

ESRA 2017 Plenary session



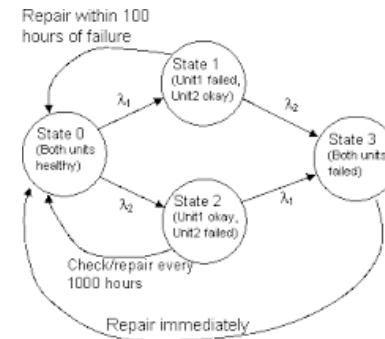
The risk analyst of the future: core competencies and specialties

Terje Aven and Enrico Zio

Risk analyst here interpreted in a broad sense covering safety and reliability
- and assessment, communication, management, ...

Are you an engineer,
statistician, ... with
some competence in
risk analysis ?

Or is your field and
science – your
profession - risk
analysis ?



Is your main interest to gain risk knowledge about a specific system ?

Or is it to improve concepts, principles, methods and models for risk analysis?

What will happen? What might go wrong? Why and how might it go wrong? What are the consequences? ...

How should we best characterise risk, deal with uncertainties etc.

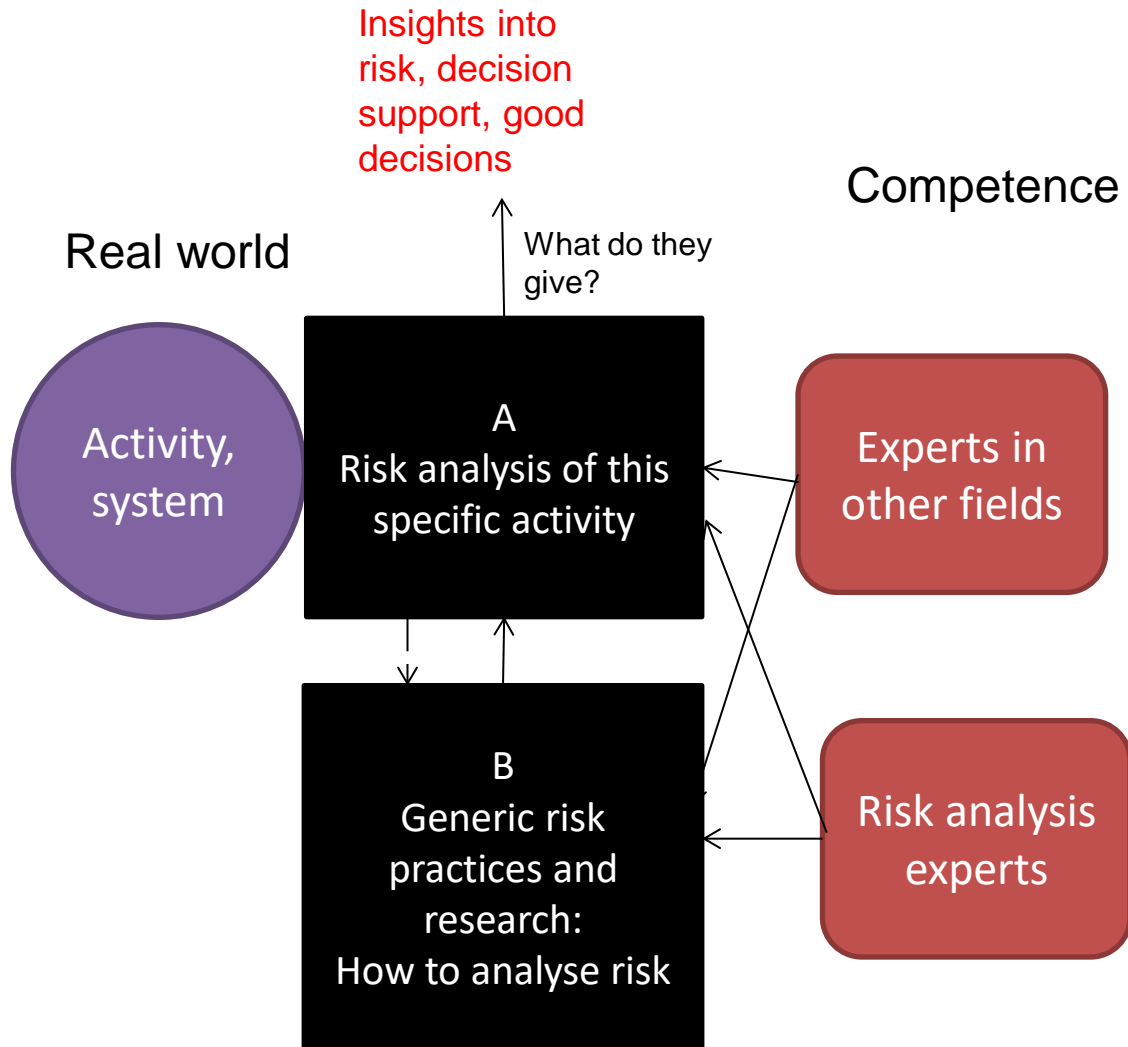
Risk Analysis

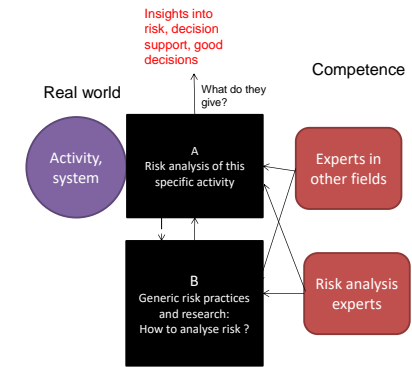
A

Risk analysis of a specific activity

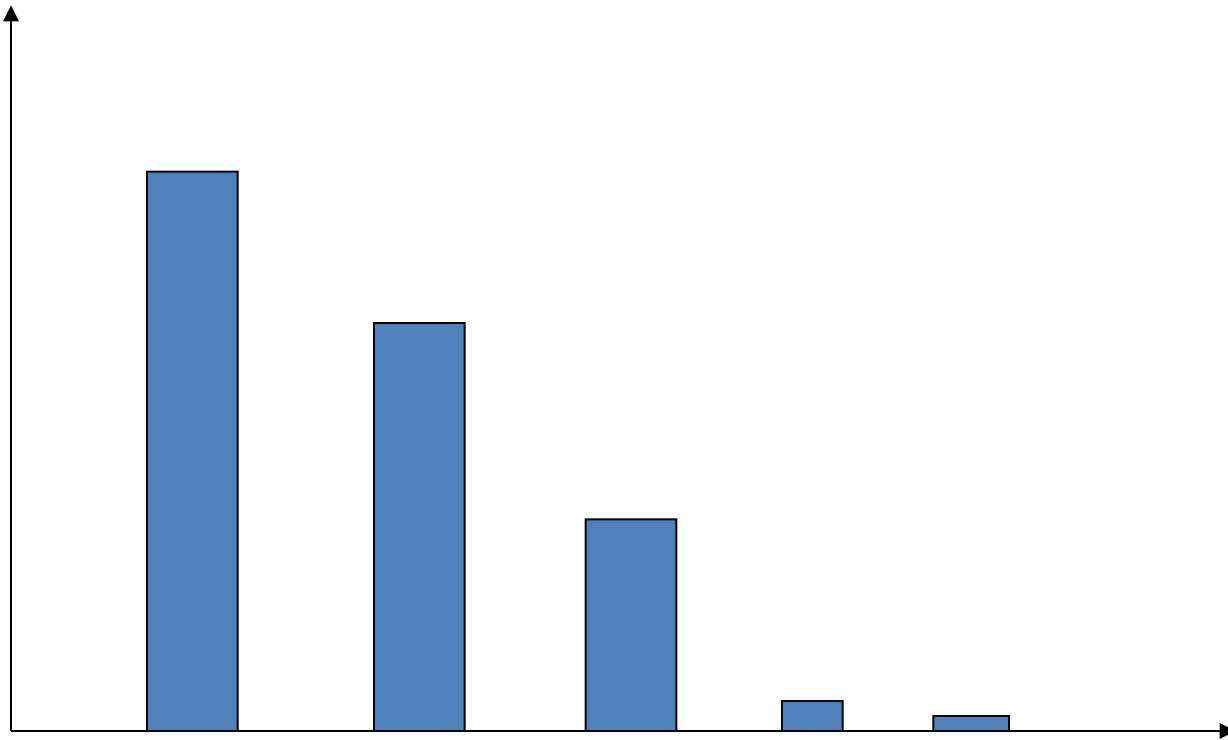
B

How to analyse risk

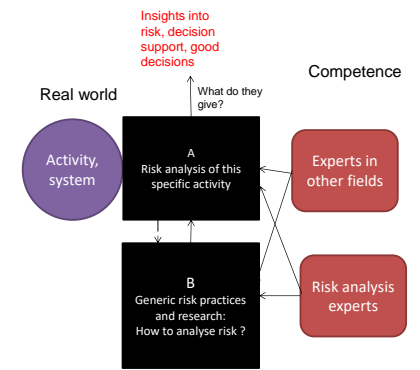


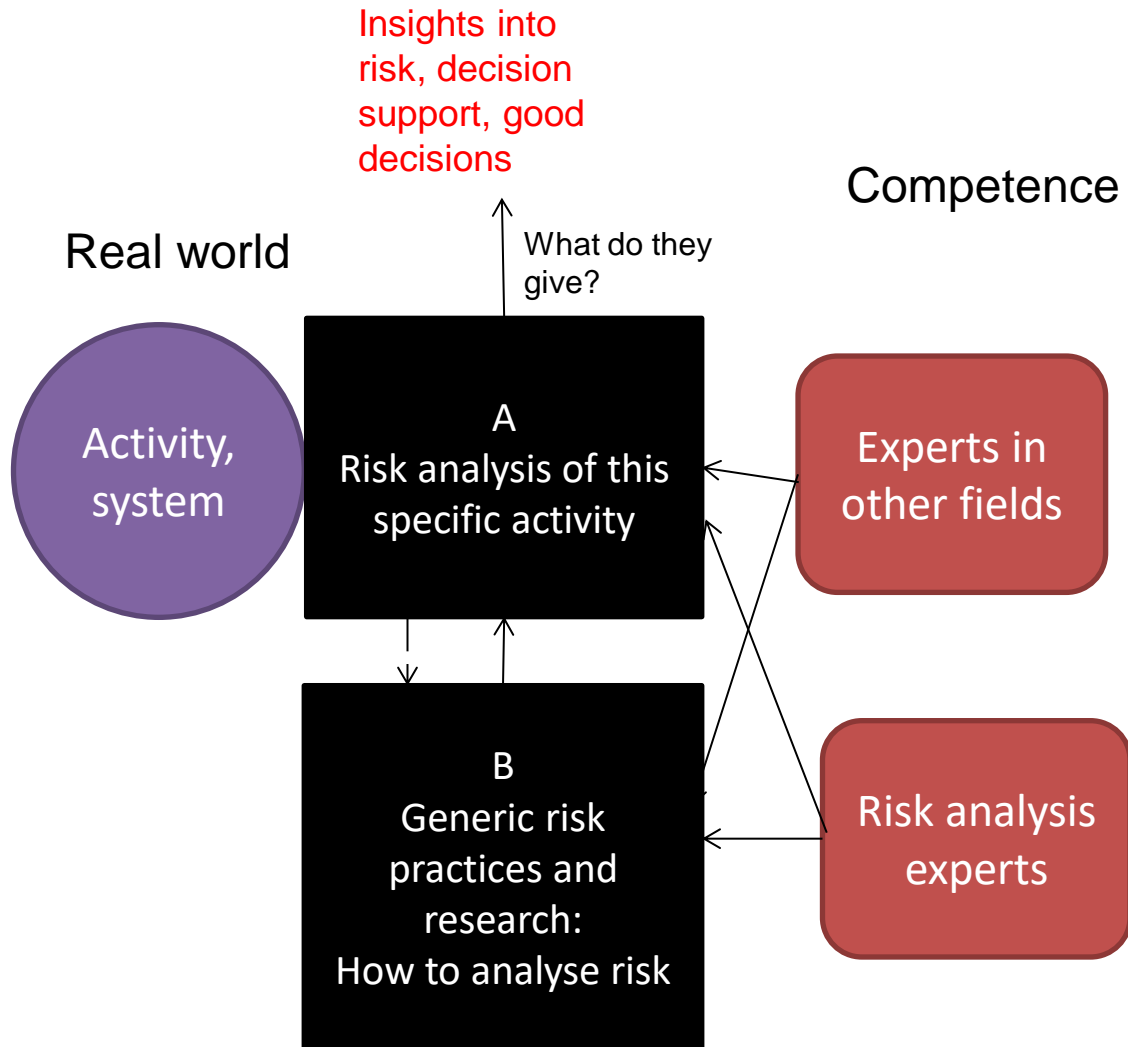


Piper Alpha



**Number of
fatalities**





I am a risk analysis scientist (focus on B) What do I work with?

Improving risk analysis
approaches methods
and models



Fundamental theoretical research on
risk analysis concepts, principles, ...

Empirical research
on risk and risk
analysis

Attend conferences
and write papers

Supporting knowledge
generation related to risk
and the tackling of risk
issues in different areas
(medicine, engineering,
transportation, finance,
etc.)

I am a risk analysis practitioner (focus on A) - What do I work with ?

Performing different
type of risk analysis
studies



Supporting knowledge
generation related to risk
and the tackling of risk
issues in different areas
(medicine, engineering,
transportation, finance,
etc.)

Guiding people how to use risk analysis
concepts, principles, methods and models
to understand, assess, characterise,
communicate and manage risk

Improving risk analysis
practices

Attend conferences and
co-authoring papers

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Risk Analysis

Glossary

A
Risk analysis of this specific activity

Core Subjects

B
How to analyse risk

www.sra.org/resources

Core subjects

1. Fundamentals
2. Risk assessment
3. Risk perception and communication
4. Risk management and governance
5. Solving real risk problems and issues

1 Fundamentals

- What is risk analysis?
- What is risk?
- Knowledge
- Uncertainty and imprecision
- Probability
- Variation
- Sensitivity analysis and importance measures analysis

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- What is risk analysis?
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- **Uncertainty and imprecision**
- Probability
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Core subjects

- Fundamentals
- Risk assessment
- Risk perception and communication
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Discussion: What are the key topics of the future for risk assessment, risk management ?