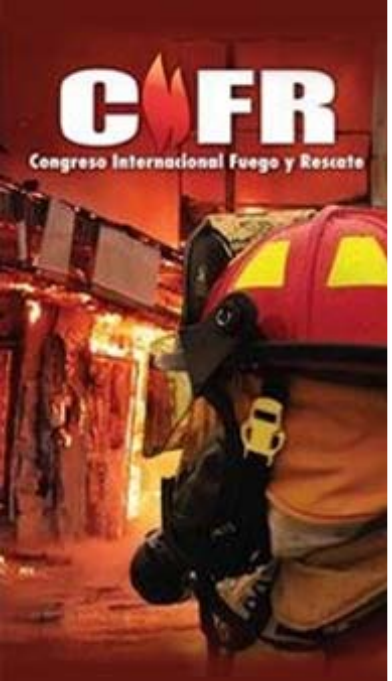

Live Fire Training as Simulation

The Role of Fidelity

Valdivia, Chile
January 2010

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Not just what and how, but why!

For the things we have to learn before we can do, we learn by doing.

Aristotle
Nicomachaen Ethics

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Understanding & Application

Is there a disconnect between the training and operational contexts?

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What's the Difference?

- Fuel Characteristics
- Fuel Load
- Ventilation Profile
- Heat Release Rate
- Thermal Environment

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What's the Difference?

Improperly designed training may provide the learner with an inaccurate perspective on the fire environment which can lead to disastrous consequences.

Not all that is learned is taught!

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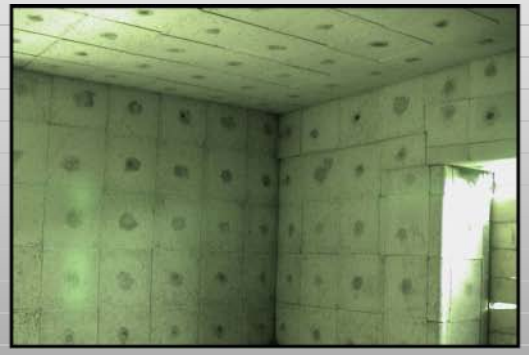
The Building

Purpose built training structures differ from those more typical of the built environment.

Gypsum Board



Ceramic Tile

Steel

- Thermal Conductivity
- Specific Heat
- Compartmentation
- Ventilation Profile

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The Fuel

NFPA 1403 Specifications and Limitations

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Fidelity

The extent to which a simulation reflects reality

- Physical Fidelity
- Functional Fidelity

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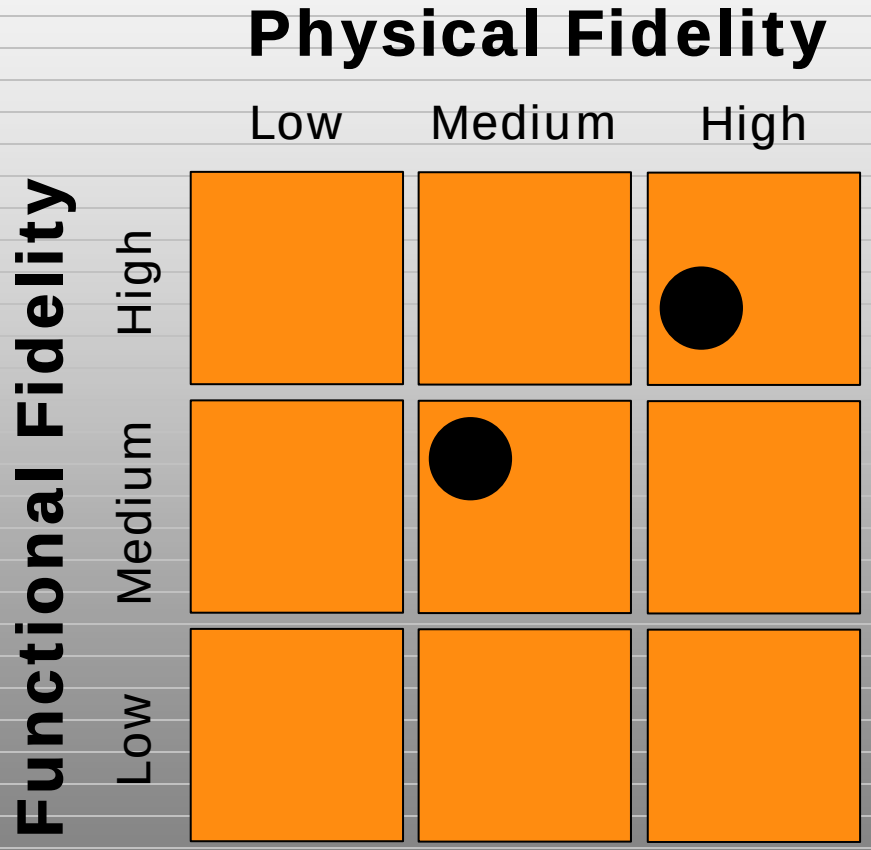
A Simple Model



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Importance of Fidelity

- Simulations are intended to model reality
- On the surface it high fidelity makes sense.
- All models are wrong, but some are useful!

A more important question is: What aspects of fidelity are important?

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Important Questions

- What degree of simulation fidelity is necessary?
- What are the key elements of fidelity for various learning outcomes?
- Is live fire training the only way to achieve these outcomes?

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What's the Difference?

Training effective task performance in stressful situations requires that the following conditions be met:

- *Exposure and conditioning to stressors*
- *Prevent built-up anxiety*
- *Minimize interference with skill acquisition*

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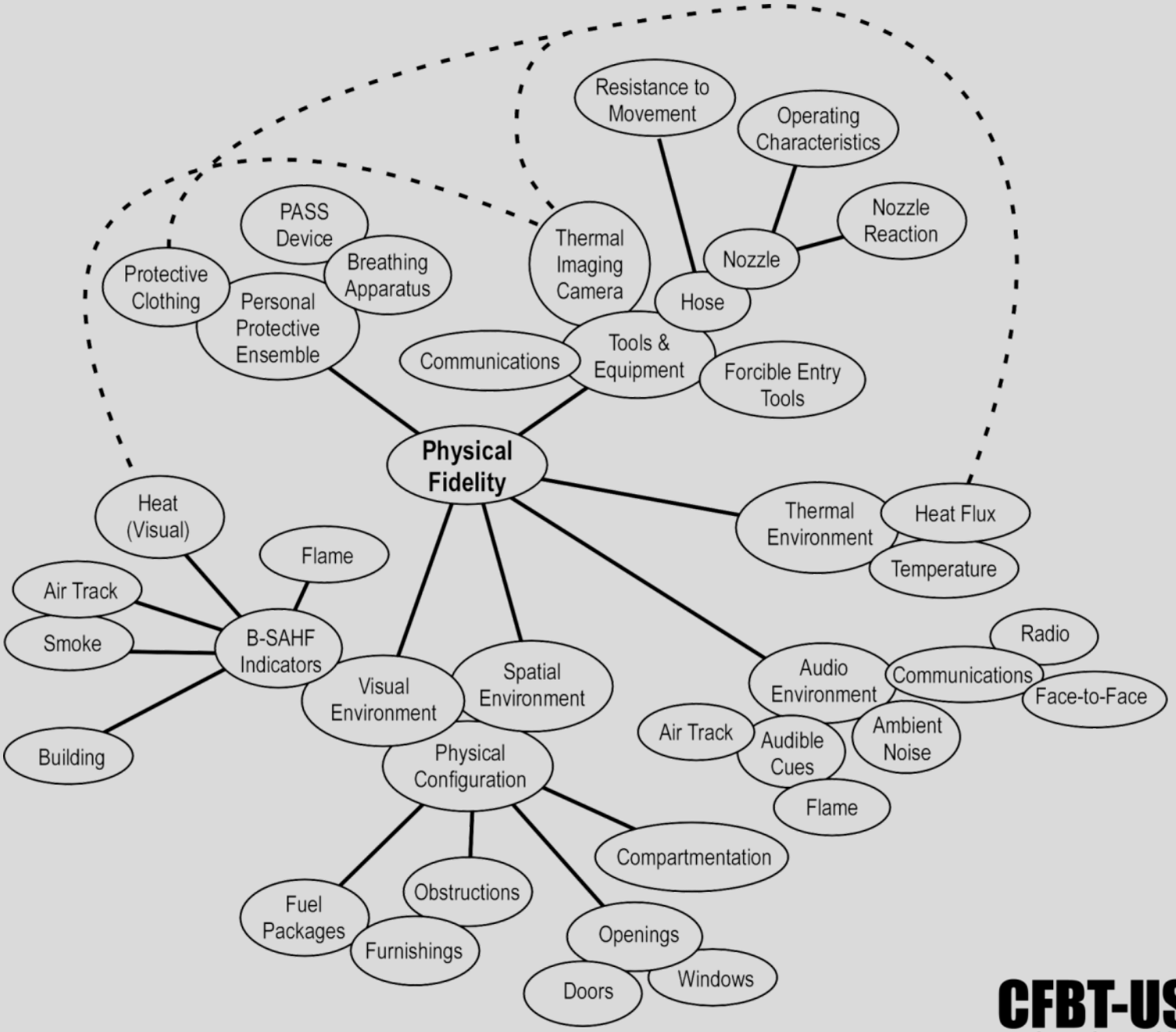

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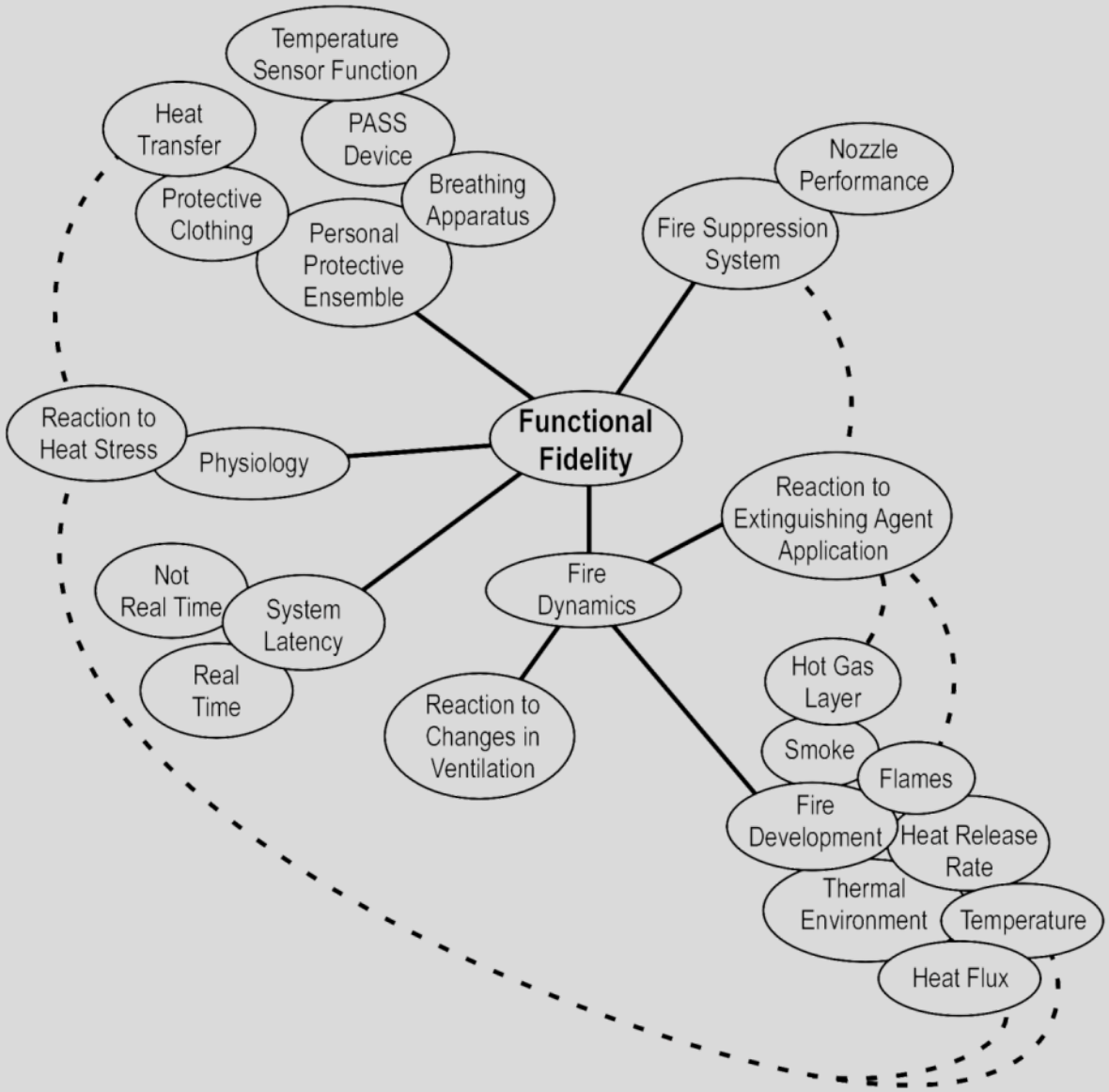

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Maintaining Balance

Fidelity must match the purpose of training activity!

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Not just what and how, but why!

Intended Use

- Fire development
- Nozzle technique
- Door entry
- Risk assessment
- Integrated tactics

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Not just what and how, but why!

Questions Remain

- What are the most effective methods of developing firefighters' understanding of compartment fire behavior?
- What is necessary to effectively facilitate transfer of this knowledge from training to the operational context?

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Not just what and how, but why!

Questions Remain

- What level of fidelity is necessary in live fire training do develop and maintain critical skills?
- How can technological simulation (computer or video based) be used to augment live fire training to maintain proficiency?

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Not just what and how, but why!

Questions Remain

To what extent might non-live fire simulation (e.g., two dimensional or immersive virtual reality computer based simulation) be used to develop compartment firefighting competencies?

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British Fire Service College

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CONTAINER FOR TRAINING IN
OFFENSIVE INDOOR FIRE FIGHTING
DEVELOPED BY RÄDDNINGSVERKET
(SWEDISH RESCUE SERVICE AGENCY)
RÄDDNINGS VERKET
Fire & Rescue Academy Malaysia

Fire & Rescue Academy Malaysia


Fire & Rescue Academy Malaysia

Washington Hall-Lancashire Fire Brigade (UK)

Swedish Civil Contingencies Agency College-Sandö

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