Introduction to the course

Susan Lechelt

Lecturer in Design Informatics

Susan.lechelt@ed.ac.uk

John Lee

Professor of Digital Media

john.lee@ed.ac.uk

design
informatics

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What we will do today

- Introduction to the course
  - What is the course about?
  - How is the course organized?
  - What you need to do for the the sessions
  - Overview of assignments

- What is a design process?
- How does data fit in this?

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Who are we?

Susan Lechelt
Course Organiser,
Lecturer, Design Informatics
susan.lechelt@ed.ac.uk

John Lee
Lecturer,
Prof. Digital Media
john.lee@ed.ac.uk

Haili Wu
Teaching Assistant,
PhD Student, Design
Informatics

Tutors (PhD Students):

Haili Wu - Design for Sharing Economies
Vidminas Vizgirda - Design for Educational Search Technologies
Melody Wang - Design for Care in Later Life
Jenny Long - Data Visualisation
Billy Franks - Design for Digital Commons
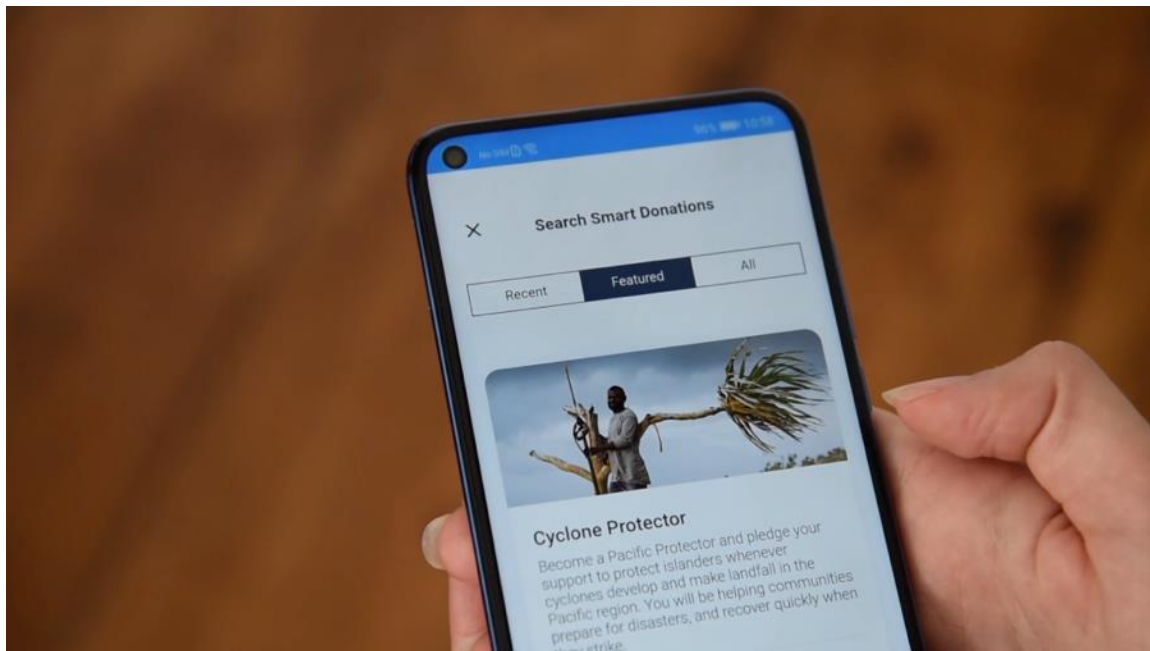**Zonglin Ji** - Applied AI

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What is Design Informatics?

1. It's about _building prototypes_ for people (users) to be _provoked by_ and _live with_

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What is Design Informatics?

2. It's about _peoples lived experience_ of data and data-driven technology

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What is Design Informatics?

3. It's about _ethical design_ of data-driven systems – Data Vis, AI, IoT, Blockchains, amongst others - and advocating for human and environmental values

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What is the course about?

- CDI1 is about _**case studies**_ – you will learn about examples of projects at the intersection of design, data and society.

- CDI1 is also about learning about _**design processes**_, methods and techniques – we will have lectures focused on these and highlight them when discussing case studies.

- In lectures you will learn about design and data case studies; in tutorials you will learn skills for finding and reflecting on case studies, and developing critical perspectives on these – with a focus on _**ethical, social, environmental, legal**_ aspects of data-driven technologies

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Schedule - What does a week look like?

- Mondays
  - Lecture in-person between 15:00-17:00 (start 15:10). These lectures will involve:
    - (i) lectures from Susan and John – usually with "interactive" components (so you're not just listening for two hours!;
    - (ii) us responding to the activities you report in your weekly "engagement" activities;
    - (iii) having a break in the middle for 10 minutes.
  - By end of each Monday (at the end of the lecture or shortly afterwards) you will receive preparatory work for the following week – the prep work will help you be ready for the lecture the following week.

- Wednesdays
  - In person group tutorials – you are allocated a group.
  - Only one Weeks: 3, 4, 6, 7, 9 and 10

Schedule – semester overview

Lectures

Week	Day	Who	Topic
1 (w/c 16th Sep)	Mon	SL/JL	Course Introduction + Introduction to Design Thinking
2 (w/c 23rd Sep)	Mon	JL	Research into, for and through Design
3 (w/c 30th Sep)	Mon	SL	Ethical Design Practice
4 (w/c 7th Oct)	Mon	SL	Case Studies in XR and Cultural Heritage
5 (w/c 14th Oct)	Mon	SL	Case Studies in LLMs and Creative Industries
6 (w/c 21st Oct)	Mon	SL	Case Studies in IoT and Sustainability
7 (w/c 28th Oct)	Mon	JL	Case Studies in Blockchain and Civic Participation
8 (w/c 4th Nov)	Mon	JL	Case Studies in Autonomous Systems and Ageing
9 (w/c 11th Nov)	Mon	SL	Probes in Design Research
10 (w/c 18th Nov)	Mon	JL	Co-Design in Design Research
11 (w/c 25th Nov)	Mon	SL	Q&A refresher session

SL: Susan Lechelt - **JL:** John Lee

Tutorials

Week	Tutorial
3 (w/c 30th Sep)	How to use the ACM Digital Library
4 (w/c 7th Oct)	How to analyse a case study
6 (w/c 21st Oct)	Analysis of a case study #1
7 (w/c 28th Oct)	Analysis of a case study #2
9 (w/c 11th Nov)	Cultural Probes
10 (w/c 18th Nov)	Co-Design

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Block 1 – What is design (research)

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Block 1 – What is design (research)
Block 2 – Case studies of data and design

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Block 1 – What is design (research)
Block 2 – Case studies of data and design
Block 3 – Applying a design (research) method

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Schedule - Locations

Monday lectures are in the Meadows Lecture Theatre in the Old Medical School building:

https://www.ed.ac.uk/timetabling-examinations/timetabling/room-bookings/bookable-rooms3/room/0113_00_G.07

Tutorials will be in Appleton Tower, AT 2.06.

Weekly engagement activities:
Reflections, Questions and Comments

- Every Monday you will get assigned preparatory work (prep work) for the next week:
  - E.g., you will get pre-work for Week 2 sessions on Monday of Week 1.

- The pre-work will comprise of material for you to read, view, listen, and consider before the sessions the following week.

- Before 12:00 (midday) each Friday, you must complete your Class Notebook in Teams and complete your "3-2-1 Reflections, Questions and Comments":
  - 3 Reflections – 3 things you learned from the **last lecture**
  - 2 Questions – 2 questions you wish to ask the lecturers based on the assigned "prep material" for the **next lecture**.
  - 1 Comment – 1 key "takeaway" you have from reading the assigned "prep material" – try to relate this to your own background knowledge and experience
  - Your responses can be as short, or as long, as you wish – teaching staff can see them but no other students can.

- **Completing this is critical for the weekly lectures on Monday afternoons!**

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Coursework

CW1 – Studying Case Studies (Individual) – 50%

- 1.1. - Comparing two different approaches to design research – 5% - 11th October 2024 (PASS/FAIL)
- 1.2. - Case study reflection and analysis – 45% - 9th December 2024

CW2 – Applying a Design Method and Weekly Engagement (Individual) – 50%

- 2.1 - Portfolio of materials for Probe or Co-Design study – 45% - 10th January 2025
- 2.2 - Evidence of weekly engagement in Course Notebook – 5% - each week throughout the course!

- **Do not worry about coursework now – I will assign CW1.1 next week**

Exploring LEARN

https://www.learn.ed.ac.uk/ultra/course

Exploring Open Course

https://opencourse.inf.ed.ac.uk/cdi1

Exploring MS Teams

https://www.microsoft.com/en-gb/microsoft-teams/log-in

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Activity 1!: 2 minutes

On MS Teams, go to the "Lecture 1" channel.

Post in there a completed version of the following:

"In this course, I hope to learn about ….."

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Everything is in the Course Handbook!

(this can be found on the Open Courses website)

Take a break!
Back at 16:10

Exploring Miro!

https://miro.com/app/board/uXjVLe2uVe8=/?share_link_id=590518885148
Password: casestudies

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In the Miro…

Can you tell us what degree programme you are on?
How about what academic background you come from? Is it design?
Computer science? Business? Something else?

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Activity 3!: 10 minutes

In the Miro... and on your own!

1. Can you think of 3 "data" products, services, things, that you have interacted with in the last week? Write each one on a new post-it...

2. Can you think of 3 words that summarise how these products, services, things made you feel? Again, write each one on a new post-it.

3. Are these positive or negative feelings? Move them to the appropriate box.

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Design Informatics: is about design + data

It's about _design + data_

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It's about _design + data_

Design **from** data: when systems are designed by people, where they are inspired by measurable features of humans, computers, things, and their contexts.

Design **with** data: when systems are designed by people, where they take into account the flows of data through systems, and the need to sustain and enhance human values.

Design **by** data: when systems are designed by other systems, largely autonomously, where new products and services can be synthesised via the data-intensive analysis of existing combinations of humans, computers, things, and contexts.

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Design Informatics: is about design + data

It's about *design + data*

DESIGNING FROM, WITH AND BY DATA:
INTRODUCING THE ABLATIVE FRAMEWORK

Design **from** data: when systems are designed by people, where they are inspired by measurable features of humans, computers, things, and their contexts.

User Centered Design, Human-centered Design

Design **with** data: when systems are designed by people, where they take into account the flows of data through systems, and the need to sustain and enhance human values.

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Service Design, Value Proposition Design

Design **by** data: when systems are designed by other systems, largely autonomously, where new products and services can be synthesised via the data-intensive analysis of existing combinations of humans, computers, things, and contexts.

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More Than Human Design, ?

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Back to the Miro!

https://miro.com/app/board/uXjVLe2uVe8=/?share_link_id=590518885148

Password: casestudies

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Activity 4!: 10 minutes

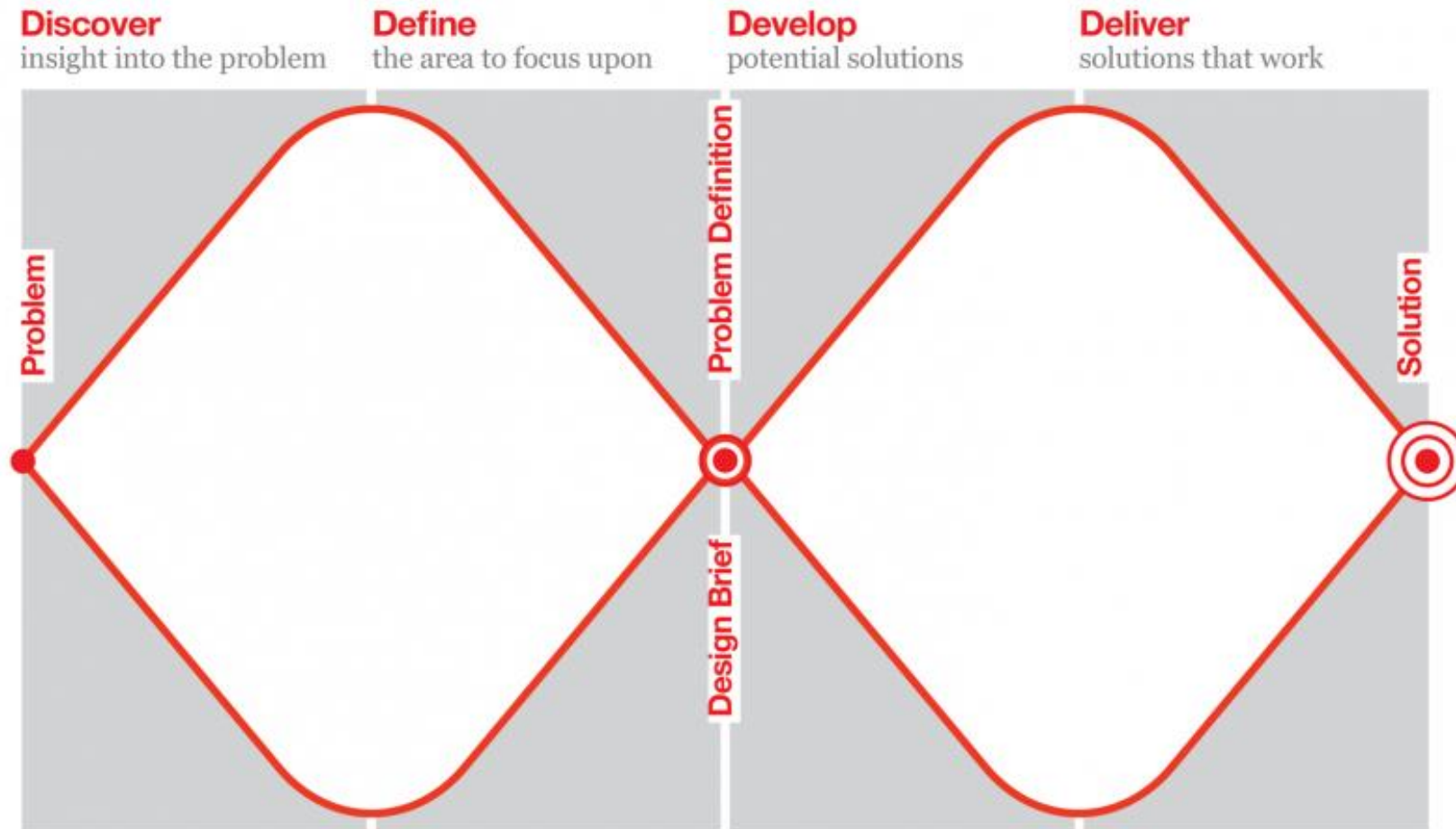Work in pairs – with the person(s) sat near you

Find an image that represents what a "design process" looks like to you

This can be a diagram, a photo, a sketch – anything

Copy and paste the image into the Miro board

What does a design process look like (1):

Divergent and Convergent approaches

British Design Council. 2004. The Double Diamond:
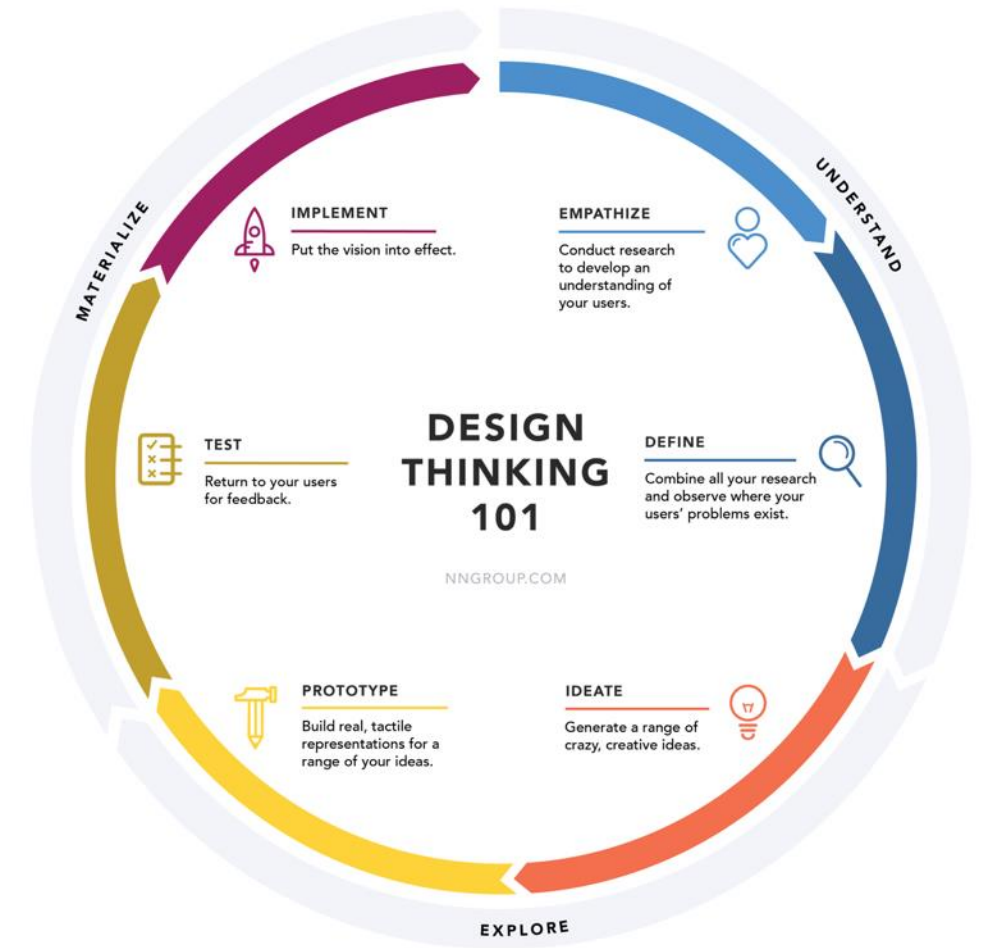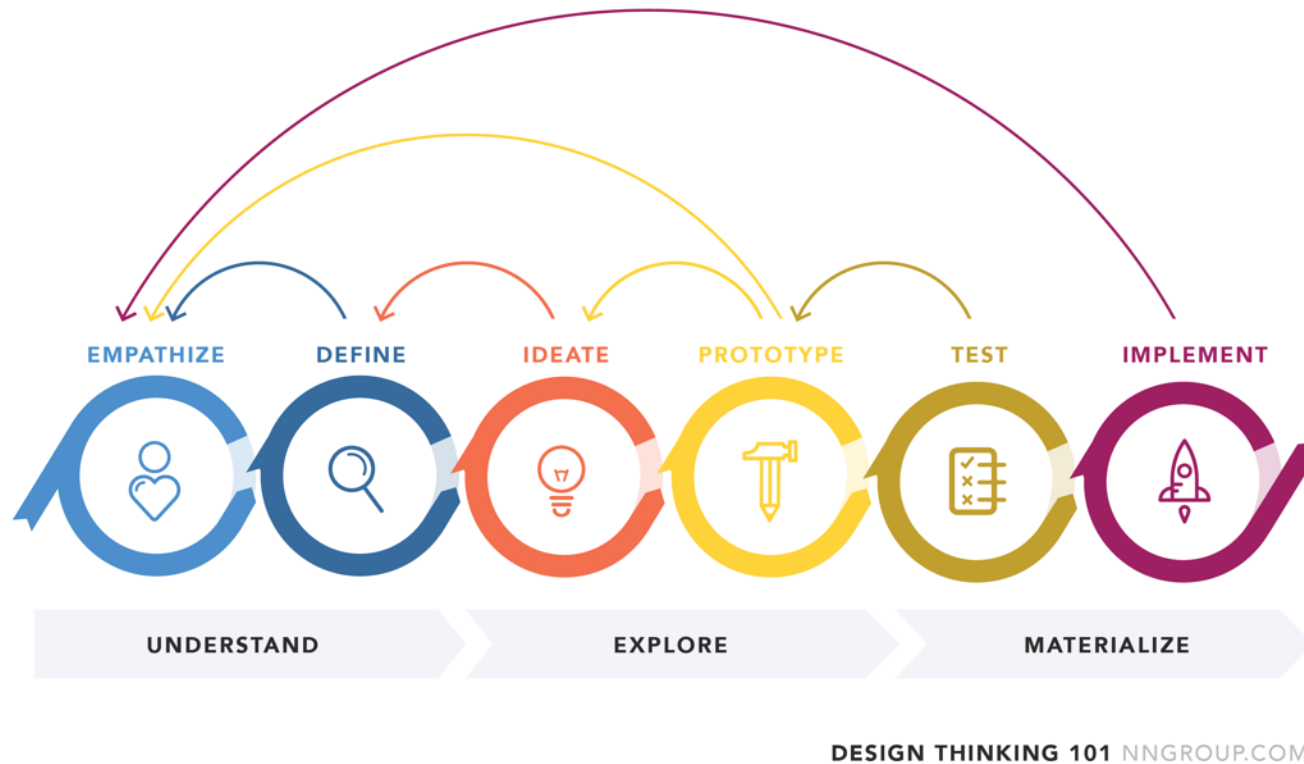https://www.designcouncil.org.uk/news-opinion/double-diamond-universally-accepted-depiction-design-process

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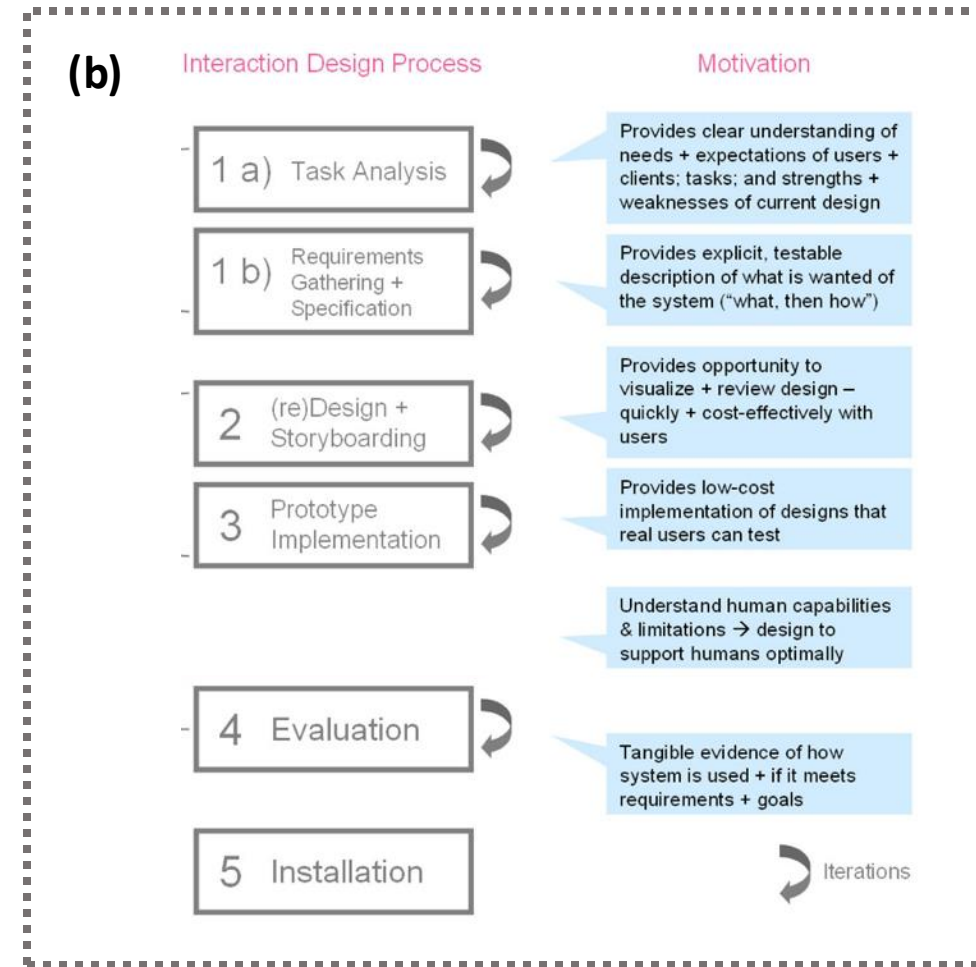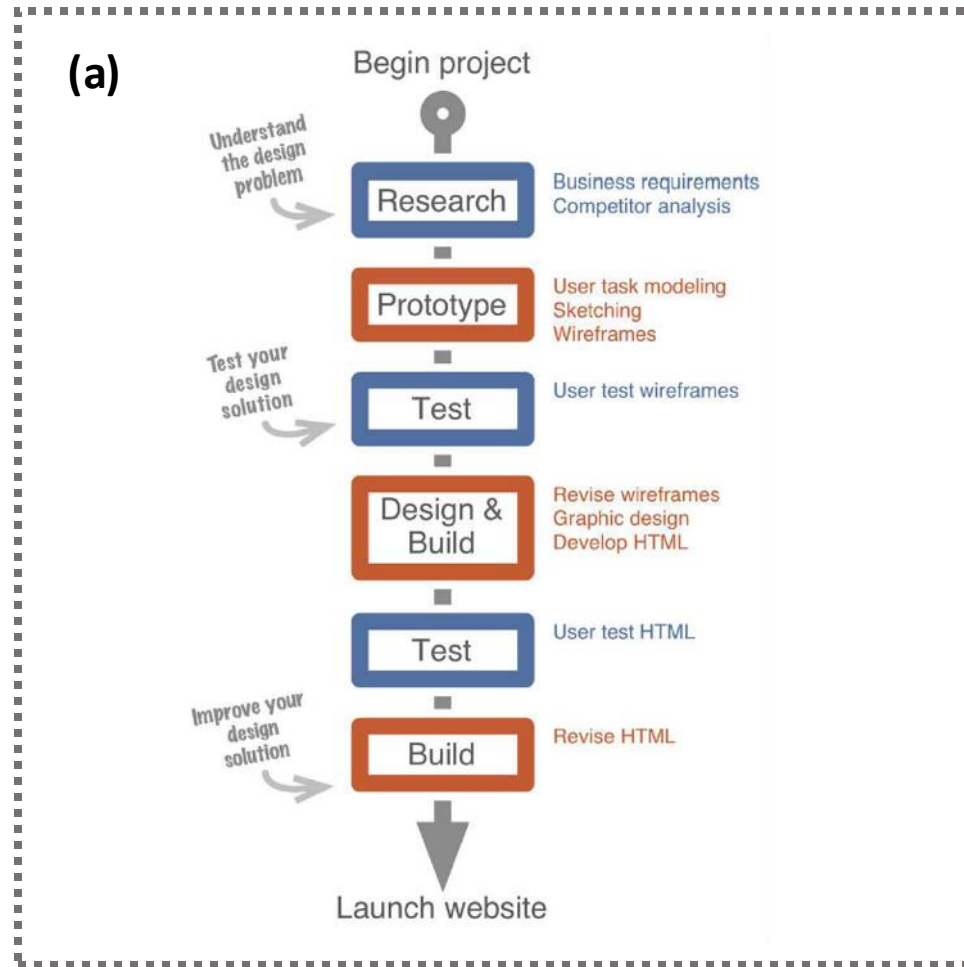# What does a design process look like (2):
Iterative and Cyclical approaches

DESIGN THINKING 101 NNGROUP.COM

Nielsen Norman Group. 2016. Design Thinking 101.
https://www.nngroup.com/articles/design-thinking/

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What does a design process look like (3):
Linear and waterfall approaches

(a) Begin project

Research	Business requirements / Competitor analysis
Prototype	User task modeling / Sketching / Wireframes
Test	User test wireframes
Design & Build	Revise wireframes / Graphic design / Develop HTML
Test	User test HTML
Build	Revise HTML

Understand the design problem → Research
Test your design solution → Test
Improve your design solution → Build

Launch website

(b)

Interaction Design Process / Motivation

1 a) Task Analysis — Provides clear understanding of needs + expectations of users + clients; tasks; and strengths + weaknesses of current design

1 b) Requirements Gathering + Specification — Provides explicit, testable description of what is wanted of the system ("what, then how")

2 (re)Design + Storyboarding — Provides opportunity to visualize + review design – quickly + cost-effectively with users

3 Prototype Implementation — Provides low-cost implementation of designs that real users can test

Understand human capabilities & limitations → design to support humans optimally

4 Evaluation — Tangible evidence of how system is used + if it meets requirements + goals

5 Installation — Iterations

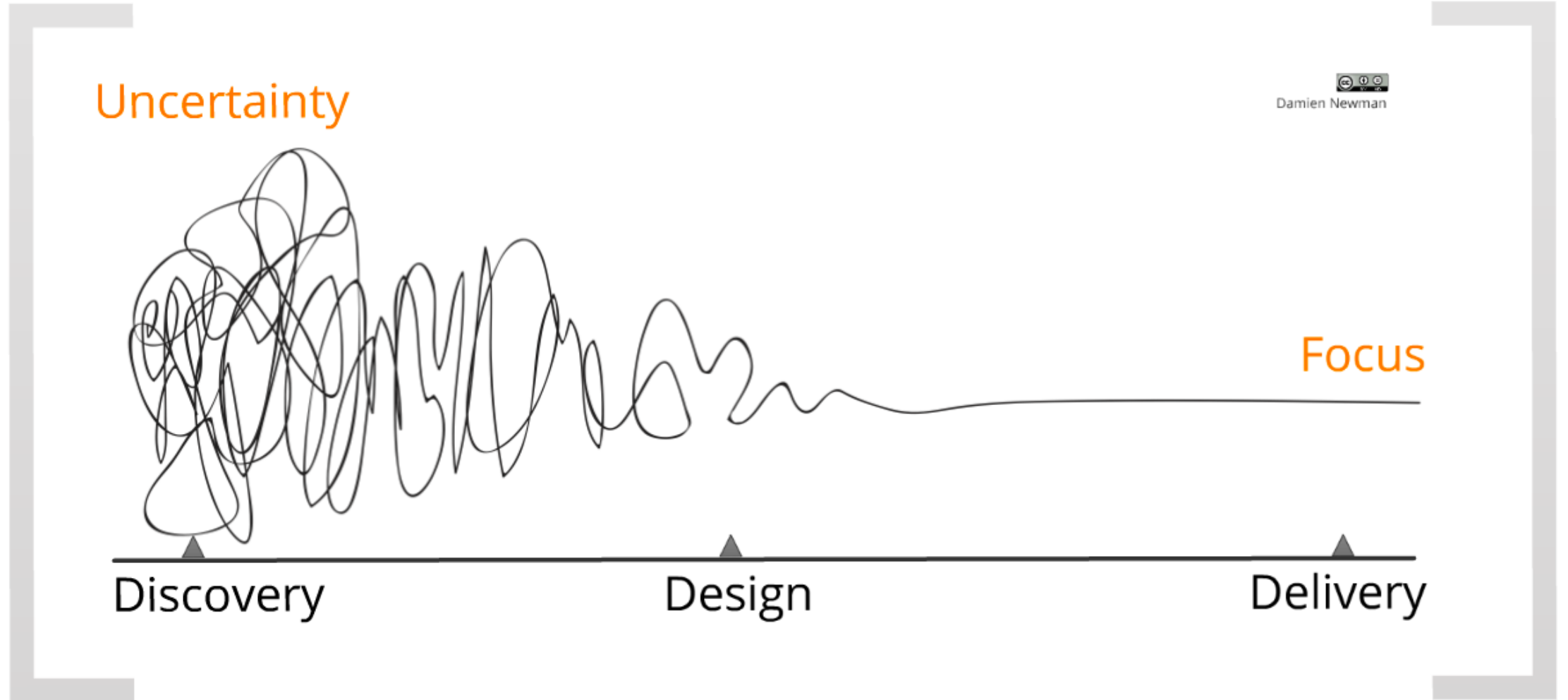(1) Allen and Chudley. 2012. Smashing UX Design. Wiley, London.
(2) Saffer. 2009. Designing for Interaction. New Riders, New York.

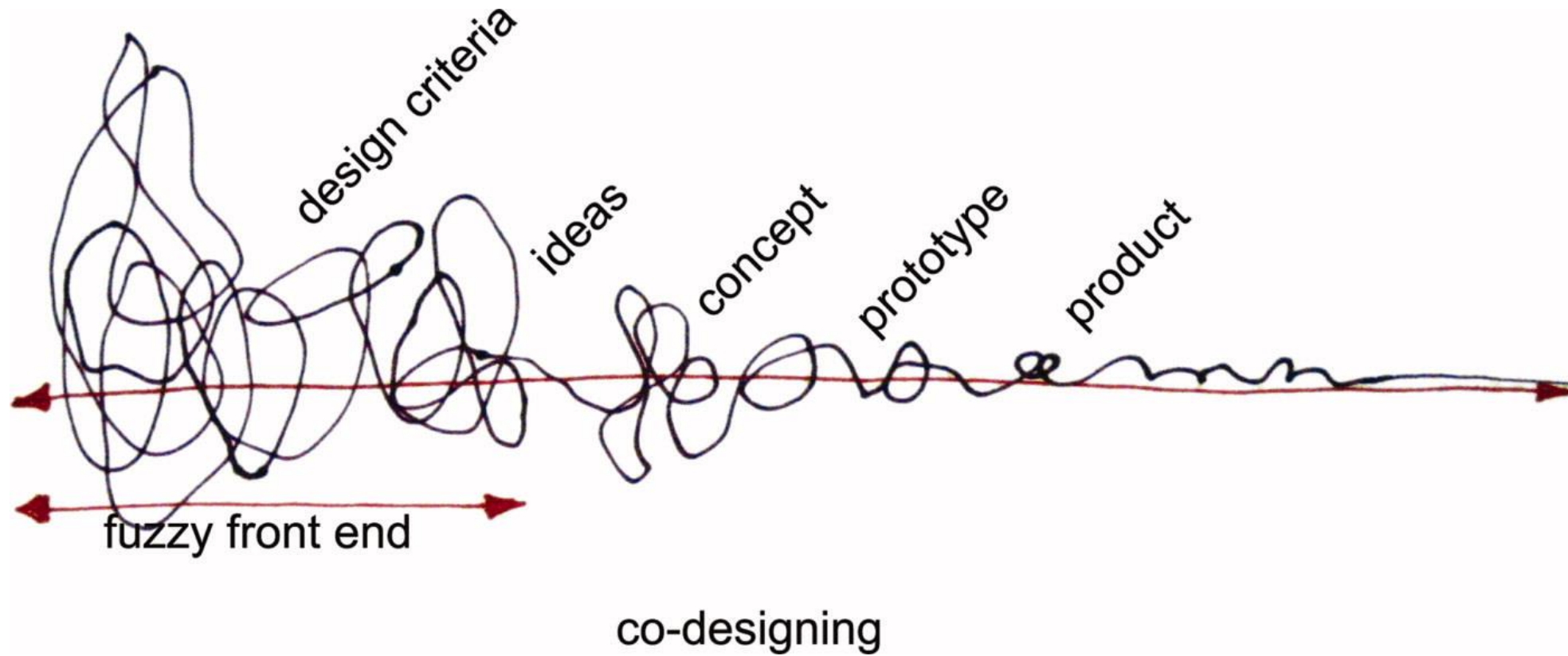THE UNIVERSITY of EDINBURGH

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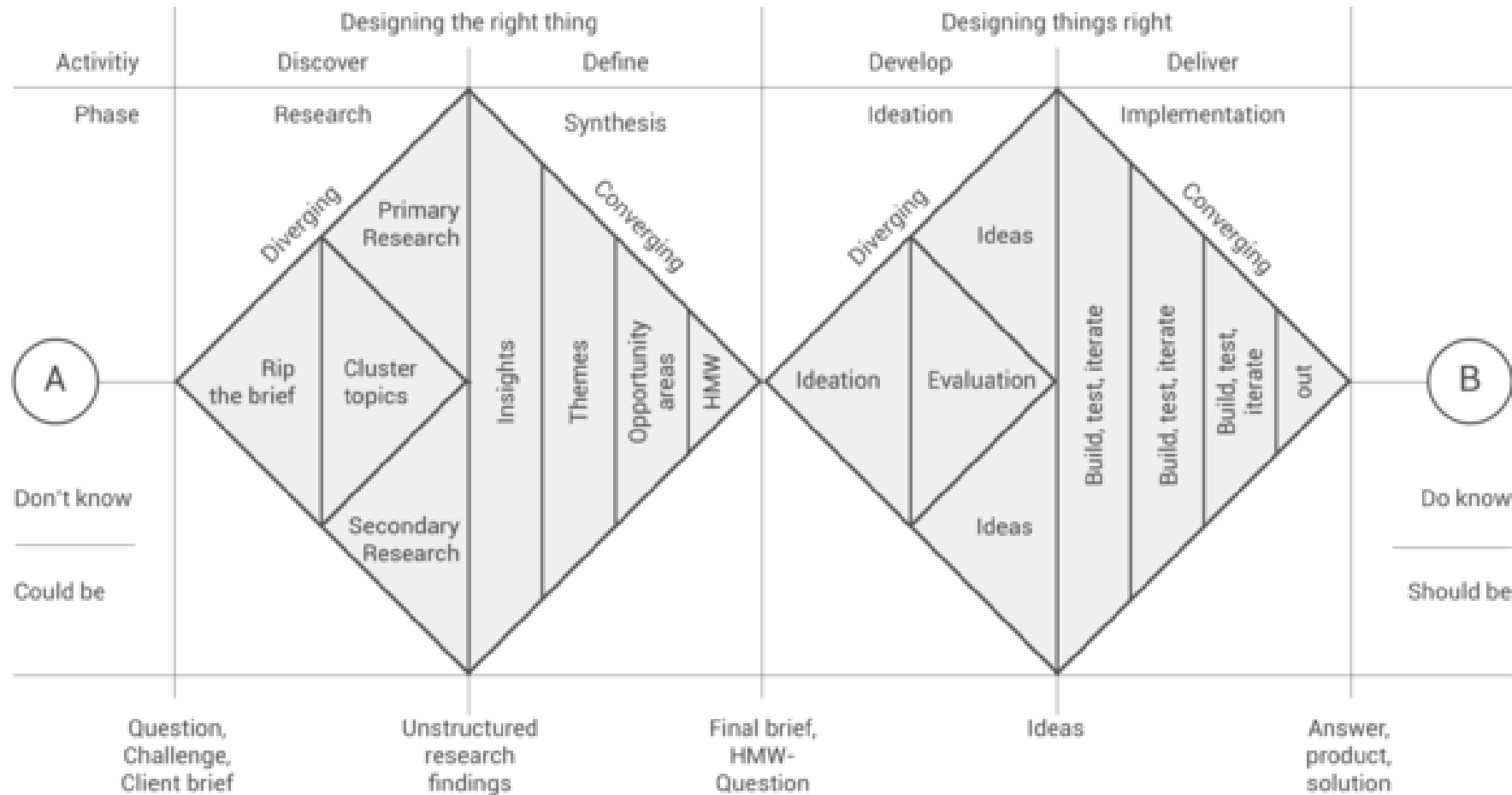
What does a design process look like (4)

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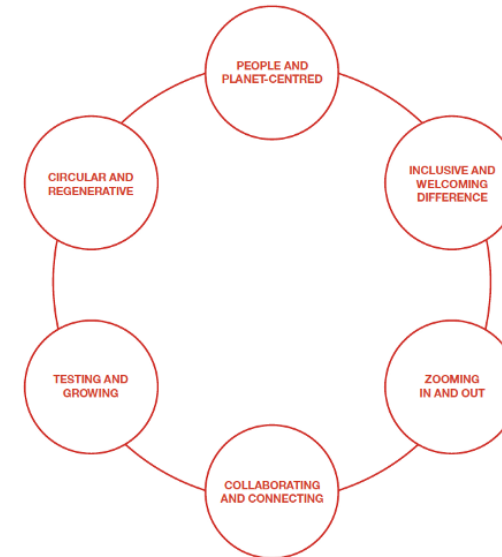design informatics

What does a design process look like (4a)

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What does a design process look like (5):
Divergent and Convergent approaches

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What does a design process look like (6):
Iterative, Cyclical and Systemic approaches
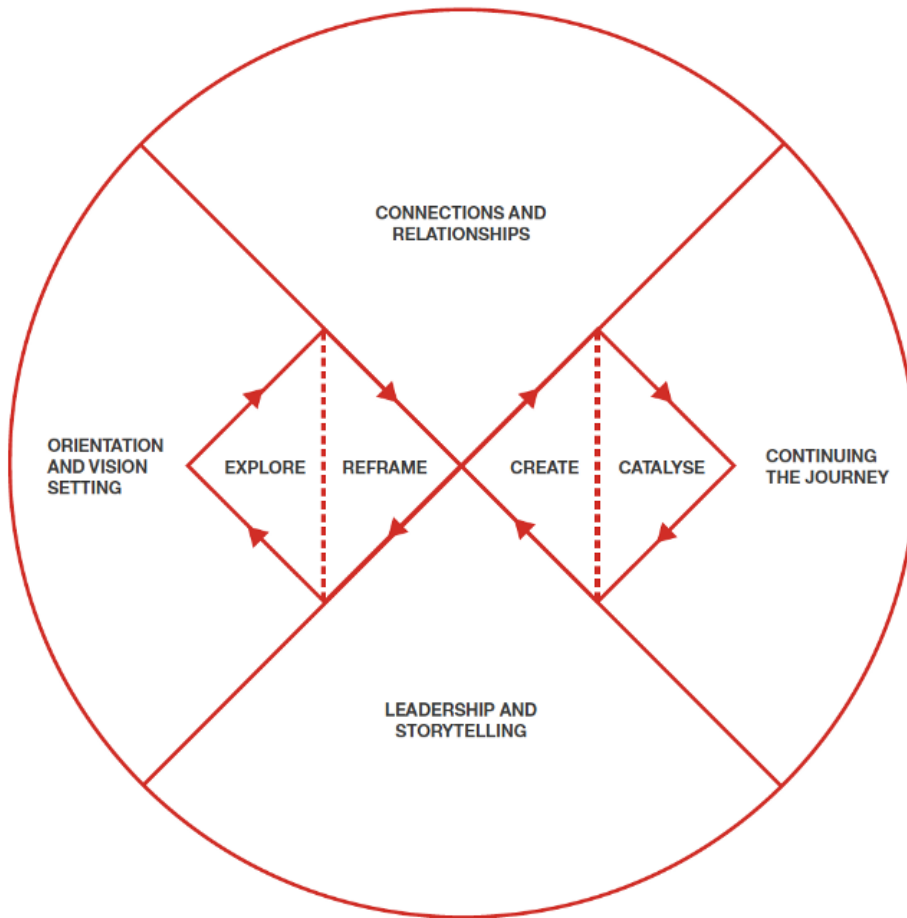
SIX PRINCIPLES FOR SYSTEMIC DESIGN

Our set of six principles aims to guide activity. They can be used to help people to develop or adapt new design methods and tools from their own practice:

PEOPLE AND PLANET CENTRED
Focusing on the shared benefits of all living things

ZOOMING IN AND OUT
From the micro to macro, from root cause to hopeful vision, from the present to the future, from the personal to the wider system

TESTING AND GROWING IDEAS
Making things to see how they work and help more things emerge

INCLUSIVE AND WELCOMING DIFFERENCE
Creating safe, shared spaces and language to bring in multiple and marginalised perspectives

COLLABORATING AND CONNECTING
Seeing a project as one element in a wider movement for change

CIRCULAR AND REGENERATIVE
focus on existing assets – physical and social – and how we can re-use, nurture and grow these

Drew. 2021. Developing our new Systemic Design Framework. https://medium.com/design-council/developing-our-new-systemic-design-framework-e0f74fe118f7

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Qualities of different Design Processes

Uni-directional / Bi-directional

Sequential / Parallel

Linear / Cyclical

Tidy / Messy

Structured / Unstructured

Closed / Open

Expansive / Constraining

Back to the Miro!

https://miro.com/app/board/uXjVLe2uVe8=/?share_link_id=590518885148
Password: casestudies

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Write a post-it note for at least four images chosen by other students that uses these keywords (and others) to describe them.

Place the post it on the image you are describing

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Tasks for the next 5 days:

1. Your prep work for next week's lecture
    i.   Read this online article introducing "research through design": https://www.designdisciplin.com/the-three-faces-of-design-research/
    ii. If helpful, also watch the video related to it (same content): https://youtu.be/CIKtqj389dI?si=hYM9ekElthkA8U-i
    iii. **Optional:** Chapter 1 of "Interaction Design: Beyond Human-Computer Interaction" – "What is Interaction Design?" This is on the Library resource page for CDI1: https://eu01.alma.exlibrisgroup.com/leganto/nui/lists/49836028050002466?institute=44UOE_INST&auth=SAML

2. Complete your first Class Notebook submission in MS Teams:
    i.   Write 3 reflections from this week's opening lecture – what did you learn? *Don't just tell us "I learned how to use MS Teams and Miro…!".*
    ii. Write 2 questions you have based on the prep work for us (John and Susan) to consider for our lecture next week.
    iii. Write 1 comment – something you have learned, are intrigued by, something related to your background and interests – prompted by the prep work.

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Tasks for the next 5 days:

Important final tip!:

Write your Class Notebook text in Word (or similar) and keep a local copy, just in case there is a problem with saving it to the cloud. Make sure when you enter it into the Class Notebook that it is saved (e.g., make sure you are online, re-load to check it is there!

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Any questions?

If you have any questions about this week or next week, contact Susan at:
susan.lechelt@ed.ac.uk