Systemic failure and the 'Iron Triangle' of conservation practice

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The problem

The effectiveness of conservation practice has long been questioned and has recently come under greater scrutiny[1,2]. Rarely discussed beyond project teams (Catalano, unpublished data), and even less commonly published[2], failure in conservation projects is both ubiquitous and unavoidable. *Systemic failure* may even be the norm. A dogma exists that the practice of conservation will become more effective if *more* money could be spent to implement *more* action *more* quickly. However, policy cannot guarantee successful action because it only sets the frame for conservation and science cannot deliver action because it is operationally limited to providing information. In short, the dogma is that more 'doing' of the same practices will resolve the state of systemic failure. A cause of our current collective ineffectiveness lies partly in an unchallenged imbalance between 'knowing' and 'doing'. Correcting this requires an intimate 'knowing' or thinking of the *contexts* in which we work, and also of *ourselves* as conservation professionals. A further cause of ineffective practice is our struggle to grapple with the essential interplay between knowing and doing.

We argue that the adoption and application of systems thinking tools linked to enabling, mainstreaming and implementation activities[3] that promote an interplay between knowing and doing should be used to trigger a strategic 'systemic disruption' in the conservation sector. A systemic disruption is an action that creatively challenges or breaks entrenched practices in a malignant system. These tools will reduce the incidence of project failures by: 1) promoting an intimate understanding of the social-ecological issues faced by policymakers, researchers and practitioners; 2) elucidating cognitive biases and dogma; and 3) promoting individual and collective thinking and reflection in practice. We present a concept used in social science – the 'Iron Triangle' – coupled with systems thinking ideas of boundary critique[4,5], to rethink the systemic failure currently embracing the conservation sector.

Systems thinking and the iron triangle: a toolkit for 'knowing' conservation practice

A *system* is a collection of entities perceived as interacting together to do something[6]. All systems are explicitly bounded, partial conceptualisations of 'reality' as perceived by specific individuals or groups. As

these conceptualisations are partial, their boundaries circumscribe only the elements and interrelationships perceived as being relevant by the individual or group in question. Boundaries thereby serve the needs of some stakeholders better than others[4]. When stakeholder perspectives (and their associated boundaries) become privileged, the knowledge used to make 'boundary judgements' and guide the implementation of conservation action will be partial. This can lead to strategies being poorly matched to other stakeholders' values, or to benefits being captured by elites. In conservation, conceptual tools for understanding situations as systems are therefore essential for effective practice[6,7].

Systems thinking in practice involves: 1) understanding interrelationships of a situation *as a* system; 2) engaging with multiple stakeholder perspectives, including perspectives of being *both* systematic (doing) *and* systemic (knowing); and 3) questioning and being aware of boundary judgements, including boundaries invoked at different system levels – sub-systems (e.g., whilst 'doing' action on-the-ground); and supra-systems (when 'knowing' the broader context of conservation)[8].

The 'Iron Triangle' is a metaphor borrowed by systems thinkers to understand interrelationships of a professional practice ('evaluation' in this case)[9]. Drawing on ideas of systemic triangulation[3], the 'Iron Triangle' was translated as a system to enable reflection upon self-perpetuating, pernicious confluences of interest that manifest as systemic failure.

The iron triangle of conservation practice

We apply the 'Iron Triangle' to conservation projects, building on previous work to identify ways of alleviating the current systemic failure of the conservation sector[7,9]. The 'Iron Triangle of Conservation Practice' (ITCP) allows conservation project participants to critique their performance and evaluate the factors affecting practice. We describe interactions between three groups common to conservation projects: 1) *communities* that projects typically engage; 2) *practitioners* implementing projects; and 3) *donors* who fund projects. The three groups are connected by six flows of influence (arrows and letters **a** – **f** in Figure 1).
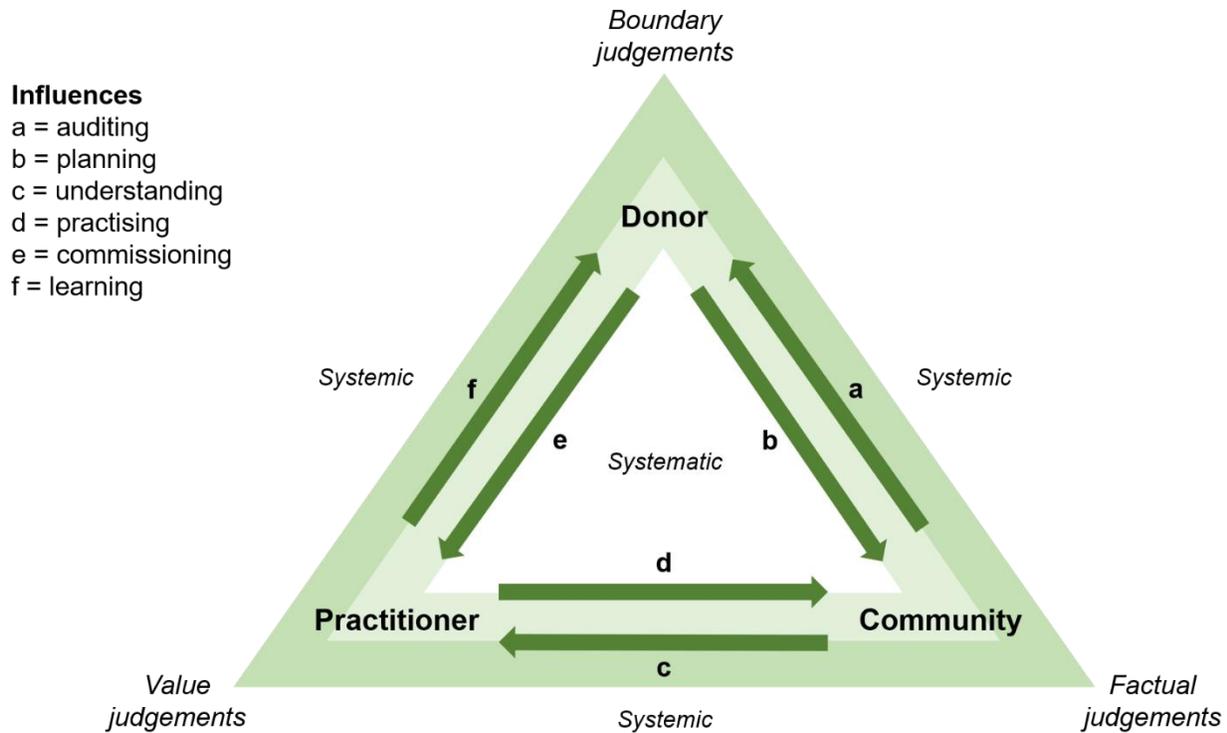
Figure 1. The 'Iron Triangle of Conservation Practice' (ITCP) is a conceptual tool adapted through the union of the 'Iron Triangle' concept used in social sciences and systems thinking ideas of boundary critique. It can be used to provide a holistic understanding of a malign system (i.e., a context in which a conservation project is being implemented with suboptimal outcomes). The tool can be used for envisaging a more benign system driving reflexive behaviour and ultimately greater effectiveness in the practice of conservation. The three parties common to any conservation intervention – communities, practitioners, and donors – correspond with factual judgements, value judgements and boundary judgements, respectively. Arrows (labelled a – f) indicate flows of influence between the three parties.

Donors identify the object of their conservation interest using a systemic audit of the real world, which should be based on judgements of 'fact' (**a**). A good-quality audit enables donors to develop a plan for delivering conservation outcomes (**b**). However, a donor's boundary judgements can negatively influence the outcomes of an audit. For example, donors often focus on species or ecosystems as outcomes, even though human behaviour usually drives the actions that manifest conservation problems and opportunities.

Planning is often based upon donors' idealised systems, meaning effort invested in planning (**b**) inappropriately outweighs auditing (**a**) due to poorly informed boundary judgements. This can result from the 'crisis' mentality of conservation professionals and organisations promoting action ('doing') over understanding ('knowing'); or a drive to ensure audit efficiency to allow investment of greater time and resources in donor-practitioner relationships. Plans often therefore fail to correspond with real-world situations, leading to project failure[2].

Practitioners (often conservation NGOs) may develop a more accurate understanding of the object of the intervention (**c**) by spending time embedded in the real-world situation. This may allow them to engage with value judgements – for example, the relative importance of ecosystem services versus the intrinsic value of nature – that inform their systematic practice (**d**). Conservation practitioners working in different unfamiliar contexts are prone to making flawed value judgements about context, which produces malign

outcomes. Effective practitioners engage more constructively with communities acknowledging mutual partial understandings, but with the collective intent towards *generating* value.

Donors' value judgements may also be imposed indirectly on a community by their commissioning of practitioners (**e**), who use donors' terms of reference for auditing and planning. This can further marginalise communities when partial donor understandings unintentionally objectify them by imposing technocentric, science-based values. A transdisciplinary approach by donors and practitioners that actively involves communities in the processes of defining conservation problems and implementing practice can help avoid excessive power being vested in "expert" practitioners in their "ivory towers" (a common criticism of Western conservation practice)[10].

Ultimately, effective commissioning must be complemented by a systemic process of learning (**f**). Conservation organisations are typically fixed in single-loop learning; learning to do things 'right' rather than, as with double-loop learning, checking on doing the right thing[11]. Double-loop learning can inform commissioning and terms of reference that more accurately and precisely reflect the dynamics of changing real-world situations; a more benign systemic triangulation whereby making judgements of 'fact' is acknowledged as being circumscribed by practitioners' value judgements and donors' boundary judgements[9]. However, double-loop learning remains incapable of addressing unequal power relations and questioning the underlying assumptions driving conservation interventions. Triple-loop learning, which ensures power relationships are both understood and made more equitable, should be the ultimate goal of conservation practice[7,11].

From practice to praxis: breaking the iron triangle of conservation practice

The six influences in the ITCP (**a** – **f**) can be mapped onto the four principles of 'praxis for effective conservation'[7] (theory-informed practice *and* practice-informed theory) to develop strategies for more effectively avoiding both project and systemic failure. Humility (Principle 1) by donors and practitioners underpins effective systemic auditing (**a**), understanding (**c**) and learning (**f**). This can ensure that the partiality of knowledge is recognised, idealised worldviews derived from inappropriate boundary judgements are avoided, and flexibility when commissioning terms of reference is ensured. Engaging with values (Principle 2) requires systemic appreciation of existing values and practices for generating new values to underpin effective systematic planning (**b**), practising (**d**) and commissioning (**e**). Communities' own sets of values must be recognised by practitioners, and donors must recognise practitioners' expertise on this issue.

Whilst Principles 1 and 2 are exercised amongst communities, practitioners and donors (each at a sub-system level), Principles 3 (Systemic learning) and 4 (Exercising wisdom) function at a higher (supra) system level for effective conservation practice, where the six influences are enacted as a 'whole' rather than simply individual 'parts'. Learning about the whole practice of conservation is conducted in the context of other practices, not simply donors learning from practitioners – as with activity (**f**). Wisdom involves enacting this higher order of learning; an action that works *both* systematically (in 'knowing' through learning) and systemically (through the wisdom of 'doing'). Conservation practitioners are invited to explore

how they may support activities (a – f) in transforming the ITCP towards a more benign conservation practice that grapples more effectively with current systemic failures.

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