Case Studies in Design Informatics 1 - INFR11094
Week 1, Lecture 1 – 15th September 2025

Introduction to the course

Susan Lechelt
Lecturer in Design Informatics
Susan.lechelt@ed.ac.uk

Dorsey Kaufmann
University Teacher in Design Informatics
dkaufma2@ed.ac.uk

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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 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

Dorsey Kaufmann
Lecturer,
University Teacher,
Design Informatics
dkaufma2@ed.ac.uk

Haili Wu
Teaching Assistant,
PhD Student, Design
Informatics

Tutors and Markers (PhD Students):

Haili Wu - Design for Sharing Economies
Billy Franks - Design for Supporting Creative
Entrepreneurs in Tech Ecosystems
Rayo Verweij - AI tools for education and co-design
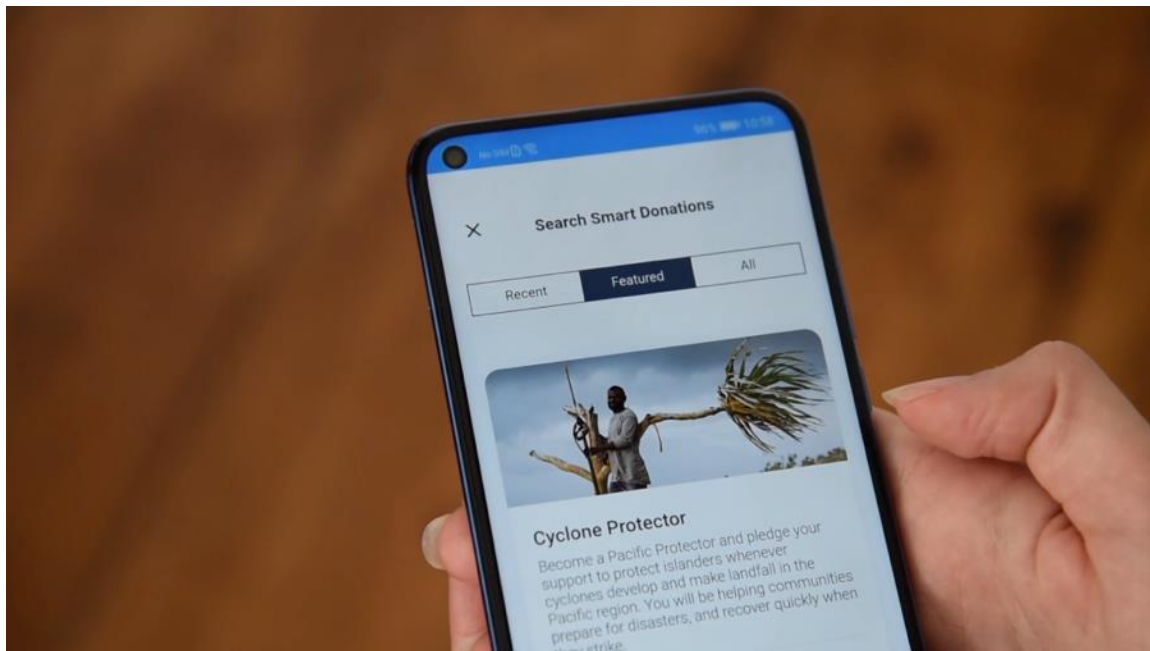**Zonglin Ji -** Applied AI

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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

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

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

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 Dorsey – 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 Weeks: 3, 4, 6, 7, 9 and 10

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Schedule – Semester overview

Lectures

Week	Day	Who	Topic
1 (w/c 15th Sep)	Mon	SL/DK	Course Introduction + Introduction to Design Thinking
2 (w/c 22nd Sep)	Mon	DK	Research into, for and through Design
3 (w/c 29th Sep)	Mon	SL	Ethical Design Practice
4 (w/c 6th Oct)	Mon	SL	Case Studies in XR and Cultural Heritage
5 (w/c 13th Oct)	Mon	SL	Case Studies in GenAI and Creative Industries
6 (w/c 20th Oct)	Mon	DK	Case Studies in Visualisation and Physicalisation for Science Communication
7 (w/c 27th Oct)	Mon	DK	Case Studies in IoT and Sustainability
8 (w/c 3rd Nov)	Mon	SL	Probes in Design Research
9 (w/c 10th Nov)	Mon	DK	Co-Design in Design Research
10 (w/c 17th Nov)	Mon	DK	Speculative Design in Design Research
11 (w/c 24th Nov)	Mon	SL	Q&A refresher session

Tutorials

Week	Tutorial
3 (w/c 29th Sep)	How to use the ACM Digital Library
4 (w/c 6th Oct)	How to analyse a case study
6 (w/c 20th Oct)	Practicing analysing a case study
7 (w/c 27th Oct)	Designing for diverse audiences and contexts
9 (w/c 10th Nov)	Cultural Probes
10 (w/c 17th Nov)	Co-Design

SL: Susan Lechelt - **DK:** Dorsey Kaufmann

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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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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 room 2.35 of the Edinburgh Futures Institute building:

https://maps.app.goo.gl/J38PSWhm6hbNqK3i7

Tutorials will be in different rooms across Central campus, and will be communicated next week.

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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 your "3-2-1 Reflections, Questions and Comments" via Microsoft Forms (link on OpenCourse each week):
  - 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% - 13th October 2025 (PASS/FAIL)
- 1.2. - Case study reflection and analysis – 45% - 8th December 2025

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

- 2.1 - Portfolio of materials for Probe or Co-Design study – 45% - 12th January 2026
- 2.2 - Evidence of weekly engagement in Course Notebook – 5% - each week <u>throughout the course!</u>

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

Exploring Open Course

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

Exploring MS Forms

Access through OpenCourse

Exploring LEARN

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

Exploring Piazza

Access through LEARN

Exploring Miro!

https://miro.com/app/board/uXjVLe2uVe8=/?share_link_id=101900183990

Password: casestudies

Open the Miro link.

Add a post it with a completed version of the following:

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

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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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Everything is in the Course Handbook!

(this can be found on the OpenCourse website)

Take a break!
Back at 16:10

Back to the Miro!

https://miro.com/app/board/uXjVLe2uVe8=/?share_link_id=101900183990
Password: casestudies

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*

Design Informatics: is about design + data

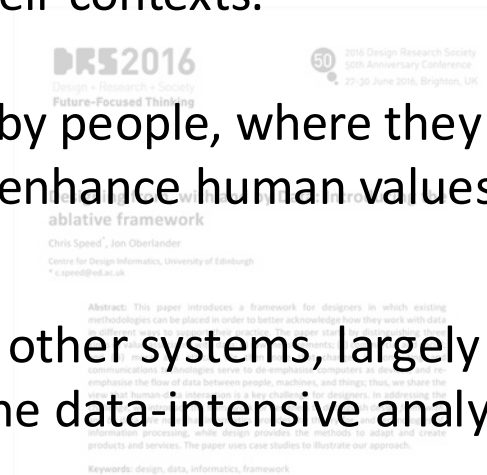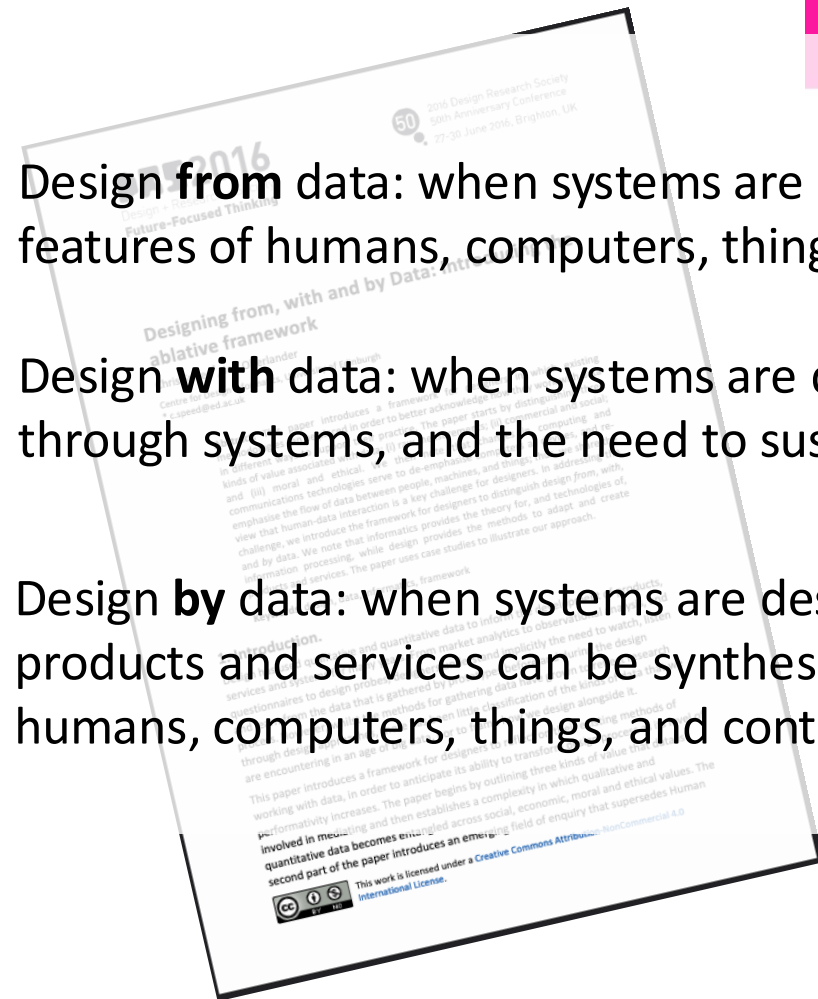It's about *design + data*

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.

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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User Centered Design, Human-centered Design

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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=101900183990
Password: casestudies

Activity 4!: 10 minutes

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

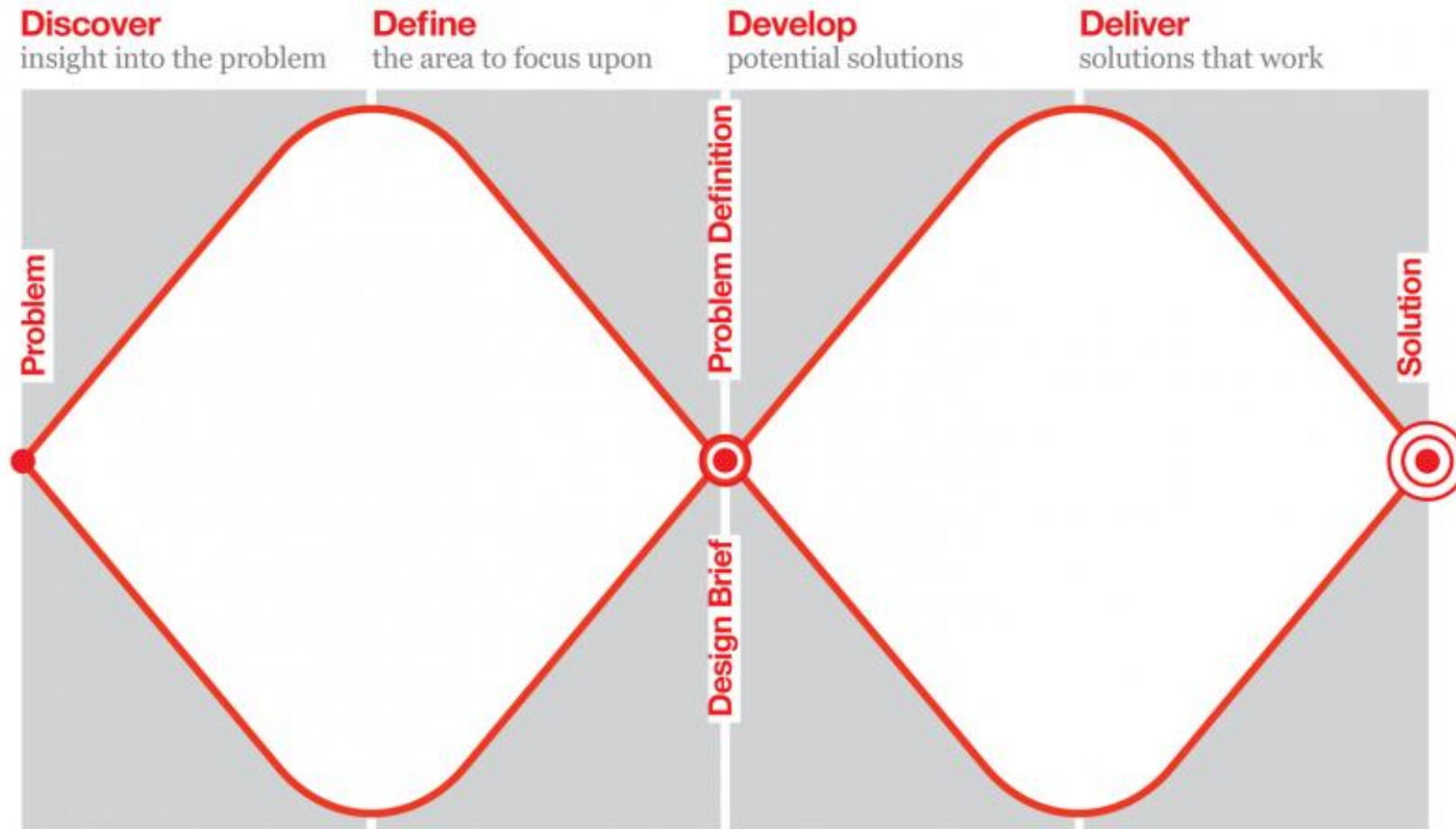Find an image that represents what a "design process" looks like to you

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

Copy and paste the image into the Miro board

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What does a design process look like (1):

Divergent and Convergent approaches
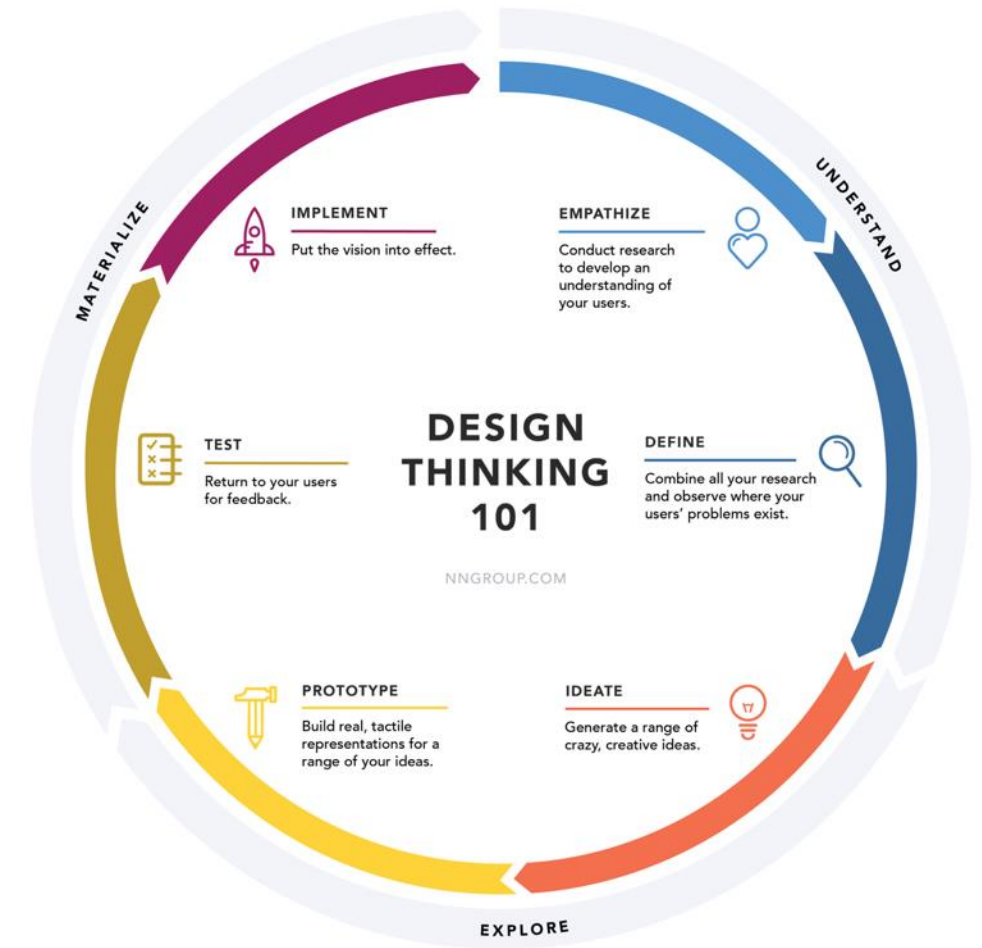

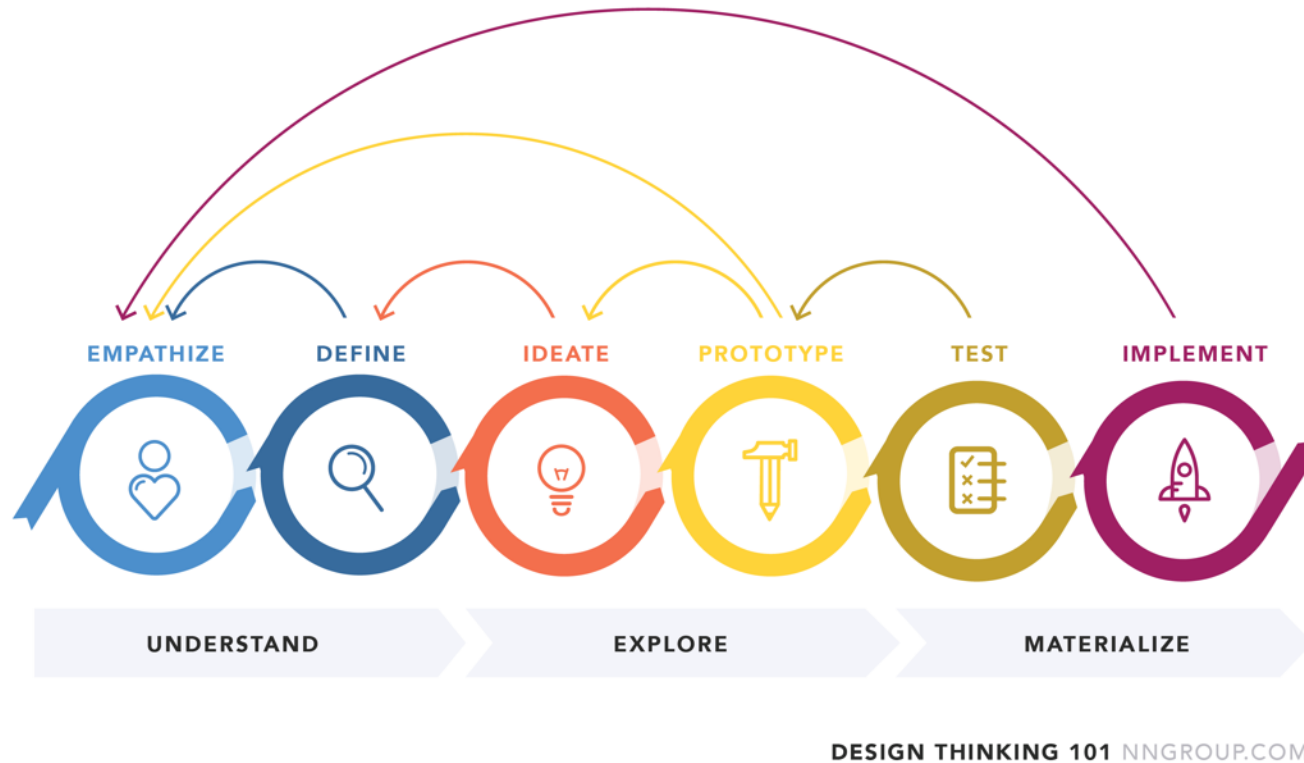British Design Council. 2004. The Double Diamond:
https://www.designcouncil.org.uk/news-opinion/double-diamond-universally-accepted-depiction-design-process

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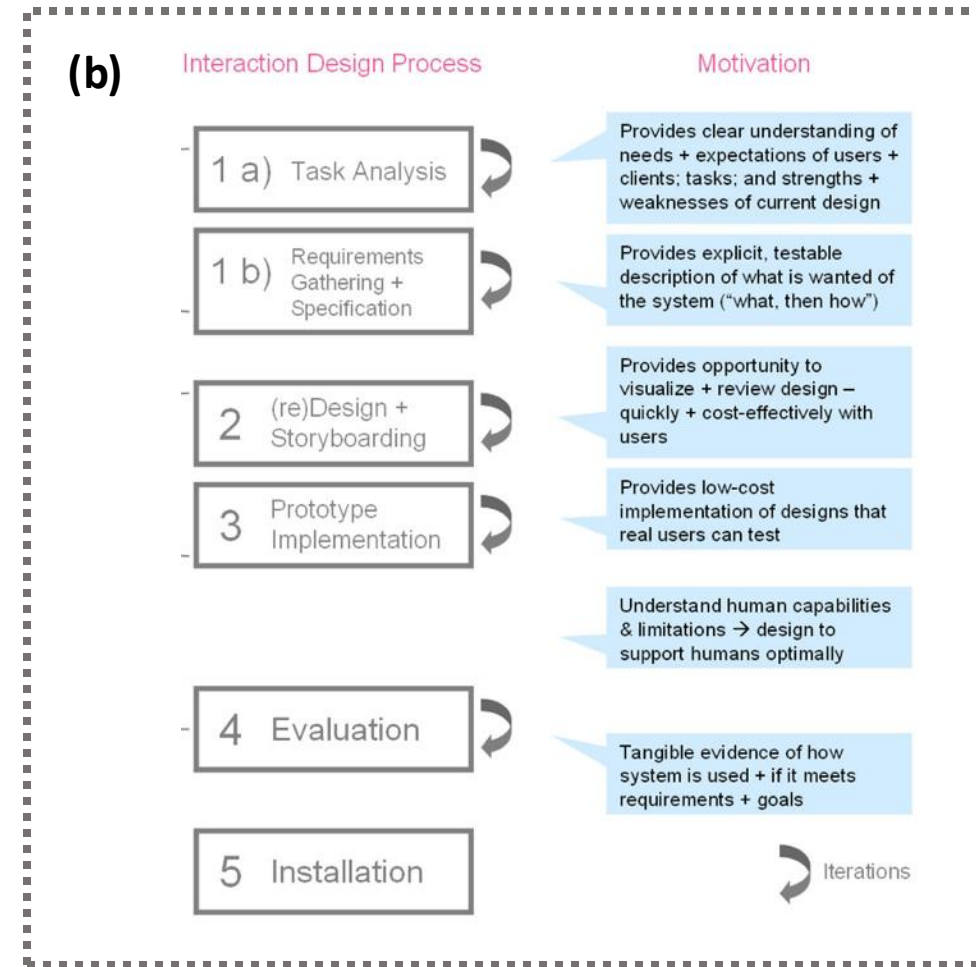
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What does a design process look like (2):
Iterative and Cyclical approaches

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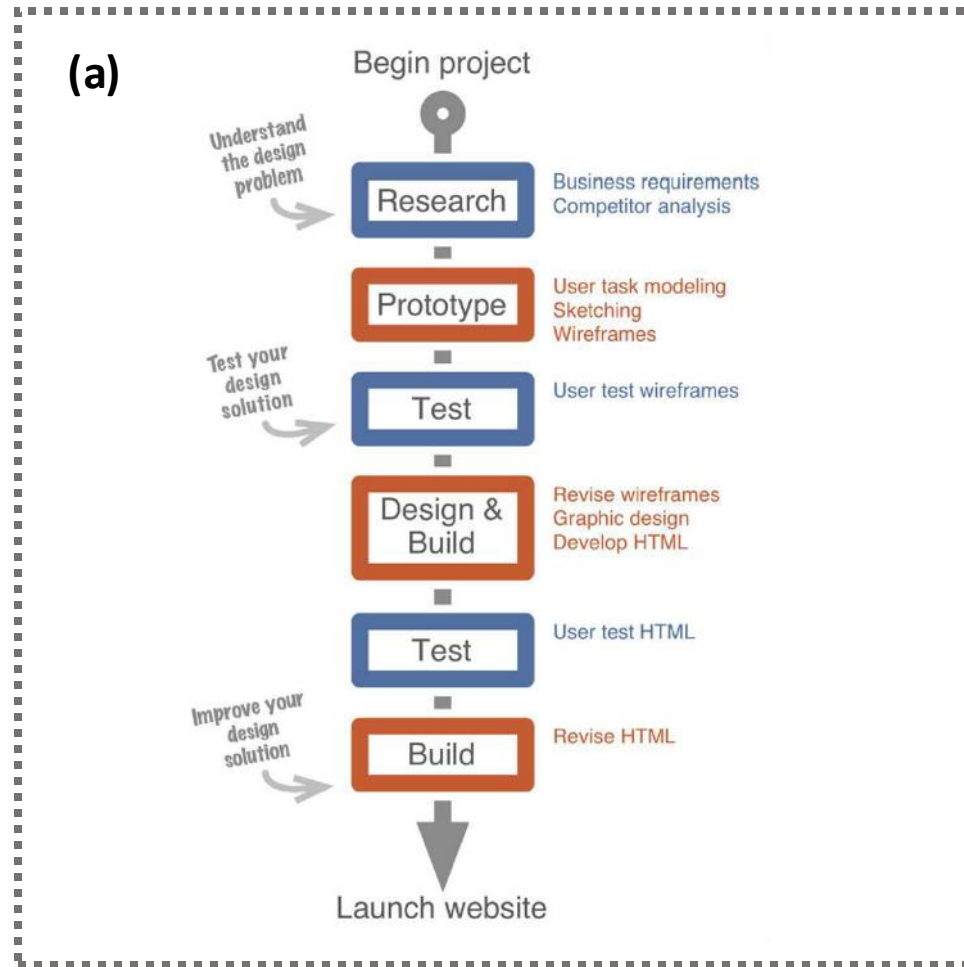
(1) Allen and Chudley. 2012. Smashing UX Design. Wiley, London.
(2) Saffer. 2009. Designing for Interaction. New Riders, New York.

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What does a design process look like (4)

Uncertainty

Damien Newman

Focus

Discovery   Design   Delivery

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What does a design process look like (4a)

design criteria

ideas

concept

prototype

product

fuzzy front end

co-designing

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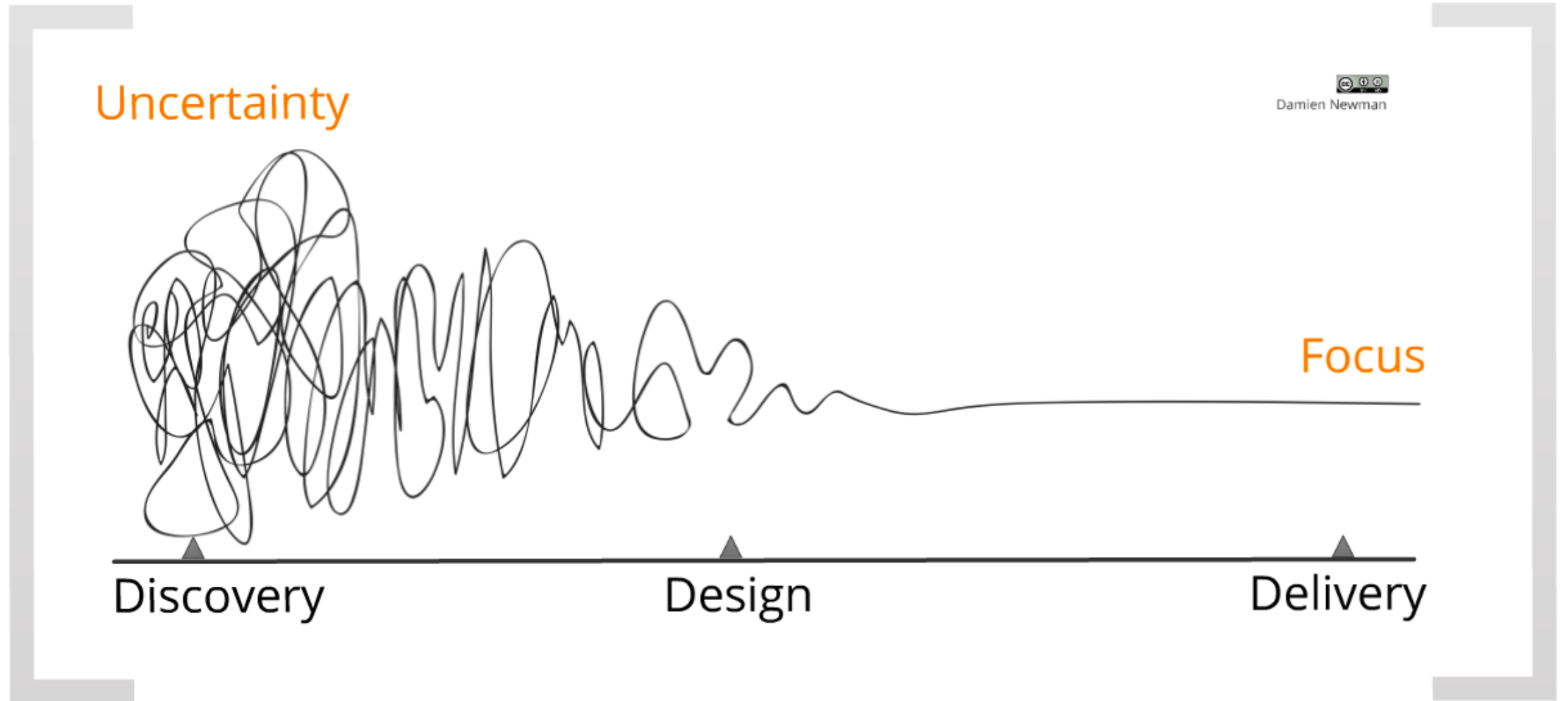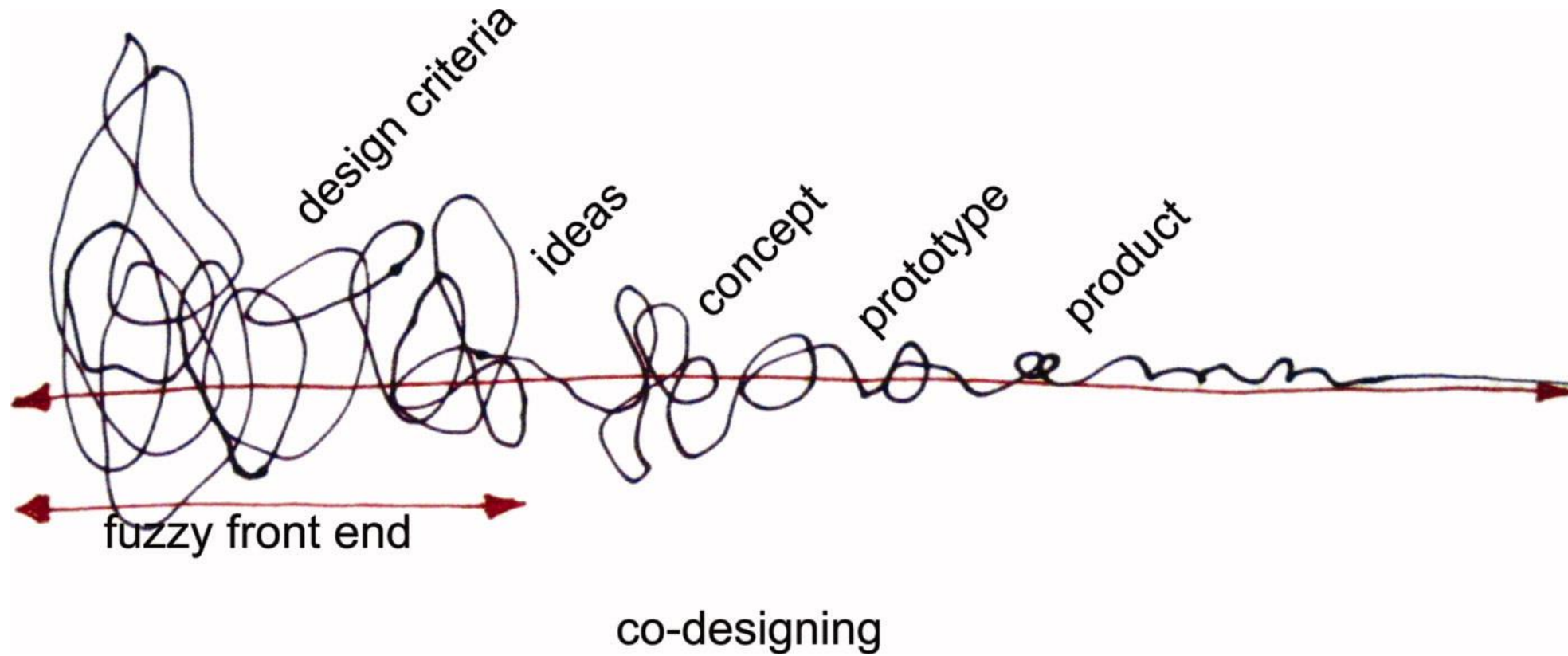
What does a design process look like (5):
Divergent and Convergent approaches

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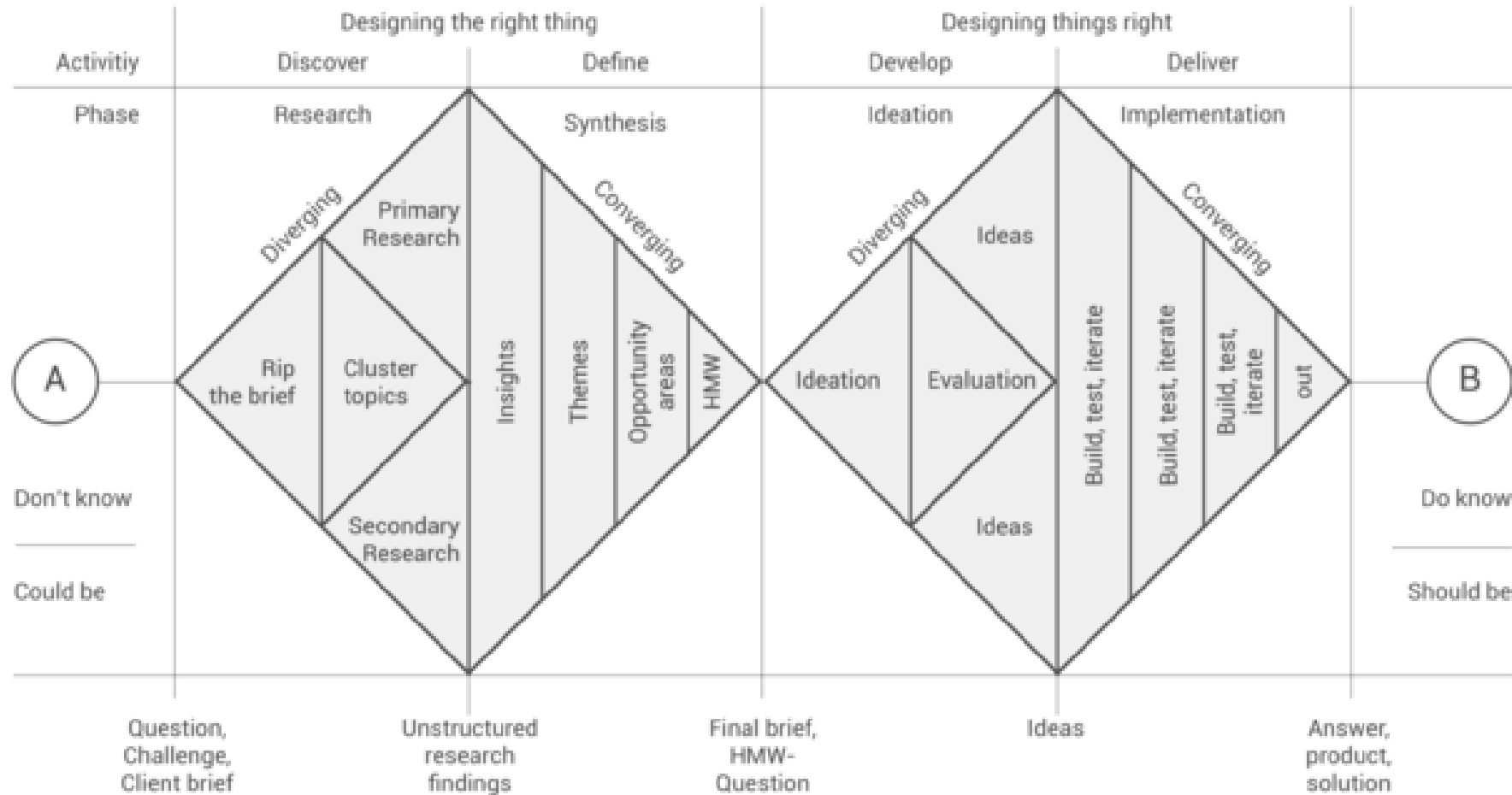
What does a design process look like (6):
Iterative, Cyclical and Systemic approaches
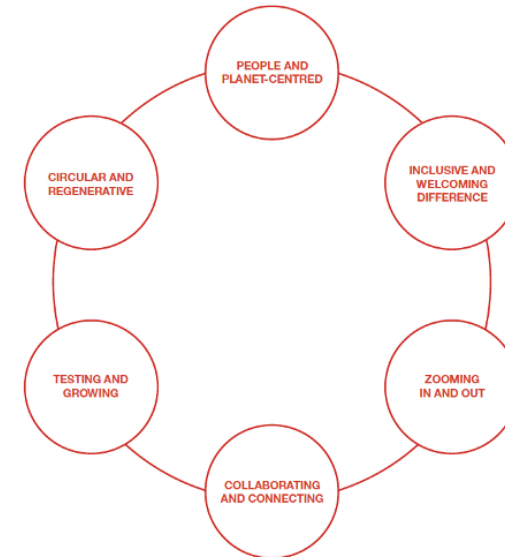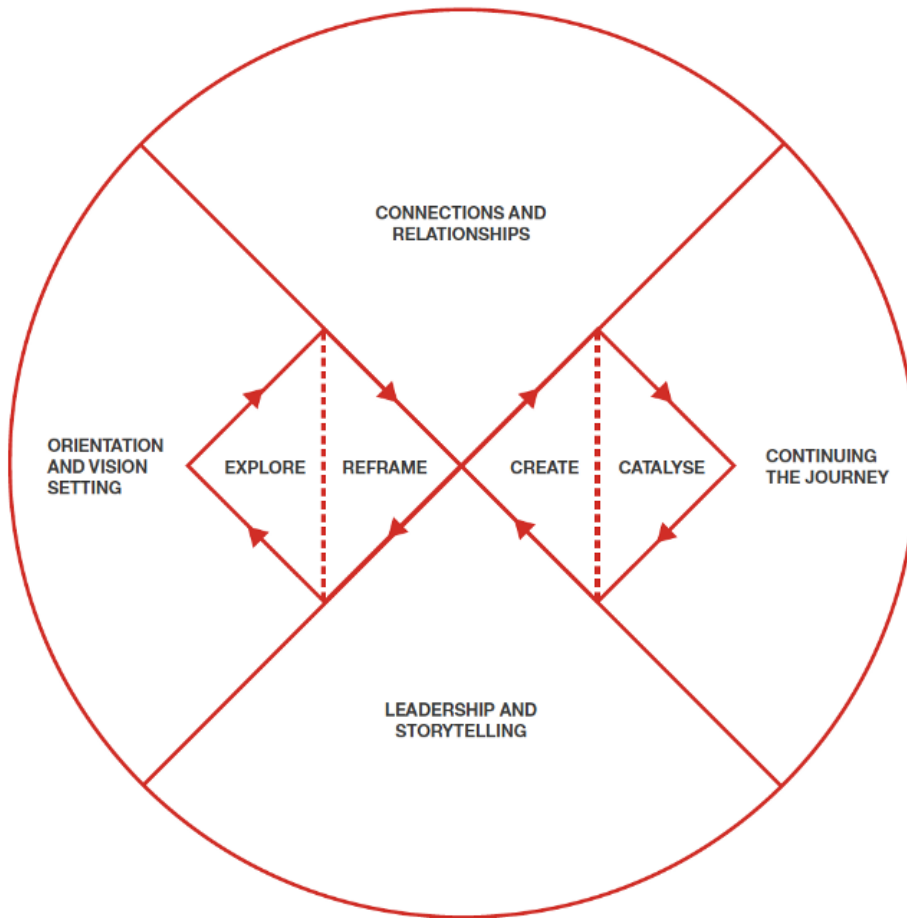
SIX PRINCIPLES FOR SYSTEMIC DESIGN

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

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Back to the Miro!

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Activity 5!: 10 minutes

Uni-directional / Bi-directional

Sequential / Parallel

Linear / Cyclical

Tidy / Messy

Structured / Unstructured

Closed / Open

Expansive / Constraining

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 Miro…!".*
    ii. Write 2 questions you have based on the prep work for us (Dorsey 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!:

Remember that we check the weekly reflections on a weekly basis and close the Form after each week's deadline. This means that there will be no opportunity to submit them late.

Please also keep in mind you can only submit the form once each week!

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Any questions?

If you have any questions about this week or next week, ask them via Piazza (which you can access through Learn) or contact Susan at: susan.lechelt@ed.ac.uk