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Content

- What is human factors?
- Varieties of human work – which perspectives do I need to be aware of?
- SEIPS – how can I look at a situation from different viewpoints?
- Summary

What is Human Factors?

Definition(s)

Enhancing human performance through an understanding of the effects of tasks, equipment, workspace, teamwork, culture and organisation on human behaviour and abilities...

...and an application of that knowledge in clinical settings.

Ken Catchpole

Professor of Human Factors at Medical University of South Carolina

Integrated design to improve life, wellbeing and performance

Chartered Institute of Ergonomics and Human Factors

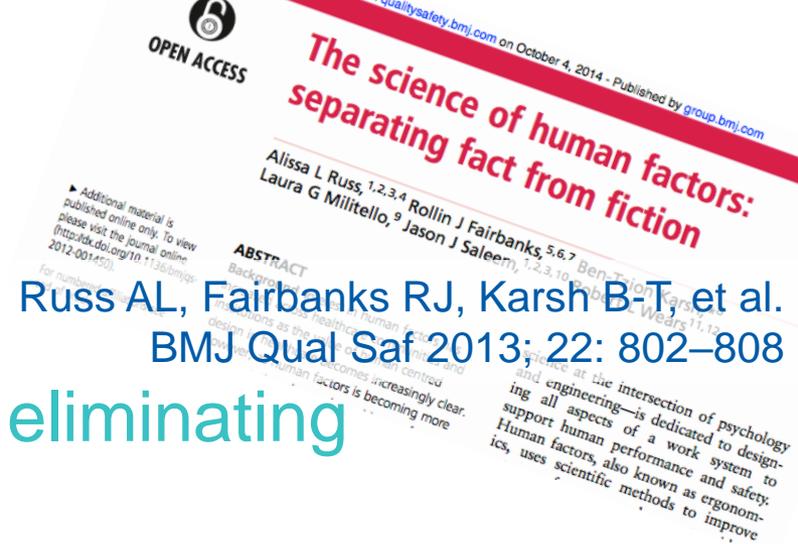
Fitting the system to the person

What HF is

- Understanding of interactions among humans and other elements of a system.
- How elements such as our environment, the equipment we use, and the systems within which we work and live interact with the way human brains and bodies work.
- The aim is to make our lives, both in and out of work, as easy, safe and well adapted to human behaviour and physiology as possible.
- When something is well designed you shouldn't notice as it just works without you having to think about it!

What HF isn't

- Fiction: Human factors is about eliminating human error.
- Fact #1: Human factors is about designing systems that are resilient to unanticipated events.
- Fiction: Human factors addresses problems only by teaching people to modify their behaviour.
- Fact #2: Human factors addresses problems by modifying the design of the system to better aid people.



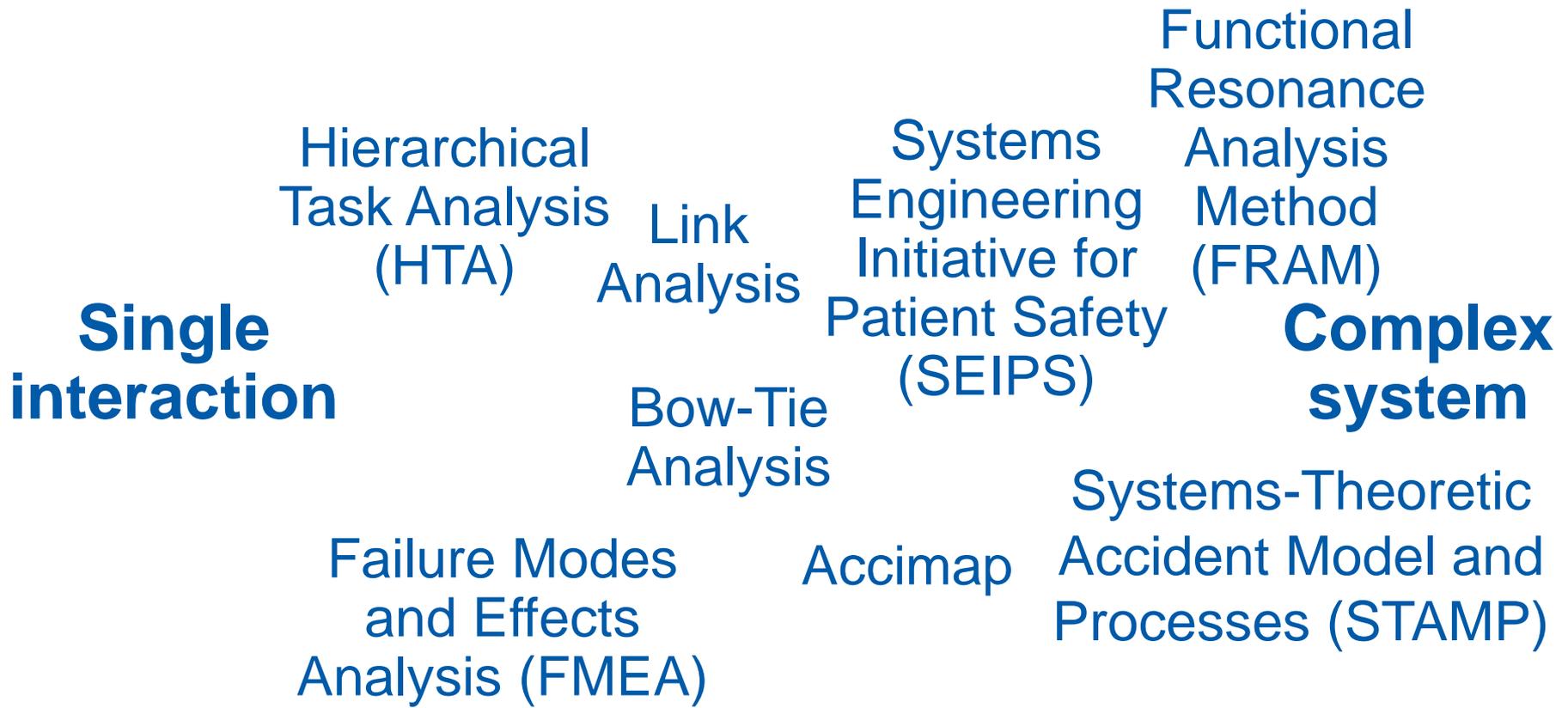
What HF isn't

- Fiction: Human factors is focused only on individuals.
- Fact #3: Human factors work ranges from the individual to the organisational level.
- Fiction: Human factors consists of a limited set of principles that can be learnt during brief training.
- Fact #4: Human factors is a scientific discipline that requires accredited training; most human factors professionals hold relevant graduate degrees.



A (very) few methodologies

- Very broad – single interaction between person and object to highly complex system



**Varieties of human work
or
Work As Imagined vs Work
As Done**

**Which perspectives do I need
to be aware of?**

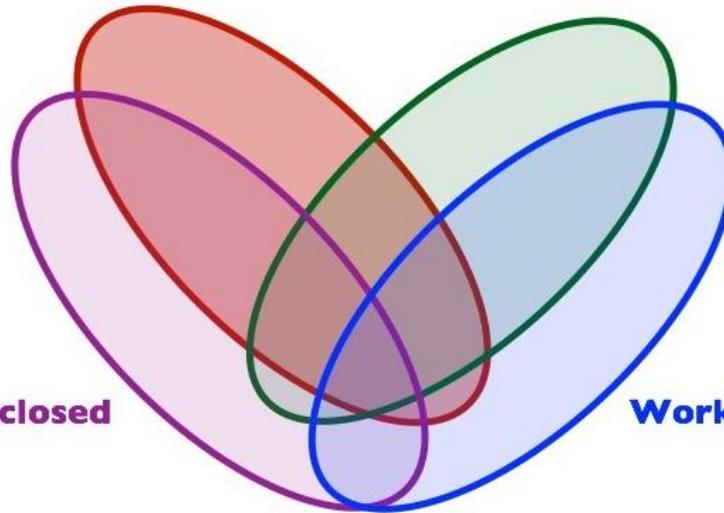
Work As Imagined vs Work As Done

What we think we
and others do in
our jobs

Work-as-Imagined

Work-as-Prescribed

What we and
others are told to
do in our jobs (e.g.
policy/ procedure)



What we and
others say we do
in our jobs

Work-as-Disclosed

Work-as-Done

What we and
others actually do
in our jobs

Work As Imagined vs Work As Done

What we think we
and others do in
their jobs

Work-as-Imagined

Work-as-Prescribed

What we and
others are told to
do in our jobs (e.g.
policy/ procedure)

Which one are you looking at? (Or which combination?)

What we and
others say we do
in our jobs

Work-as-Disclosed

Work-as-Done

What we and
others actually
do in our jobs

SEIPS

How do I know what elements were at play in that situation?

SEIPS

- **Systems Engineering Initiative for Patient Safety**
 - the full system looks at contributions to healthcare transactions from professionals and patients
 - we will just look at the first part – breaking down a single situation
 - Link to the original paper: bit.ly/2KNvCFu
- A way of breaking a situation down into different elements to see what contributes to the successful or unsuccessful completion of tasks
- Other similar models exist but SEIPS is the only one specifically designed for healthcare

SEIPS in practice

Person/people

e.g. role, experience, stress, fatigue, team support

Tasks

e.g. frequency, sequence, complexity

Organisation

e.g. staffing ratios, training, policies, culture

Tools and technology

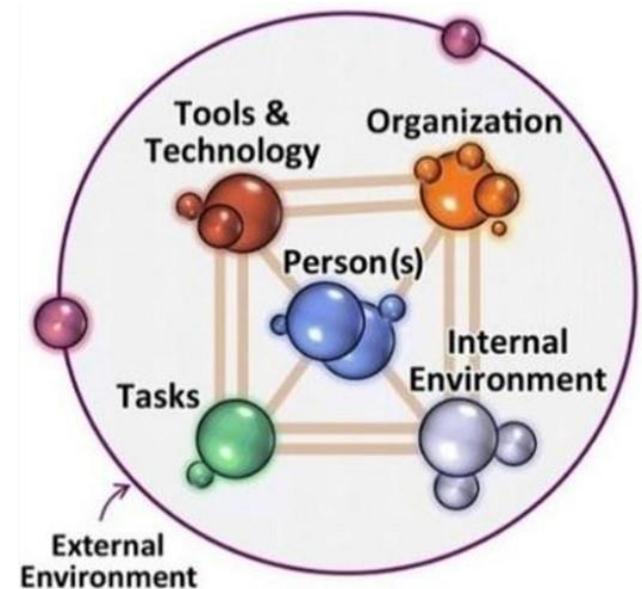
e.g. usability, availability, familiarity

Internal environment

e.g. workspace, signs, noise levels, lighting

External environment

e.g. regulations, laws, national guidance

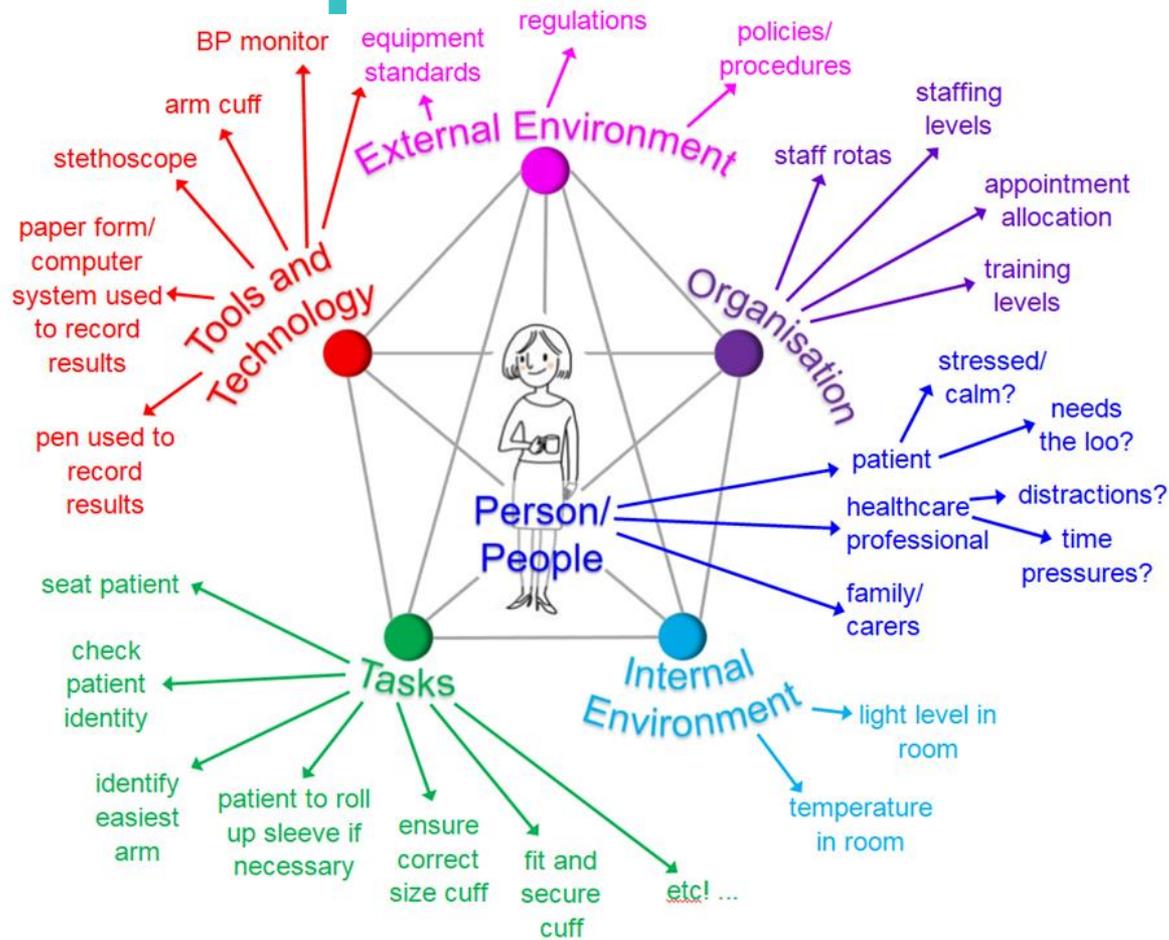


Example situations

Nurse taking and recording a patient's blood pressure

This session

Example 1: Nurse taking and recording a patient's blood pressure



Example 2: This session

- **External environment**

- Aims and outcomes of the session – you and me
- What the organisers want out of the session

- **Internal environment**

- Light levels
- Room temperature
- Distractions – kids homeschooling in the background?!
- Microphone/speakers – can you hear me?

- **Tasks**

- Me – conveying new information to you; getting the slides, etc to work!
- You – listening and learning new information; thinking of how you could apply new knowledge; asking me questions

Example 2: This session

- **Tools and technology**
 - Me – laptop, screen, cables, training/competency?
 - You – chair, desk, laptop, speakers
- **People**
 - Me, you, organisers
 - Fatigue, illness, stress, etc
- **Organisation**
 - Teamwork – e.g. covering shifts, communication, social relationships
 - Organisational culture, patient safety culture, supervisory/management style
 - Rewards and incentives
 - Work schedules, rotas

**How could human factors
enhance my work?**

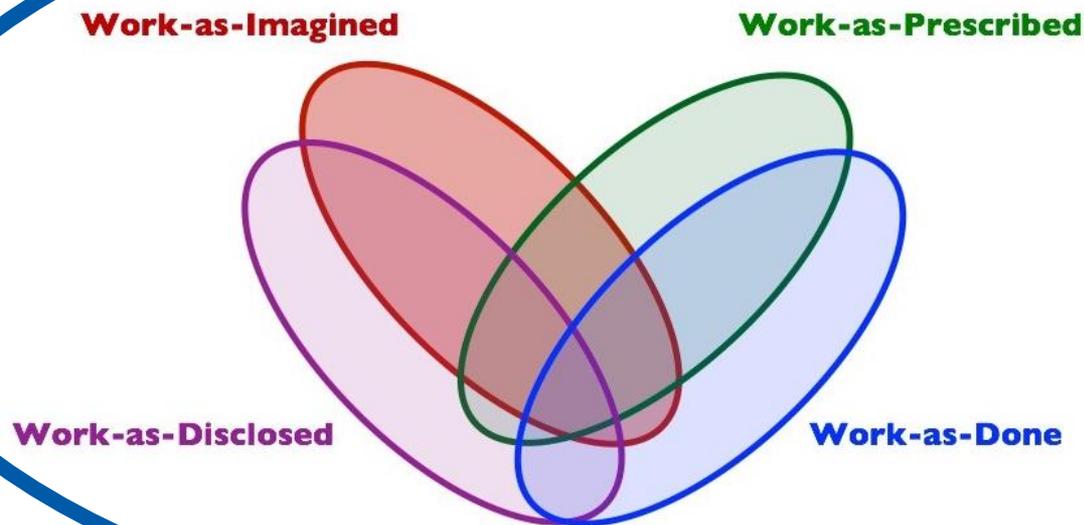
Human factors (HF) projects

- What is going on? What are the issues? What is going right?
- How can we find out? What methods are appropriate?
- Data collection
- Data analysis
- What do the results mean?
- Potential solutions?
- Test a solution – does it solve the issues?



Human factors (HF) projects

Whole System Perspective



Human factors (HF) projects

- Essentials:
 - Do not assume everyone's experience of a process/scenario is the same
 - Involve those who do that work from the beginning
 - Get multidisciplinary opinions (doesn't have to be you asking the questions)
 - What can we learn from what went right as well as what went wrong?
 - Varieties of human work

Summary

- Human factors is a broad discipline, which takes a whole systems approach
- Think about the information you have gathered – what perspective did that come from? Was it work as imagined, done, etc?
- Think about the whole system the staff were operating within – did the system guide them to take those actions/decisions?
- Human factors perspectives and methodologies can enhance investigations