

Design Guideline Gap and 2 Feedback Loop Limitation



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History of this research

- ▶ 2001 Analysis and prediction of Design & Emotion field (D&E conference, Loughborough)
- ▶ 2009 Critical analysis of D&E literature comparing history of D&E with predictions of 2001 (IASDR conference, Seoul)
- ▶ Helpful comments by Don Norman and Paul Hekkert

Two 'gaps' in Design & Emotion

Two issues cause Design and Emotion design failures:

- ▶ Design guideline 'gap'
- ▶ 2 Feedback Loop Limitation

Two primary purposes of design research are:

- ▶ **Guidelines** for producing specific design outcomes
- ▶ Prediction of **behaviours** resulting from design outcomes

If Design and Emotion research cannot fulfill these two tasks it is useless to designers.

Why important?

If Design & Emotion research doesn't fulfil these two tasks or gives the wrong answers then:

- ▶ Design failures
- ▶ Disasters and losses for users
- ▶ Financial claims against designers

Design Guidelines

The role of design guidelines is to direct design decisions.

Design guidelines specify elements of design solutions

To be effective, design guidelines must be concrete and specific.

- ▶ *Use this font, with this leading and place the text in this way*
- ▶ *Display images with this kind of pan and zoom at these timings*
- ▶ *Use a maximum piston speed of 30 m/s for these materials*
- ▶ *The optimal layout for this kind of circuit is as shown'*

Research and design guidelines

Implicit claim in D&E literature is:

Design and Emotion research benefits designers because it
provides design guidelines



Evidence – the D & E research literature

Literature review indicates widespread failure to create design guidelines from D& E research

This problem has been ‘hidden in full view’

- ▶ Confusion between ‘information given to designers’ and ‘information to guide design decisions.’



Evidence: Design & Emotion website

An easy to access example are the 'tools and methods' on the D&E society website. www.designandemotion.org

None of the D&E research methods result in design guidelines.

- ▶ 'Cabinet'– data collection method
- ▶ 'Vision in Product Design'– idea generation method/ business process flowchart
- ▶ All the 'design research methods on the D&E website show the 'design guideline gap' except the Kn6 IBV Kansei method – an attempt at brute force linking user info to gross design elements

2 Feedback Loop Limitation

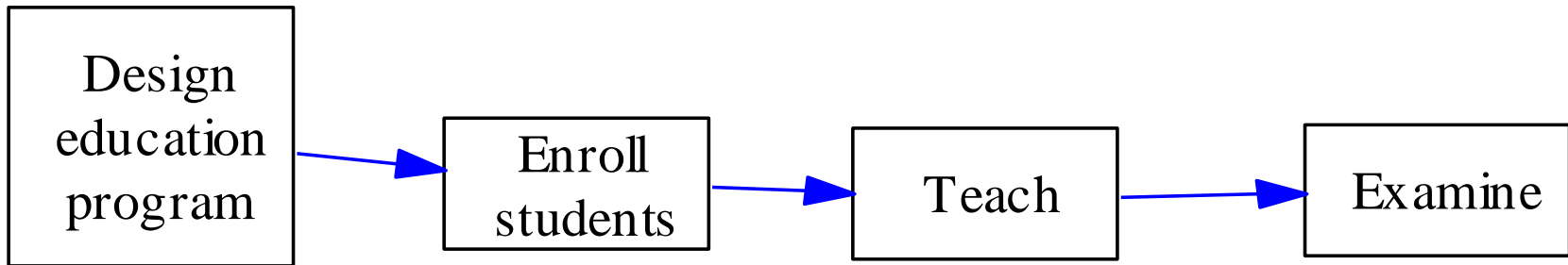


D&E research applies only to 'simple' design situations -

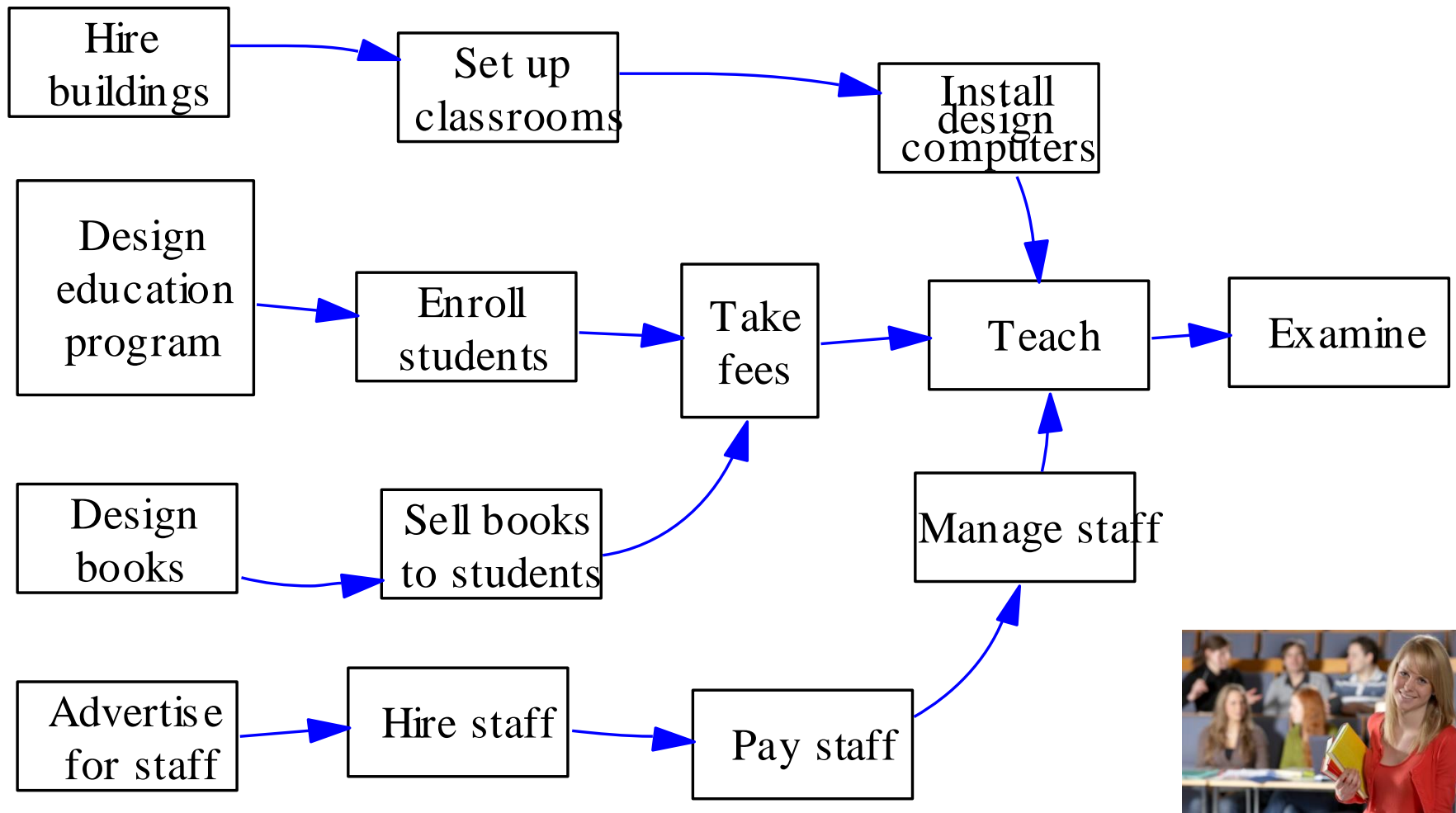
Review of D&E research literature shows:

- ▶ D&E field seems unaware of distinctions between design situations that are 'simple', 'complicated' and 'complex'
- ▶ Almost zero awareness of the 2 Feedback Loop Limitation

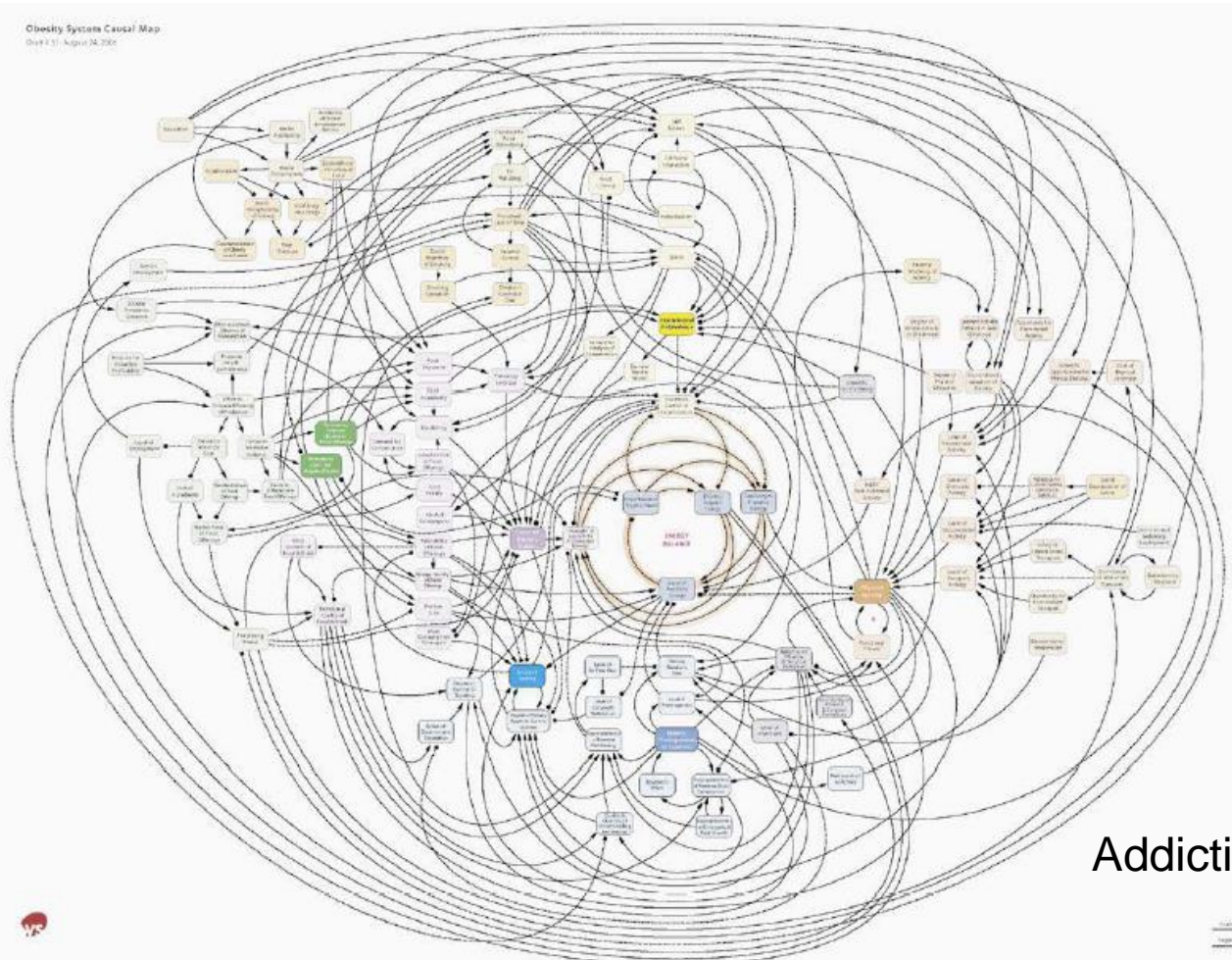
‘Simple’ design situation



‘Complicated’ design situation



‘Complex’ design situation



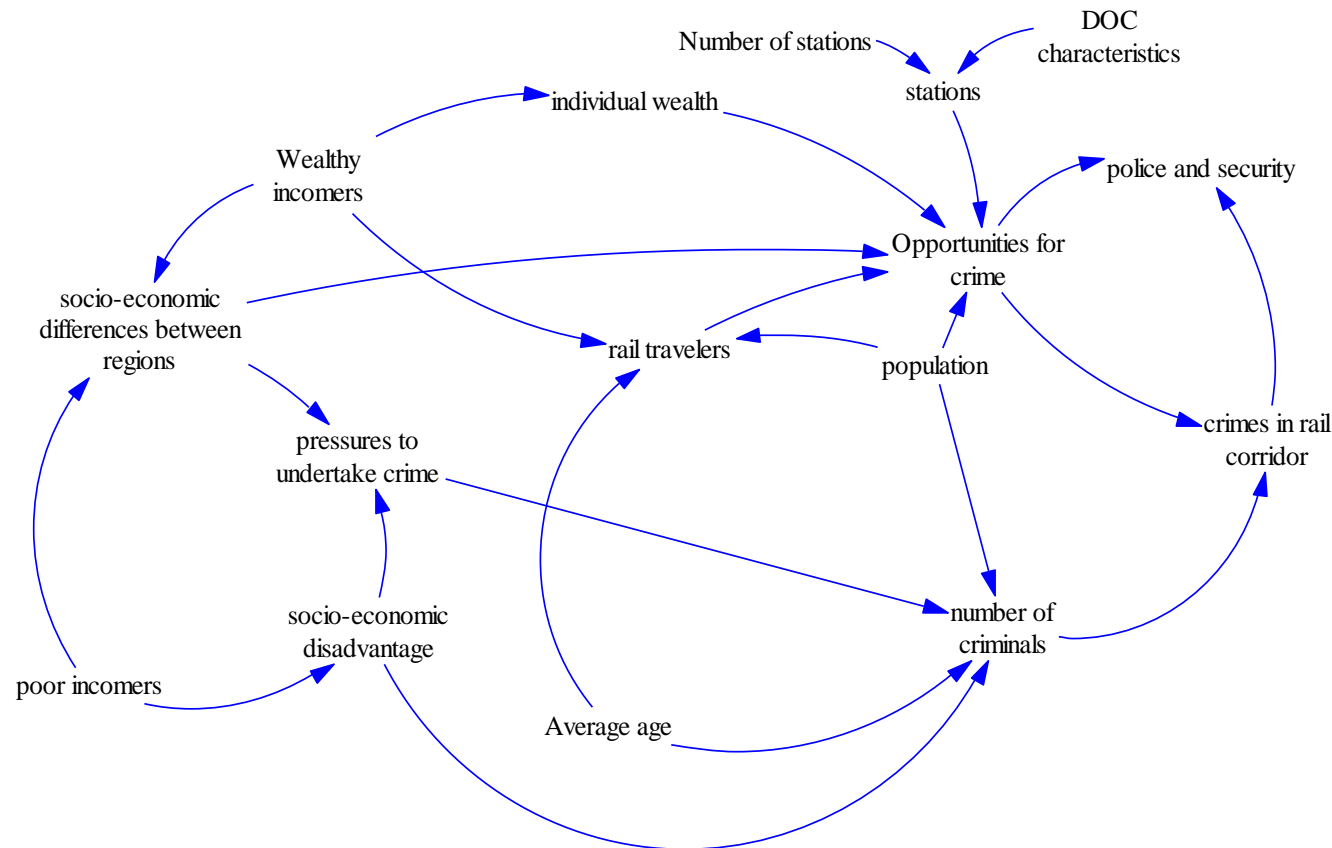
More than
2 feedback loops

Addiction intervention design

Design of obesity reduction: simplified model of multiple interrelated feedback loops <http://www.foresight.gov.uk/Obesity/12.pdf>

Another 'complex' design situation

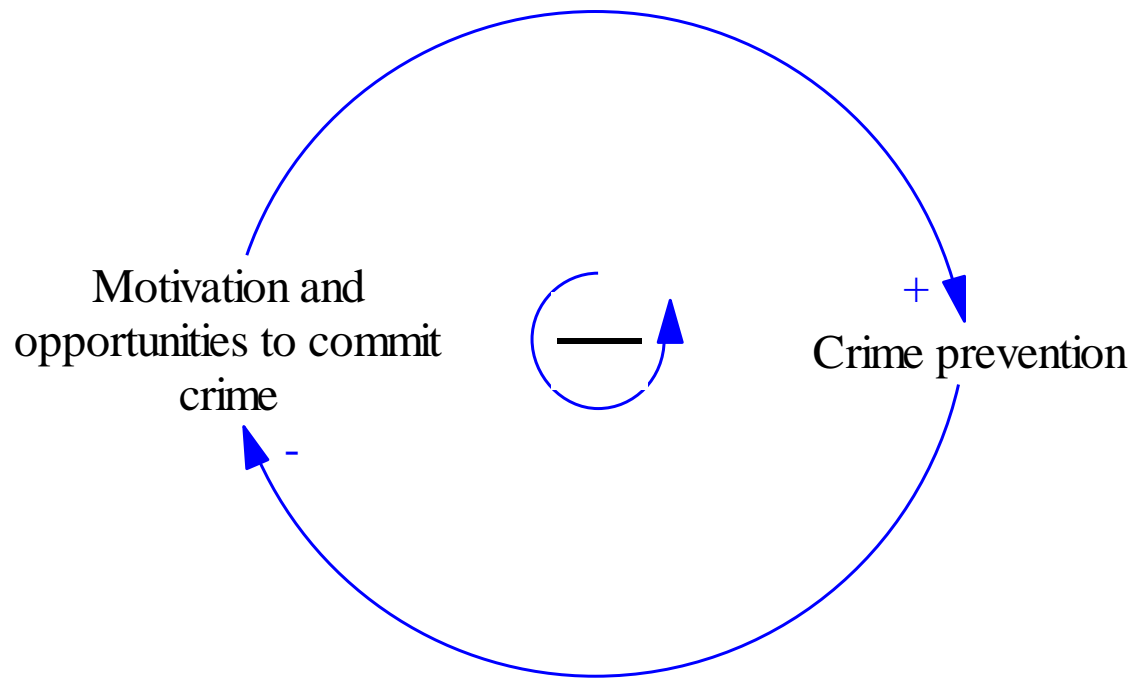
Crime prevention feedback loops in new rail corridor



Preliminary model of relationships affecting crime and crime prevention interventions in a rail corridor
(unpublished Love, T, Cooper, T, Cozens, P, Morgan, F and Clare, J)

Design & Emotion and 'complex' design

Literature of Design & Emotion assumes no feedback loops or at most a single feedback loop.



2 Feedback Loop Limitation

Biologically humans are limited in their cognition and emotional abilities:

- ▶ No one can understand or predict unaided the behaviour of situations with **two or more feedback loops**
- ▶ No amount of thinking, intuition, feelings, creativity, emoting, affective judgement or collaboration works on design situations with 2 or more feedback loops
- ▶ Current approaches to D&E research and design methods typically do not apply to complex design situations.

New directions for D&E

Urgent need for new direction in Design & Emotion:

- ▶ Redirect research funding to develop new ways to create design guidelines
- ▶ Develop new forms of design research and practice for creating of D&E design guidelines
- ▶ Awareness that data about users and emotions and existing D&E research are not design guidelines
- ▶ Development of new forms of D&E research and design methods for complex design situations.

Questions?

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