

## PhD Program in Science and Policy: System thinking

**Lecturer:** Dr. Martin Reynolds, The Open University, UK

**Location:** University of Zurich, Botanical Garden

**Date:** 13-15, June 2017

**Credit Points:** 1 ECTS

### Course Objectives

- (i) demonstrate the relevance of boundary critique;
- (ii) provide a simple, practical framework to guide the application of boundary critique alongside conventional methods;
- (iii) expand participants' methodological repertoire in analysing complicated, complex, and conflictual situations, and designing better systems of intervention.

### Course Program

Participants will develop skills in systems thinking in practice using ideas from boundary critique and critical systems heuristics (CSH). Participants effectively design a reference system for their case study based on applying the CSH boundary-setting questions. Through surfacing key inter-relationships, perspectives, and boundaries, participants will explore the possibilities and limitations of making factual judgments, value judgments, and boundary judgments associated with the 'wickedness' of their case study situations.

The workshop will be a combination of presentation and mini-lectures (40%) centred on a core demonstration case study running throughout the event, group-work sessions (40%) based on individuals' choice between two to three other case studies, and plenary reflection and discussion (20%). Participants should also be encouraged to keep reflective notes through personal journaling during the course of the workshop. Morning and afternoon sessions should be of approximately same duration - 3 hours each, including 20 minute breaks. Figure 1 below provides a general model of the workshop.

**Prior Knowledge:** None required.

**Number of Participants:** 16

**Individual Performance and Assessment:** Assessment will be based on active participation during the course, a record of the personal journal (reflections of relevance of workshop material to students' own practice), and a summary of case study work. There is no preparatory work required for this course.

**Trainer:** Martin Reynolds <http://www.open.ac.uk/people/mdr66>

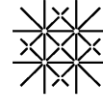
**Systems thinking in practice** involves deliberating on the boundary judgements that are implicitly made in researching and other interventions (planning and implementing projects, programmes, and policy). Making boundary judgments in an intervention (planning and implementation) 'contributes inevitably to exclusion and marginalisation of people and ideas. So it is necessary to subject boundary judgments to critical reflection, debate and justification – which in turn can help generate new more relevant values of merit, worth and significance. Boundary critique can be adapted for use by any practitioner with any one method or collection of methods comprising a specific analysis, design or evaluation of programs, policies or interventions. It can be applied in any context of intervention where complexity is evident.

Boundary critique provides an underlying systems approach. It is a *systems* approach because it deals explicitly with boundaries and boundary judgments - a core feature of any systems approach. CSH introduces a simple generic framework of systems thinking in practice based on boundary critique as



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‘conversation’ using three orders of conversation: 1<sup>st</sup> order conversation with reality (evidence), 2<sup>nd</sup> order conversation with stakeholders (values), and 3<sup>rd</sup> order conversation involving reflection on limitations of bounding evidence and values. Three complementary core ideas are outlined: (i) understanding inter-relationships, (ii) engaging with multiple perspectives, and (iii) reflecting on boundary judgments. Participants are invited to explore incidences of these three core attributes in their own chosen case studies. A particularly powerful systems approach – critical systems heuristics (CSH) – is used to exemplify the application of the three core ideas. CSH was developed by Werner Ulrich, based on the systems thinking philosophy developed by C. West Churchman. The four sets of CSH questions provide a reference system for examining the four sources of influence affecting any systemic design and systemic evaluation: (1) motivation and values; (2) control and decision-making; (3) knowledge and uncertainty; and (4) legitimacy and politics.