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SPECIAL ISSUE • Co-creative approaches to knowledge production and implementation

research

Towards a heart and soul for co-creative research practice: a systemic approach

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The language of co-creation has become popular with policy makers, researchers and consultants wanting to support evidence-based change. However, there is little agreement about what features a research or consultancy project must have for peers to recognise the project as co-creative, and therefore for it to contribute to the growing body of practice and theory under that heading. This means that scholars and practitioners do not have a shared basis for critical reflection, improving practice and debating ethics, legitimacy and quality. While seeking to avoid any premature defining of orthodoxy, this article offers a framework to support researchers and practitioners in discussing the boundaries and the features that are beginning to characterise a particular discourse, such as the one that is unfolding around the concept of co-creation. The paper is the outcome of an online and face-to-face dialogue among an international group of scholars. The dialogue draws on Critical Systems Heuristics' (Ulrich, 1994) questions concerning motivation (revealing assumptions about its purpose and value), power (interrogating assumptions about who has control and is therefore able to define success), knowledge (surfacing assumptions about experience and expertise) and legitimacy

(disclosing moral assumptions). The paper ends by suggesting important areas for further exploration to contribute to the emerging discourse of co-creation in ways that support critical reflection, improved practice, and provide a basis for debating ethics and quality.

key words Co-creation • participatory research • boundary critique • Critical Systems Heuristics

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Background

Purpose and genesis

The language of co-creation in research and consulting has become popular with policy makers, researchers and consultants wanting to support evidence-based change (Voorberg et al. 2015; Ghate, 2016). Other articles in this special issue of *Evidence and Policy* explore questions such as, when is a co-creation approach indicated? And, what particular methods or approaches are useful in co-creative projects? However, there is little agreement about what features research must have for it to be co-creative, and therefore for it to contribute to the growing body of practice and theory under that heading.

The purpose of this paper is to stimulate discussion on what qualities and considerations should characterise co-creative research. Our working assumption is that co-creative research is research that values the expertise and perspectives of those likely to be affected by the work, and those who utilise insights from the work. We make the case that co-creation requires deliberate and persistent attention to the boundaries of inclusion (of both people and the issues that concern them), and we argue for the utility of Critical Systems Heuristics (Ulrich, 1994) as a tool to support critical reflection and improve practice in co-creative projects.

The term co-creation is being increasingly used to suggest or claim a category of research that is distinct from other modes (Voorberg et al. 2015). Some people may dismiss such claims because of the similarities between co-creative research and other categories such as participatory action research (for example, Bradbury, 2015), responsible research and innovation (for example, Owen et al. 2012), transdisciplinarity (for example, Brown et al. 2010), and co-production (for example, Durose et al. 2017). We, however, see the concept of co-creation as useful in designing and describing a distinctive research approach.

Our hope is that a shared discourse of co-creation in research will provide a basis for critical reflection and improved practice, and a platform for debating issues of ethics, legitimacy and quality in strongly participative projects. Such outcomes will not only guide research design and practice, but also assist funders and those who review and evaluate research. For example, funders will have a basis to assess the aptness and implications of a decision to adopt a co-creative methodology.

The current paper is a product of a two-year interdisciplinary dialogue between researchers exploring the issue of co-creative capacity in research. The authors are a subgroup of scholars gathered for that purpose by SESYNC (the Socio-Environmental

Synthesis Center) funded by the National Science Foundation in the US. Participants were selected for their expertise, interest and availability to participate in a 'pursuit team'. The authors of this paper self-selected from within the pursuit team to develop the topic of the paper, and have worked in both face-to-face and online dialogues during its production.

The paper is deliberately framed using normative statements about co-creative research. In line with the purpose of the paper, we are testing these normative views for their usefulness. We hope to stimulate scholarly debate on our provisional positions. Our normative statements, notably, are limited to *considerations we propose should be taken into account by those designing and evaluating research*. This paper avoids a normative view of what methods or procedures are necessary for co-creation.

Contribution

The paper offers two contributions. First, while seeking to avoid the premature defining of orthodoxy, or the construction of overly-neat boundaries for co-creative research, we offer a framework for researchers and those commissioning and funding research to explore the edges and features beginning to characterise the emerging discourse of co-creation.

Second, this paper offers a novel application of Critical Systems Heuristics (CSH) (Ulrich, 1994, 2003, 2005) as a framework to make the edges and features of co-creation discussable. While CSH has been widely used to structure discussions between stakeholders on the design, planning and evaluation of policies, strategies and services in the public, private and voluntary sectors (for example, Flood and Jackson, 1991; Cohen and Midgley, 1994; Midgley et al. 1998; Luckett, 2006; Fitch, 2012; Wallis et al. 2013; Pinzón-Salcedo and Torres-Cuello, 2017; Venter and Goede, 2017), as far as we are aware it has only once previously been used for academic and practitioner knowledge construction: Venable (2009) used CSH to examine requirements for stakeholder engagement in Design Science Research. Co-creation, however, is broader than this, as it potentially applies to *any* participative research or intervention activity, and not just design.

'Co-creation': toward a working definition

There is no consensus among scholars on the term 'co-creation', although a number of definitions and distinctions have been suggested (McDougall, 2012; Metz, 2015; Voorberg et al. 2015).

We view co-creation as an approach to research that values the expertise and perspectives of those likely to be affected by the work, and those who utilise insights from the work. We distinguish co-creation from other concepts by relating it to the *quality* of processes and relationships developed through a programme of work, rather than by seeing it as merely a means to an end. Co-creative research, then, is a commitment to the quality of processes being both the means *and* an end; which is not to say that such processes are a sufficient end to justify the research, merely that it would be part of the desired outcome. Research design and chosen methodologies will still need to demonstrate that they are well suited to achieving conventional goals such as knowledge generation, hypothesis testing and deepening understanding.

In common with our purpose, Vargo and Lusch (2017) seek to shape a discourse; in their case, on service-dominant logic (SDL). Foundational to SDL is the concept of co-creation of value (Vargo and Lusch, 2017). We see co-creative research as co-creating value. As SDL has it, 'value is cocreated by multiple actors, always including the beneficiary', 'all social and economic actors are resource integrators', and value in human exchange is to be determined by the beneficiary (Vargo and Lusch, 2016: 8). Such premises stand in contrast to solutions to social problems that require experts to devise strategies that those experts assume will be passively accepted by service recipients.

We suggest that co-creation in research can be guided by such concepts from SDL. Researchers, then, would not *deliver* value through their work, but 'participate in the creation and offering of value propositions' (Vargo and Lusch, 2016: 8). The difference is not mere semantics: 'delivery' assumes that the control of value lies in the hands of the researcher alone, while 'participating in the creation of value' indicates that the researcher is just one contributor to synergistic value creation.

We propose that co-creative research, characteristically, recognises that knowledge creation and social change are outcomes of engagement between multiple actors holding diverse expertise and perspectives, and often exercising unequal power.

Co-creation, then, is systemic in the sense discussed by Ulrich (1994) and Midgley (2000): it considers the boundaries of who is and what issues are to be included, and the values that help determine those boundaries, and it assumes complex interactions between actors and with the environment.

A systemic approach

The paper takes a 'systemic' stance in exploring co-creation. The authors consider it useful and important to make explicit that decisions about how to conduct research are made within a context of value judgements about what purposes to pursue, boundary judgements about whose views and what issues are relevant, and relationships between stakeholders who may make different value and boundary judgements (Churchman, 1971; Midgley, 2000).

If co-creative research is, as proposed here, a way of working that is intentional about decisions of inclusion, then a framework drawn from the field of critical systems thinking (CST) (Flood and Romm, 1996; Midgley, 2000), that defines being systemic in the above terms, is likely to prove useful in exploring core qualities at the heart (and soul) of what is distinctive about co-creative research. Midgley (2000) describes CST as including an emphasis on power relations and how they affect both what problems are addressed and how they are perceived (Reynolds and Holwell, 2010). Ulrich (2003: 326) distinguishes CST as the 'use of systems thinking in the service of reflective practice'. 'Systems thinking without critique is blind with respect to its underpinning boundary judgements and their normative implications; critique without systems thinking is boundless, and ultimately empty, in that its object and context of valid application remain arbitrary' (Ulrich, 2003: 327).

Introduction to Critical Systems Heuristics

The CST approach adopted in this paper is an application of Critical Systems Heuristic (CSH) (Ulrich, 1994, 2003, 2005), a framework developed by Werner Ulrich. As Reynolds and Holwell (2010: 20) put it, 'CSH is a framework for reflective practice

based on practical philosophy and systems thinking'. CSH builds on systems philosophy (for example, Churchman, 1971), American philosophical pragmatism (for example, Peirce, 1878) and European critical social theory (for example, Habermas, 1973).

CSH offers a way to systematically reflect on practice to make explicit the boundary and value judgements implicit in it. It can be applied to truth claims, method selection, or intervention design. For our purposes, CSH provides a framework of twelve questions with which to interrogate research and social interventions. The twelve questions examine sources of motivation, power, expertise/knowledge and legitimation. These questions can be applied to the situation as it is, and the situation as it is desired to be (Ulrich, 1994, 2005).

The framework, at its most emancipatory, can be used collaboratively with affected parties, thus addressing the CSH questions from multiple perspectives and establishing a basis for critique by parties with relatively less power than those who are directly involved in preparing or carrying out an intervention.

Method: a systemic consideration of co-creative research

CSH is typically applied as a tool for reflective practice at project level (be it research or social intervention). We are applying it at a meta-level, to critically reflect on the framing of an emerging discourse, based on our collective experience of developing and evaluating systemic and participative methods. When applied to a project, the questions serve as a discipline to make present the interests of those who may be affected but not involved in any meaningful way. The questions are considered emancipatory in that they can be used by those in power to become aware of the way decisions can or do marginalise certain parties; and they can be used by the marginalised to challenge and critique the dominance of those controlling an agenda.

When applied at a meta-level, as we do in relation to co-creative research, CSH questions surface assumptions about inclusion and roles, and can be used by those adopting the discourse to discuss desired norms for that discourse. They enhance debates about ethics, legitimacy and quality.

While we do suggest ways in which the CSH questions can guide project-level decisions, our main purpose is to establish dialogue among researchers about what delimits co-creative research.

We have adapted the twelve questions to suit our task (see Table 1). The main changes to wording were to apply the enquiry specifically to the deployment of a co-creative approach to a project. The focus, then, is the framing of a project.

Our decision to use Ulrich's CSH is based on our wish to demonstrate its potential usefulness for exposing the boundaries of, and assumptions flowing into, a concept like co-creation. It would, of course, be possible to use other theoretical framings, and potentially desirable to do so. Co-creative action as a discourse is early in its development and, as such, is likely to be enhanced by borrowing from multiple framings. Having said this, we believe that CSH is well suited as a critical framework for co-creative research. It addresses something that appears to be central to the concept of co-creation: meaningful involvement of multiple parties. Also, by making boundary judgements at project level explicit, it provides a basis for discussing boundaries common to the emerging discourse of co-creative research.

CSH is presented in this paper, then, as a tool to interrogate and discuss the boundaries of an emerging discourse, rather than as a definitive or required method

Table 1: Critical heuristics of co-creation (adapted from Ulrich, 1994, 2005)

| Focus of enquiry | Our questions |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | vs. <i>[a short version of Ulrich's CSH questions taken from Ulrich, 2005]</i> |
| Sources of motivation | Who or what should benefit from deploying a co-creation approach in research, and how? |
| <i>What makes the endeavour meaningful to those involved or affected?</i> | <i>[Who is (ought to be) the client or beneficiary?]</i> |
| | What should be the purposes of deploying a co-creation approach in research? (that is, what goals should it aim for in order to deliver to the beneficiaries?) |
| | <i>[What is (ought to be) the purpose?]</i> |
| | What should be the key measures of success for the deployment of co-creation approach in research? |
| | <i>[What is (ought to be) the measure of improvement or measure of success?]</i> |
| Sources of power | Who should be seen as key decision-makers in the deployment of a co-creation approach in research (that is, who should have the authority to change who or what should benefit, what the purposes should be, and how success should be measured)? |
| <i>Who is in control of what is going on and is needed for success?</i> | <i>[Who is (ought to be) the decision-maker?]</i> |
| | What components (resources, people, policies, and so on, should be under the authority of the decision-makers in the deployment of a co-creation approach in research? |
| | <i>[What resources and other conditions of success are (ought to be) controlled by the decision-maker?]</i> |
| | What components are essential for delivery of the benefits and purposes, but should not be under the authority of the decision-makers? |
| | <i>[What conditions of success are (ought to be) part of the decision environment?]</i> |
| Sources of expertise | Who, either in addition to or instead of the decision-makers, should be involved in delivering the benefits and goals, in deployments of a co-creation approach in research? |
| <i>Whose knowledge and experience will be taken seriously?</i> | <i>[Who is (ought to be) considered a professional or further expert?]</i> |
| | What should count as expertise? (that is, who should be considered an expert and what should be their roles?) |
| | <i>[What kind of expertise is (ought to be) consulted?]</i> |
| | What are the key factors that will guarantee (or increase the likelihood of) success? |
| | <i>[What or who is (ought to be) assumed to be the guarantor of success?]</i> |
| Sources of legitimization | Who or what should be seen as having a legitimate claim that they are affected parties (human or non-human); and how should such parties be involved or their concerns considered? |

Table 1: Continued

| Focus of enquiry | Our questions |
|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>What will contribute to participants' and affected parties' perception that a co-creative project is fair and just?</i> | <i>[Who is (ought to be) witness to the interests of those affected but not involved?]</i> |
| | What, in the deployment of a co-creation approach in research, ensures that those who could be affected are able to choose freedom from the constraints, assumptions and agendas of the project? |
| | <i>[What secures (ought to secure) the emancipation of those affected from the premises and promises of those involved?]</i> |
| | Upon what core values and assumptions should a deployment of a co-creation approach in research be based? |
| | <i>[What worldview is (ought to be) determining?]</i> |

or component of co-creative research. It is a critical, systemic stance from which to discuss and compare research projects that claim or aspire to be co-creative.

Findings: applying the framework

In this section we apply the CSH questions (Table 1). In applying any of the questions at project level, we would argue, co-creation is enhanced if the question is revisited throughout the project. The practice of revisiting critically-motivated questions periodically throughout a project has been discussed in more detail by Córdoba and Midgley (2008). We assume there is no one moment in time to definitively apply a question; indeed, we propose that the questions remain 'live' throughout the conception, design and development of a project. In other words, we propose a developmental approach to supporting critical reflection and improved practice (in the sense used by Patton (2011) in his developmental evaluation), rather than using the CSH questions simply as design or evaluation criteria. Such an open approach may prove challenging, however, for funders, and for managers when dealing with tight timelines.

Sources of motivation

The first set of questions for interrogating our concept of co-creation in research concerns sources of motivation. What makes the endeavour meaningful to those involved or affected?

1. Who and what should benefit?

Who or what should benefit from deploying a co-creation approach in research, and how?

At a meta-level, this question is an invitation to clarify assumptions or choices about the stance of the research in relation to possible intended and unintended consequences for people and environments.

Two boundary judgements are surfaced by the question: who and what should benefit, and how should they benefit.

The question gives research decision-makers explicit opportunities to consider how a co-creative approach could change outcomes for people and environments;

and, in particular, to consider concerns that might otherwise be marginalised. Such consideration will make explicit who could benefit and therefore make visible choices about who *should* benefit.

We propose that the choice of co-creation be seen as a choice to value the expertise and perspectives of those likely to be affected by the work, and those likely to be important in making use of any insights from the work. The decision to adopt a co-creation approach is, then, a decision that has implications for participation, the loci of benefits, and the way these two dimensions are related.

The question also asks *how* beneficiaries should benefit from deploying a co-creation approach. The question can, and should, be read at multiple levels: how should beneficiaries benefit from the *process* of doing research co-creatively? And, how should the beneficiaries benefit from the *results* of co-creative research? In answer to the first of these questions, we propose that co-creative research involves the potential beneficiaries as participants, and therefore gives them an opportunity to shape and learn from the project.

The answer to the second question (how should the beneficiaries benefit from outcomes?) has to be locally determined by the participants in each project: there is no universal answer, *except that the question must be considered* if a project is to be called ‘co-creative’.

A core principle could be an explicit focus on equitable distribution of social capital resulting from the interactions and information flow surrounding co-creative activities; for example, relationships, systems knowledge, and systems vocabulary that either strategically or incidentally evolve from co-creative practice.

2. What should be the purposes?

What should be the purposes of deploying a co-creation approach in research? (that is, what goals should it aim for in order to deliver to the beneficiaries?)

At a meta-level, this question is an invitation to articulate a robust and reviewable rationale for adopting a co-creative approach, and how such a choice is connected to explicit goals for beneficiaries. Our assumption here is that co-creation is not the answer to every research opportunity. Co-creative research comes at a cost. Not only do relationships and co-creative ways of working take time, but expectations are formed among participants, and failure to deliver on commitments to co-creation partners can have negative consequences, such as loss of trust in researchers, and even loss of legitimacy of the project.

Once a provisional decision is made to pursue co-creative research at the project level, determining the purpose and relevant goals becomes an object of co-creation. Determining and reviewing purposes separately from the co-creative process itself would seriously compromise any claim that the project is actually co-creative. In this respect, it is not sufficient in co-creative research to merely give participants control over the means to deliver pre-determined ends; the ends themselves must be under the control of the participants.

A generic goal of a co-creation project is to create synergy: the bringing together of perspectives to achieve some purpose, in ways that will deliver benefits to those identified as intended beneficiaries. There are potential synergies in at least three aspects of research: firstly, synergies that inform research framing, method and interpretation; secondly, synergies that could improve the usability and uptake of

findings; and, thirdly, synergies to co-create knowledge and methodology that are meaningful to co-creation partners and their communities.

3. *What should be the measures of success?*

What should be the key measures of success for the deployment of co-creation approach in research? At a meta-level, this question is an invitation to consider implicit and explicit criteria for assessing co-creative research for its co-creative quality and for whether project purposes are being met. We are not suggesting assessment against fidelity to set criteria (as in a process evaluation); rather, we suggest that a dynamic and repeated use of the *question* of success criteria is at the heart of co-creation.

High-level generic criteria for assessing success in co-creation include: the degree to which participants experience and value synergy between participant perspectives in shaping the purpose and direction of the project; and evidence of diverse participants sustaining confidence in the salience, credibility and legitimacy (Cash et al. 2002) of the project throughout its course. In other words, we assume co-creation is a process in which participants not only contribute but share in evaluating the process and outcomes.

The task of assessing success, like other elements of co-creative research, is provisional, iterative, multiperspectival (not centrally controlled) and exploratory; deeply rooted in relationship and exchange. A core attribute for success in co-creation is, therefore, humility. Attempts at comprehension and control are likely to be frustrated. Surprises are more likely than comprehension. Such complexity suggests that developmental evaluation (Patton, 2011) could offer an approach to evaluation that is better suited to co-creative projects than summative or formative approaches. Important elements of co-creation are typically under continual negotiation. Neither the path nor the goals are likely to be stable.

Finally, judging ‘success’ in co-creative research needs to avoid a narrow understanding of knowledge production or technical innovation. Aristotle proposed three types of knowledge: *episteme* (theoretical knowing, or what is always true), *techne* (technical knowing, concerning methods and tools) and *phronesis* (practical judgement, or how to act). As Flyvbjerg (2001) and Juarrero (2002) have reminded us, modern science has often neglected the third of these ‘virtues’: *phronesis*. In deciding what counts as success for the deployment of a co-creation approach in research, we emphasise the importance of impacts on practical judgements by affected parties.

Sources of power

The second set of questions in CSH address sources of power. Who is in control of what is going on and is needed for success?

4. *Who should be seen as decision-makers?*

Who should be seen as key decision-makers in the deployment of a co-creation approach in research (that is, who should have the authority to change who or what should benefit, what the purposes should be, and how success should be measured)?

At a meta-level, this question is an invitation to consider the relationship between those intended to benefit, those important for implementation, those with a ‘professional’

interest in conducting the research, and who gets to set or change the purpose, direction, parameters, and qualities of the research.

The genesis of a project may be from anywhere in the ecosystem of research collaboration; for example, the genesis may lie with professional researchers, problem owners, or public-good funders. The decision to involve others, and to choose a co-creative approach, is a critical decision of stance. We propose that adopting a co-creation stance necessarily requires that decisions become shared with other actors.

There is no *absolute* standard for deciding who is a decision-maker, but co-creation implies that decision-making on the key dimensions of the project is shared, and that the question of who is to be seen as a decision-maker should be deliberately, continually and explicitly asked.

Guiding principles in deciding who should be decision-makers include values and pragmatism. Who has a just claim to be included (fairness as a value), and who is needed as a decision-maker to improve salience, credibility and/or legitimacy of the project for key audiences (pragmatism)? Decisions to include or exclude actors from decision-making have the potential to reinforce or disrupt existing marginalisation and power configurations in a system (Midgley et al. 1998), and they therefore need to be explicitly justified in response to actual or anticipated critical voices (Romm, 2001; Midgley et al. 2017).

5. What components should be under the authority of decision makers?

What components (resources, people, policies, and so on) should be under the authority of the decision-makers in a deployment of co-creation approach in research?

At a meta-level, this question is an invitation to consider what should be controlled locally within a project. Question 6, below, will address conditions and resources that should specifically *not* be under the authority of project decision-makers.

The guiding principle is that, for co-creative research, access to and authority over components should be subject to open deliberation among decision-makers and project owners. Transparency is critical to establishing a trusting relationship between partners. This implies that, regardless of the situation of ownership of resources, what is most easily placed under the control of decision-makers are the processes used to discuss resourcing and, thereby, enable the necessary transparency.

6. What components should not be under the authority of decision-makers?

What components are essential for delivery of the benefits and purposes, but should not be under the authority of the decision-makers?

At a meta-level, this question is an invitation to consider the environment of the co-creation; that is, what should be considered as ‘givens’? Of course, the rest of the knowable universe is a given! However, to avoid an unhelpful over-expansion of the boundaries, the question limits the focus to components that are *essential for delivery of the benefits and purposes*. Often, people’s first reaction to this question is to feel uncomfortable about putting anything that is essential for success beyond the control of decision makers. However, almost every complex system for the delivery of benefits to human beings relies on components that are the responsibility of others. For example, in the delivery of food from a warehouse to shops, vans may be under the control of the delivery company, but not the roads they are driven on.

What should not be under the control of decision makers is always a matter of value judgement. Reasons for excluding essential components from decision-makers’

control include potential impacts on others as well as political judgements on the ownership and control of common pool resources.

Sources of expertise

The third set of questions in CSH addresses issues of multiple forms of knowledge and experience. Whose knowledge and experience should be taken seriously?

7. Who should be involved?

Who, either in addition to, or instead of the decision-makers, should be involved in delivering the benefits and goals, in deployments of a co-creation approach in research?

At a meta-level, this question is an invitation to consider logical dependencies between the research activities and other activities without which the research could not deliver its benefits. The value of that consideration is that it encourages project decision-makers to recognise a range of expertise and practice with which they need to engage, and to plan how to work with that range. Co-creative research should not be conducted as if it were a closed system; as discussed in the previous section, co-creative research depends on inputs that are not under the authority of project decision-makers, and on interpretation, implementation, adaptation and adoption by actors other than project decision-makers. Accommodation of these elements in research formulation and conduct can enhance its co-creative nature and influence.

At a project level, decisions should be made about where to draw boundaries in considering a wider system of actors; and then, decisions need to be made as to what degree each actor from that wider system should be involved. Some form of stakeholder analysis is likely to be useful. For example, [Mitchell et al. \(1997\)](#) propose a framework to identify stakeholders according to the amount of urgency, power and legitimacy they exhibit. While such frameworks support systematic consideration of who to involve, co-creative research ideally requires the analysis to be iterative throughout a project, as people's understandings of the system evolve. Indeed, [Mitchell et al. \(1997\)](#) recognise that any one stakeholder analysis is just a snapshot in time.

8. What should count as expertise?

What should count as expertise? (that is, who should be considered an expert and what should be their roles?)

At a meta-level, this question is an invitation to consider a further boundary when adopting a co-creation approach in research: the boundary of what is counted as expertise. The consequential consideration, for projects, is how to work with the range of expertise thus recognised. Without such considerations, forms of knowledge and practice that fall outside the 'disciplines' of conventional research and expertise can become marginalised, overlooked, misinterpreted or misused.

Expertise should be relevant to the enquiry. This seems obvious, but the implication is that collaboratively scoping and clarifying the purposes and goals of the research is a necessary component of determining what should count as expertise. A priori judgements about expertise would seem out of place in a co-creation approach. Understandings of the necessary expertise may evolve as an initial group of collaborators realises that key knowledge is missing from their project.

Co-creation is about *possibility*: multiple sources of knowledge, and synergies between them, can reveal new possibilities for benefit. The process should, ideally, be liberating and flexible. However, in practice, this can be very challenging. The perceived value of expertise can be influenced by its association with particular professional and community identities, meaning that building trust between people with different identities where these might otherwise stimulate a dismissive attitude will be important (Midgley et al. 2007; Walsh et al. 2017). Not all expertise will share a unifying epistemology; not all expertise will draw on mutually compatible sources of legitimacy and credibility; and not all expertise will be fully amenable to scrutiny and verification by those from other epistemic traditions. Some expertise may be predominantly or wholly oral in nature, some may be communally held, some may be intergenerational, and some may be deeply embedded in practice and largely tacit. For those who take for granted a Western scientific tradition of propositional knowledge, other ways of knowing might not even be visible at first (Liamputtong and Rumbold, 2008; Rajagopalan and Midgley, 2015). Additionally, expertise rooted in an unfamiliar or competing paradigm can appear disturbing or threatening to co-creation participants. Co-creative research needs to recognise and allow for such dynamics.

We also expect projects to include some process expertise relevant to the demands of conducting co-creative research. Such expertise will include experience in working across disciplines, skills in noticing and managing power differentials and marginalisation, and attitudes that are alert to alternative worldviews.

9. What should underpin success?

What are the key factors that will guarantee (or increase the likelihood of) success?

At a meta-level, this question is an invitation to consider where interested parties should look to gain confidence in the credibility of a co-creative research project. Various interests will look to differing sources of credibility, only some of which will be characteristics of a co-creative approach. However, a co-creative approach should pay attention to what the various participants and affected parties look to as their guarantors of likely success.

Ulrich illustrates this question by providing as generic possible answers, ‘consensus among experts, the involvement of stakeholders, the experience and intuition of those involved, political support’ (2005: 11). We would add, specific to co-creative research, that potential guarantors are likely to include, in some measure:

- the quality of process around participation;
- the level of mutual trust among decision-makers and with affected parties;
- the extent of diversity among decision-makers;
- capacity to work with high levels of uncertainty and ambiguity;
- capabilities to sustain the necessary cognitive, communicative, affiliative, affective processes;
- the level of commitment to a co-creative process;
- transparency of intention and interests;
- the use of boundary objects to support dialogue between paradigms (‘boundary objects are both adaptable to different viewpoints and remain robust across them’ (Star and Griesemer, 1989: 387)).

Sources of legitimization

The fourth set of questions in CSH address sources of legitimization. What will contribute to participants' and affected parties' perceptions that a co-creative project is fair and just?

10. Who or what should be seen as having a legitimate claim?

Who or what should be seen as having a legitimate claim that they are affected parties (human or non-human); and how should such parties be involved or their interests considered?

At a meta-level, this question is an invitation to ensure the visibility of, or give voice to, concerns that have a legitimate claim to be considered, and that, if not considered, would undermine the legitimacy of the project. Of course, who is legitimate may be different from different points of view that need to be considered.

Considerations in this regard should include those directly affected by the conduct and outcomes of the intended project (with the proviso that the harms of including them do not outweigh the benefits), along with concerns that might be indirectly affected by the existence or conduct of the project. Examples of the former could include parties that are expected to contribute data of various kinds, enterprises expected to contribute time or resources to enable the project to proceed, and the social and/or natural environment that is intended to benefit (change) as a result of the project's success. Examples of indirectly affected parties could include other actors working in parallel, overlapping or related fields; those holding competing or incompatible paradigms; and those affected (negatively) by the use of contestable limited resources for the project.

What we are advocating for in the deployment of co-creation approaches, in line with Ulrich's (1994) perspective, is that project decision-makers take a deliberate and defensible position about which concerns are acknowledged, and how their concerns are being heard and considered.

11. What ensures that those affected are not 'captured' by the project?

What, in the deployment of a co-creation approach in research, ensures that those who could be affected are able to choose freedom from the constraints, assumptions and agendas of the project?

At a meta-level, this question is an invitation to consider ways in which well-intentioned co-creative research could constrain participants and others affected, and to seek ways to ameliorate such constraints. Behind this question is the idea that unintended or unameliorated constraints on parties affected by a project can reduce the legitimacy of the project. Since co-creative research should enable the deliberate involvement of affected parties, the question of ensuring that those parties are not unduly constrained by the deployment of a co-creation approach is important in considering the legitimacy of such a deployment.

There may be circumstances where some restricting of freedom is considered legitimate, and this is a boundary decision. For example, school children may be able to co-create their educational experience, but refusal of schooling may not be an option as part of this. We argue that, while participation in co-creation needs to be voluntary, freedom from the effects of the systems that are being co-created is a matter of judgement in context. The purpose of the current question is to make the consideration of the context and the relevant value judgements explicit, recurrent and defensible.

12. Upon what core values and assumptions should the project be based?

Upon what core values and assumptions should a deployment of a co-creation approach in research be based?

At a meta-level, this question is an invitation to consider how to work with multiple worldviews as part of co-creation. Ulrich offers a generic illustration of this part of CSH by highlighting the possibility of ‘different visions of “improvement”... and how... they should be reconciled’ (Ulrich, 2005: 11). Co-creation raises special challenges that come with the expectation that every element of a project could potentially be subject to co-creation. Thus, it is not only different visions of improvement that need to be considered, but *different visions of how to get to improvement*. This is in line with Ulrich’s view that the distinction between means and ends is problematic: means are ends too (Flood and Ulrich, 1990).

We are advocating for a generic worldview to support co-creation. The paradox is that this is a worldview that involves embracing the diversity of worldviews, and many will not be so open and tolerant of other perspectives. Indeed, some may actively undermine the co-creation. Of course, this presents a dilemma that is common in liberal democratic societies when it comes to issues of free speech for those advocating violence, hatred and the destruction of free speech itself (for example, Cohen-Almagor, 2001), and it is why co-creation cannot be *totally* all-embracing: boundaries have to be considered. Nevertheless, we propose that a deployment of co-creation in research should embrace the following values and assumptions as starting points, which might be tested and modified in any given local context:

- that synergy from diversity is possible, and has potential to improve the salience, credibility and legitimacy of a project;
- that it is possible to establish structures and processes to manage and support synergy from diversity;
- that expertise relevant to change in the real world is unlikely to be found exclusively in the academy;
- that expertise may draw on various epistemologies and ways of knowing (either explicit or implicit) and may be conveyed through a range of routes, not all of which are amenable to interrogation or testing by Western scholarship.

Discussion

We have illustrated how one community of scholars interprets and delimits a co-creative approach to research. In doing this we have used CSH to argue that co-creative research can be seen as a deliberately emancipatory choice. We suggest that it is this emancipatory motive that might distinguish co-creation from associated co-terms applied to research and social interventions. This paper does not argue that a co-creative approach or an emancipatory motive is appropriate to every situation. Rather, where a co-creative methodology is likely to produce a superior outcome, then allying that choice with a critical heuristic such as those illustrated here will make key decisions apparent and open to critique.

The choice of CSH to structure our reflections on co-creation is not a bid to insist on a widespread adoption of CSH as an essential tool for co-creation. It served a useful purpose here to systematically reflect on boundaries of a discourse. While CSH

is also likely to be useful to others in designing, discussing and comparing co-creative projects, we are not promoting it as an essential template. It is the dialectic enabled by a structured heuristic like CSH that is a guarantor of co-creation, not the fact of its use. In other words, we have used CSH as a heuristic rather than a recipe. This reflects comparisons between a Habermasian use of CSH and a Foucauldian approach (Brocklesby and Cummings, 1996; Flyvbjerg, 2001).

While Habermasian thought was deeply influential in Ulrich's development of CSH (Ulrich, 1994), and the work of both Habermas and Foucault are emancipatory, we follow Flyvbjerg (2001) in noticing and avoiding Habermas's faith in particular instruments, like constitutions, to regulate power.

Habermas's efforts to achieve more rationality and democracy, however laudable, draw attention away from critical relations of power. The neglect of power is unfortunate, because it is precisely by paying attention to power relations that we may achieve more democracy... our first task is not to understand the utopia of communicative rationality, but to understand the realities of power (Flyvbjerg, 2001: 98).

In Foucault we find a way for us to use a heuristic such as CSH, not as a guarantor of democracy *per se*, but as one basis for practical and dynamic challenging of assumptions and practices. 'Whereas Habermas approaches regulation from a universalistic theory of discourse, Foucault seeks out a genealogical understanding of actual power relations in specific contexts... For Foucault... freedom is a practice, and its ideal is not a utopian absence of power' (Flyvbjerg, 2001: 102).

It is possible that the scope and practice we have attached to the term co-creation will leave some readers sceptical about its practical application. How can current funding mechanisms support an endeavour that claims at the outset that neither method nor participation is rigidly fixed? How can researchers and practitioners committed to co-creative practice generate the deliverables associated with merit attributions, such as peer-reviewed journal articles and generalisable knowledge. While acknowledging such concerns, we have attempted to position co-creative practice in a way that will assist those choosing that path to argue the integrity and nature of their approach.

Conclusion

The purpose of this paper has been to trial a particular systemic framework (Critical Systems Heuristics: CSH) as a basis for dialogue on possible boundaries for a shared discourse on co-creative research. CSH was chosen for its potential, as it aligns with an important rationale for taking a co-creative approach espoused by the authors: that co-creative research involves knowledge creation as a product of engagement between multiple actors who hold diverse expertise and perspectives, and who experience unequal power relations. Applying CSH to the nascent discourse of co-creation has helped focus attention on the need for negotiating the boundaries of collaboration, as opposed to taking them for granted. It has also highlighted the potentially emancipatory character of co-creative research and practice. As a generic heuristic, CSH has structured the dialogue among the authors, and helped them

identify some of the potentially constitutive edges of that discourse. In addition, the paper has hinted at ways that CSH could be used more conventionally to critically reflect on research or practice design and implementation in co-creation projects.

The paper is offered as an invitation to our colleagues in research who have adopted or are considering co-creative approaches, to enter a reflective dialogue about how we might mutually appraise our co-creative choices and processes.

The authors look forward to robust critique of the deliberately normative framing of the paper and hope that the outcome will be a self-critical discourse among researchers and practitioners about what to look for in projects that aspire to be co-creative.

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Conflict of interest

The authors declare that there is no conflict of interest.

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