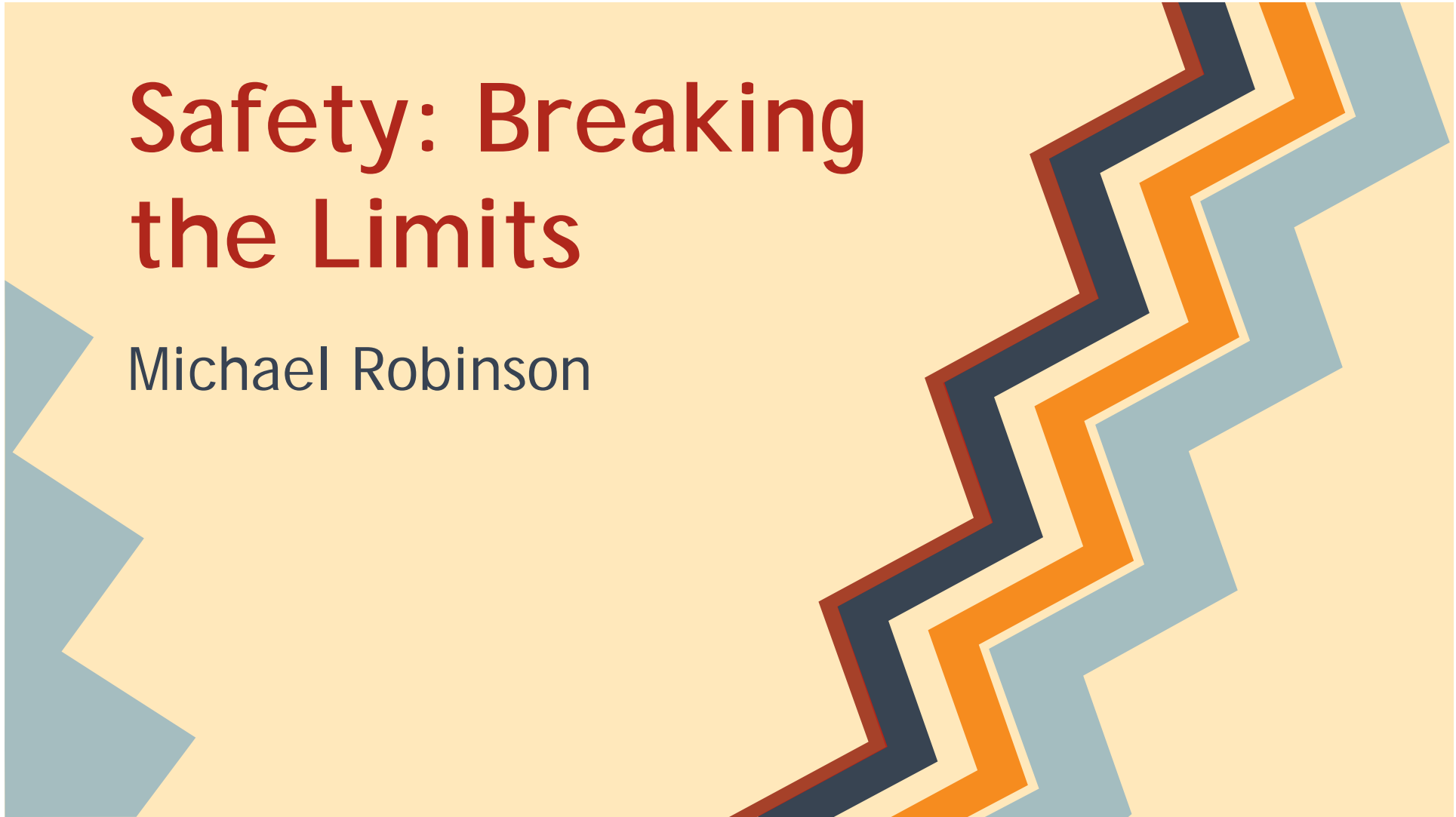


Safety: Breaking the Limits

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Intro

The Limitation of Safety compares the “High Reliability Theory” and the “Normal Accidents Theory”. The question was posed, “Why haven’t we had any mishaps with nuclear weapons?”, which lead to the question, “Is it possible to prevent mishaps?” There are two schools of thought that answer this question and they have two different answers

Yes and No

High reliability theory answers “Yes”

With proper planning you can stop an accident from occurring

Normal Accidents Says “No”

You can only delay an accident. It is inevitable that something will happen that we can not prepare for.

Competing Perspectives on Safety with Hazardous Technologies

High Reliability Theory	Normal Accidents Theory
Accidents can be prevented through good organizational design and management	Accidents are inevitable in complex and tightly coupled systems
Safety is the priority organizational objective	Safety is one of a number of competing objectives
Redundancy enhances safety: duplication and overlap can make “a reliable system out of unreliable parts”	Redundancy often causes accidents: it increases interactive complexity and opacity and encourages risk-taking
Decentralized decision-making is needed to permit prompt and flexible field-level responses to surprise	Organizational contradiction: decentralization is needed for complexity, but centralization is needed for tightly coupled systems
A “culture of reliability” will enhance safety by encouraging uniform and appropriate responses by field-level operators	A military model of intense discipline, socialization, and isolation is incompatible with democratic value
Continuous operations, training, and simulations can create and maintain high reliability operations	Organizations cannot train for unimagined, highly dangerous, or politically unpalatable operations
Trial and error learning from accidents can be effective, and can be supplemented by anticipation and simulations	Denial of responsibility, faulty reporting, and reconstruction of history cripples learning efforts.

High Reliability

- Naive but positive way of thinking
- Does not really account for outside influences.
- Assumes everyone will have similar objectives (Safety)
- Everyone has to want same thing for this to work
- Not impossible but not likely.

Normal Accidents

- Normal accidents theory is pessimistic but realistic.
- The more people who want different things the more likely you are to have an accident.
- There are a lot of outside and unexpected variables in the world.
- Nothing is perfect and you often are not afforded a large margin for error for every situation.
- Some accidents will happen and they may be dire.

Whose right?

High Reliability

- I don't think this is impossible for safety to be the key thing of focus here.
- The big deal with nuclear weapons development
- High Reliability looks at solutions without anticipating all problems

Normal Accidents

- Where high reliability expects people to unite to a common goal normal accidents claims that cannot be done.
- Its all problem and no solution.

Highly situational

I think that you must pull from both schools of thought to solve your issues and depending on the issues you may lean more to one school than another.

Nuclear Weapons Situation

- I say that depending on the situation a careful mix of both schools of thought can keep you safe.
- No one with nuclear weapons wants a mishap. (High Reliability)
- The want isn't enough to stop accidents from happening
- Outsiders may want accidents(Normal Accidents)
- It is impossible to predict the future (normal)

but

- as long as the system has safety as a main focus if conditions are right it is possible (it may be extreme ,but possible)