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# Making 'systems' work for evaluation<sup>1</sup>

Martin Reynolds<sup>2</sup>

## Abstract

Systems thinking is an arresting idea for meeting many of the systemic logistical, ethical, and political challenges of mainstream evaluation. Evaluative practitioners need to deal increasingly with logistics of interdependent variables in an evaluand, the ethics of contrasting perspectives amongst stakeholders including other evaluators, and the politics of institutionalised power relations relating to the governance of evaluations. Meanwhile, evaluators might be forgiven for the unsettled landscape of meaningful and appropriate systems thinking literacy to support their evaluative practice. The systems literacy can veer towards either seemingly being very shallow and flaky based on loose concepts of interrelationships, perspectives and boundaries (IPB), or alternatively very deep and intense, requiring considerable investment, for example, in learning constitutive rules of well-established systems thinking approaches. This paper maps out a more appropriate systems thinking literacy to work with in supporting evaluative practice – a literacy based on three principles of systems thinking in evaluative practice (STiEP) – relational thinking, perspective thinking, and adaptive thinking. The principles are accessible to evaluative practitioners; firstly, in dealing with systemic sensibilities without necessarily being shallow, and secondly being founded on traditions of critical systems thinking literacy without necessarily being obtruse. The principles can be enacted through a learning device – the STiEP heuristic - underpinned by an evaluative transdisciplinary approach of bricolage; a methodological approach that continually couples emergent systemic sensibilities with appropriate systems thinking literacy in order to generate STiEP capabilities.

The suggested STiEP principles are presented as a contribution to ongoing conversations amongst members of the *Systems approaches to evaluation* (SAE) thematic working group (TWG8) – approved by, and established under the auspices of the European Evaluation Society (EES) in 2022. The principles build on, whilst providing a point of departure from, principles published in 2018 by the sister American Evaluation Association (AEA) grouping *Systems in Evaluation Topical Interest Group* (SETIG). Whilst similarly based on ideas of IPB, the STiEP principles differ in terms of (i) having an explicit praxis orientation, (ii) being explicitly rooted in theoretical traditions of American pragmatism and critical social theory, and (iii) embedded in a methodological approach of bricolage that invites (multi) disciplinary, interdisciplinary and transdisciplinary conversations amongst practitioners.

**Key words:** bricolage, systems approaches to evaluation; systems thinking in practice; systems thinking in evaluative practice; transdisciplinary approaches

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<sup>2</sup> For correspondence: [martin.reynolds@open.ac.uk](mailto:martin.reynolds@open.ac.uk) Senior Lecturer and Postgraduate Qualification Lead, Systems Thinking in Practice, Applied Systems Thinking in Practice (ASTiP) Group, School of Engineering and Innovation, The Open University, Walton Hall, Milton Keynes, UK. MK7 6AA

## 1. Backdrop of encouraging systemic sensibilities

Systems thinking is an arresting idea for meeting many of the systemic logistical, ethical, and political challenges of mainstream evaluation. With logistical challenges, there has been a long tradition of tracking the shortfalls of linear systematic evaluation techniques; the critique of which underpins Supplementary Guide in the UK Government 2020 Magenta Book “[Handling Complexity in Policy Evaluation](#)” and other work supported and undertaken by the UK-based CECAN (Centre for Evaluating Complexity Across the Nexus) (Barbrook-Johnson et al., 2021). Traditional logical framework techniques, standardised programme planning, and randomised control trials (RCTs) have been particularly subject to the critical lens of being ‘reductionist’ – too focused on narrow terms of reference, beholden on a linear pathway, and negating the importance of factors outside of the evaluation intervention (Fig. 1)



Fig. 1 Traps of linear thinking and the [The Impossibilities of the Circular Economy](#) (Lehmann et al., 2022)

The context of evaluands have of course always been subject to uncertainties, turbulence, lack of control, nonlinearities, and unforeseen emergent events (Mowles, 2014; Reynolds, 2015a; 2018). What may have changed is a more widespread appreciation and retrieval of our systemic sensibilities about the interconnectedness of any evaluand, as expressed through popular notions of intersectionality and polycrises etc.

Systemic sensibilities generate ethical as much as logistical dimensions, revealing the shortcomings of expert-led intervention with built-in assumptions of different stakeholder perspectives. Again, there is a long tradition of corrective measures encouraging wider participation within evaluative practices dating from late 1980s ‘Fourth generation evaluation’, to more recent expressions of ‘Participatory evaluation’ (Christie and Alkin, 2023). Giving voice to evaluand stakeholders provides an ethical address to issues of utility and rights-based evaluation.

Together, systemic awareness of logistics and ethics contribute to the increasing dimension of political sensibilities around meeting transdisciplinary endeavours of evaluation. Here there is a focus on *transforming* ‘systems’ and making ‘systems change’. Attention is being given amongst evaluators towards *developing* value rather than simply measuring value (cf. Schwandt and Gates, 2021); an endeavour that invites attention to different relations of power - power-over, power-with, power-to, and agency (power-within) - associated with evaluation.

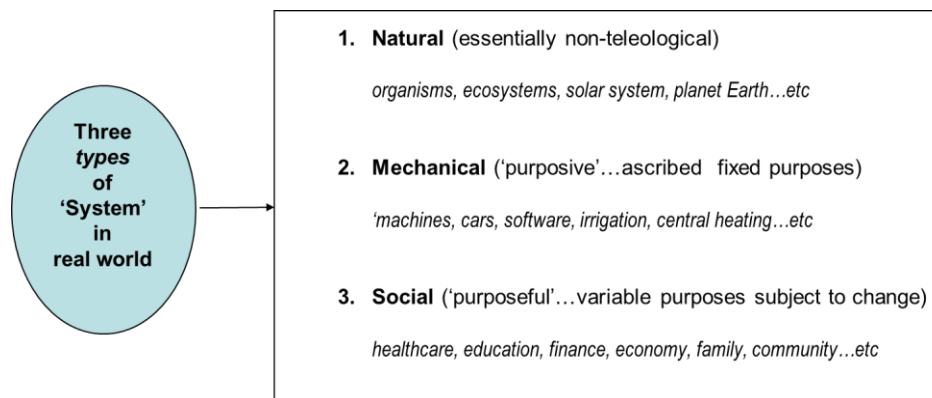
The growth in awareness of systemic sensibilities in all three dimensions might have generated more attention and interest in systems thinking and the development of a systems thinking literacy. To a limited extent, amongst practising evaluators, that has been realised. Terms like ‘systemic failure’ and ‘systems change’ are now common currency in both public and professional domains. Ideas of complex systems, emergence, feedback loops and modelling – including theories of change – are increasingly part of a growing systems literacy in evaluative practice.

There are though limitations. Section 2 examines the feral nature of the concept of systems and varied use of systems thinking ideas. It suggests a more purposeful way in which ‘systems’ might better work for evaluation. Sections 3 and 4 respectively examine some key challenges and opportunities in making systems thinking work. Section 5 draws together experiences of making systems work in providing three basic principles for supporting systems thinking in practice (STiP) and more specifically supporting what I have termed systems thinking in evaluative practice (STiEP)

## 2. Making sense of ‘systems’ and systems thinking literacy

There are two ways of using ‘systems’ as a device by evaluators for supporting evaluation. One is as an ontological device for capturing the reality of a situation of interest (1<sup>st</sup> order orientation). Another way of using the systems idea is as an epistemological device for actively learning about and thereby more proactively shaping a situation of interest (2<sup>nd</sup> order orientation).

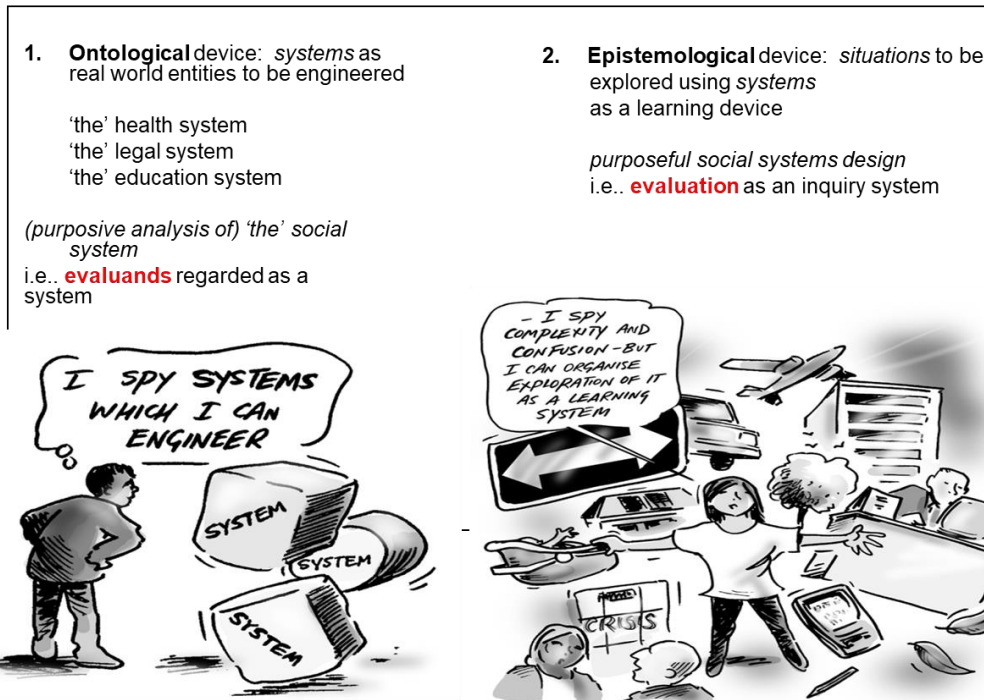
Figure 2 illustrates the somewhat feral way in which ‘systems’ are commonly used in general language as ontological devices.



**Fig. 2 Using systems as primarily 1<sup>st</sup> order ontological device (capturing reality)**

Whether using the ‘term’ systems as an ontological device or epistemological device it is important to appreciate that ‘systems’ *are* essentially conceptual devices, ways of thinking about reality. To paraphrase Alfred Korzybski (1931; 1933) systems are best considered ‘maps of the territory, not the territory’

It is perfectly reasonable to use systems as ontological devices, but when used as part of STiEP endeavours, it is advised to adopt the primacy of systems as epistemological devices.

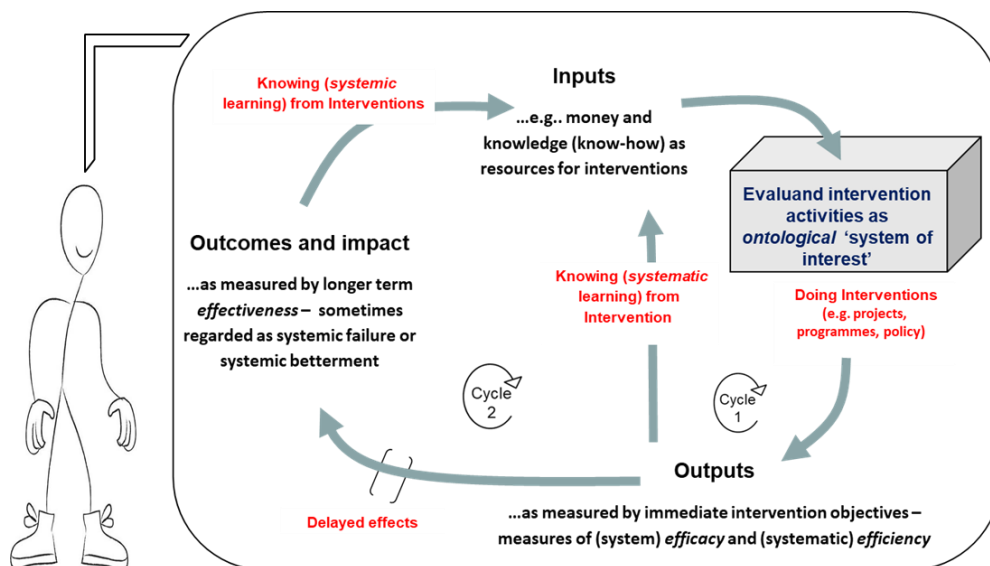


**Fig.3 Ontological and epistemological uses of systems in evaluation**  
(Graphics of each device sourced from Ison, 2017)

Figure 3 illustrates both uses of the systems idea, but it also hints at how systems can be (mis)used in treating the evaluand (e.g a project, programme, or policy) *exclusively* as something to be engineered through evaluation.

One way of using 'system' as primarily an ontological device is through regarding an intervention (project, programme or policy; i.e. an evaluand) as a system through a theory of change (ToC). However, in just viewing the *evaluand* as an isolated reified system (an ontological perspective), there remains a lost opportunity in the potential for regarding the *evaluation* process itself as a system of interest – a learning device (using an epistemological perspective); a system with non-linear activities including potential feedback loops helpful in the evaluation endeavour.

Figure 4 illustrates the whole evaluation depicted through a ToC itself as (an epistemological) learning system of interest, whilst retaining the evaluand as (an ontological) system of interest.



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**Fig. 4 Generic Theory of Change with Evaluation Regarded Primarily as an Epistemological (Learning) System of Interest**

Incorporating both systemic and systematic endeavours illustrating two feedback loops (Cycles 1 and 2) representing two complementary loops of learning (Hummelbrunner and Reynolds, 2013). Cycle 1 represents single-loop learning from evaluation – systematically measuring ‘outputs’ from a defined system of interest (often associated with the terms of reference for an evaluation) – inviting the question ‘is the intervention working right?’. Cycle 2 represents a deeper potential for double-loop learning – where longer term outcomes and wider possible impacts might be considered through the evaluation process, thus leaving open the possibility of questioning or conversing with the original commissioned terms of reference for the evaluation – inviting the question ‘is this the right intervention?’

Viewing the evaluation process as a learning system here involves the core relational dynamic between being *both* systematic (the inevitable ‘reductionist’ step-by-step endeavours required of any intervention, including an evaluation) *and* being systemic (anticipating and interrogating longer term outcomes and wider impacts). Using systems as primarily an epistemological device has considerable benefits in securing not only better outcomes of an intervention (1<sup>st</sup> order benefits) but also greater learning amongst evaluators (2<sup>nd</sup> order benefits). Such learning from the epistemological use of systems can in-turn secure ongoing better evaluation.

The limitations in uptake of systems thinking ideas have come from contrasting views amongst systems thinking practitioners regarding the relative importance of encouraging systems thinking literacy.

### 3. Challenges in making ‘systems’ work for evaluation

Two distinct pathways towards supporting systems thinking in evaluative practice can be identified; (i) an orientation more towards *recovering systemic sensibilities*, and (ii) an orientation more towards *deepening systems thinking literacy*. The two orientations came to surface in a debate on how best to deploy systems thinking in evaluative practice between two reputable practitioners in respective fields of Evaluation and Systems thinking - Michael Patton (2022 and 2023) and Mike Jackson (2022 and 2023).

Patton champions an encouragement towards recovering systemic sensibilities through a defence of what has been increasingly referred to amongst evaluators as the IPB approach based on attending to generic concepts of Interrelationships, Perspectives, and Boundaries.

Jackson (2022) critiques this approach with a preference towards what I would call a deepening systems thinking literacy; manifest in promoting his long-standing approach of critical systems practice (CSP). Jackson's most recent rendering of CSP is through a methodological approach called EPIC—Explore (the problem situation), Produce (an intervention strategy), Intervene (flexibly), and Check (on progress). Jackson attends to the practice of *evaluation* as synonymous with 'Check' in EPIC, and goes on to critique what he regards as the lack of appropriate influence of systems thinking as a discipline on evaluation (*ibid*).<sup>3</sup>

For ease of reference I'll use the acronyms IPB and CSP to signal the two orientations. Both have their limitations and challenges – shortcomings - in making 'systems' work better with evaluative practice. The two orientations are summarised in Boxes 1 and 2, followed by an explanation of my own positioning.

**Box 1 Recovering systemic sensibilities: IPB approach (interrelationships, perspectives, boundaries)**

The three concepts originally emerged from a four-day gathering in Berkeley, California in October 2005, involving a group of twelve international systems thinkers along with variable numbers of evaluation practitioners, sponsored through assistance from the American Evaluation Association (AEA). The deliberations – sometimes referred to as the 'Meeting of Minds' event - resulted in the publication *Systems Concepts in Evaluation: an expert anthology* (Williams & Imam, 2007). The aim of the gathering was to generate better use of systems ideas for evaluation by way of purposeful conversations between the two communities.

A core feature of IPB is the looseness and variable ways in which the concepts might be deployed for an evaluation. Used as stand-alone nouns, the concepts remain essentially undisciplined – part of what I might call a lifeworld of systemic sensibilities. Focus here has been on promoting systems thinking techniques and core ideas such as getting the bigger picture, holistic thinking, rich pictures, systems mapping techniques, causal loop diagramming, influence diagramming, participatory diagramming, and a whole range of other types of visualisation techniques and interactive strategies associated with action research for deliberative action.

**Possible shortcomings**

- (i) Too opaque/ vague/ anecdotal; concepts of IPB appear to be too shallow, lacking depth in theoretical tradition and weak in robustness and rigour
- (ii) Free standing nature of loosely defined concepts allow them to be captured by less-systemic practitioners, adopting and adapting bare sensibilities of IPB, and deploying IPB to defend and perpetuate conventional over-systematic practices
- (iii) Relating to (i) and (ii), there appears little definitive guidance on how to deploy IPB in an intervention (including evaluation itself as an intervention)

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<sup>3</sup> Three systems approaches to evaluation are identified by Jackson; (i) single methodologies (using tools from one particular systems approach – say, viable system model or system dynamics, etc); (ii) systems concepts drawing particularly on three concepts – IPB; and (iii) critical systems thinking (CST) and Jackson's own rendition of CSP. The prime focus of concern between Patton and Jackson relates to the latter two approaches – IPB and CSP.

### **Box 2 Deepening Systems Thinking Literacy: CSP approach (critical systems practice)**

CSP derives from a wider tradition of critical systems thinking (CST) first expressed in the 1980s through Centre of Systems Studies at University of Hull. CST encourages the critical examination on boundary judgements associated with systems thinking i.e. the boundaries implicit in our mental models of, say, economic or health systems, and those boundaries more actively constructed explicitly through systems modelling and/or systems design. CST promotes the use of a range of methods and methodological approaches with the ultimate intent towards promoting an emancipatory interest on behalf of those ideas and stakeholders (factors and actors) conventionally marginalised in society (Reynolds, 2016). Jackson's focus on 'practice' with CSP (as one expression of CST) highlights the concern for multimethodology or methodological pluralism.

Evaluators need to gain skilled know-how in the systems approaches associated with Jackson's five prescribed 'systemic perspectives' on problem situations: machine, organism, cultural/political, societal/environmental, and interrelationships. Two directives of EPIC include: "To provide an understanding of the strengths and weaknesses of the different systems approaches [and] ...to take appropriate systems methodologies, models and methods and use them together in an intervention that will improve the problem situation" (Jackson, 2022, Appendix A).

#### **Possible shortcomings**

- (i) Too complicated/expert-driven/ time-consuming; practising evaluators have limited capacity to engage with varied lineages of systems thinking literacy associated with STiP
- (ii) Systems literacy associated with grammar of constitutive rules and philosophical traditions underpinning systems approaches may provide a trap against exploring innovative systemic sensibilities
- (iii) Relating to (i) and (ii), there may be a built-in tendency towards marginalising (which can sometimes be experienced as 'gaslighting') existing evaluation tools and practices that may be helpful in securing systems thinking in evaluative practice

The two approaches towards supporting systems thinking in evaluative practice (STiEP) may appear quite polarised. Notwithstanding my own involvement with the Berkley event – and proclivity towards systemic sensibilities, my actual biography belies a proclivity more towards supporting 'systems thinking literacy'. As co-editor of *Systems Approaches to Making Change* – a compilation of commissioned works from a range of significant expert systems thinking practitioners (Reynolds and Howell, 2020 [2<sup>nd</sup> Edn]), coupled with being a lead author on a Postgraduate programme in *Systems Thinking in Practice* at The Open University, I like to think that I have modestly contributed towards embedding some greater systems literacy amongst various professional practitioners (Box 2).

However, my own preference for supporting STiEP leans more towards the need to recover systemic sensibilities amongst such practitioners (Box 1). As a participant systems thinking practitioner at the 2005 Berkeley event in California I can testify that the extensive conversations in Berkeley did not focus on the constitutive rules of particular systems approaches, but rather on how different aspects, tools and patterns of systems thinking might resonate with evaluative practice in order to enhance such practice.



Whilst there is a need to address *both* systemic sensibilities *and* systems thinking literacy, the core driver towards STiEP lies with continually appreciating and dealing with systemic dimensions of any evaluand and evaluation. An appropriate literacy is also important in working through a systemic evaluation process, but may not exclusively rely on existing lineages or traditions of systems literacy in order to be effective. Before exploring how both approaches might work together in supporting evaluative practice, some further weaknesses of each approach as described in Boxes 1 and 2 can be emphasised.

In emphasising systemic sensibilities, there can be a tendency towards ‘systems washing’ amongst practitioners, particularly those not well-versed in systems literacy. This ‘washing’ relates to the superficial use of systems literacy in undefined phrases like ‘whole systems change’ and ‘joined up thinking’ etc., as well as the prefixing of common terms with ‘systemic’ (systemic medicine, systemic engineering, systemic management, systemic evaluation, etc.) giving an outward impression of doing things differently but not actually backed up evidence (Reynolds and Ison, 2023).

Recovering systemic sensibilities through IPB involves supporting and developing a shared understanding of the basic concepts in using the systems idea. Much of this in the evaluation field has been promoted through publications such as the collective edition *Systems Concepts in Evaluation* (Williams and Iman, 2007) where the conceptual ideas of IPB first emerged, and the extensive works of Michael Patton including *Developmental Evaluation* (2011), *Principles-focused evaluation* (2018), and *Blue Marble Evaluation* (2020). Some of the concerns around the use of IPB relates to the looseness of meaning attached to the concepts in isolation, and their use outside of any wider framing device. One important corrective is the adding of verbs attached to the concepts, as expressed in the parameters of a systems thinking in practice (STiP) heuristic – constituting three activities (i) understanding inter-relationships, (ii) engaging with multiple perspectives, and (iii) reflecting on boundary judgements (Reynolds, 2011).

In relation to promoting a systems thinking literacy, whilst CSP may appear as being set up as ‘best practice’ its claim and value lies more towards supporting the contingency driver of ‘best fit’ (cf. Ramalingam et al., 2014); a meta-practice set of guidelines in supporting contextualised incidences of good systems practice. In this practice, situations of interest (e.g. evaluands) are regarded (by the evaluator) as being of a particular nature – typically, simple, complicated, complex, or conflictual – which invites a particular systems approach best-suited for the situation. As argued elsewhere, this contingency approach to evaluation falls into two basic traps: firstly, that any situation can be objectively and systematically defined from the outset rather than systemically assumed to have elements of complicatedness, complexity and conflict; and secondly, that systems approaches and their tools somehow have intrinsic properties over and above the situated use-of, coupled with users of, the systems approaches and emergent capacity to adapt tools accordingly (Reynolds, 2015a). As expressed by Ken Bowen in an earlier critique of the multimethodology espoused by Jackson: "I hazard a guess that rather than shift between methodologies, most will choose to weave ideas which they wish to borrow into their own preferred overall pattern, especially if they are the designers of the methodology" (Bowen, 1996 p. 174)

The CSP approach requires in my view an unnecessarily deeper engagement and familiarity with systems literacy. CSP makes it less practically viable for those without, or even limited, systems literacy to engage.

In a conciliatory note at the end of a published exchange of viewpoints between Patton and Jackson, Jackson expresses the possibility of having some ‘golden mean for systemic evaluation’ (Jackson, 2023). The idea suggests the search for some magical fixed point between perceived polar opposites

of what I have termed aptitudes of recovering systemic sensibilities and proficiency in embedding systems thinking literacy. An alternative viewing might regard the two dimensions not as polar opposites on a continuum, but rather as an ongoing dualistic coupling or conversation. The coupling can be regarded as part of a wider conversation between being systemic and being systematic - an often unsung principle behind what constitutes systems thinking (in practice) capability.

I'll shortly return to suggested principles of systems thinking as a means of addressing the challenges of supporting evaluative practice. Meanwhile, it is perhaps helpful exploring some contextual opportunities afforded towards endeavours in cultivating systems thinking in evaluative practice.

#### 4. Opportunities for making 'systems work'

Two events are worth mentioning in support of developing STiEP – the approval of a new Thematic Working Group (TWG) affiliated with the European Evaluation Society (EES), and the approval of a new postgraduate level occupational Standard for Systems Thinking Practitioner Apprenticeship (STPA).

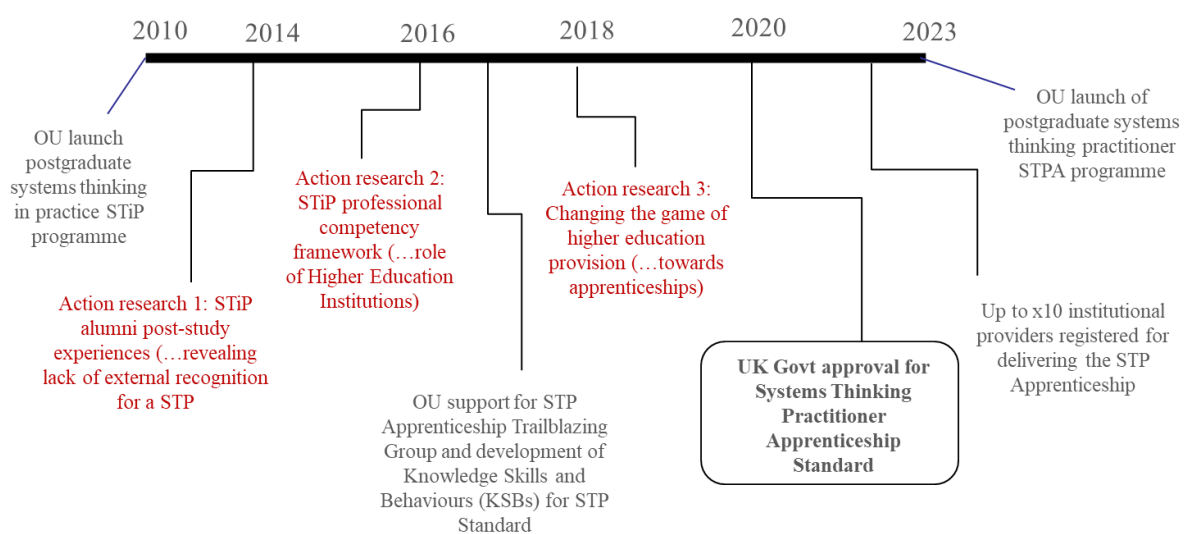
As a result of deliberations arising from the 14th European Evaluation Society Biennial Conference held in Copenhagen in June 2022, a group of evaluative practitioners, led by Barbara Schmidt-Abbey from Ireland and Kirsten Collins from Denmark, set about seeking approval for a new TWG based on systems thinking. In early 2023, EES gave approval for [TWG8: Systems Approaches to Evaluation](#) (SAE). Since then, the group has been active with bimonthly meetings and hosting events, including an inaugural occasion of an online panel discussion between Patton and Jackson (EES, 2023). TWG8 - SAE provides a European based counterpart to the longer standing Systems in Evaluation Topical Interest Group (SETIG) of the American Evaluation Association (AEA); a group that gave impetus and assistance for the 2005 *Meeting of Minds* event in Berkeley (referred to in Box 1).

The personal endorsement and active encouragement provided by the current (2023) EES President - May Pettigrew – as well as the vibrant conversations and contributions being made to the regular meetings (including from colleagues associated with AEA-SETiG and others outside of Europe, as well as May herself) lends hope for more significant progress on making 'systems' work more meaningfully for evaluative practice. In general the Group opens a vital space of conversation amongst evaluators and, in continuation of the Berkeley event, between evaluators and systems thinking practitioners, for continued exploration and experimentation with ideas and tools from many traditions of practice – including, but not only, evaluative practice and systems thinking in practice. This sense of playfulness in developing STiEP can be regarded in terms of methodological bricolage (cf. Patton, 2011 ch.11; Reynolds & Holwell, 2020 Preface to the Second Edition). Bricolage is a transdisciplinary and eclectic approach that allows reconciling different ways of knowing, doing and being for purposeful action. With the postgraduate programme in STiP at The Open University, bricolage is used as an overriding methodological principle for crafting the artisanal skills of STiP – specifically supporting the systemic triadic relationship between understanding interrelationships, engaging with multiple perspectives, and reflecting on boundary judgements, underpinning the STiP heuristic (Reynolds and Shah, 2020). Bricolage is increasingly regarded as relevant in the context of systems thinking in evaluative practice (cf. Hargreaves, 2021; Aston and Apgar, 2022).

More particularly, from my viewpoint, the European STA Group (TWG8) also prompts an opportunity towards appreciating more the potential with 2<sup>nd</sup> order dimension of systems thinking – use of the 'system' idea as an epistemological (learning) device for purposeful evaluation – referred to in section 2.

Another significant space for wider conversation around 2<sup>nd</sup> order dimension of systems thinking is afforded by the UK Government approval of the Systems Thinking Practitioner Apprenticeship (STPA) Standard in 2020. The approval provides a significant landmark in shifts towards external recognition of STP as a professional role, and STiP as a profession. The STPA Standard itself comprises a set of 25 knowledge, skills and behaviours (KSBs); a benchmark to which an apprentice needs to demonstrate proficiency, in order to then gain the Apprenticeship qualification.

Figure 5 outlines the historic emergence of the STP Apprenticeship, including the role of our own postgraduate STiP program at The Open University. At the time of writing, STPA – a minimum two-year program of part-time study integrated with workplace activities - is available for organisations only based in England, though there is considerable interest in customizing the programme elsewhere. As hinted below, STPA presents opportunities beyond individuals and institutions immediately benefitting.



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**Fig. 5 Timeline in development of the Systems Thinking Practitioner Apprenticeship (STPA)**  
(UK) example in externalised recognition of a professional role as a systems thinking practitioner (STP)

Several opportunities are afforded by STPA for supporting STiEP. Most directly there may be opportunities for evaluators themselves based in England to join an Apprenticeship scheme being currently delivered by a range of providers. Whichever provider is chosen, practicing evaluators will have an opportunity to test out ideas of systems thinking within their own workplace – whether that be, for example, a private sector industrial business, a consultancy, education institution, or an NGO or public sector organization etc. Whichever provider is selected, the program is obliged to provide for appropriate practical and academic mentoring support commensurate with satisfying the STPA Standard.

Beyond direct individual and organisational benefits, the STPA provides an opportunity for higher education institutions – including Further Education colleges and Universities – to expand their

curriculum provision to include academic courses on systems thinking.<sup>4</sup> The STPA has opened the doors for a whole range of new systems courses to be developed, many involving fresh and early-years academic practitioners. From my perspective, there has been a marked invigorated input to postgraduate systems thinking curriculum across UK higher education.

Another related potential benefit of apprenticeship programs more generally – and something that may take a little longer to be realized - is the opportunity to present a new way of delivering PG curriculum; one that privileges more ‘practice’ over ‘theory’ elements of higher education learning. In short, there are potential opportunities of using praxis ideas underpinning systems thinking *in practice* with the STPA curricula, to inform alternative and better ways of teaching higher education level (Reynolds, 2020; Reynolds et al., 2020)

### 5. Three principles for making ‘systems’ work for evaluation

One measure of disciplining the concepts whilst retaining their essential systemic sensibilities is through identifying principles associated with the application of systems thinking in evaluative practice. Some years after the 2005 ‘Meeting of minds’ gathering in Berkley, subsequent endeavours of a group of 21 systems evaluators from the Systems in Evaluation Topical Interest Group (SETIG) of the American Evaluation Association (AEA) worked collaboratively over two years to convert the IPB concepts into *Principles for Effective Use of Systems Thinking in Evaluation* (SETIG, 2018). With an overarching principle of systems-in-evaluation, four constituent principles are identified – interrelationships, perspectives, boundaries, and dynamics – each contributing to a total of twelve operating principles.

Below, I offer an alternative modification of the SETIG principles, based on an eighteen-year endeavour as lead co-creator of a postgraduate programme in STiP at the the Open University, UK. In the more recent development of the module *Evidencing STiP* for the Open University STP Apprenticeship programme, three general principles for STiP have emerged (Reynolds & Ison, 2023). These can be customised for systems thinking in *evaluative* practice – STi(E)P.<sup>5</sup> As with the SETIG principles noted above, the STiEP principles are based on ideas of IPB. The three principles of STiEP (described more fully below) are respectively referred to as – *Relational*, *Perspective*, and *Adaptive* - thinking in evaluative practice (...TiEP).

The point of departure from SETIG rests with a more nuanced meaning behind the three (systemically-informed) lose ideas of IPB, based on some basic (more systematically-informed) systems literacy; a meaningfulness that I suggest offers some coherency and rigour to the enactment of STiEP principles. One overriding aspect of systems literacy is that (evaluative) practice is a form of *praxis* – theory informed action – where neither thinking or practice is exclusively privileged in terms of a conventional (either/or) dualism – i.e. ‘thinking *or* practice’, but rather regarded as a continual (both/and) duality – hence ‘thinking *in* practice’ or thinking in evaluative practice (TiEP).

The praxis of STiP draws on traditions of American pragmatism using ideas of boundary critique and systemic triangulation (Ulrich, 1996, Reynolds, 2016, Ulrich and Reynolds, 2020). The triangulation is between three sets of judgements in continual interplay – judgements of fact (‘evidence’), coupled always with value judgements, and mediated through boundary judgements. Any system of interest

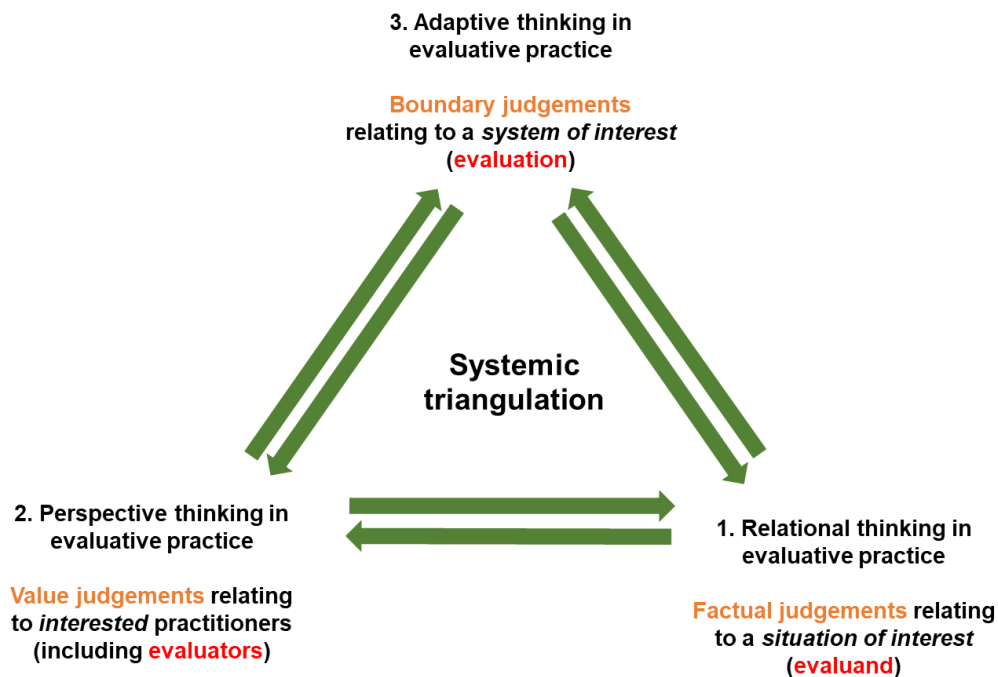
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<sup>4</sup> In the UK, up until 2020, only Hull University and the Open University as Universities had any substantive track record in delivering exclusive systems thinking courses in the UK (though with Hull University having its Masters program in Systems Thinking dissolved in 2004).

<sup>5</sup> The evaluative ‘E’ is placed in brackets here to signal this particular practice as one amongst many different professional practices to which STiP can be aligned – including healthcare (H), design (D), engineering (Eng.), research (R) etc.

can be regarded as a bounded entity actively constructed through *boundary judgements* (...of a 'system' and its sub-systems), constituted by an interplay between *value judgements* ('perspectives' on the situation informing the system) and '*factual*' judgements ('evidence' of situational reality informing the system).

Figure 6 depicts the interplay between the three judgements as corresponding with each of the three principles of STiEP associated with respective attention to (i) evaluands (relational TiEP), (ii) evaluators (perspective TiEP), and (iii) evaluations (adaptive TiEP). Each principle is described below Figure 6.



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**Fig.6 Systemic triangulation between 3 principles of systems thinking in evaluative practice** ...relating to boundary critique – the interplay between making judgements of ‘fact’ with ‘value’ judgements, mediated through ‘boundary’ judgements (drawing on Ulrich, 1996; Ulrich and Reynolds, 2020; and Reynolds, 2011, 2015b, 2016)

The three principles of STiEP are described below. Each principle provides two operational sub-principles – one relating to 1<sup>st</sup> order engagement of the systems idea (ontological use of systems as if representing situations, with a focus on using systems to depict evaluands), and one relating to 2<sup>nd</sup> order engagement of the systems idea (epistemological use of systems as learning devices, with a focus on using systems to learn through an evaluation)

### 5.1 Relational thinking in evaluative practice

“...everything connects” (Leonardo DaVinci 1452-1519)

Attend to interrelationships between entities (relational thinking) rather than entities in isolation ('residual' thinking). Systems thinking is a duality between the systematic and systemic. Being *both* systematic *and* systemic in evaluative practice is a core part of the wider logistical need to address inevitable non-linear dynamics involved with any evaluation.

Systematically addressing terms-of-reference for any commissioned evaluation - using measures of efficacy and efficiency relating to immediate 'outputs' from the evaluand - might be enhanced through engaging *also* more systemically with longer term outcomes and wider impacts.

### *Operational principles*

- 1.1. **Evaluands:** 1<sup>st</sup> order interventions (projects etc.) can be viewed (conceptualised) as non-linear 'systems' (ontological devices). Systems thinking involves standing back (getting the bigger 'rich' picture) and reflecting on 1st order relational dynamics within a given situation of interest.
- 1.2. **Evaluation:** 2<sup>nd</sup> order interventions (evaluation of projects etc.) can also be viewed as wider non-linear 'systems' (epistemological devices), with *systematic* cycles of interplay between inputs and outputs, and more *systemic* cycles of interplay between inputs and wider outcomes and longer term impacts. Systems thinking involves 2nd order reflexivity – acknowledging the role and responsibility of the practitioner as an integral part of the situation of interest.

### 5.2 Perspective thinking in evaluative practice

"systems thinking *begins* when first you see the world through the eyes of another" (Churchman 1968 p.77)

"... the transition of oneself from an *observer of a reality* which is considered to be outside oneself, to a participant in the same reality, and then towards being a *co-creator of that reality*, requires fundamental cognitive and emotional reorientation" (Buddrus, 1996, quoted in Bell and Morse, 1999 p. 85. My italics)".

Systems are fundamentally conceptual constructs which can be used to both (i) represent realities of any evaluand ('as if' constructs) as part of 1<sup>st</sup> order reflective practice, and (ii) actively shape realities during an evaluation through purposeful 2<sup>nd</sup> order reflexive praxis. Such evaluative practice as praxis invokes ethical responsibilities (e.g. what is 'good/harmful' and 'right/wrong') on the part of evaluators as situated practitioners integral to the evaluand.

### *Operational principles*

- 2.1 **Evaluands:** STiEP involves deepening a 1<sup>st</sup> order agency (power-within alongside power-over and power-with), using systems literacy for principally co-creating 'knowing about the world'; determining values with other practitioners about the evaluand
- 2.2 **Evaluation:** STiEP involves broadening a 2<sup>nd</sup> order agency (power-within alongside power-to), using systems literacy for principally co-creating 'knowing how to work (in) the world' whilst intervening with other stakeholder groups and mediating with different cultures of practice; generating value in the process

### 5.3 Adaptive thinking in evaluative practice

"...if a system [an evaluation] is to be able to deal successfully with the diversity of challenges that its environment produces, then it needs to have a repertoire of responses which is (at least) as nuanced as the problems thrown up by the environment. So a viable system [e.g. an evaluation] is one that can handle the variability of its environment. Or, as [Ross] Ashby put it, only variety can absorb variety." (adapted from Naughton, 2017)

"No problem can be solved from the same consciousness that created it. We have to learn to see the world anew" (Albert Einstein 1879-1955).

Attend to change in relevant interrelationships and relevant perspectives – requires continually adapting boundaries; i.e. developing systems thinking in practice capability in evaluation. Systems

that we construct in an evaluation – whether at 1<sup>st</sup> or 2<sup>nd</sup> order level – are always provisional; transitional and impermanent. 2<sup>nd</sup> order STiEP invites development of learning; that is, systems that are agile and responsive to changes in lifeworld in which systems inhabit. Evaluations as purposeful learning systems of interest may be regarded as political tools; socio-technical constructs that have power-over situations as well as power-to transform situations, or conversely power-to maintain business-as-usual relations of power. STiEP is political.

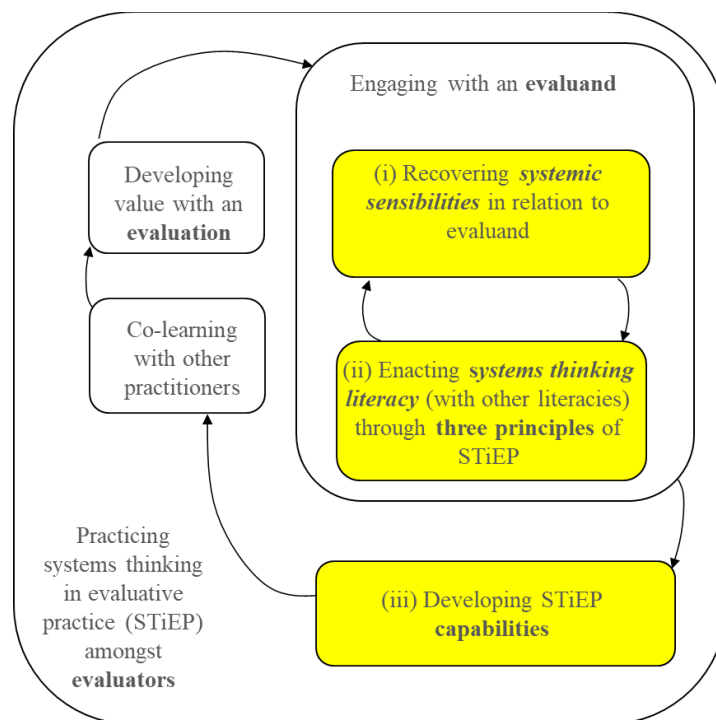
*Operational principles*

- 3.1 Evaluand: STiEP involves identifying and anticipating incidences of institutional constraints to, and enablers of (affordances for), capability – the realpolitik of power relations – in situated practices. STiEP capability examines the actual power relations helping and/or hindering ethically effective STiEP for eco-social betterment (1<sup>st</sup> order evidencing of STiP capability).
- 3.2 Evaluation: STiEP involves orchestrating an evaluative practitioner performance that maintains and/or renegotiates relationships (e.g. with a colleague, a co-worker, a commissioner, a funder, project or programme manager etc.), creating (i) effective evaluative action in situations of concern as well as (ii) actions to reframe the situations in ways that enable more effective STiEP (2<sup>nd</sup> order evidencing with STiEP capability)

The three sets of principles are an elaboration of the IPB but founded upon robust theoretical lineages of American pragmatism and critical social theory (Reynolds, 2011; 2016). They are an integral part of a wider methodological approach to enacting STiEP through bricolage.

6. STiEP and bricolage

Figure 7 illustrates the essential dynamics of enacting STiEP as bricolage through a generic activity model (i.e. a learning system or heuristic).



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**Fig.7 Activity model (heuristic) of systems thinking in evaluative practice (STiEP)**



...based on a methodological approach of bricolage, incorporating an ongoing interplay amongst three core activities: (i) *Recovering systemic sensibilities*; (ii) *Enacting systems thinking literacy*; and (iii) *Developing STiEP capabilities*

*Recovering systemic sensibilities* involves both reflecting on the bigger picture of an evaluand (1<sup>st</sup> order reflective practice) as well as acknowledging personal responsibility as part of the evaluand (2<sup>nd</sup> order reflexive practice). *Enacting systems thinking literacy* involves attention to the three STiEP principles outlined above and the operating sub-principles associated with 1<sup>st</sup> and 2<sup>nd</sup> order practice. Crucially with bricolage, these principles are enacted in correspondence with literacies (expertise and experiences) associated with other practitioners involved with the evaluand, giving expression to multidisciplinary, interdisciplinary and transdisciplinary conversations. *Developing STiEP capabilities* is part of an ongoing learning process arising from such conversations, giving emergence to developing value as a constituent part of STiEP in any evaluation.

The three principles of STiEP outlined in Fig.6 and section 5 above can be regarded as the core component part of a methodological approach of bricolage underpinning how 'systems' might better work for evaluation.

## 7. Conclusion

Principles are not tablets of stone but rather simple guidance frames – a form of literacy that helps with enacting practice. The STiEP principles expressed here are designed to speak not only to systemic sensibilities associated with practicing evaluators, but are founded on systems thinking literacy; specifically ideas of systemic triangulation with boundary critique underpinning STiEP, as presented in Fig.6. The three principles can be summarised:

P1 – Relational thinking (in evaluative practice): nurturing ongoing systemic sensibilities around the intervention (evaluand) *coupled with* more systematic endeavours in progressing intervention aims and objectives

P2 – Perspective thinking (in evaluative practice): ensuring continual attention to viewpoints that may be affected by though not involved with the unfolding evaluand; i.e. engaging with traditionally marginalised communities as well as those in command of key decision making resources

P3 – Adaptive thinking (in evaluative practice): securing meaningful learning in action by revisiting and revising boundaries of the intervention being evaluated (including possible refinement of aims and objectives) in order to adapt to inevitable changing circumstances.

Drawing on ideas and experiences of teaching bricolage we can widen systemic sensibilities in evaluative practice and deepen systems literacy with evaluative practice in developing *logistical*, *ethical*, and *political* value. Navigating evaluations as systems of interest in evaluative practice requires not just addressing discomforting logistical questions on dealing with dynamics of change and uncertainty in situations, but also working with ethical issues of engaging contrasting perspectives, and mediating these through political endeavours of questioning and adjusting the boundaries of systems that we work with – the boundaries of governance in the situations of interest, and the boundaries of governance associated with the evaluative practice itself.

The inaugural online debate event between Patton and Jackson in February 2023 marked a newly established European thematic working group *Systems approaches to Evaluation* (TWG8) approved by the EES. It also marked an unsettled landscape amongst evaluative practitioners on how best to



make 'systems' work in evaluative practice, exposing contrasting emphases to systemic sensibilities (cf. Patton) and systems thinking literacy (cf. Jackson). My aim in this paper is not to proffer some 'golden mean' between the two, but rather to invite evaluative practitioners to continually exercise and give primacy to, instinctive systemic sensibilities (e.g. regarding attention to wider outcomes and longer-term impacts of an evaluand, and being reflexive of personal responsibilities in an evaluation). But to do this in tandem with some basic systems thinking literacy suggested by the three principles of STiEP that speak to these sensibilities. A further suggestion is to embed such practice through an overriding artisanal approach of bricolage – one that embraces multiple traditions of inquiry often including, but never exclusively, systematically focused scientific endeavours. Critically though, bricolage also embraces uncertainties and ignorance, and the necessary transdisciplinary conversations of a more systemic nature.

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