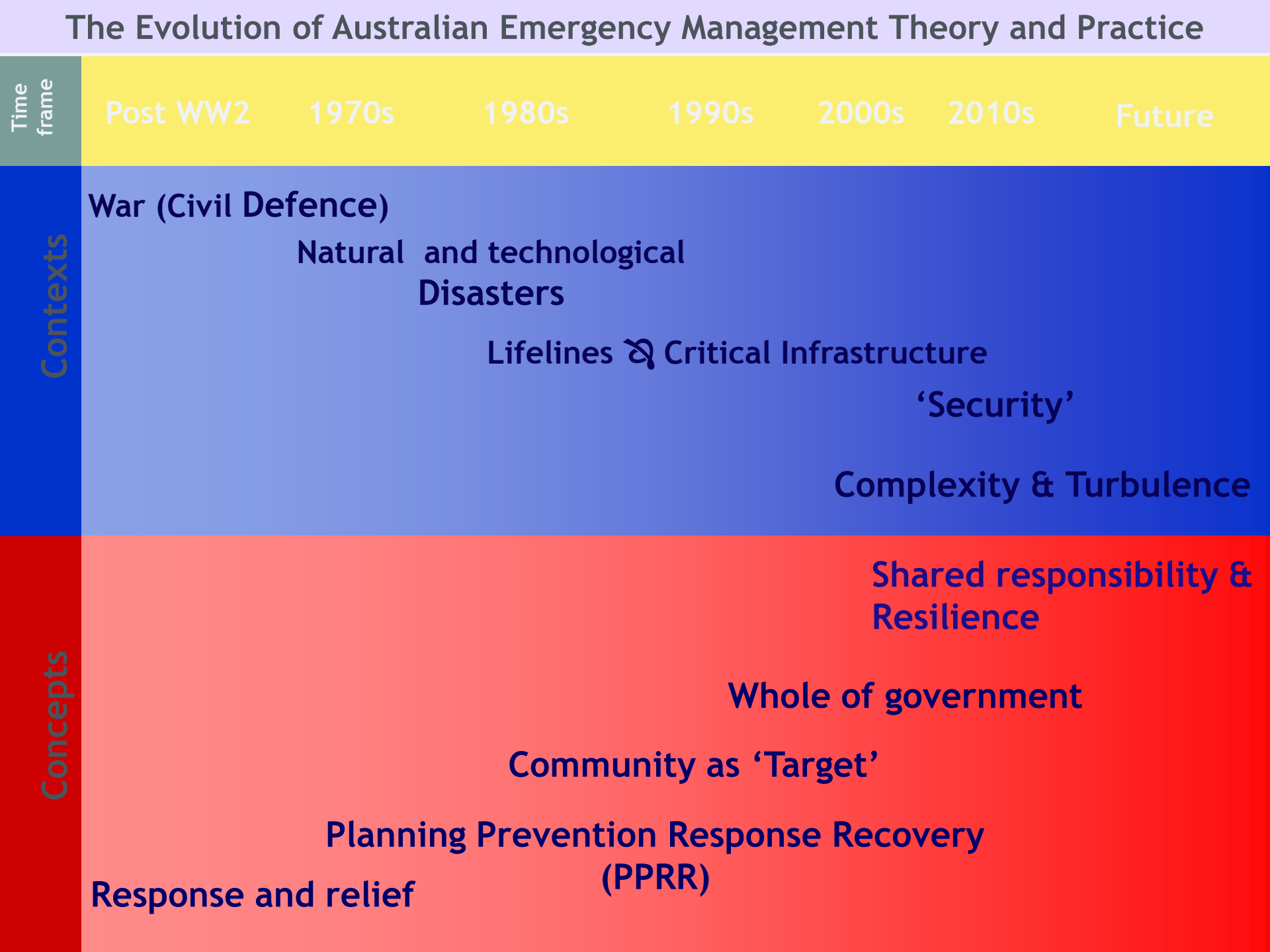
Secondary sources, inquiries

Interviews = 130

Survey = 870

Observations = 18 IMT simulations, 4 real-time events

- Review information and communication flows;
- Review how teams work with the AllMS system
- Identify areas for improvement





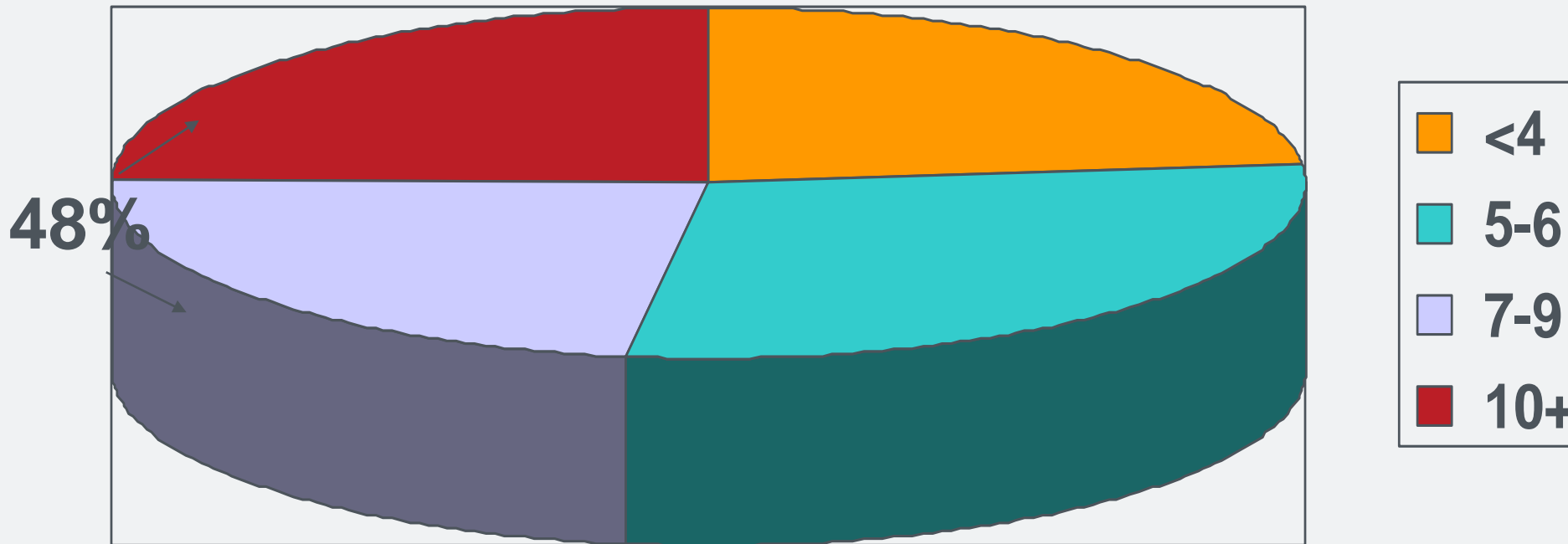


Challenges:

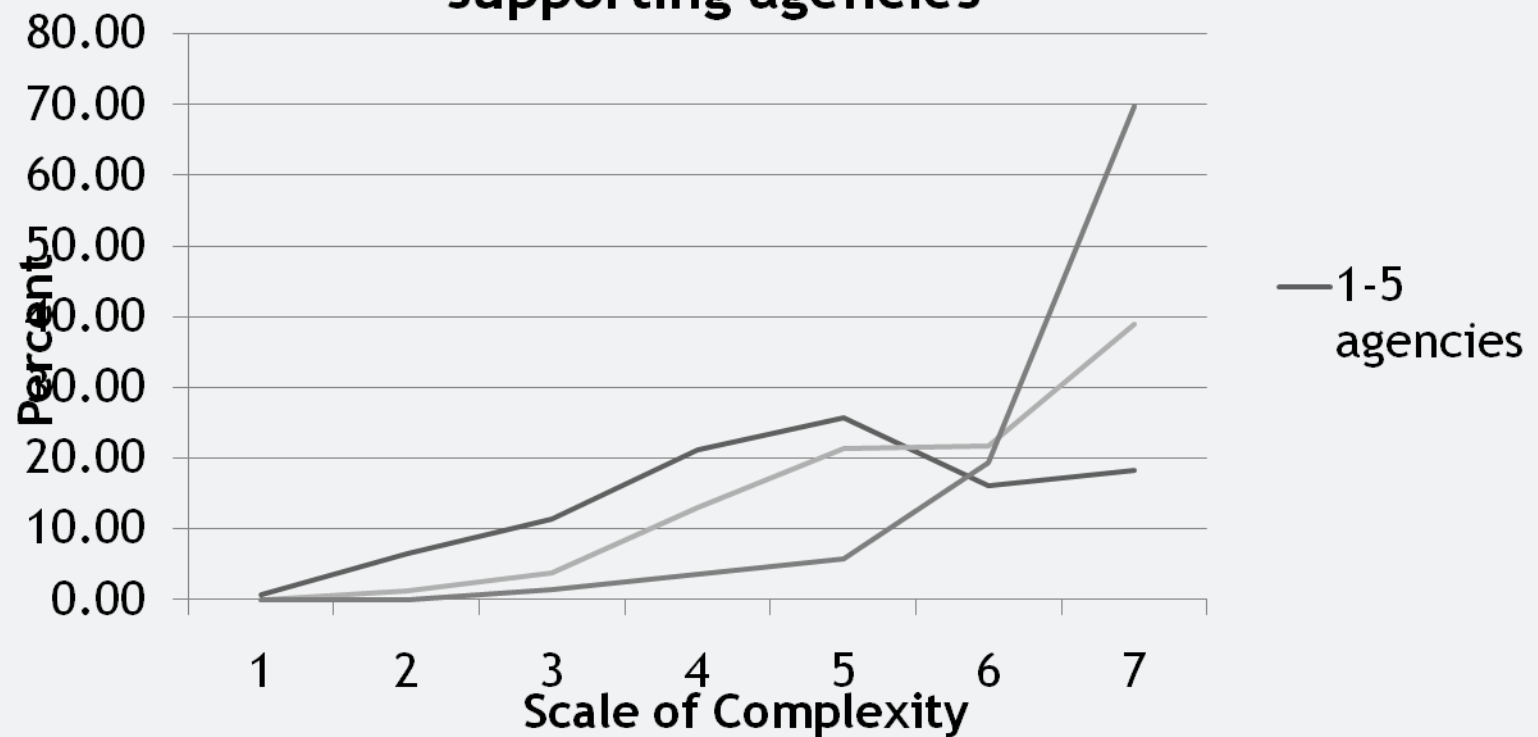
- Multiple stakeholder interests
- Increasing community expectations
- Doing more with less
- Losing expertise



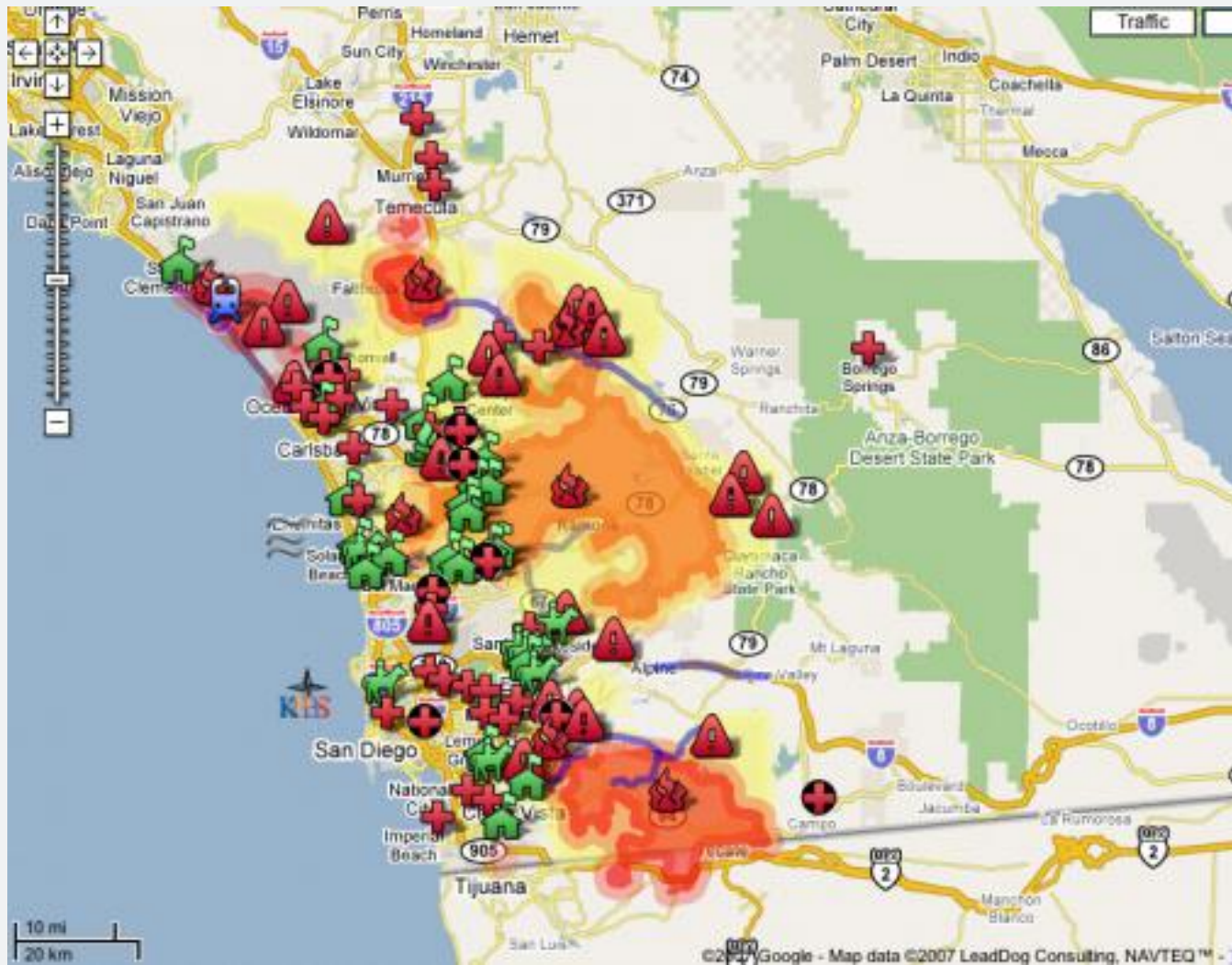
Supporting agencies in incidents



Perceived complexity by Number of supporting agencies



Reporting wildfires



Reporting: Earthquakes & Storms

USGS
science for a changing world

USGS Home
Contact USGS
Search USGS

Earthquake Hazards Program

Home **Earthquake Center** Regional Information About Earthquakes

Research & Monitoring Other Resources

You are here: [Home](#) » [Earthquake Center](#)

Latest Earthquakes

- USA
- World
- EQ Notification Service
- Feeds & Data
- Animations
- Recent Earthquakes: Last 8-30 Days
- Historic Earthquakes
- "Top 10" Lists & Maps
- Significant EQs
- Earthquake Search
- EQ Summary Posters
- Scientific Data
- About EQ Maps
- Did You Feel It?
- Fast Moment Tensors
- Media Info
- PAGER
- Seismogram Displays
- ShakeMaps

Did You Feel It?

Community Internet Intensity Maps

To view a map or report a felt earthquake, select your region from the map or the list below the map.



ALASKA HAWAII GUAM, PUERTO RICO & TERRITORIES

OUTSIDE the US [click here](#)

3 kimt.com
Iowa, Minnesota, together.

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Home News Weather Sports Health Links Mentioned Big Shot Features Programming Community Local Calendar Expert

Hearing Associates, P.C.
250 South Crescent Drive, Mason City
(641) 422-6424 • Toll Free 1-800-621-6424
Trust the professionals

Local weather

STORM TEAM 3 KIMT

StormTeam 3 Storm Spotter Weather Reports

Since rainfall and snowfall varies so much from city to city, storm spotters make or break the coverage of rain and snow events!

If you have not yet registered for a username and password, please [click here](#). It may take a day or two for you to be entered into our system.

Username:

Password:

Precipitation recorded:

Location precipitation was recorded at:

Forecast Center

RIGHT NOW **54°** Partly Cloudy
Today's Temperatures **Hi 51** Wind WNW at 23 mph
Low 35

Local Forecast | Weather Closings | Weather Maps
Eye in the Sky | Storm Spotters | Weather Warn



kimt STORM TEAM 3

3 Video on demand

kimt STORM TEAM 3

You're watching
Storm Team 3 Forecast

00:02 / 03:12



earthquake.usgs.gov/eqcenter/dyfi

weather.kimt.com

Post VBRC

When I walk in this room and I look at the people inside, I don't feel confident that we have highly skilled people to do the job any more --- we have had a drain of resources over the last few years and we're not spending enough time or resources in training and mentoring.

The problem is they have no-idea about how to discern if a situation is turning from routine to non-routine. They need to be able to identify the risks and ... and flag it to the rest of us.

Centralisation– Decentralisation

Accountability – Adaptation

Bureaucracy – Agility

Unitary command and control – multiagency collaboration

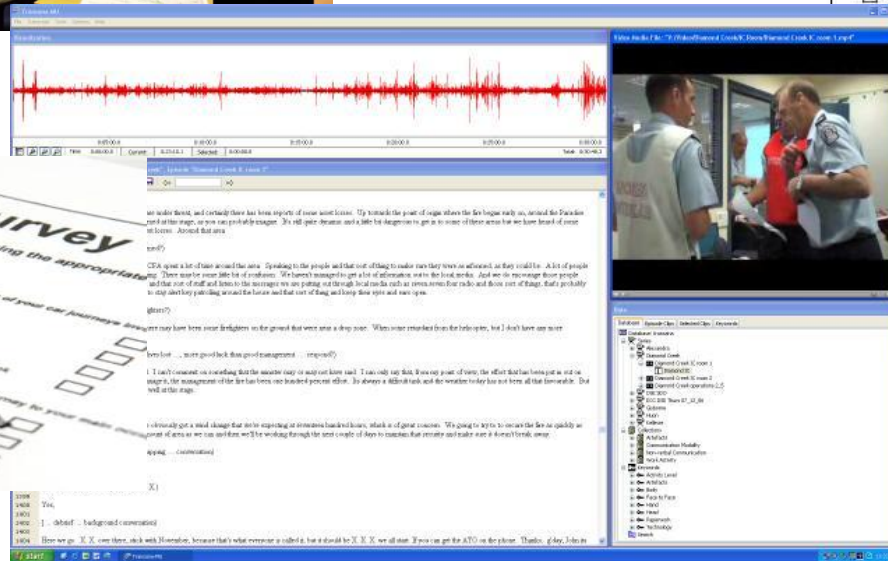
Degrees of information veracity: foundational, dynamic, opportunistic

1:1 1: Many Many:Many



2. What do we already know about the challenges of emergency management coordination?

2. What do we already know about the challenges of emergency management coordination?



Section 2: Area of Responsibility

In this section you are asked to think about a specific shift during the incident detailed in 'Section 1: Overview'. Please answer the following questions about that shift only.

2.1 In which phase of the incident was this shift?

☐ Beginning
☐ Escalation (if applicable)
☐ Middle
☐ Map up
☐ Recovery

ON ARRIVAL AT THE SHIFT

2.2 Did you give a briefing?

☐ Yes

Did you give a briefing? (If NO, go to question 2.9)

Is there an opportunity to ask questions?

a scale of 1 to 7, to what extent do you think your input was VALUED?

	1 (not at all)	2	3	4	5	6	7 (very)	can't answer
which your input was valued	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

a scale of 1 to 7, how COMFORTABLE were you in asking questions for action?

	1 (not at all)	2	3	4	5	6	7 (very)	can't answer
comfort in asking questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page 8

Observations

Organisational
survey

4 levels of emergency management organisation

State level (n = 52)

Regional level (n = 44)



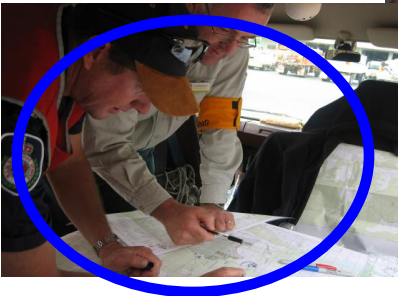
IMT Officers (n=207)

IMT functional Unit (n= 168)

Fire- Incident ground (n= 177)

Teamwork, interaction and organisation

4 Intra-team factors



- 1: Team-working
- 2: Weak Signals/Preoccupation
- 3: Shift Resources
- 4: Timely Responsiveness

Teamwork, interaction and organisation

2 Inter-team factors



1: Distributed Collaboration
2: Flexibility

3 intra-organisational factors

1: Systemic capability

2: Personnel Capability

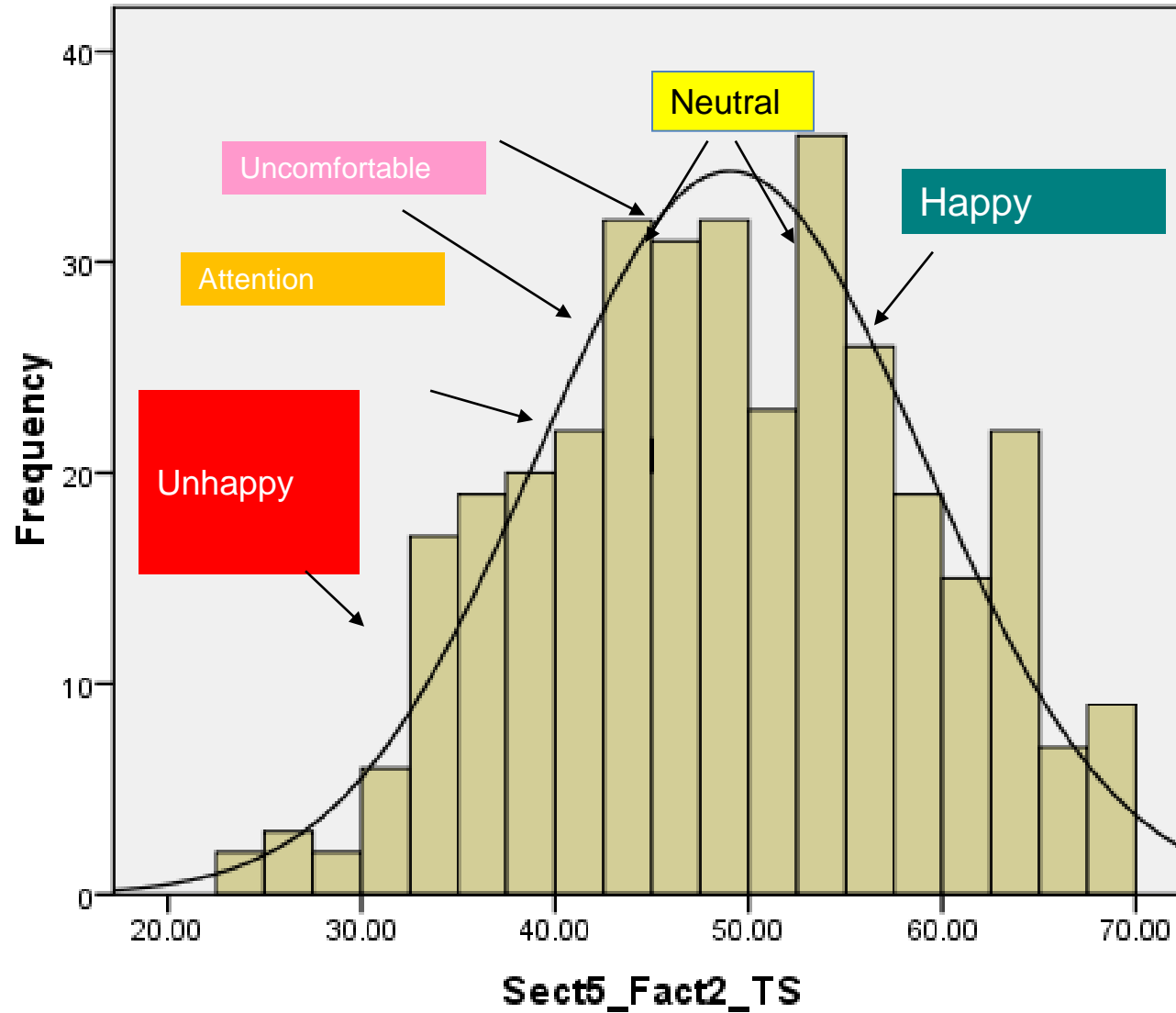
3: Organisational impediments



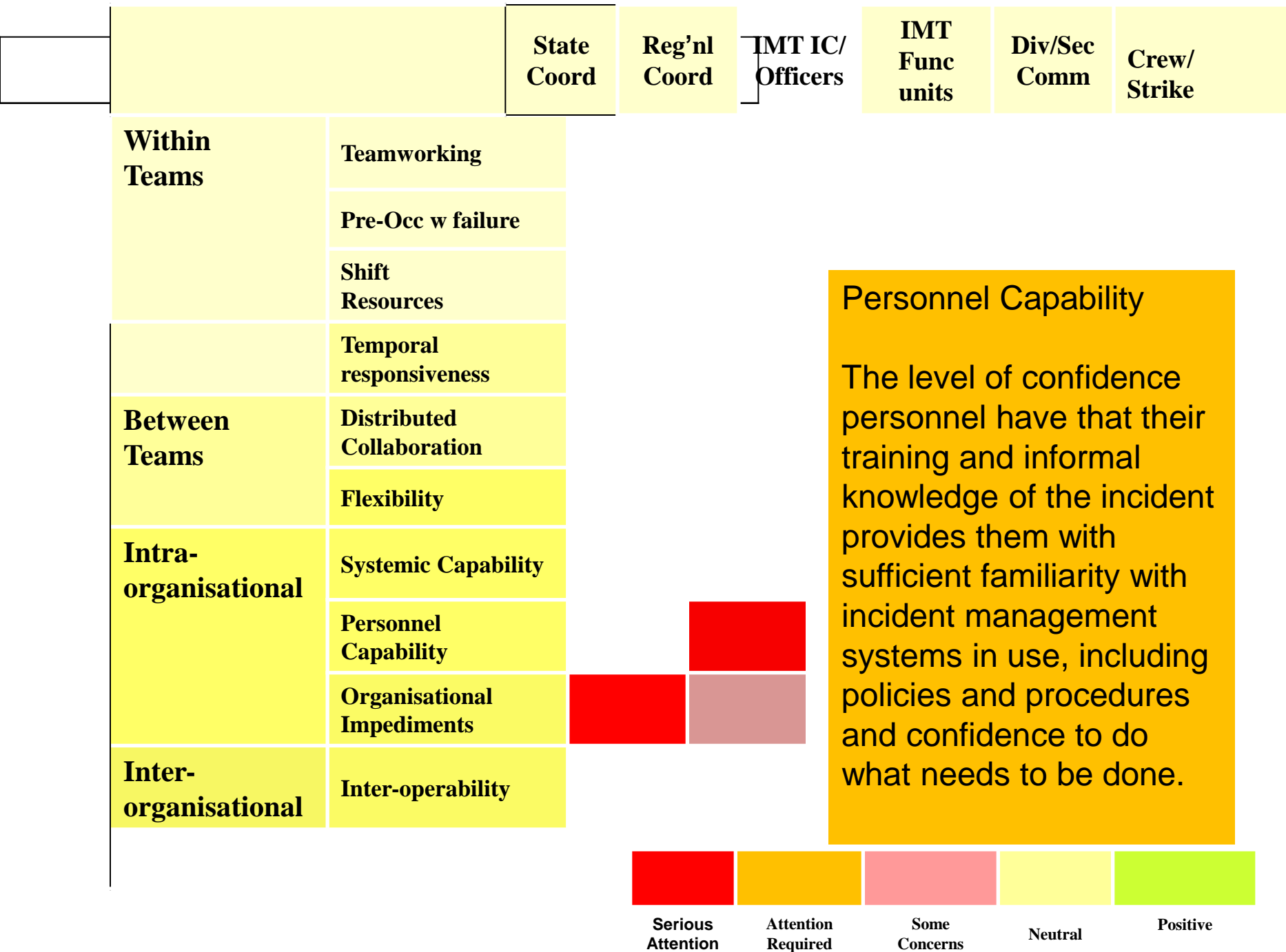
1 inter-organisational factor

– inter-operability

Histogram



Mean =49.04
Std. Dev. =9.965
N =343



		State Coord	Reg'nl Coord	IMT IC/ Officers	IMT Func units	Div/Sec Comm	Crew/ Strike
Teams	Teamworking						
	Pre-Occ w failure						
	Shift Resources						
	Temporal responsiveness						
Between Teams	Distributed Collaboration						
	Flexibility						
Intra-organisational	Systemic Capability						
	Personnel Capability						
	Organisational Impediments						
Inter-organisational	Inter-operability						

Teamwork

The processes decisions and activities that team members use to coordinate their behaviour, including information sharing and resources to attain shared goals

Serious Attention

Attention Required

Some Concerns

Neutral

Positive

		State Coord	Reg'nl Coord	IMT IC/ Officers	IMT Func units	Div/Sec Comm	Crew/ Strike
Teams	Teamworking						
	Pre-Occ w failure						
	Shift Resources						
	Temporal responsiveness						
Between Teams	Distributed Collaboration						
	Flexibility						
Intra-organisational	Systemic Capability						
	Personnel Capability						
	Organisational Impediments						
Inter-organisational	Inter-operability						

Dist'd Collab

The ways in which IMT and fire-ground personnel communicate with one another to share information and risks in a constructive manner.



		State Coord	Reg'nl Coord	IMT IC/ Officers	IMT Func units	Div/Sec Comm	Crew/ Strike
Teams	Teamworking						
	Pre-Occ w failure						
	Shift Resources						
	Temporal responsiveness						
Between Teams	Distributed Collaboration						
	Flexibility						
Intra-organisational	Systemic Capability						
	Personnel Capability						
	Organisational Impediments						
Inter-organisational	Inter-operability						

Interoperability

The technological systems, policies and procedures and culture that enables the effective inter-operability between agencies.



		State Coord	Reg'nl Coord	IMT IC/ Officers	IMT Func units	Div/Sec Comm	Crew/ Strike
	Within Teams	Teamworking					
		Pre-Occ w failure					
		Shift Resources					
		Temporal responsiveness					
	Between Teams	Distributed Collaboration					
		Flexibility					
	Intra-organisational	Systemic Capability					
		Personnel Capability					
		Organisational Impediments					
	Inter-organisational	Inter-operability					

Serious Attention

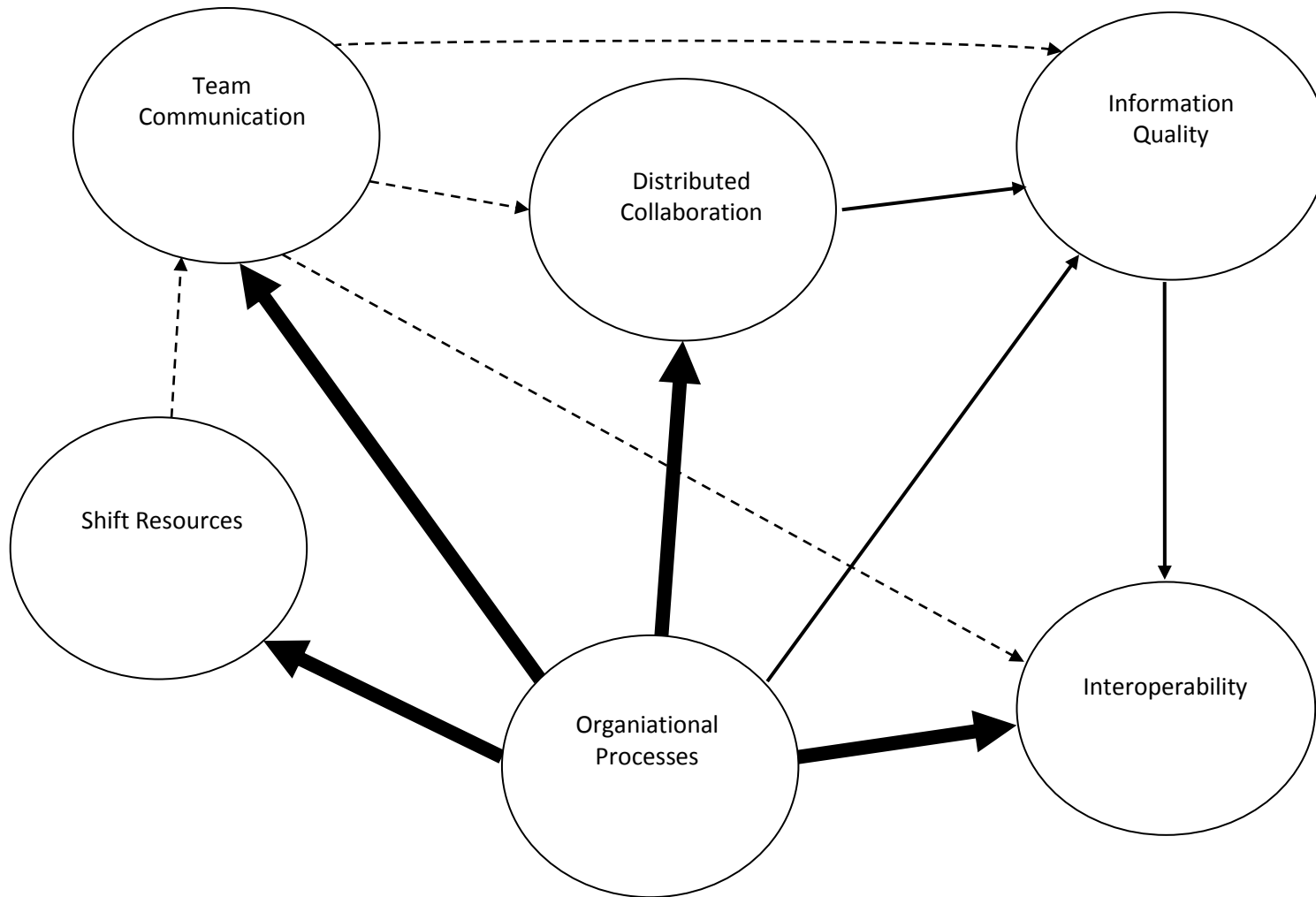
Attention Required

Some Concerns

Neutral

Positive

Theory building: theory testing



SEM

Theory Dev
database
n=444

Theory
Testing
database
n=426

IMT Simulation Observations

Camera 1



Camera 2



Camera 3



Observations



QUESTIONNAIRE

Very often ☐

Often ☐

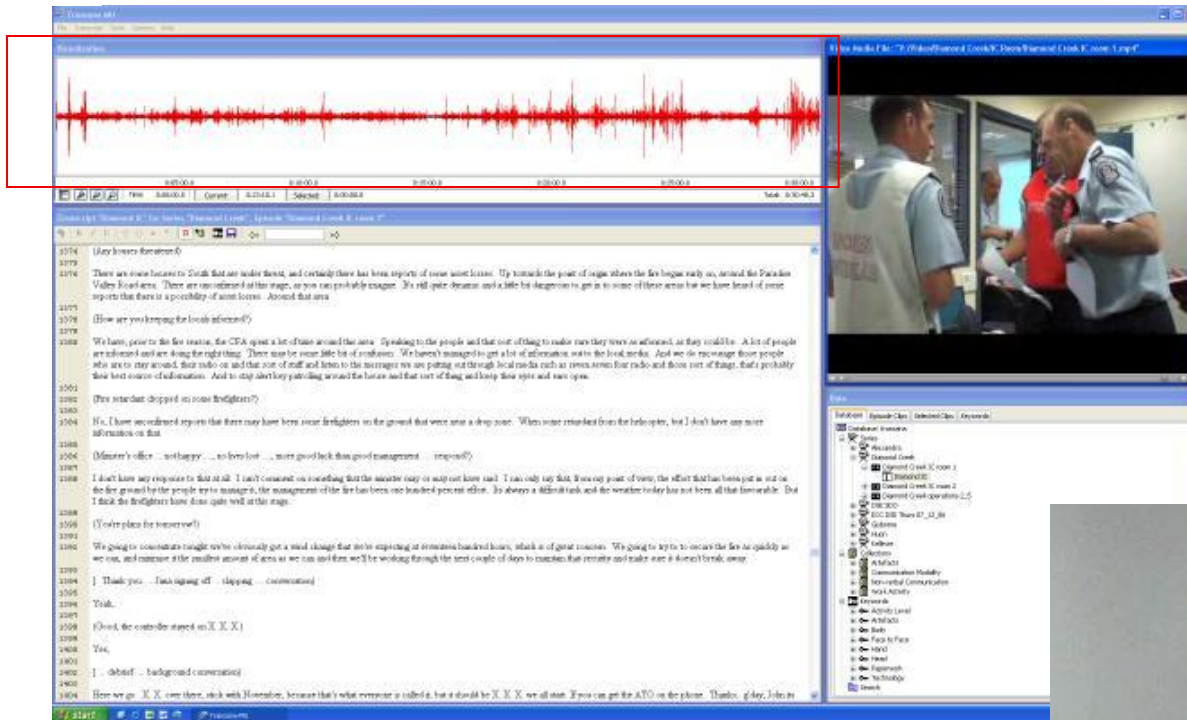
Sometimes ☒

Rarely ☐



The changing nature of emergency management coordination

from imagination to impact



Observations IMT simulation



Self-reflections Incident Controller Simulation

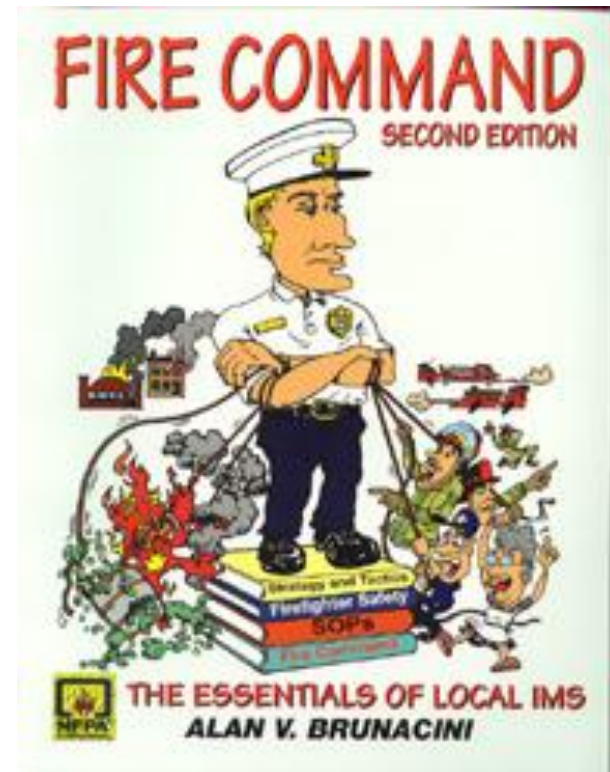
(Phase 3 observations)

Til

bushfire CRC		
IC <input checked="" type="checkbox"/> Ops <input type="checkbox"/> Planner <input type="checkbox"/> Logistics <input type="checkbox"/>		
Time	Level	Words (3)
9:30 9:45	4	calm/relaxed. Happy

Impression Management

- convey (and shape) an interpretation of the situation
- “Commander “presence”



Reality Check



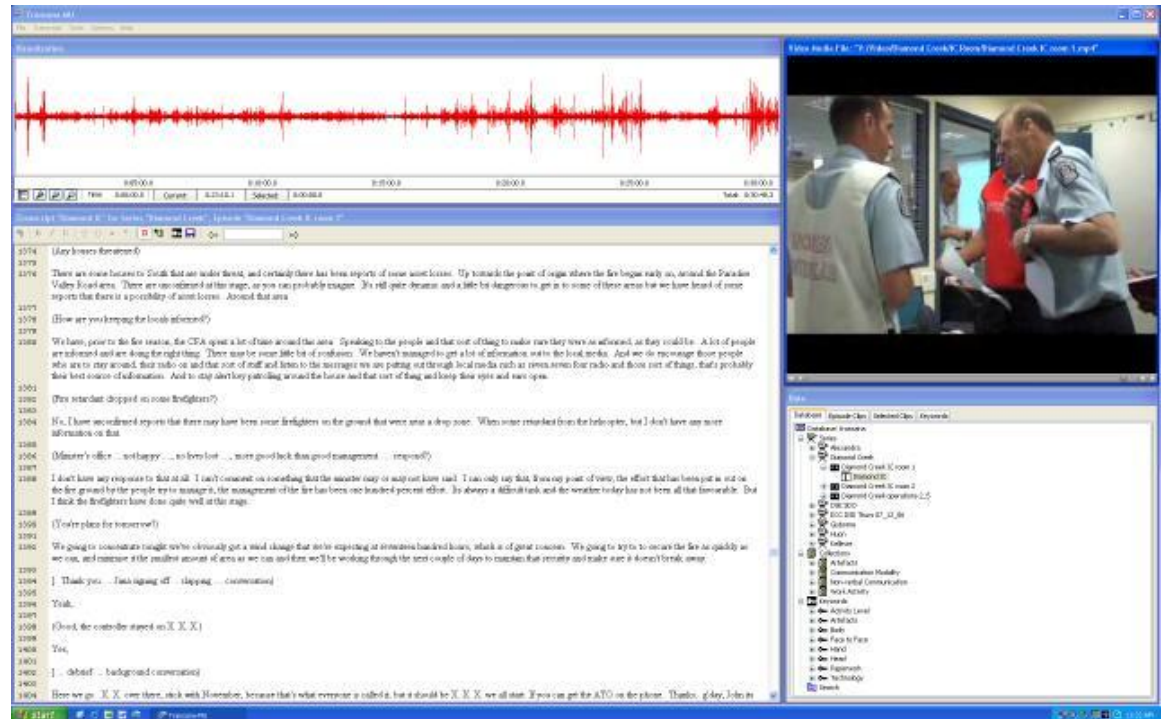
The research Observations



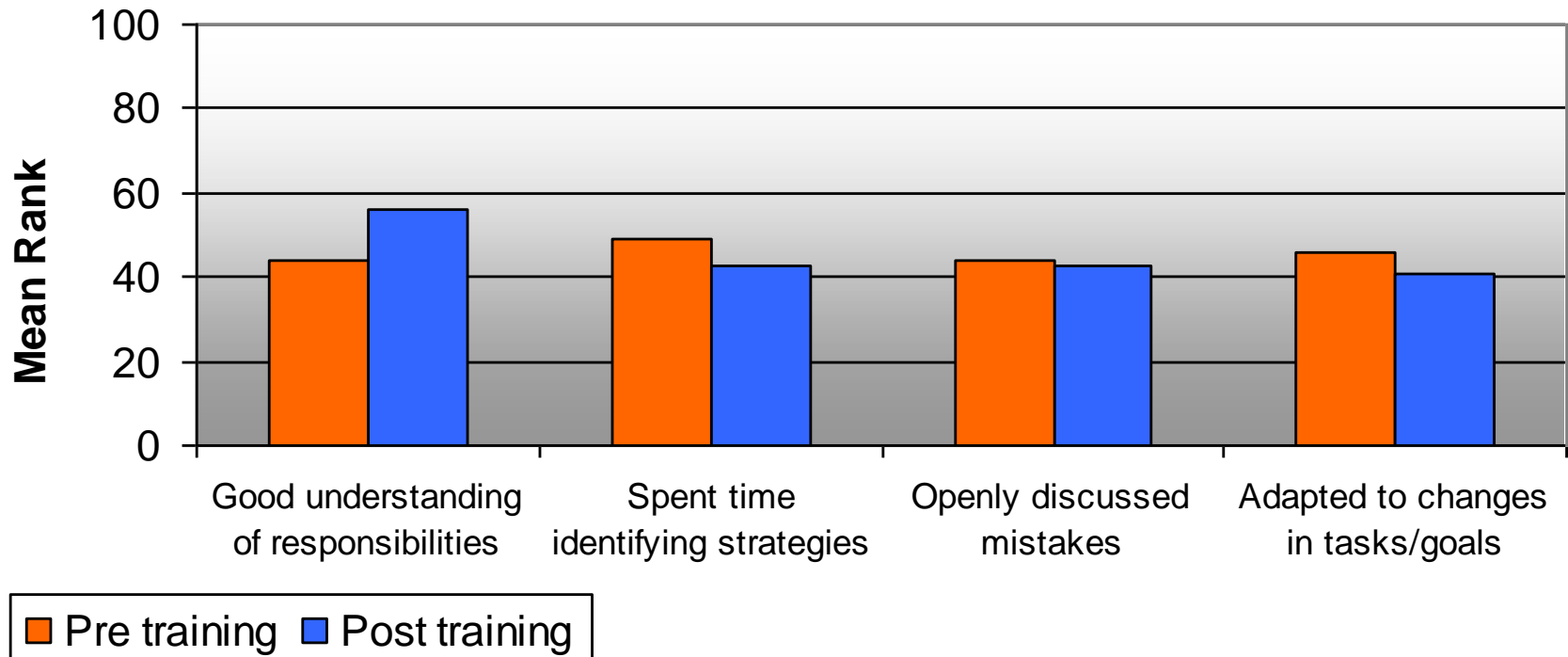
After

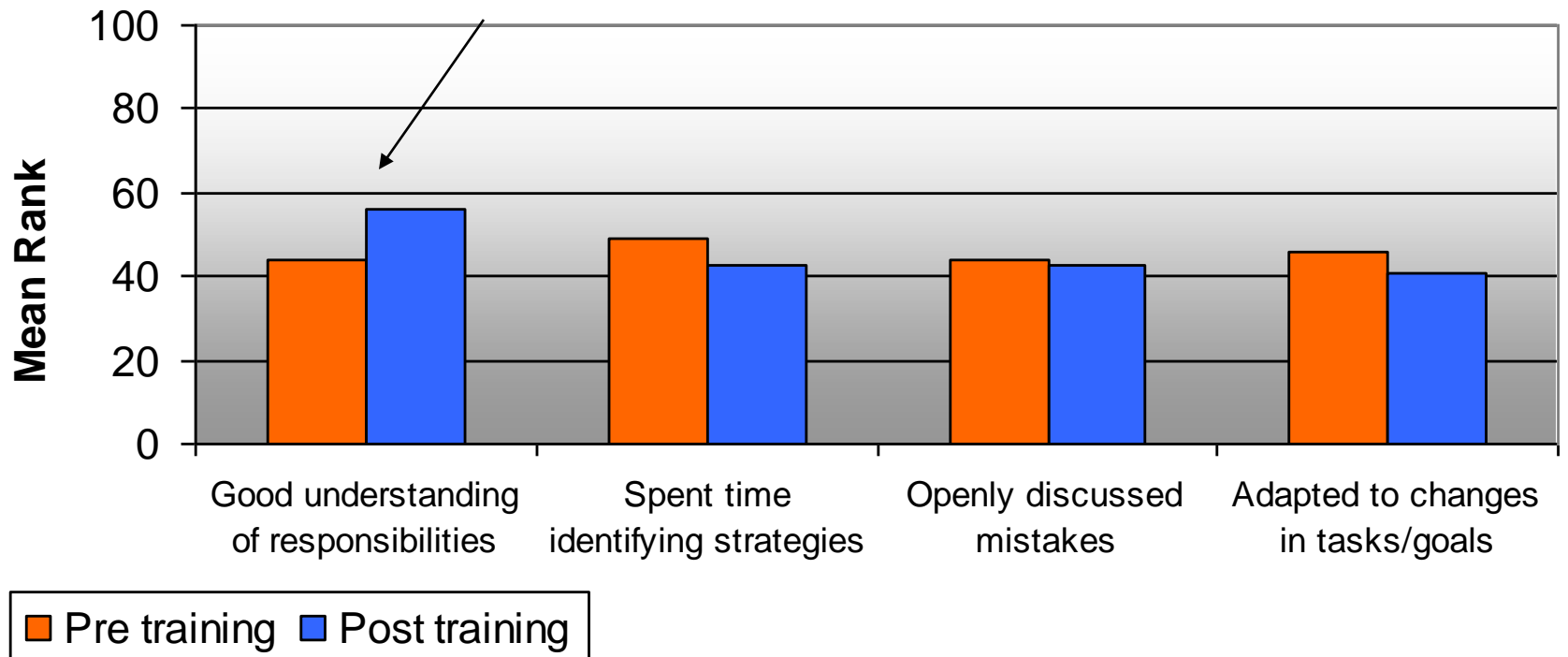


Before

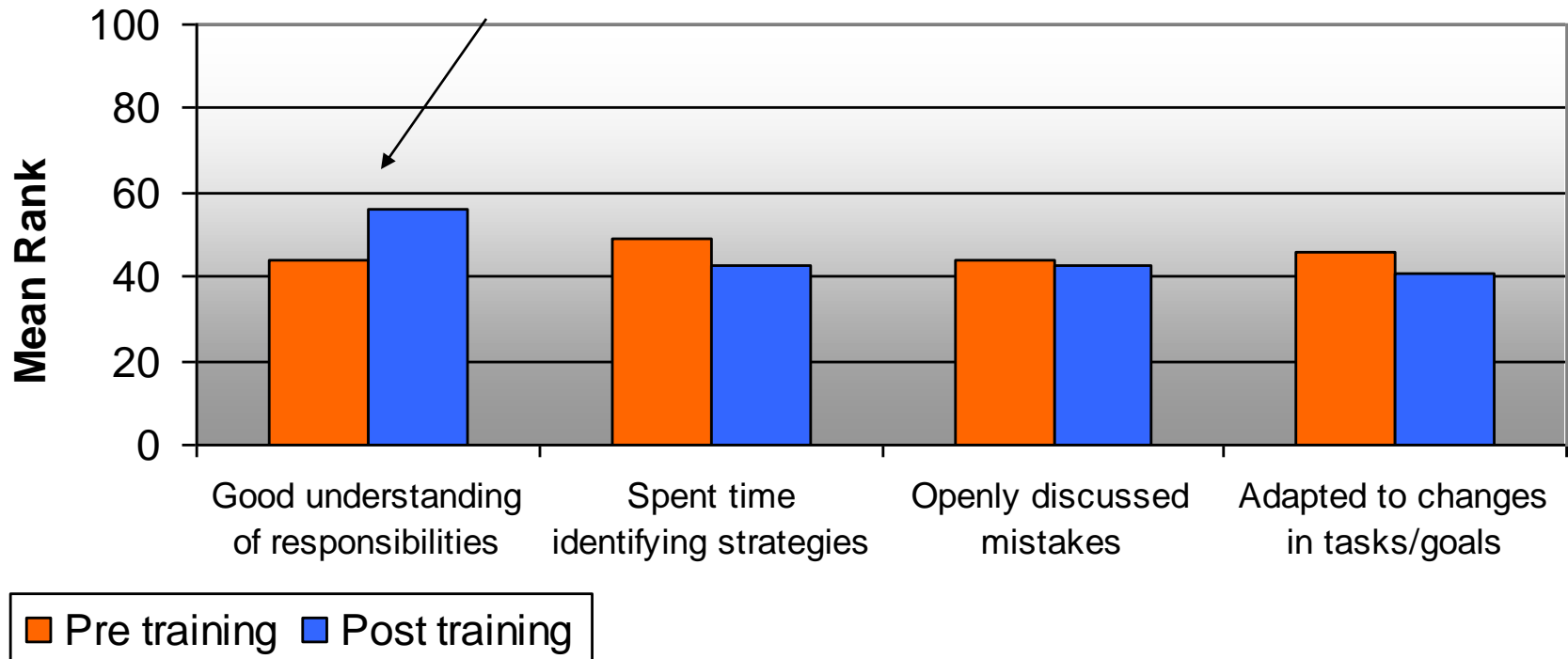


Team processes





Team building



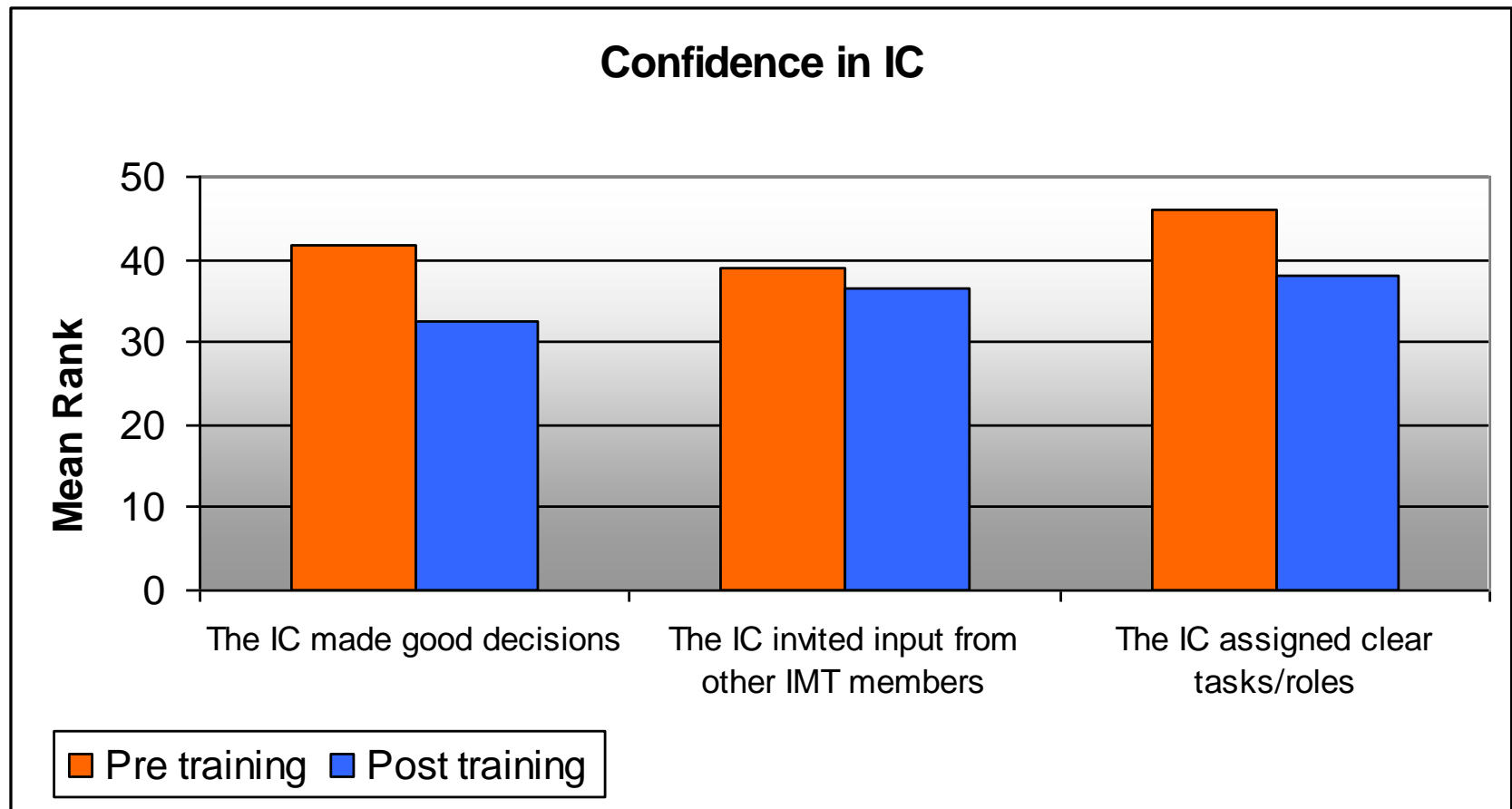
Exercising: Team-building- not TEAM work

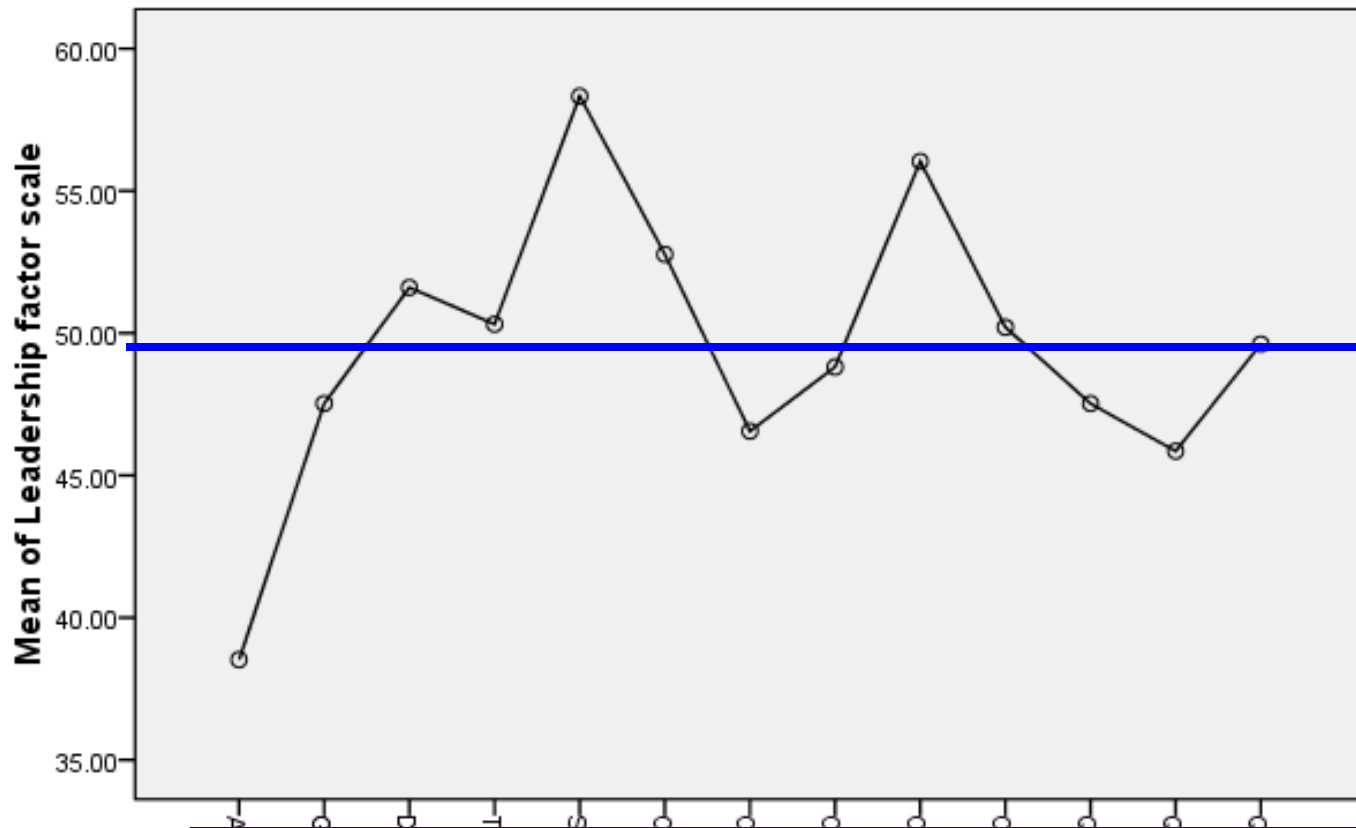


IMT training simulation about practicing individual roles

Leadership

240 participants; 16 groups





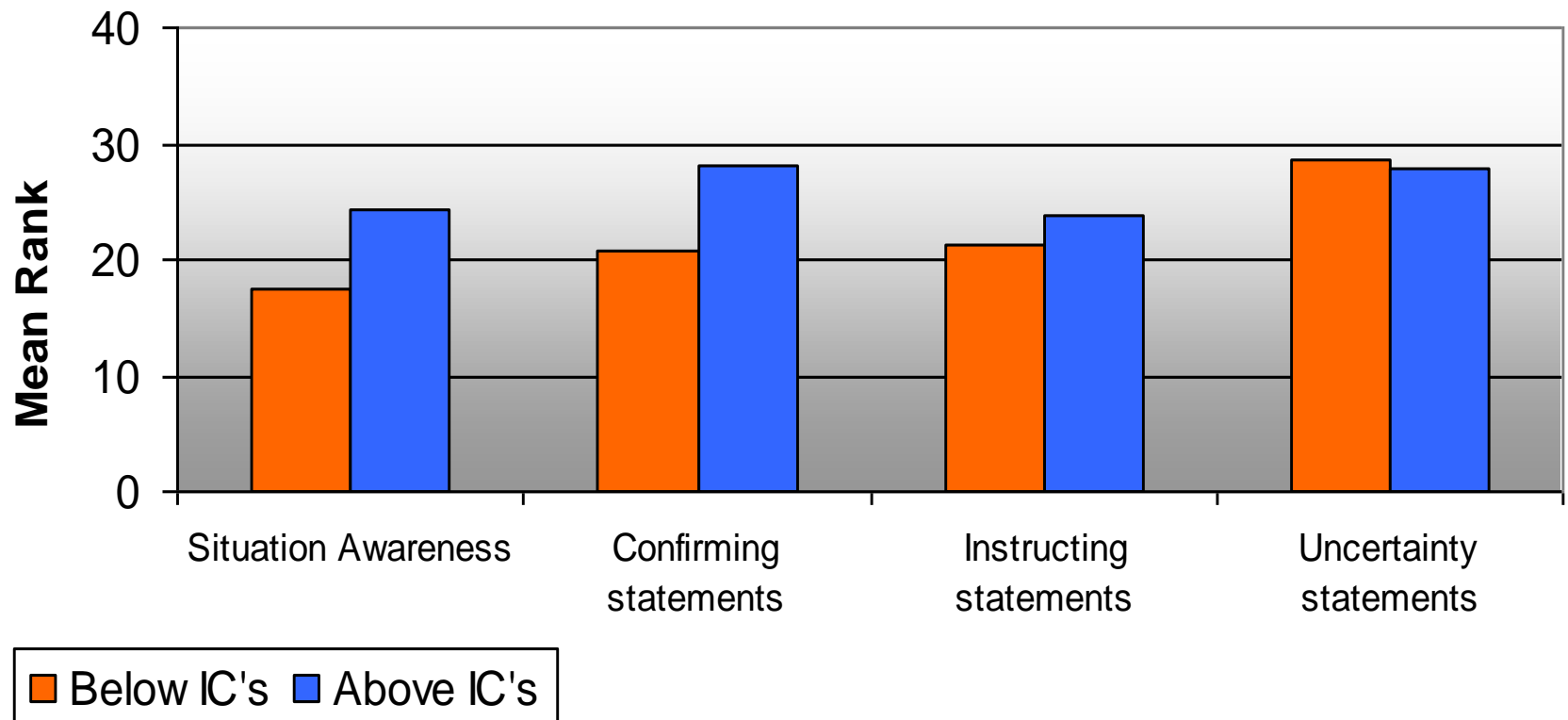
Incident Controller x location

Below the line Incident Controllers

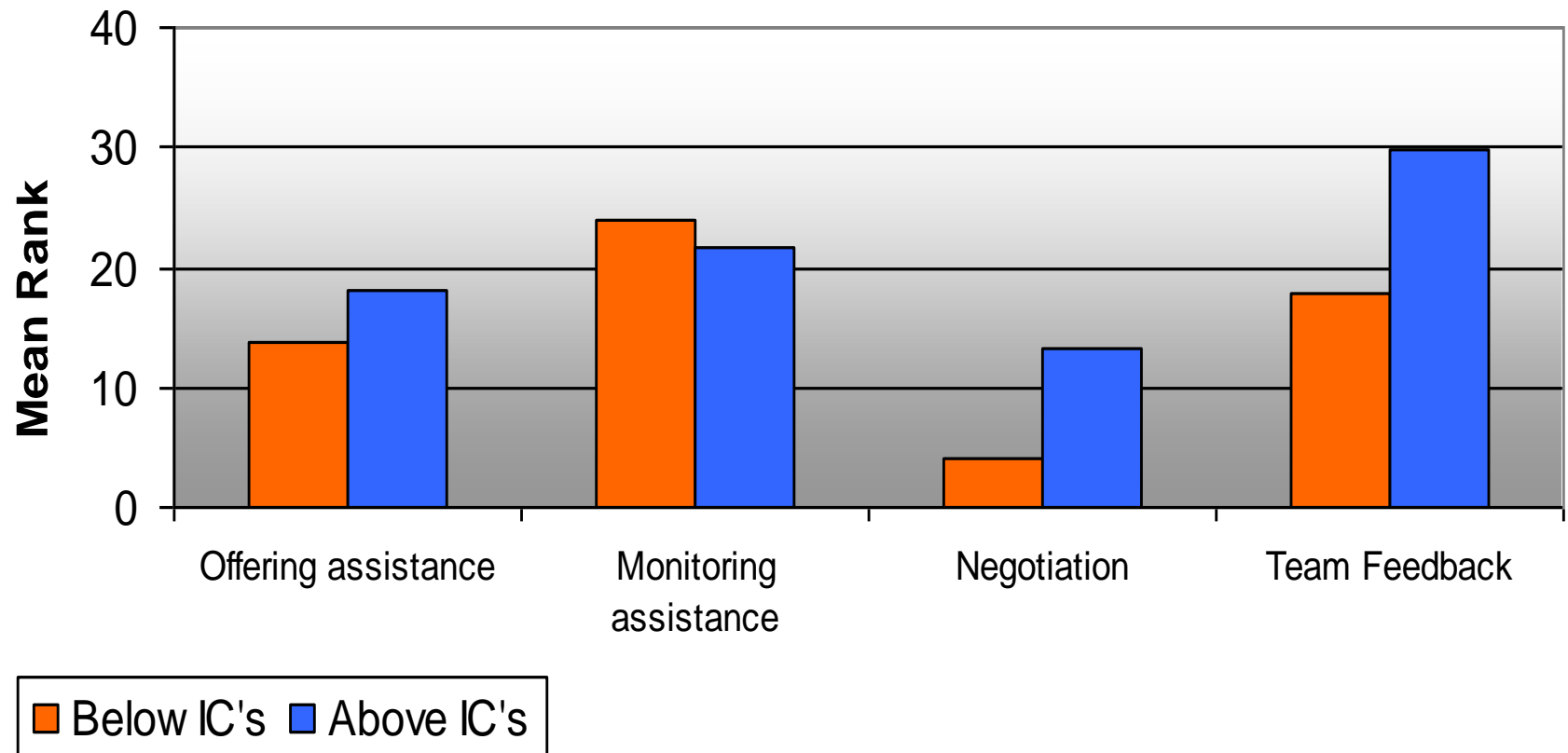
- More focussed on the fire
- Tend to live in the now
- Rarely invite input
- Rarely set up the conditions to support challenging or countervailing views



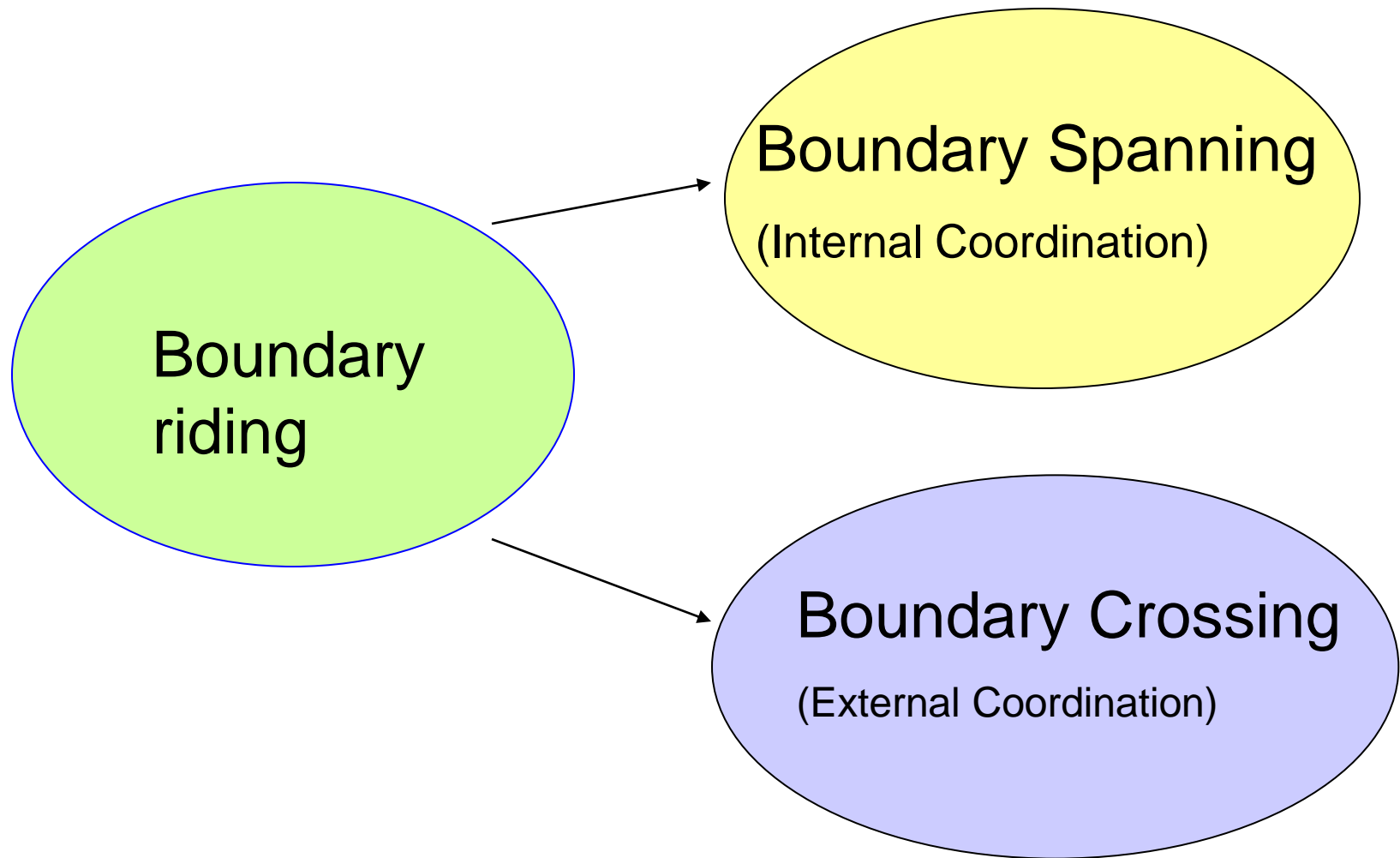
Communicative practices of Incident Controllers



Teamwork practices of Incident Controllers



Incident Controller coaching/feedback

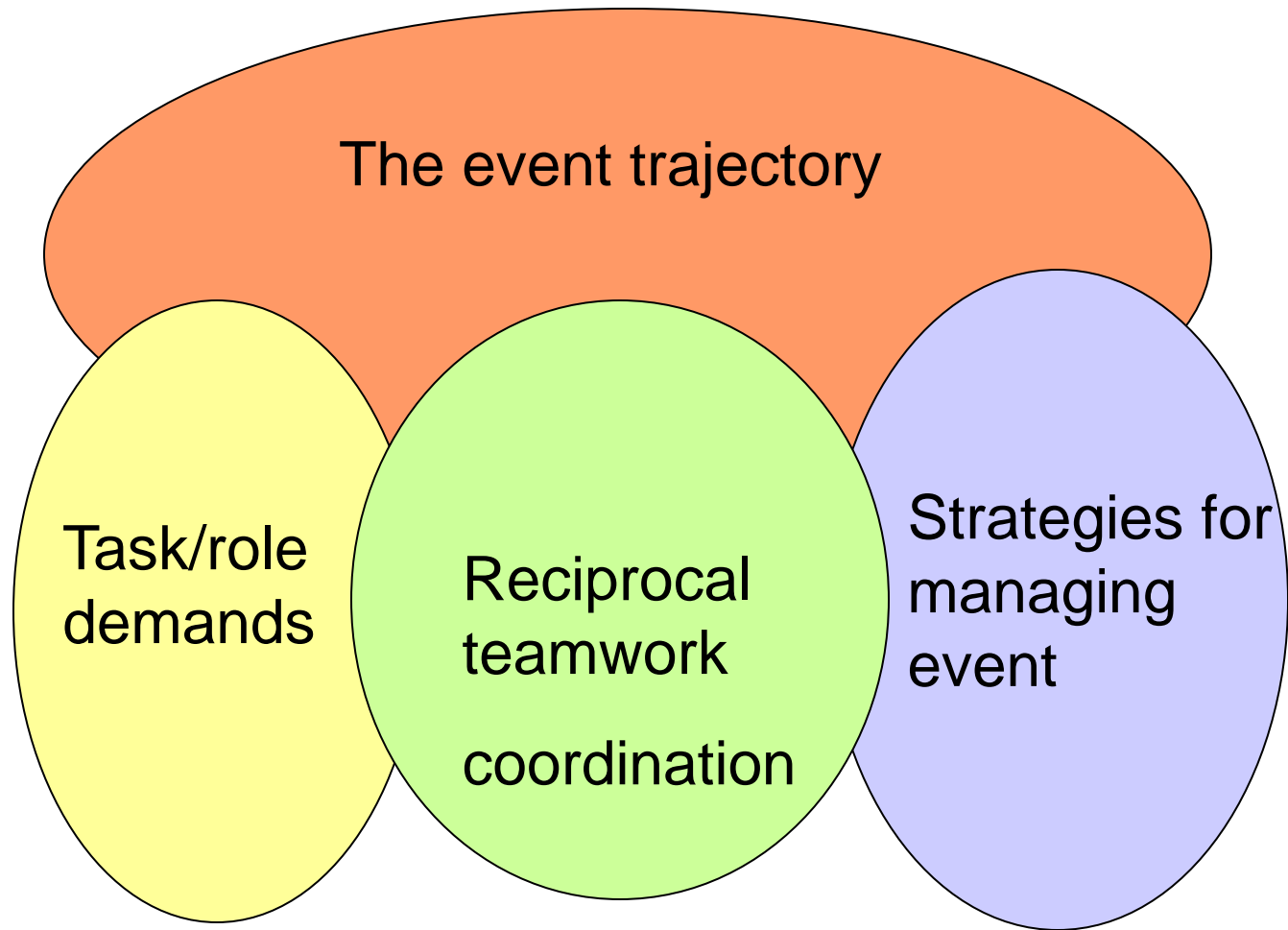


Team feedback: Incident Controller coaching

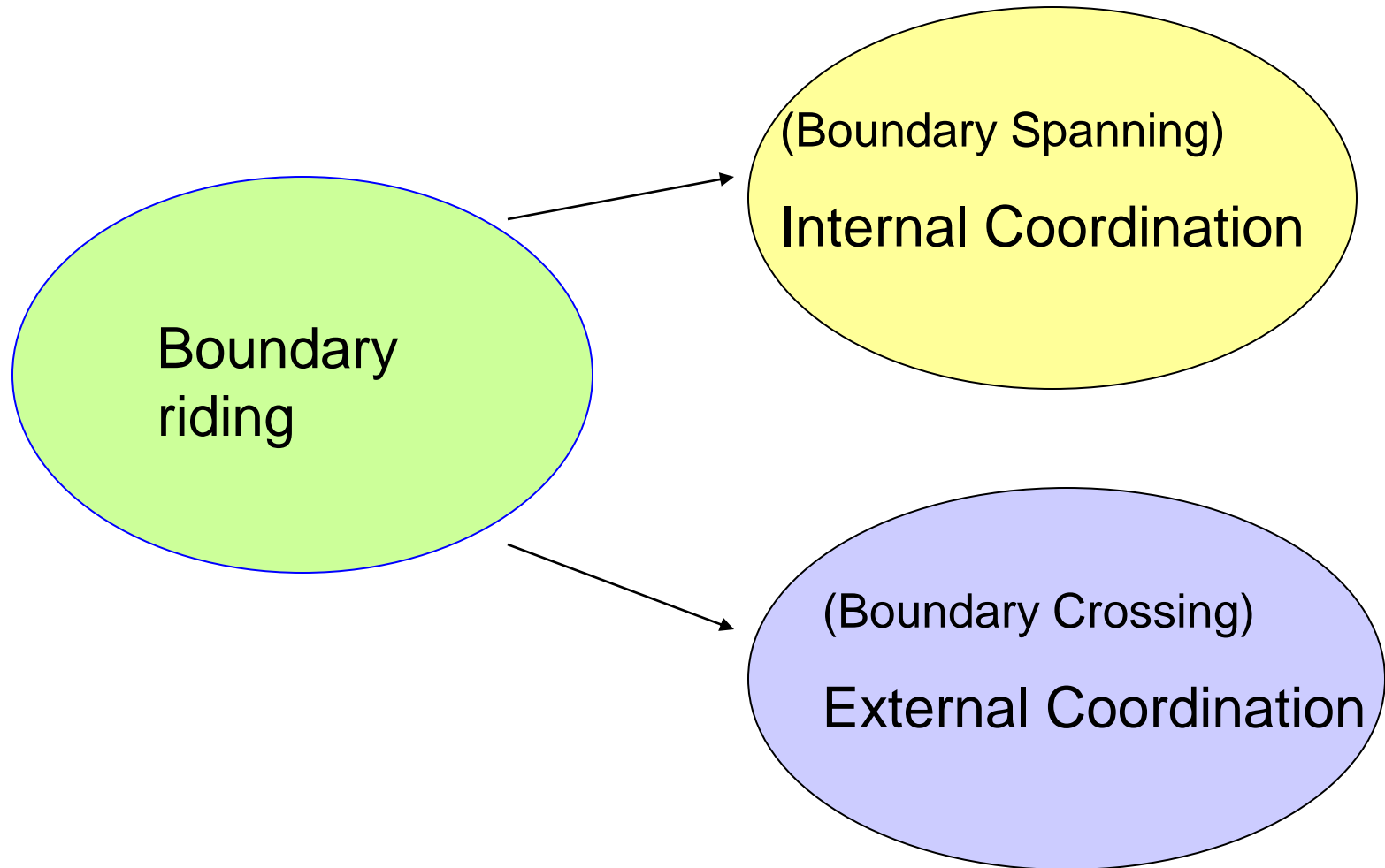
- **Boundary riding:**

Follow up; situation awareness; connecting expertise; connecting mental models; temporal expectations

Boundary riding



Incident Controller coaching



Boundary spanning (internal integration)

integration within and between functional units;
ensuring updating inter-positional knowledge

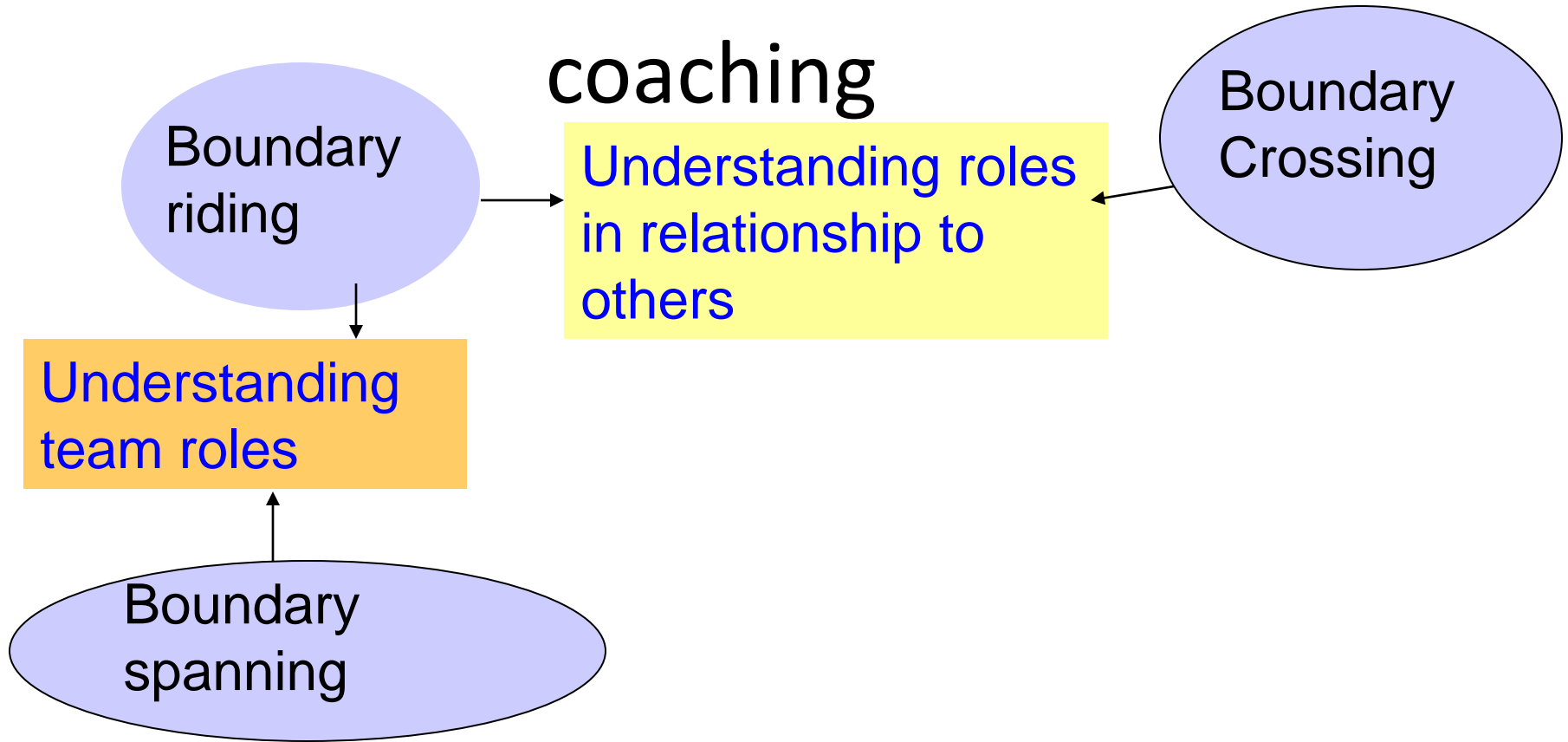
- “you and ops need to be hand in glove”
- “just be mindful they need a bit of notice”
- “you’ll end up with the channels totally choked”
- “I’m concerned they’re (Planning) not getting regular updates”

Boundary crossing

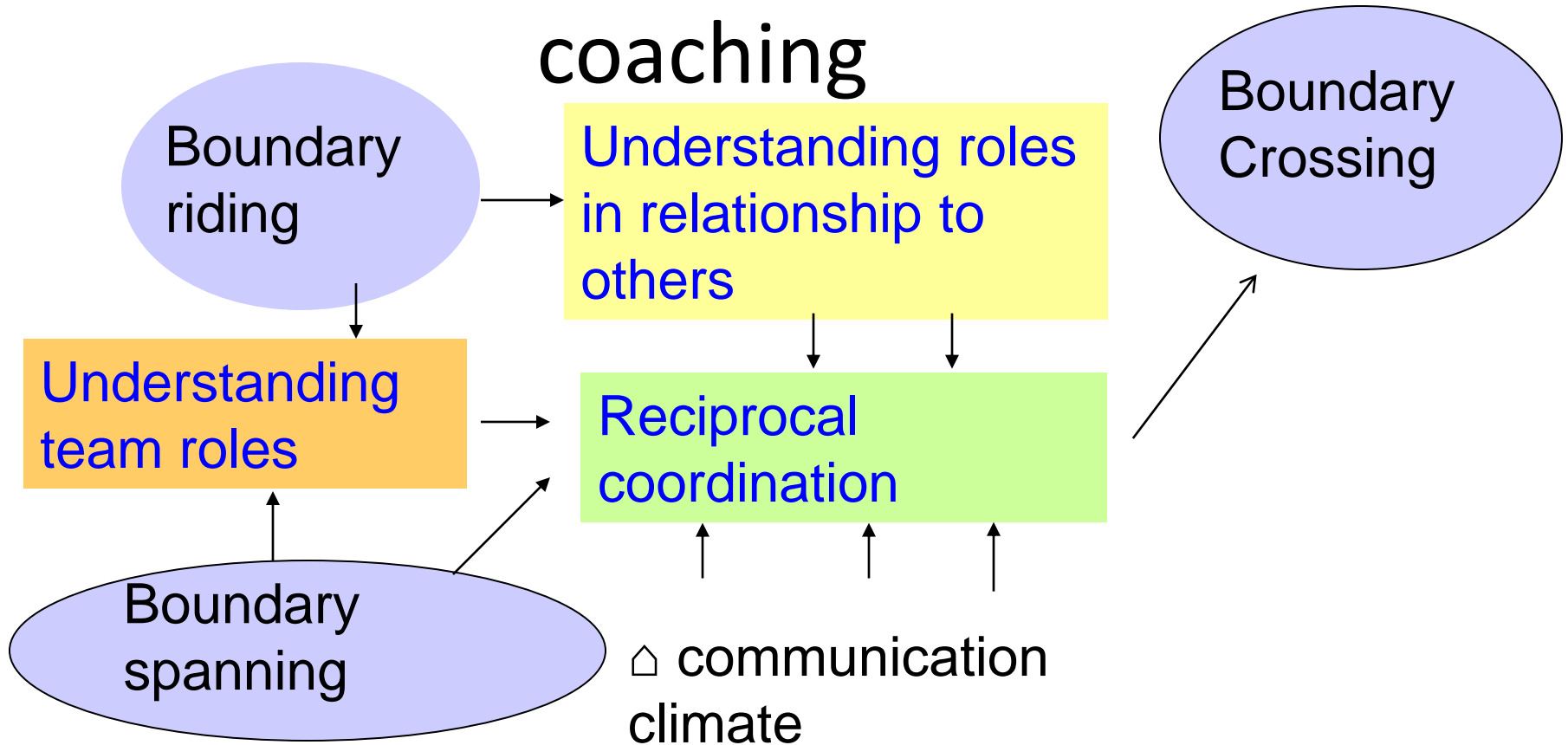
Inter-agency checking; lateral and vertical relationships – encouraging shared situation awareness

- “we don’t have any expertise – that’s a XX job”
- “they’re a bit concerned the fire does not leave xxx”
- “they’ll do that but you need to spell out xxx”
- **“this [teleconference] is going to be intense – you need to be ready for that”**

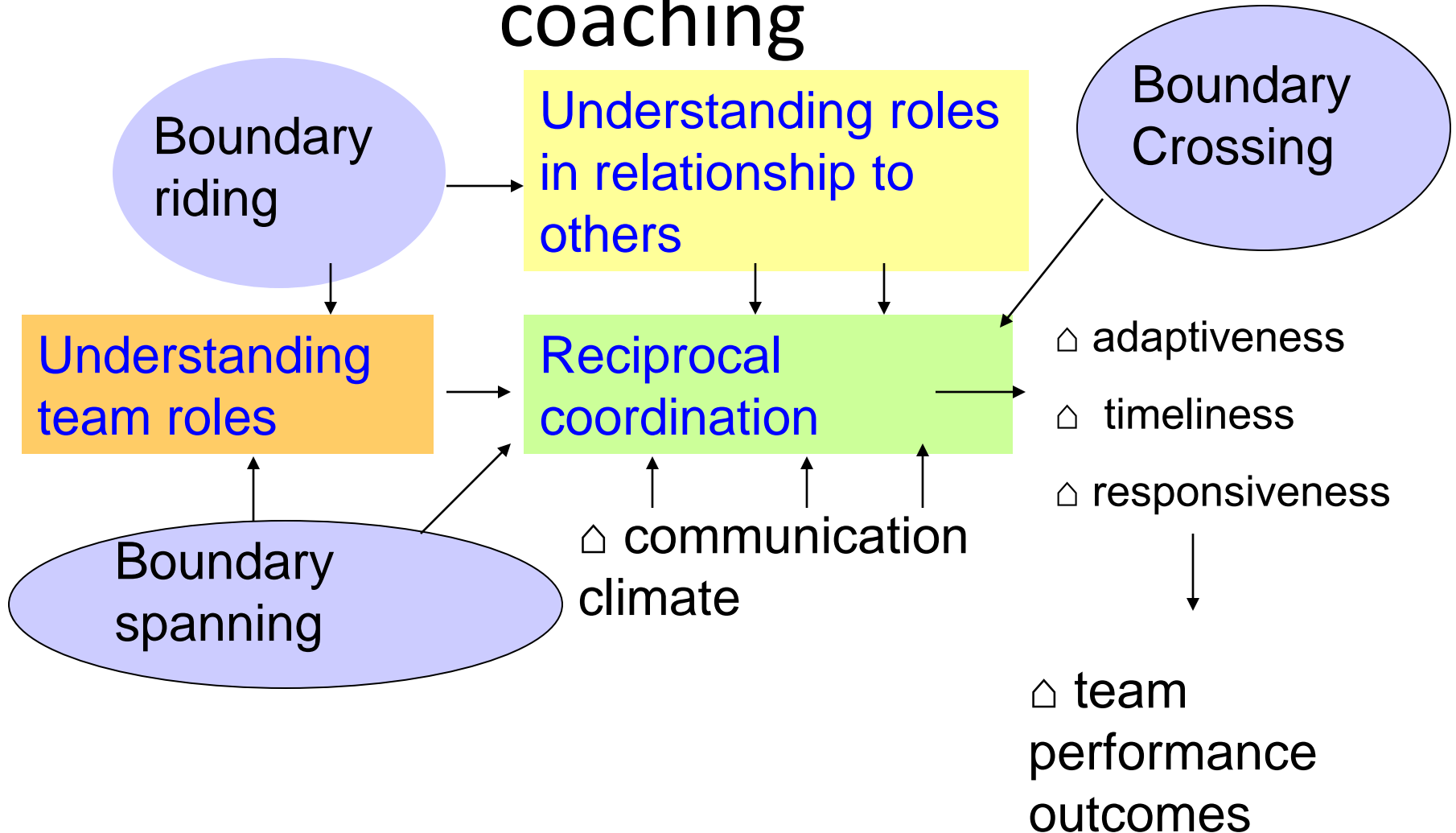
Incident controller team coaching



Incident controller team coaching



Incident controller team coaching



Where to next?

Research utilisation- human factors workshops

Organising for effective management



Christine
Owen



Liaquat
Hossain

Ben
Brooks



Greg Hannan



Douglas
Paton

No image
available

Chris
Bearman

A collaboration between

- The University of Tasmania
- The University of South Australia and
- The University of Sydney

Industry engagement -
meetings