

# Training to Failure and Other Unlikely and Highly Effective Training Strategies

WRMC 2017

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**Managing  
Risk**

Systems Planning  
for Outdoor  
Adventure  
Programs

# Agenda

1. Schema and sensemaking
2. Theoretically anchored behaviour model
3. Training for non normal and failure



# Bottom line:

- Spending training time in 'normal' in no way prepares one for non-normal
- Meaningful interaction with inherent risk defines non normal and builds coping skills at the boundaries
- Safe Failure needs to replace Fail Safe

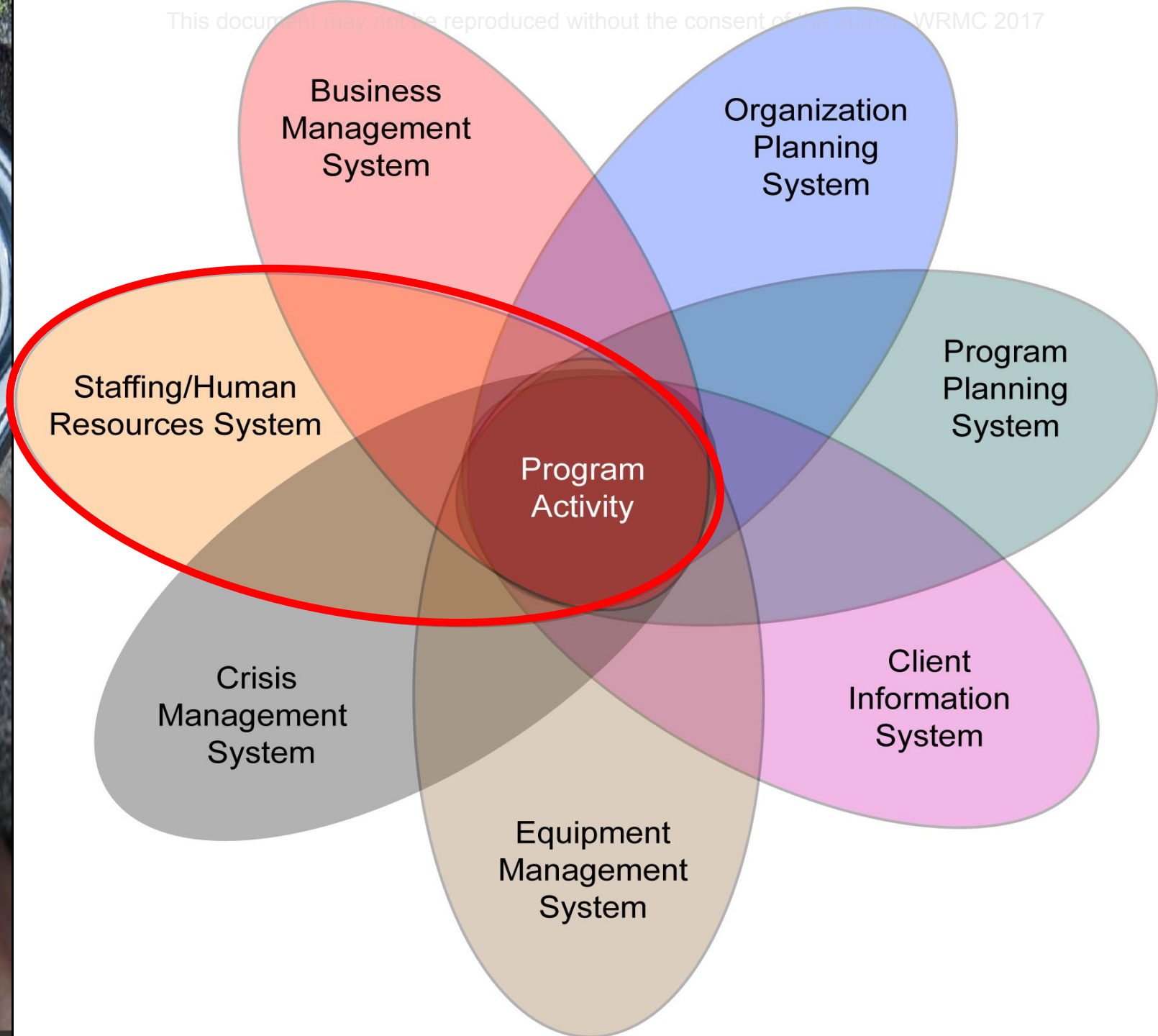


# Key ideas:

Safety training priorities:

1. Coping skills at the boundaries
2. Meaningful interaction with inherent risk
3. Testing calibrates judgement
4. Make learning hard





# Pair/Share Question:

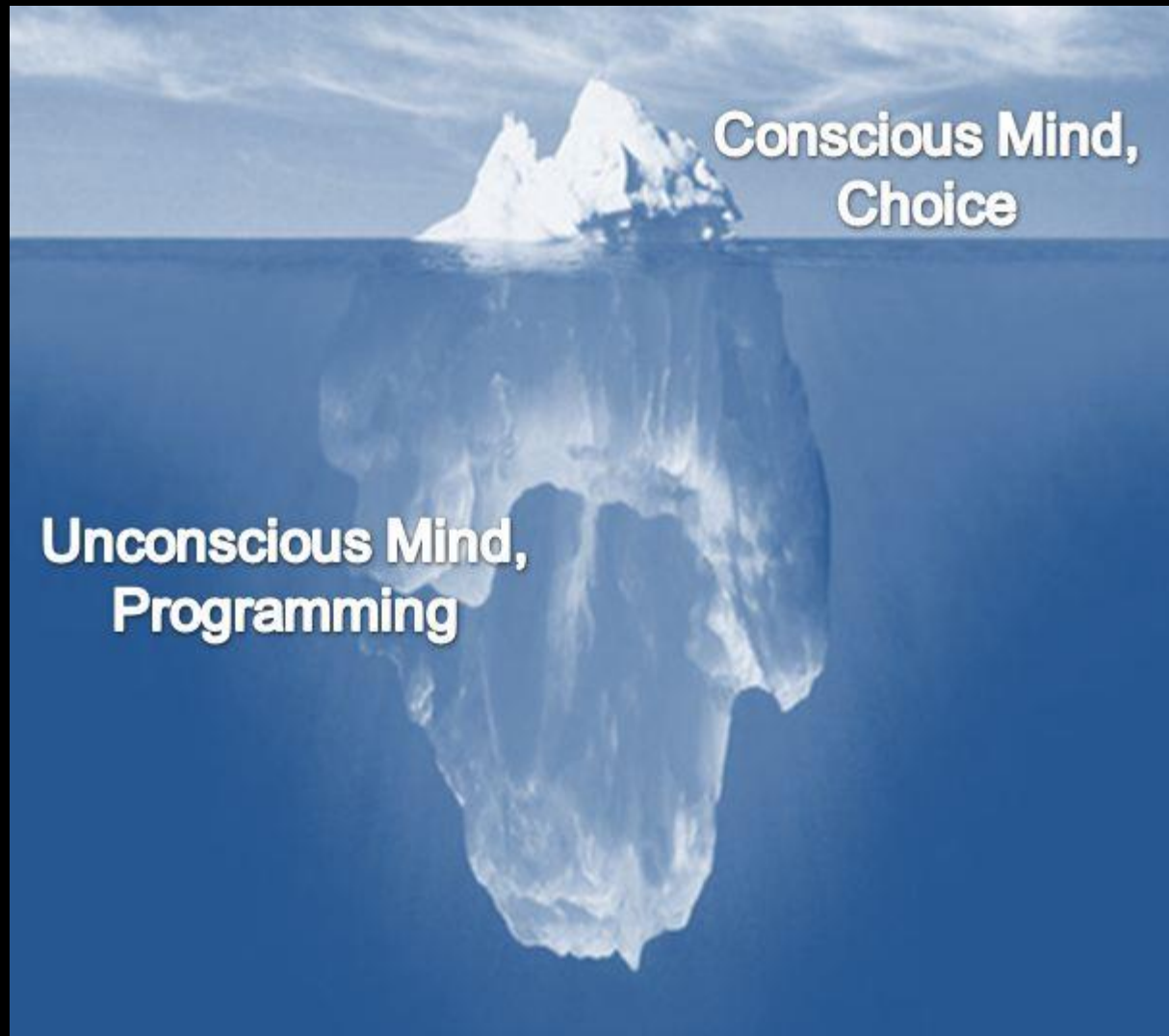
- What is your biggest challenge in training staff? (2 minutes per partner)



# Question:

- Do you train decision making?  
How?





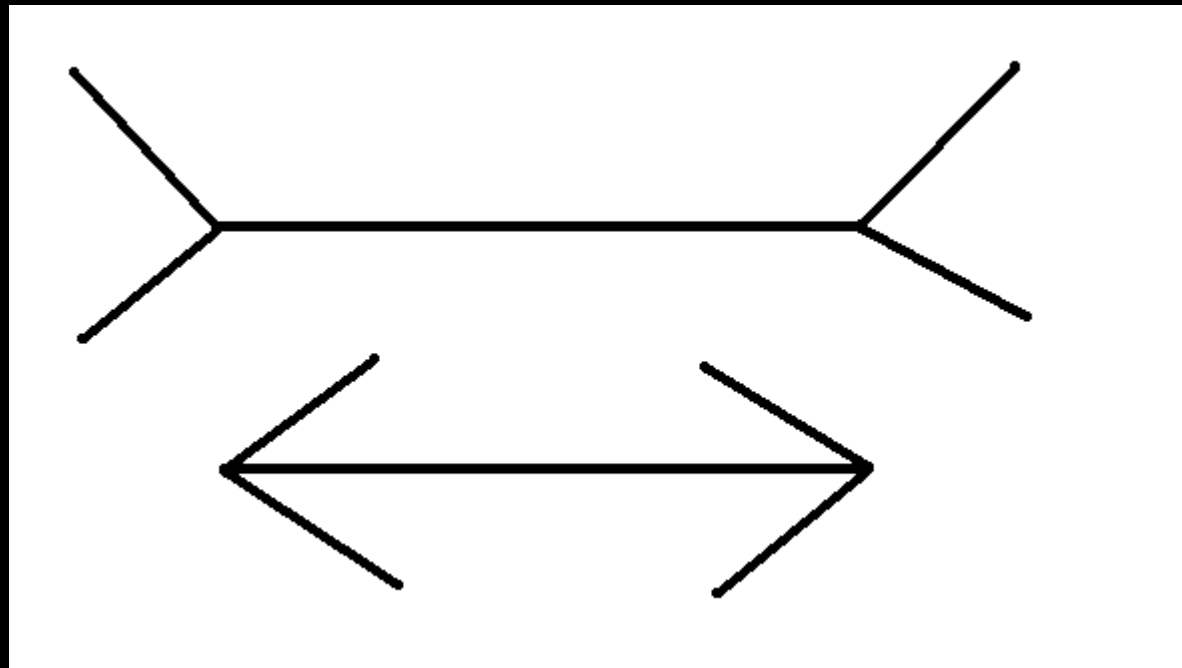


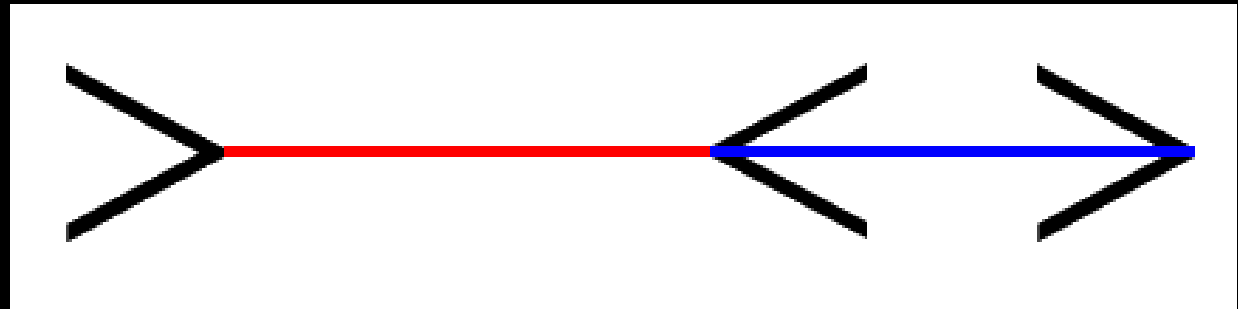
# 2 ways of thinking



17 x 24

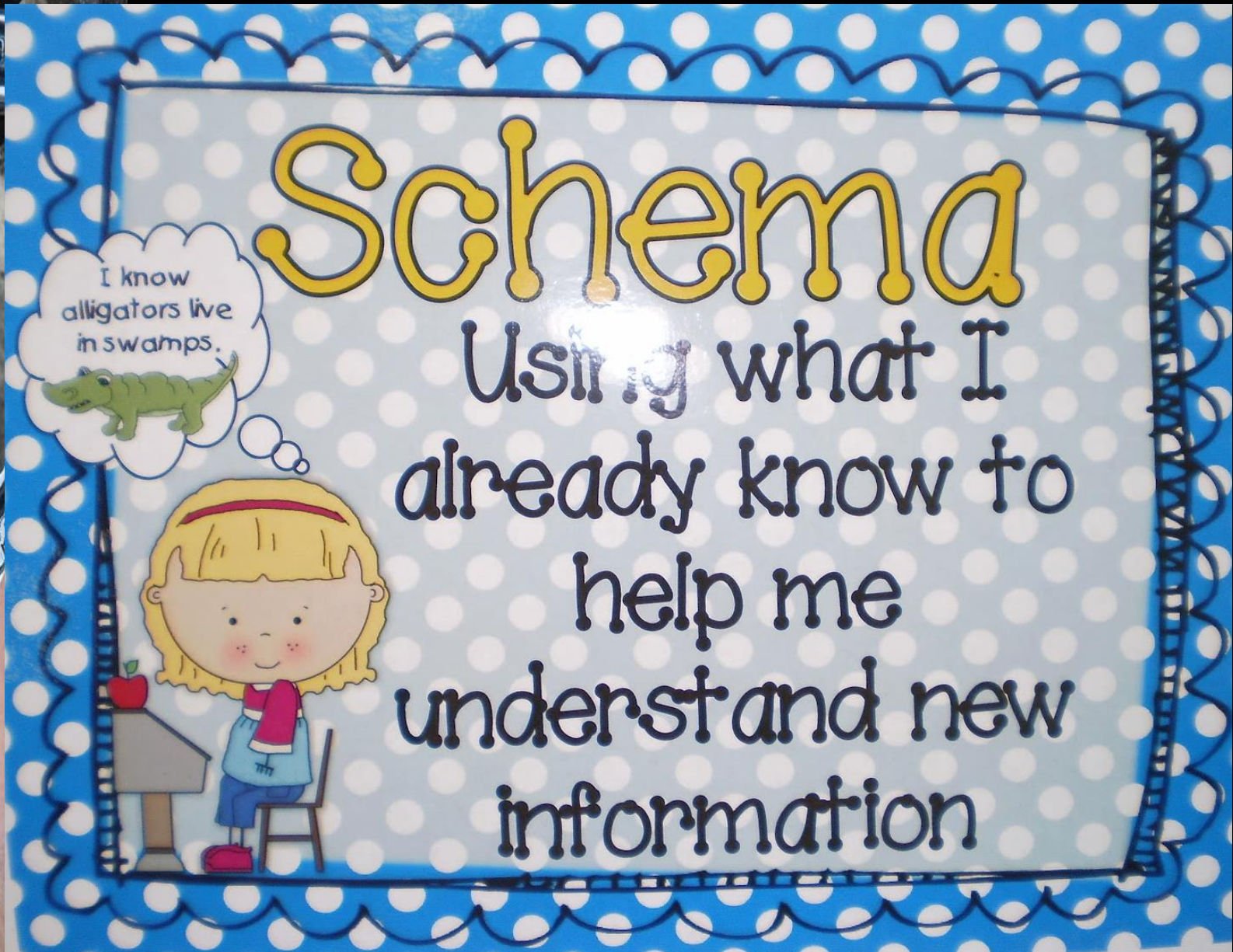
Fast & slow  
Intuitive & rational  
System 1 & system 2











The image shows a hand-drawn educational poster on a blue background with white polka dots. The poster is framed by a black scalloped border. On the left side, there is a cartoon illustration of a young girl with blonde hair, wearing a blue dress and a red headband, sitting at a desk with a red apple. Above her is a thought bubble containing a green alligator and the text "I know alligators live in swamps." The main text of the poster is written in a large, yellow, bubbly font for the word "Schema" and a smaller, black, rounded font for the rest of the text.

# Schema

Using what I already know to help me understand new information

# Schema

- template for recognizing a particular class of relevant environmental threats or opportunities

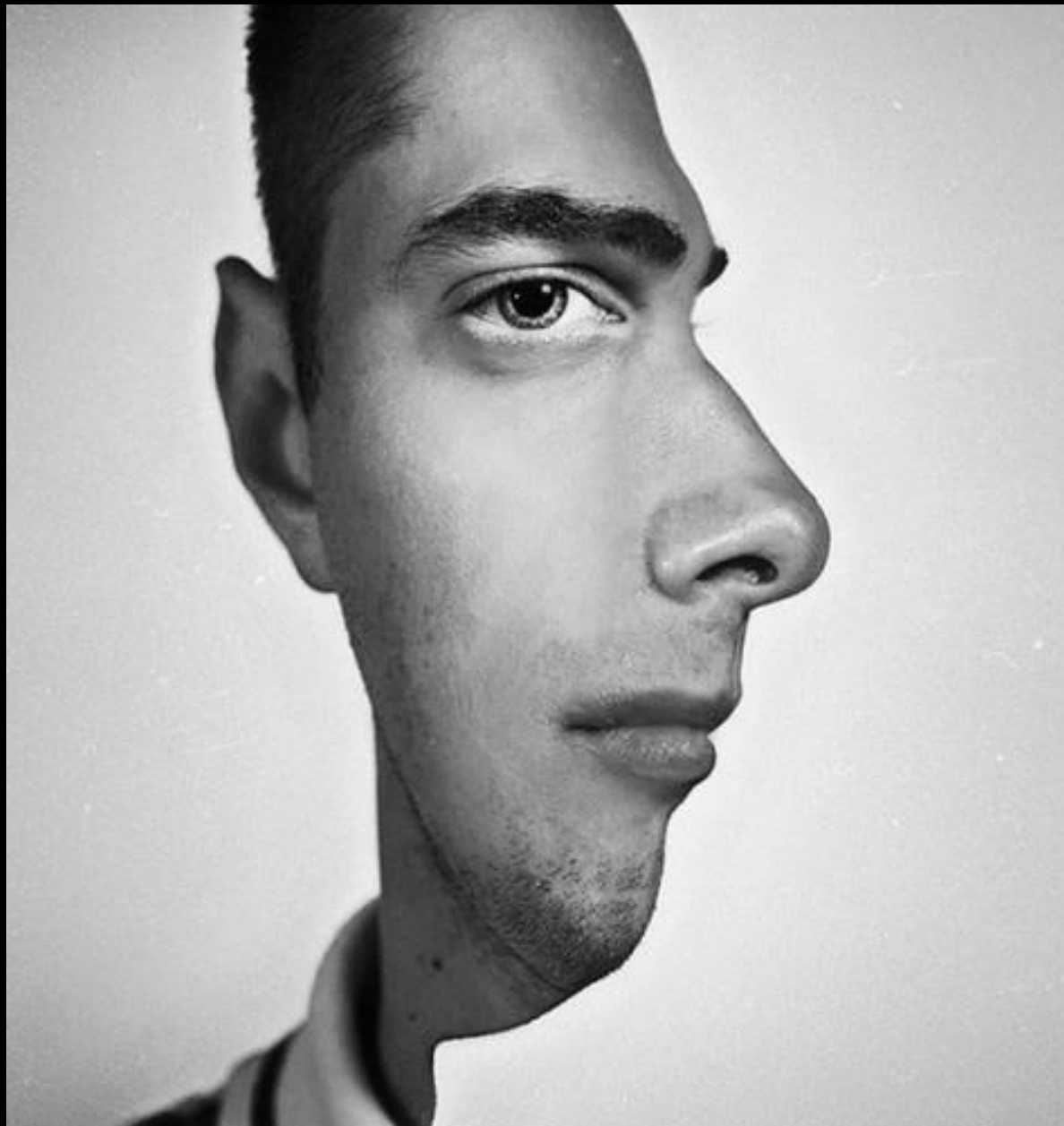




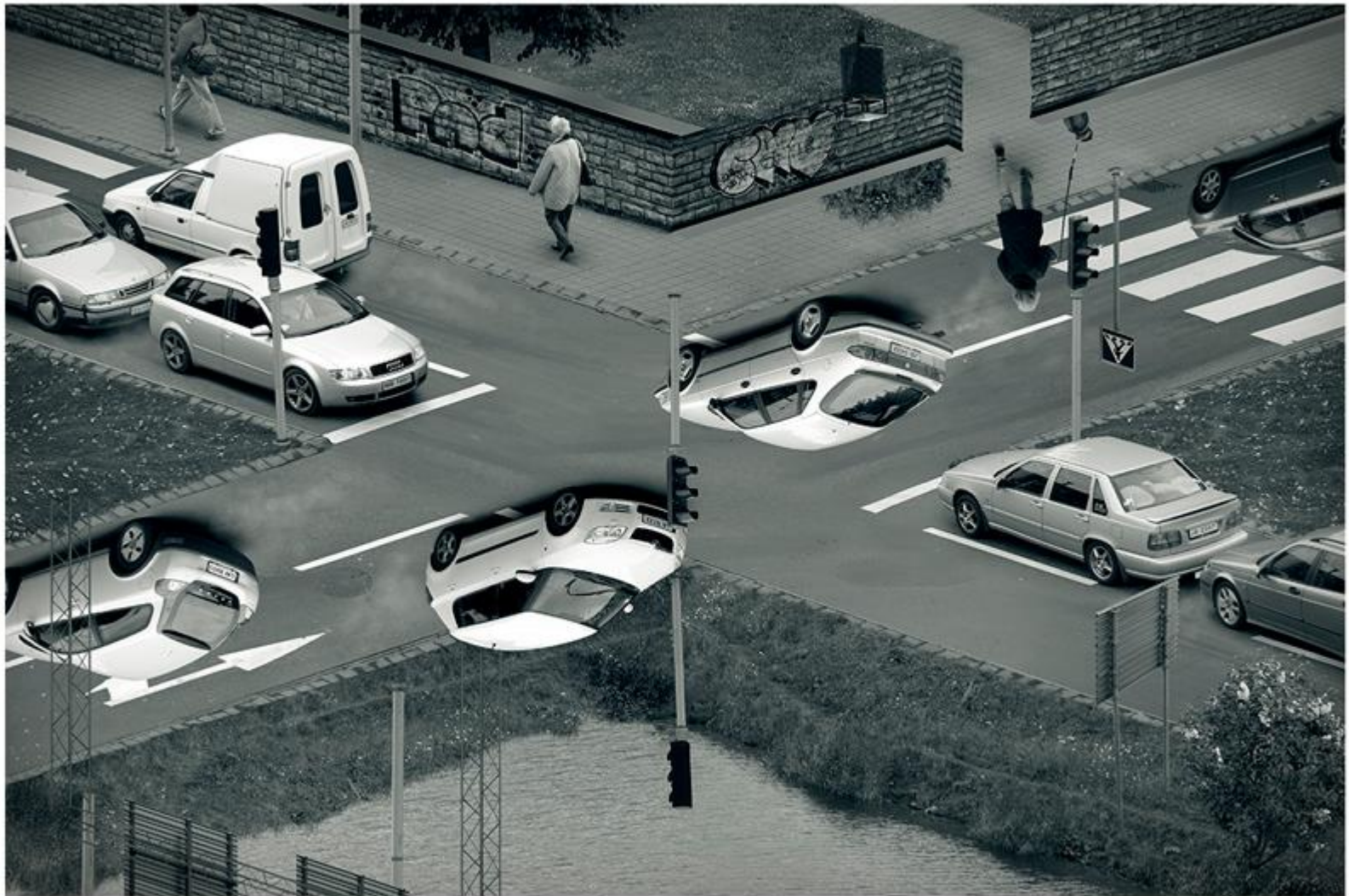




**APPLE**



Jeff Jackson Algonquin College





# Schema v. Sensemaking

- Schema:
  - Categories (of memory?)
- Sensemaking
  - Ongoing process to categorize ambiguous cues

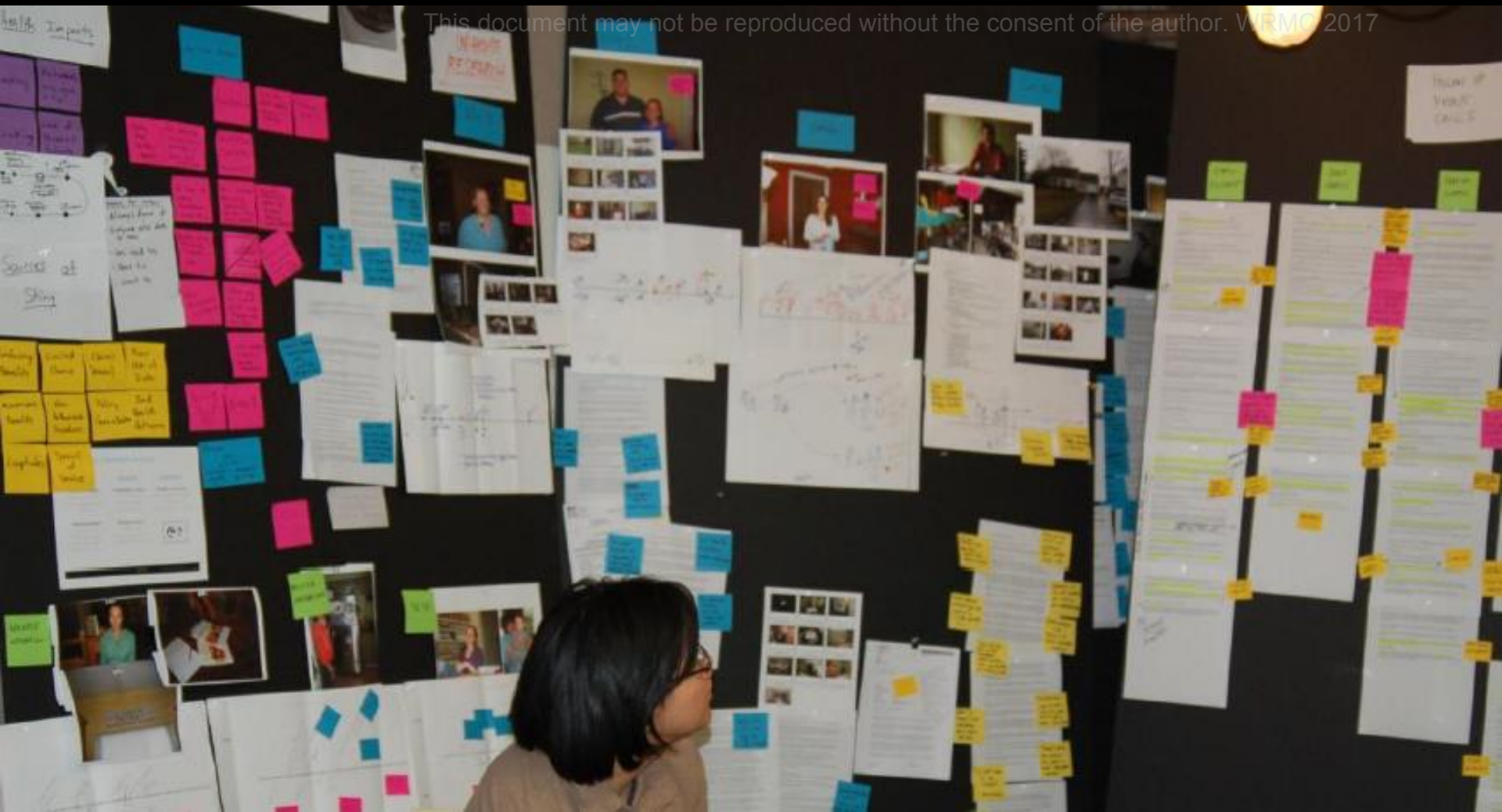


















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# Motivated Behaviour Model:

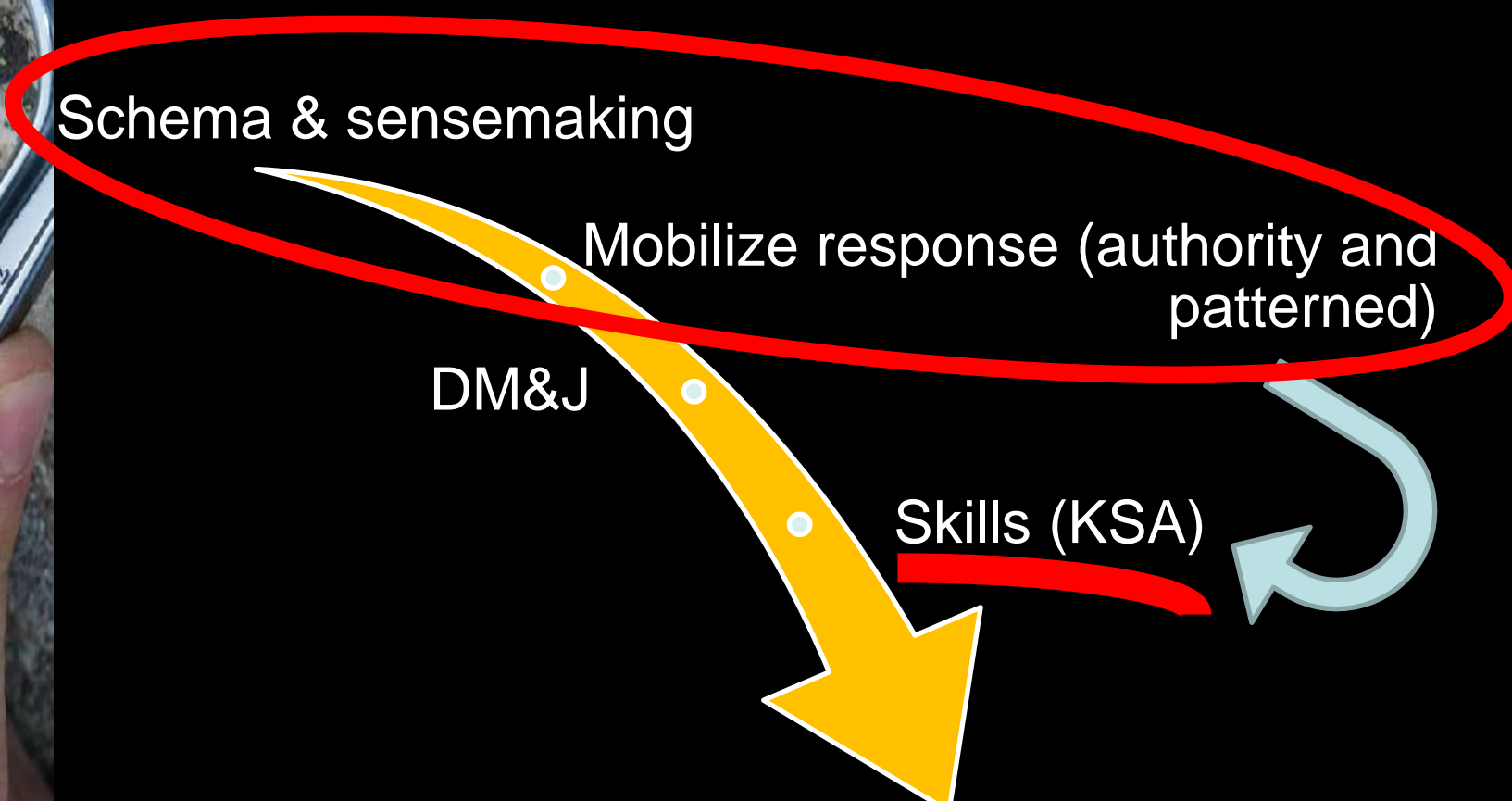
Schema & sensemaking

Mobilize response (authority and patterned)

DM&J

Skills (KSA)

Motivated behaviour or action





Can you find the  
the mistake?

1 2 3 4 5 6 7 8 9

# Motivated Behaviour Model:

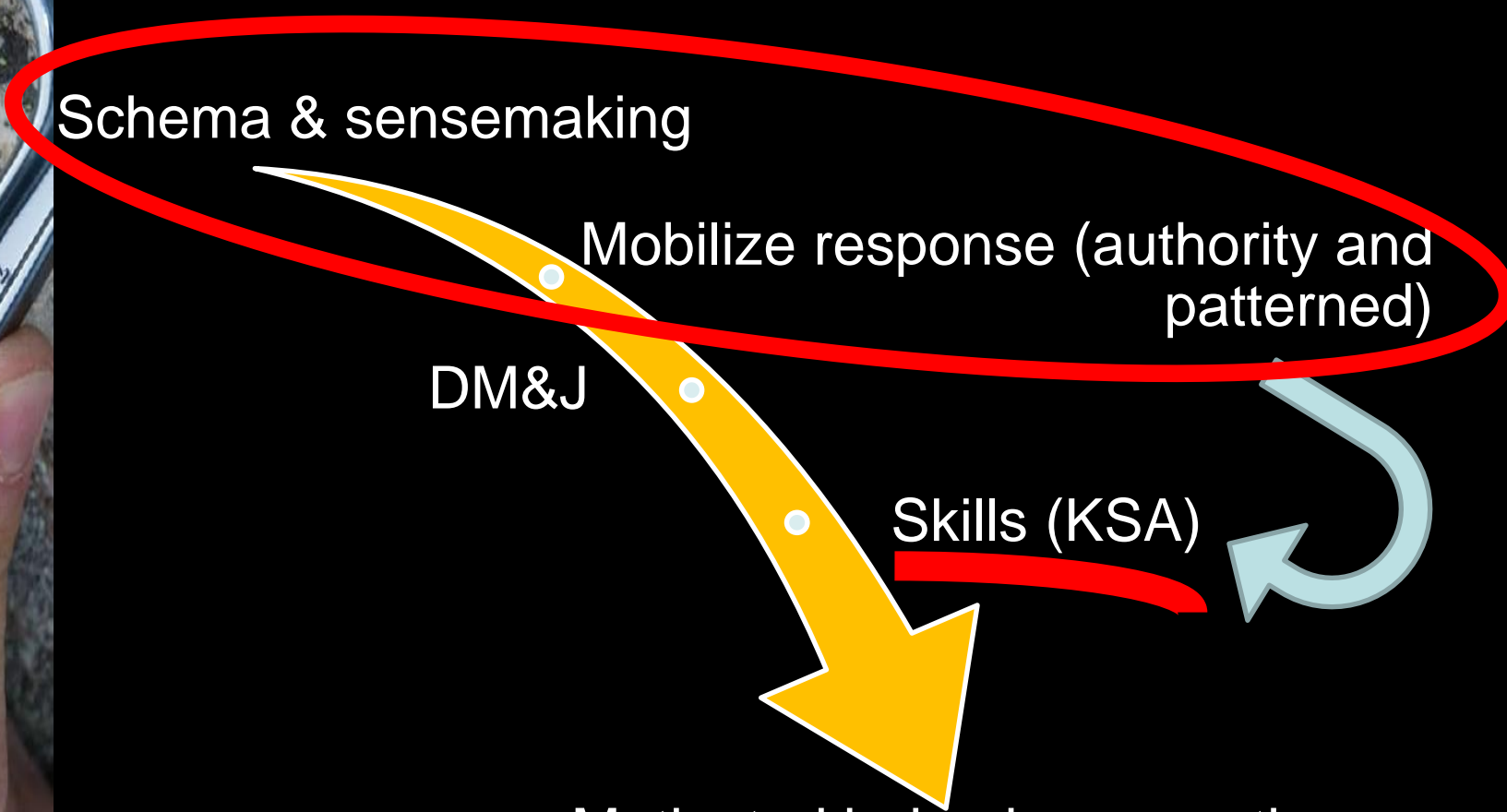
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“Human error is a consequence,  
not a cause.”

*Reason (1997)*

...decision making as “continuous  
control task”

*Rasmussen (1997)*

# Question:

- Do you train decision making?  
How?
- Do you train for failure?



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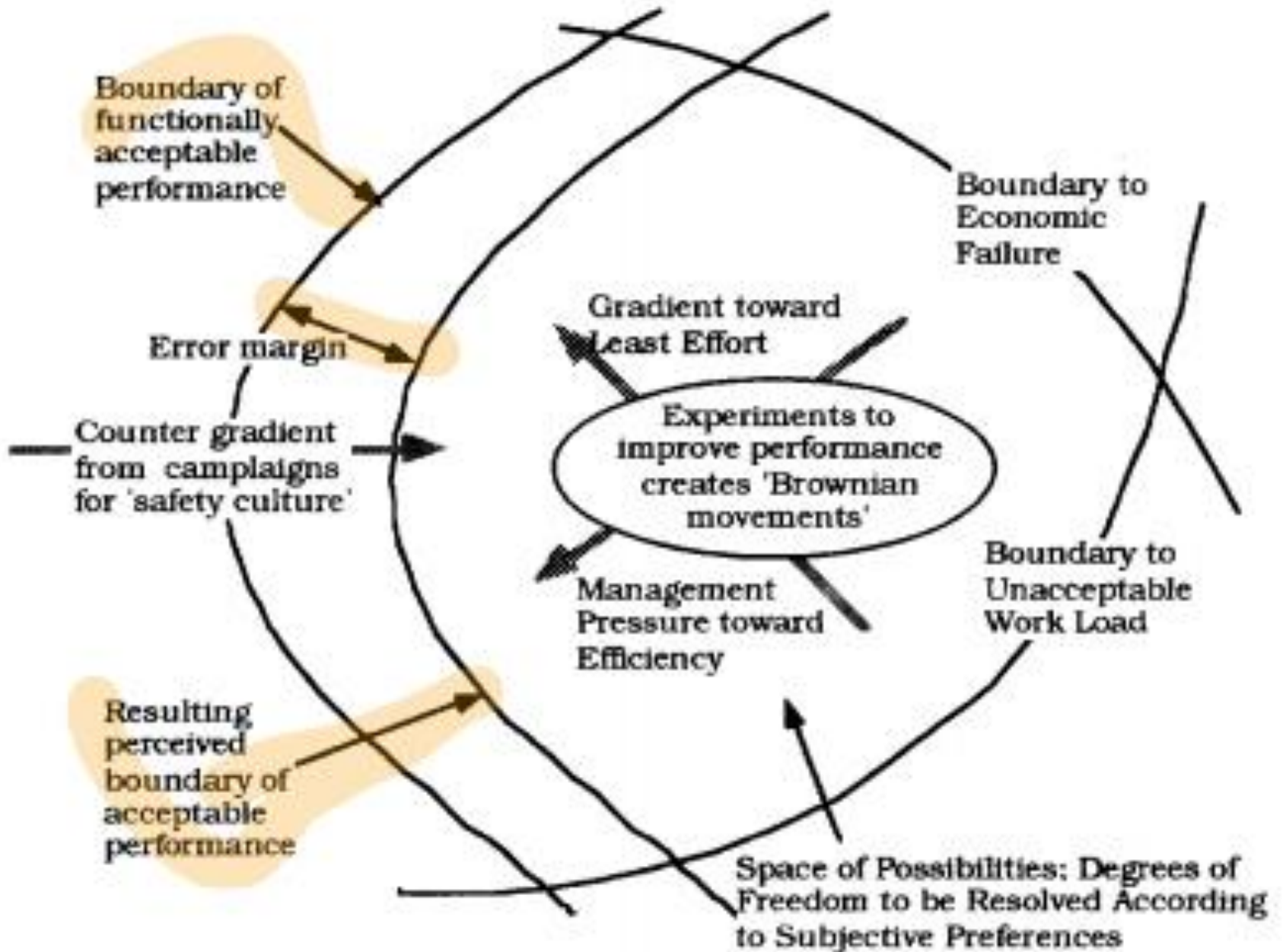


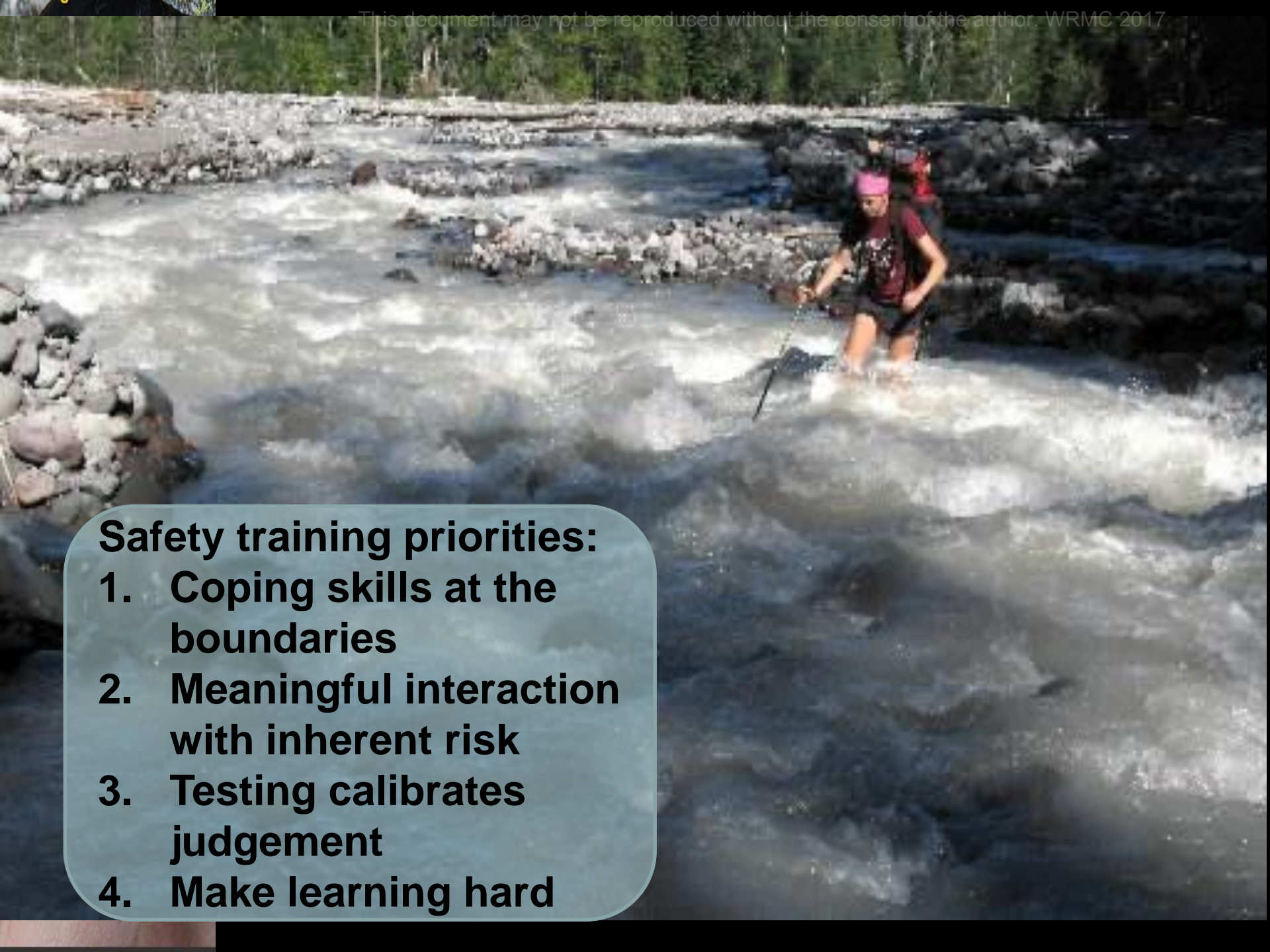


“...rather than striving to control behaviour by *fighting deviation*...

Control behaviour by *making the boundaries explicit and known* and by giving opportunities to develop *coping skills at boundaries.*”

Rasmussen (1997)



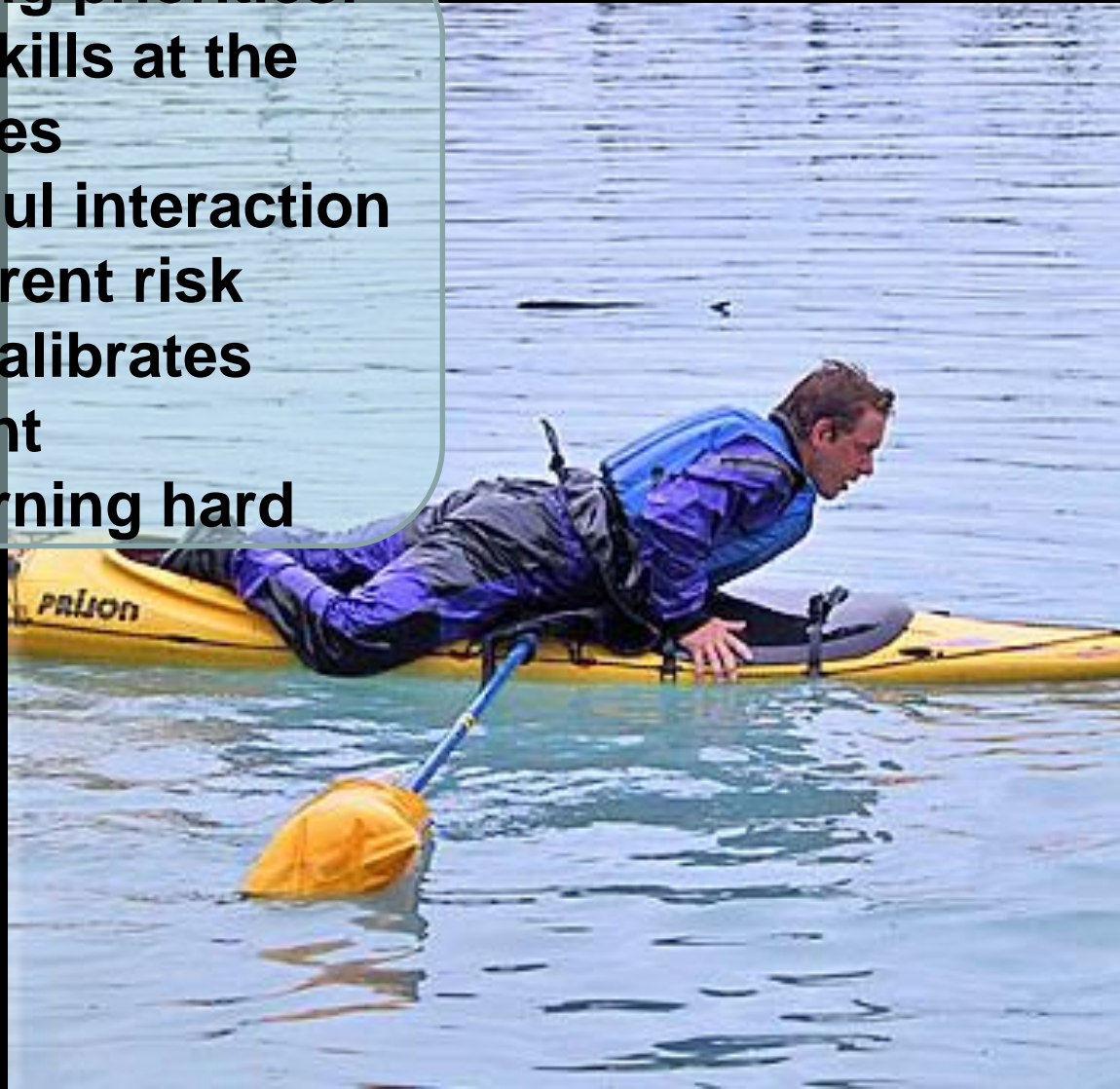


## **Safety training priorities:**

- 1. Coping skills at the boundaries**
- 2. Meaningful interaction with inherent risk**
- 3. Testing calibrates judgement**
- 4. Make learning hard**

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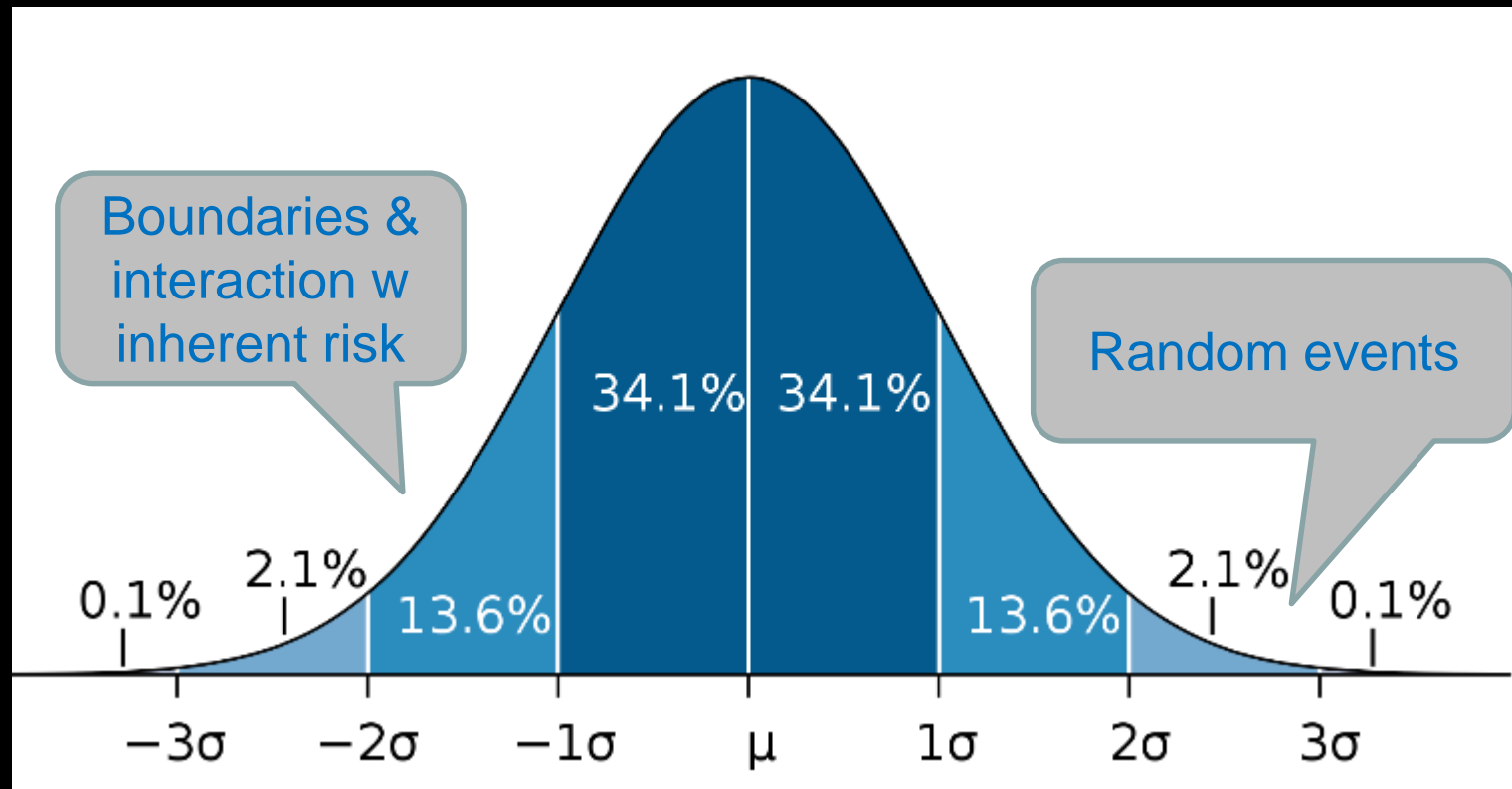
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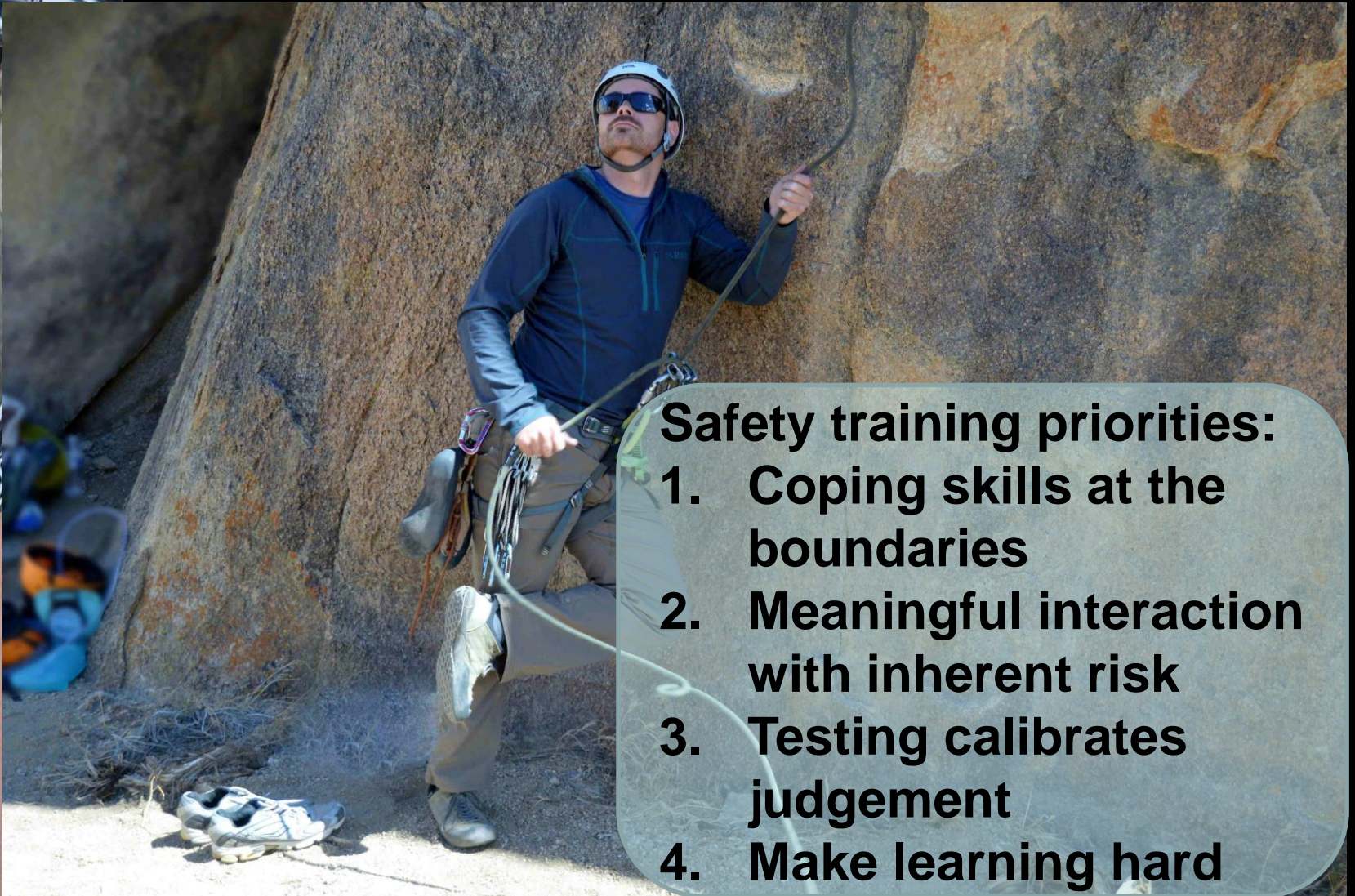
# Normal vs Non Normal





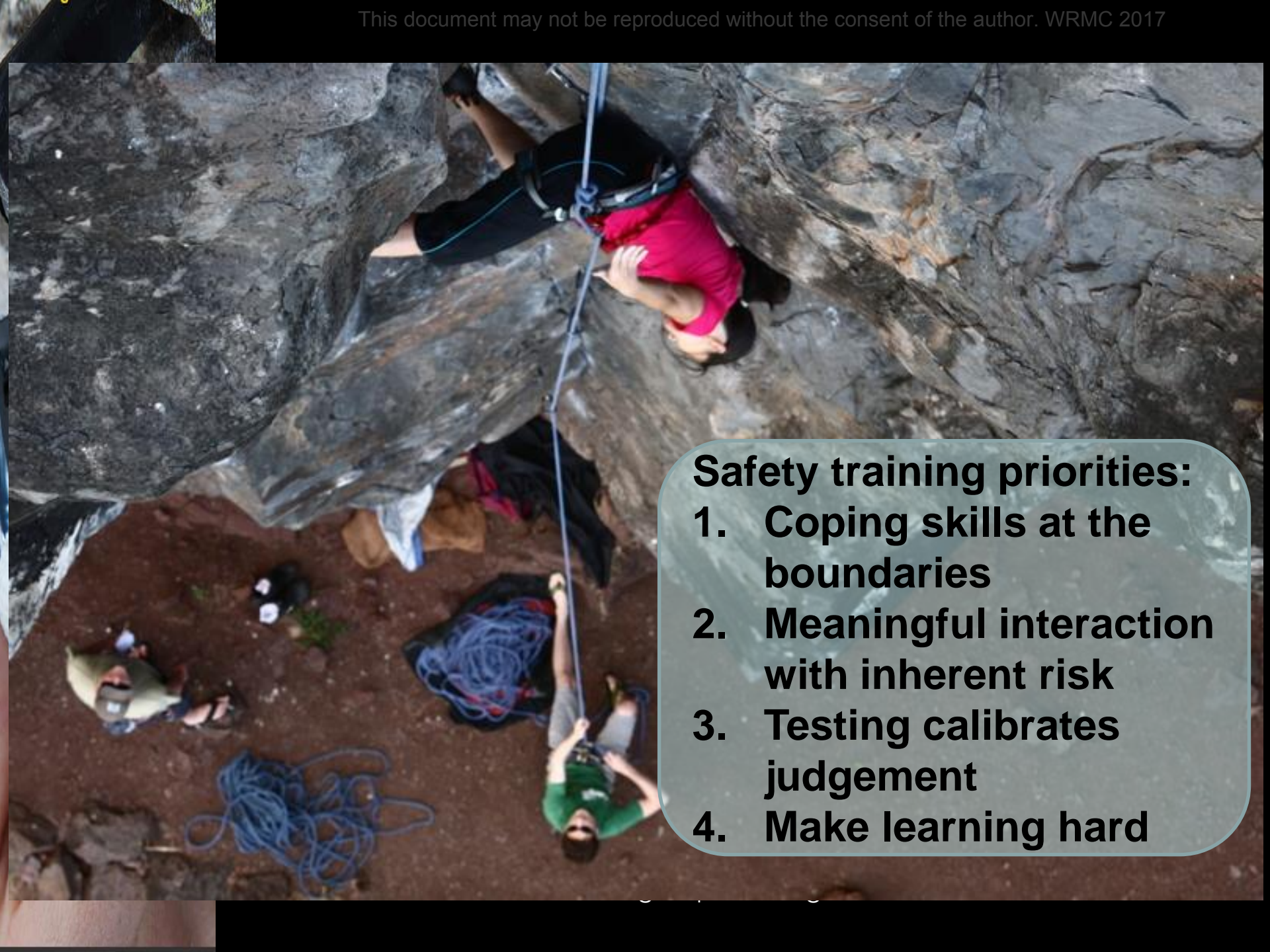






**Safety training priorities:**

- 1. Coping skills at the boundaries**
- 2. Meaningful interaction with inherent risk**
- 3. Testing calibrates judgement**
- 4. Make learning hard**

A photograph of a rock climbing scene. A person in a red shirt is climbing a dark rock face. Below them, another person in a green shirt is managing a rope. On the ground, there are several coils of blue rope and other climbing gear. The scene is set outdoors on a rocky terrain.

## Safety training priorities:

1. Coping skills at the boundaries
2. Meaningful interaction with inherent risk
3. Testing calibrates judgement
4. Make learning hard



# Training for critical events

- Meaningful interaction w inherent risks
- Illuminate failure points
- Define boundaries

Normal via Non Normal

Coping skills at boundaries

Sensemaking

Multiple schema





# DIGRESSION ALERT!!

- Testing calibrates judgement
- Make learning hard



# Training for critical events

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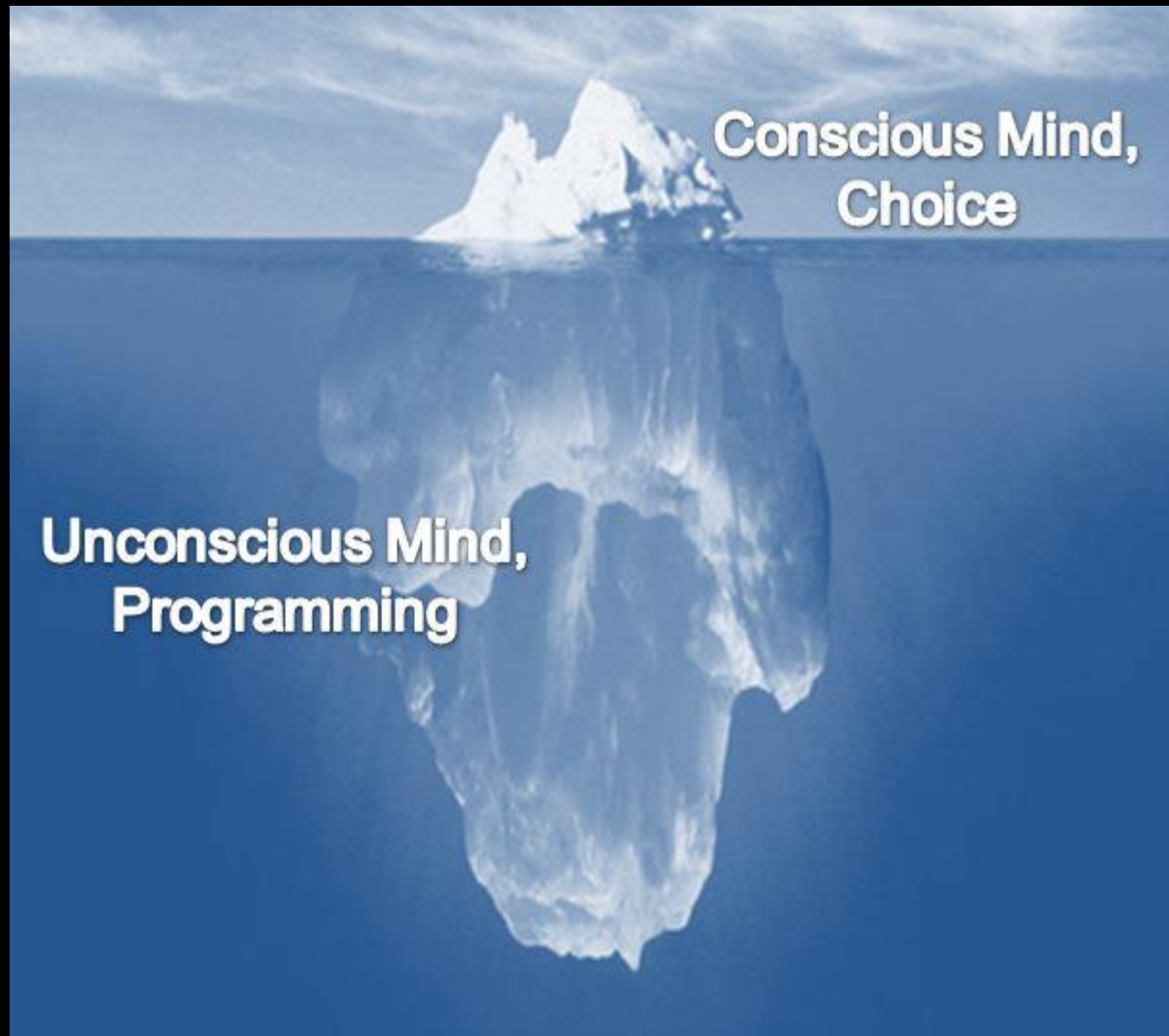
Normal via Non Normal

Coping skills at boundaries

Sensemaking

Multiple schema









# Accelerated Training

- Situational awareness
- Recognize patterns
- Defined roles
- Empowerment to act



# Motivated Behaviour Model:

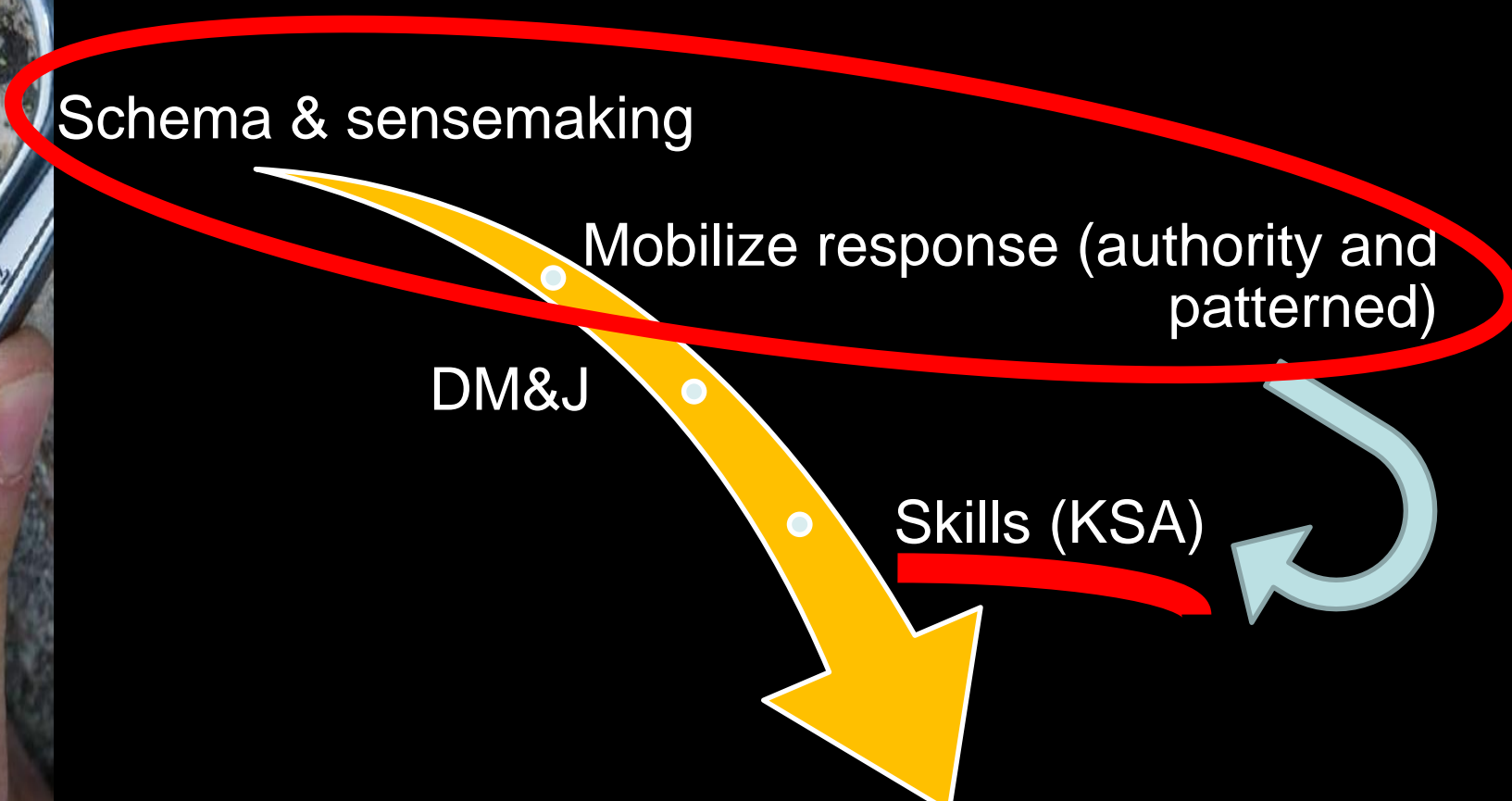
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# Safe failure v. fail safe





# Ends vs Means

- Structure meaningful interaction with inherent risks
  - Case study org IRF's
  - Crux points on routes
  - Reasonably foreseeable hazards



# Take away points:

1. multiple schema > a single durable
2. define roles and authority to act
3. train from boundaries inwards
4. Safe failure over fail safe



## References / further reading

- 
- Brown, P. C., Roediger, H. L., & McDaniel, M. A. (2014). *Make it stick*. Harvard University Press.
- Jackson, J. & Heshka, J. (2010). *Managing Risk, Systems Planning for Outdoor Adventure Programs*, Direct Bearing Inc., Palmer Rapids, ON.
- Rasmussen, J. (1997). Risk management in a dynamic society: a modelling problem. *Safety science*, 27(2), 183-213.
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- Reason, J. (1997). *Managing the Risks of Organizational Accidents*. Ashgate, Aldershot, England.
- Weick, K. (1988). 'Enacted Sensemaking in Crisis Situations'. *Journal of Management Studies* 25:4

# Managing Risk

Systems Planning for Outdoor Adventure Programs



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Book info:

[TheManagingRiskBook.com](http://TheManagingRiskBook.com)

Adventure  
Risk Report

[AdventureRiskReport.blogspot.com](http://AdventureRiskReport.blogspot.com)

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