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Relating Systems Thinking and Design
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Boundary Critique

The work of Werner Ulrich

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Systemic design (*SD*) has primarily drawn on systems thinking (*ST*) methodologies. It is a niche area where soft systems methodology (*SSM*) almost dominates practice today (Hossain et al., 2020; Smith et al., 2019).

Yet, *ST* is more than methodology. *Critique* is an active surfacing and challenging of irresolvable tensions in philosophy, and boundary critique is its real-world counterpart – the life’s work of Werner Ulrich (1987; 1983).

In gist, boundary critique is a framework for reflective practice on four sets of tensions and boundaries (Ulrich, 2022; 1987; 1983; Ulrich & Reynolds, 2020). It also builds on Churchman’s (1971) own heuristics for application.

The use cases in the last five years have been in business and economics, coalition building, evaluation, and technology. In turn, this workshop is intended to help systemic designers apply boundary critique in their work.

KEYWORDS: boundary critique; critical systems heuristics, systems thinking.

RSD TOPIC(S): Methods & Methodology.

Boundary critique

Boundary critique, or critical systems heuristics (*CSH*), is a framework for reflective practice that focuses on “working constructively with tensions between opposing perspectives as they [will] arise in ... [all] professional interventions” (Ulrich, 2020, p.255).

The framework helps us surface tensions between

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- *Critique and maps*, or our 'reference systems' versus an abstraction of reality;
- *Why and who*, or our purposes versus identities with(-in) reference systems;
- *Claims and means*, or our justifications versus what we do with(-in) systems;
- *Conflicts and cost*, or scarce mutual understandings versus scarce resource.

In turn, its heuristics help us reflect on the boundaries of

- *Motivation*, or where the sense of purpose(-fulness) and value comes from;
- *Power*, or who controls resources and what we need to achieve our goal(s);
- *Knowledge*, or what experience or expertise supports our claims or means;
- *Legitimacy*, or the *who*, *how*, and *why* to be considered and also, reconciled.

With *theory*, Ulrich (1987; 1983) remains the source material. There are also recent and reliable secondary sources (Ulrich, 2022; W., Ulrich, personal communication, 24 Nov 2021; Wong, 2022; Wong & Tan, 2021; Reynolds & Wilding, 2020; Ulrich & Reynolds, 2020).

While there are claims for 'new' boundary critique, this is not supported by literature. The citations relate only to scoping generic boundaries (Haley et al., 2021; Ivanova & Elsworth, 2021; Sydelko et al., 2021) or modifying CSH (*see* Ufua, 2020, p.10 for a concise summary).

It is important to note that that boundary critique is neither (*meta-*)methodology, nor a precursor to design. *Critique* is an active surfacing and challenging (*dialectic*) of irresolvable tensions (*antinomies*) that *we live out and embody* – not '*critically*' think about.

With *practice*, recent use cases have been in business and economics (Kish, 2021; Ramezani et al., 2021; Mirhoseenie et al., 2019), coalition building (Nicholas et al., 2022; Wong & Tan, 2021), as well as program evaluation (Wong & Tan, 2021; Schawandt, 2018).

There is also a rising adoption in technology (Wong, 2022; Ivanova & Elsworth, 2021; Borrás & Edler, 2020; McCord & Becker, 2019), where methodology fails. Rather, design needs to emerge from surfacing tensions, boundaries, and thereby, the right conditions.

From experience, critiques are simply common sense and practical. On one hand, we can never know about scenarios beforehand (*a priori*) (i.e., how could we possibly reduce design to a *choice*?) On the other, reference systems are not '*thought through*', only lived.

It is a pity that many systemic designers are still unaware of boundary critique, since the framework has so much to offer "pragmatic applications of ... creative participation ... interaction with technology ... [and] observing the human experience" (Jones, 2021, p.31).

One reason for this is the near dominance of soft systems (*SSM*) on systems practice today (Hossain et al., 2020; Smith et al., 2019). Another has been secondary sources contrary to the spirit and letter of the framework, and its clarifications (E.g., Ulrich, 2003).

However, Ulrich (1987; 1983) is a difficult writer to read, even in short form (E.g., Ulrich, 2022). In fact, he can be inaccessible to people without formal experience or training in philosophy or policy. (In turn, this makes already poor secondary sources even poorer.)

Yet while concepts like tensions and boundaries are hard to grasp in writing, they are easily understood visually. Onscreen transitions allow us to walk through use cases, and tangibly 'see' the process, iterations, and setbacks as they would have had occurred.

In turn, the intent of this workshop is to enable systemic designers to apply boundary critique as-is. We will make use of a real-world professional intervention, not a publication. Still, a list of primary and secondary sources will be provided on the theories.

Boundary critique would appeal to systemic designers who work with embeddedness, embodiment, and entwinement. It could also appeal to interests in European design, albeit linked to American(-Berkeley) luminaries like Churchman (1971) and Nelson (2021).

Pre-Workshop

These readings are recommended in sequence:

- Ulrich (2022)
- Wong & Tan (2021)
- Ulrich & Reynolds (2020) (*optional*)
- Ulrich (1987) (*optional*)

It may be possible to explore your use case over the workshop. However, please write to desmond_wong@imda.gov.sg at least 2 months before the date for an exploratory chat.

Workshop

Workshop format

30 minutes | online | maximum number of participants 20 | using Miro or PowerPoint

Workshop agenda

0:00 – 0:05 *Why:* A 1-minute value proposition and concepts
0:05 – 0:15 *How:* From first steps, to fieldwork, to facilitation
0:15 – 0:25 *What:* Practice perspectives and how to do better
0:25 – 0:30 *Now what:* 3 key takeaway and how to get started

Exploring RSD11 themes

Systemic design has drawn on methodological aspects of systems thinking, almost dominated by SSM today. However, it has yet to explore boundary critique. This is not (meta-)methodology, but a higher order framework to reflect on tensions and boundaries.

Participants will gain an accurate understanding of boundary critique as a framework created by Ulrich (1987; 1983), building on top of heuristics first created by his teacher, Churchman (1971). They will also learn *how* to apply it to their advanced design practice.

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