

# designerly ways of knowing

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- what design is / can be
- what designers know

# design

‘Design is when designers design a design to produce a design.’  
(Heskett 2001: 18)

‘Design ... is concerned with how things ought to be.’ (Simon, 1969)

‘Our job is to give the client ... not what we wants, but what he never dreamed he wanted; and when he gets it, he recognizes it as something he wanted all the time.’ (Lasdun, 1965)

Design involves a reflective conversation with the situation (Schön, 1983)

Design work is

- carried out with limited resources and for an employer
- characterized by structural, functional, ethical & aesthetic aspects (Löwgren & Stolterman)

# design

- involves to create / construct something based on a plan
- originates from
  - *designo*: draw
  - *signum*: sign, mark: refer to something material that stands in for something else

Design processes are activities that directly contribute to visions, sketches, specifications and realizations of design results.

Design results are **technical** artefacts that should be part of practices in a use situation.

# designerly ways of knowing; Nigel Cross

five aspects (p. 12):

- designers tackle 'ill-defined' problems
- their mode of problem-solving is 'solution-focused'
- their mode of thinking is 'constructive'
- they use 'codes' that translate abstract requirements into concrete objects
- they use these codes to both 'read' and 'write' in 'object languages'



design ability

- resolve ill-defined problems
- adopt solution-focussing strategies
- employ abductive / productive / appositional thinking
- use non-verbal, graphic /spatial modelling media

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# designerly ways of knowing - 2

## knowing about design processes

- problem setting and problem solving (Schön): name the things we will attend to and frame the context (set boundaries, select focus, impose coherence)
- 'the problem' cannot be fully understood in isolation from consideration of 'the solution'. The problem and solution co-evolve.
  - 'seek, or impose a primary generator (Darke, 1979) which both defines the limits of the problem and suggests the nature of its possible solution.' (p7)
  - 'changing the problem in order to find a solution is the most challenging and difficult part of designing' (Jones)
- ill-defined problems, "wicked" problems
- systematic shift of 'placements' (Buchanan)
- tacit knowing (Polanyi: we know more than we can tell)
- design expertise (based on studies of three designers)
  - a broad 'systems approach' to the problem, not narrow problem criteria
  - 'framing' the problem in a distinctive & personal way
  - designing from 'first principles' (which depend on the framing)

# designerly ways of knowing - 3

knowing about design products

- the knowledge that resides in objects
- the shapes, sizes, materials of objects
- 'read' and 'write' in the material culture of objects, a 'metaphoric appreciation'
  - 'in 'reading' the world of goods, in translating back from concrete objects to abstract requirements, through their design codes.' (p10)
  - seeing-as; what-if (Lanzara)
- a creative leap -- or rather building a bridge between problem requirements and solution proposal
  - combination (new combinations of features from existing designs)
  - mutation (modifying the form of a particular existing feature)
  - analogy ( $\approx$  seeing-as (Lanzara))
  - design from first principles (identifying core requirements & desired functions  $\Rightarrow$  appropriate forms or structures, a theoretical basis)
  - emergence (previously unrecognised properties are perceived)

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# design is

rhetorical: it is persuasive as product and as proposal (which is constructed as a particular kind of argument)

exploratory: not find the optimum solution to a given problem; 'the creative designer interprets the brief as a partial map of the unknown territory' (p32), using metaphors: seeing-as and games: what-if (Lanzara)

emergent: relevant features emerge and the solution and the problem develop together

opportunistic: influenced by what is learned along the way

abductive : a type of reasoning which concerns the necessary but difficult step from function to form (Roozenburg)

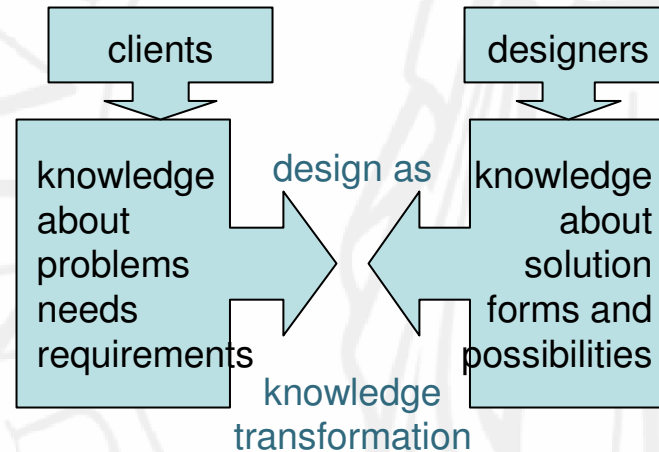
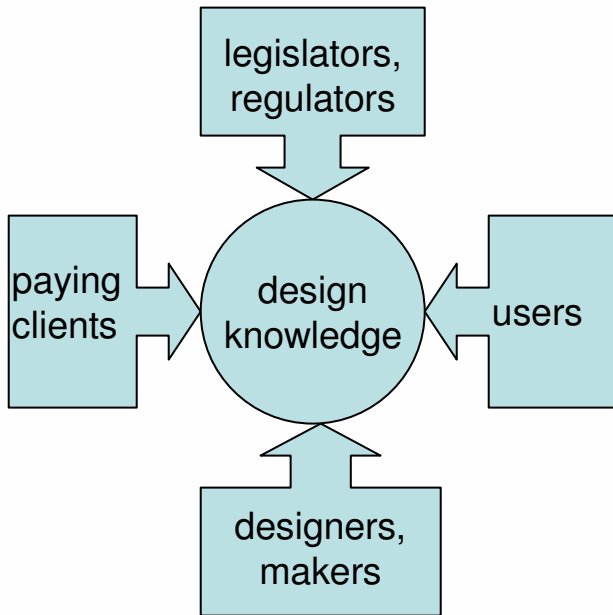
reflective: through external and internal representations that express and reflect upon half-formed ideas (consider, revise, develop, reject, return to)

ambiguous: live with uncertainty, leave option open as long as possible -- as placeholders (Wagner)

risky: a real possibility to fail, 'it is not comfortable, and it is not easy' (p34)

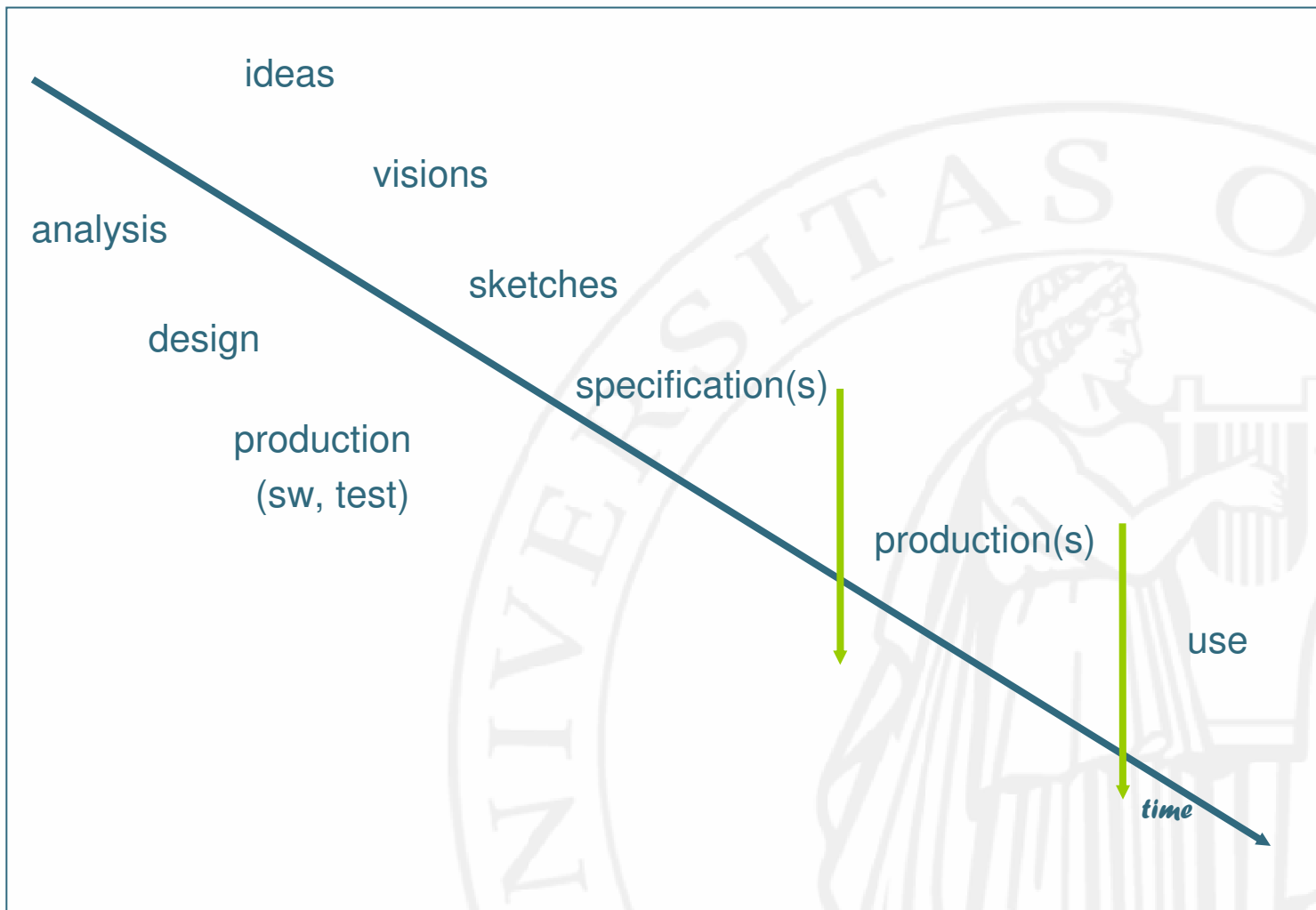
# what designers know; Bryan Lawson

- knowing by doing
- drawing / sketching



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# design in systems development

Andersen et al. 1986

