Werner Ulrich's Home Page: *Ulrich's Bimonthly*
Formerly "Picture of the Month"

November-December 2017
Systems Thinking as if People Mattered
Part 2/2: Practicing Boundary Critique

Abstract Part 1 proposed that systems thinking, properly understood, can become the source of a new critical competence for citizens as well as professionals and decision-makers, a competence called *boundary critique*. Some basic arguments in favor of such a methodological development were outlined by connecting the concept of professional competence with that of competent citizenship and embedding both concepts in a development of civil society.

The idea of boundary critique was then explained in terms of four basic reference systems that may inform claims to rational practice – the system (or situation) of primary interest S, the relevant environment (or decision-environment) E, the context of application (or of responsible action) A, and the universe (or universe of discourse) U. The fundamentally different rationalities involved were discussed with a view to what they mean for systematic boundary critique. As a further illustration of their relevance, Part 1 concluded with a brief discussion of the deficient nature of contemporary notions of "systems rationality."

Part 2 is now to explain how boundary critique is pragmatized and implemented in critical systems heuristics (CSH), the author's approach to critical systems thinking and practice. It introduces a number of basic tools of boundary critique. Rather than trying to provide a full account of CSH, the aim is to enable readers to *start practicing* boundary critique – the best way to experience its critical relevance and argumentative power – and on the basis of such practical experience then also to develop further tools that will be adapted to their specific fields of practice.

<< Continued from Part 1/2

Selectivity, not comprehensiveness, is the fate of all practice.
(W. Ulrich, "Philosophy for professionals: towards
critical pragmatism," 2007b, p. 2)

Note: This *Bimonthly* essay, Part 2 of a two-part essay, continues and concludes the preceding introduction to the topic in the *Bimonthly* of September-October 2017. How can boundary critique, the core principle of critical systems heuristics (CSH), be practiced so as to provide a new critical competence to ordinary citizens and professionals?

A Plea for Boundary Critique: Recapitulation   Based on a review of some major contemporary ideas on active citizenship, competent professionalism and management, and systems thinking, Part 1 identified a fundamental deficit of conventional systems rationality in its failure to come to terms with the inevitable *selectivity* of all human practice – the basic insight that no human effort can claim to be comprehensive in its outlook and rationality and to live up to everyone's interests and concerns equally.

Today's prevailing framework of systems thinking lacks a systematic conception of the divergent *reference systems* or "contexts that matter" for identifying relevant knowledge and rational action. Its focus on the system/environment distinction, that is, on a system of interest and the environmental conditions on which it depends, is oriented one-sidedly towards the success of what is regarded as system of concern, as distinguished from all other concerns that may be at issue – ranging from the specific concerns of third parties that, although being affected, are not involved in or relevant to the system in any way, to the universalizing perspectives of morally defensible and ecologically sustainable reasoning. In particular, contemporary systems thinking fails to systematically consider what we called the *context of application* (or context of responsible action), that is, the real-world context in which the consequences of systemic rationality arise and its value implications become apparent, not only for the parties who have a say and are to benefit but also for all those who don't.

The result of this failure is an impoverished rationality that we encounter at work everywhere around us. It is omnipresent in our epoch's ongoing process of rationalization, and particularly in the corporatist and bureaucratic organization of the society it has brought about, a society in which the actual sources of power and legitimacy lie much more with vested interests and global corporations than with the citizens. Worse, the impoverished, managerial and functionalistic nature of this surrogate rationality – a rationality grounded in references to "the system" of interest and its relevant environment *only* – can hardly be said to be obvious and clear to a majority of citizens, professionals, and decision-makers, and accordingly to be under broad and thorough scrutiny. We have in this respect become an *unconscious civilization* (Saul, 1997), in which it seems normal that people understand (and are expected to understand) as "rational" that which works for the

systems of (vested) interests in which they are involved or of which they are accountable as managers.

A rationality perspective grounded in references to the context of application is markedly different from such a managerial perspective. It accepts accountability for the consequences of systemic rationality regardless of where they arise and whom they affect. It stands for a moral point of view in dealing with the inevitable deficits of justification of these consequences and the manifold ways in which they may affect those concerned. By dealing openly and carefully with such deficits, it brings into the picture a *critically-normative* perspective. It thus complements the success-orientation of a systems rationality grounded in the system/environment distinction (What serves the system?) with a fundamentally different orientation towards ethical awareness (What is conducive to improvement as seen from the standpoints of all those concerned?) and moral reasoning (What is arguably fair as seen from an impartial and universal point of view?) – a perspective that takes up the concerns of those affected but not involved and asks what "success" means for *them,* that is, how *their* interests are treated.

Given the enormous influence of systemic thinking on many fields of professional practice, it should not surprise us that this deficit of conventional systems theory has had and continues to have serious consequences. We encounter here a fundamental reason of why rational, professionally and scientifically based decision-making so often produces *external irrationalities* such as unexpected side-effects, undesirable long-term effects and unsustainable policies, costs and risks imposed on third parties, and so on – in short, omnipresent suboptimization and deficits of rationality and legitimacy. Its consequences are then symptomatically treated as "external" effects that one cannot all foresee and about which one cannot do a lot. They are "external," indeed, to the systems rationality of those involved *but not* of course for those who have to live with them.

Such externalities are omnipresent today. They have prompted the German sociologist Ulrich Beck (1992; 1995) to describe the dilemma of modernity in terms of a *Risk Society,* that is, a society whose processes of rationalization produce risks for whom nobody seems to be responsible – a case of *organized irresponsibility* (thus the 1995 book's original title, lost in the English translation). However, despite the immense attention that Beck's

diagnosis received, a methodologically clear, systematic and rigorous treatment of the context of application, and particularly of its normative content, is still largely missing in the applied disciplines to this day.

In the CSH framework that I propose for such critically-normative practice, any claim to systemic rationality calls for empirical and normative scrutiny of its selectivity, that is, its different implications for all the parties concerned – not only for those involved but also for those affected but not involved (so-called third parties). The key methodological principle is *boundary critique,* a systematic process of laying open the situational boundary judgments that delimit the contexts considered relevant (whether consciously or not) in claims to knowledge, rationality, and improvement, or in short, the borders of concern.

As this recapitulation should help readers recall, four essential kinds of contexts were introduced in Part 1, understood as "reference systems" to which such claims cannot avoid referring, whether explicitly or implicitly, and which therefore offer themselves for a systematic analysis of selectivity: the system (or situation) of primary interest S; the relevant environment (or decision-environment) E; the context of application (or of responsible action) A; and the universe (or total conceivable universe of discourse) U. Together they make up the proposed *S-A-E-U formula* (or scheme) of boundary critique. Critical systems thinking and practice as I understand them will make boundary critique with reference to these four reference systems an integral part of the quest for competent and self-reflective practice. It is now time to explain how boundary critique works.

Critical Systems Heuristics We have understood that the fate of all human inquiry and practice is selectivity, not comprehensiveness. This selectivity can be traced to the boundary judgments by which we delimit the reference systems for rational practice or, in everyday terms, decide what is part of the picture we consider and what is not. In principle, of course, sound reasoning has to take into account "everything" potentially relevant, otherwise it becomes arbitrary. In practice, though, we don't know what that means. The quest for comprehensiveness is an ideal that we may strive to approximate but will not fully realize. Hence, we should never assume or claim that we do live up to it. How, then, can we still hope to secure sound argumentation in
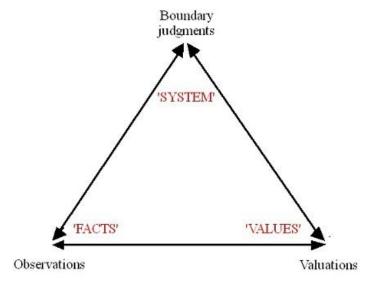
everyday and professional practice? What can rational practice mean under such conditions? This is the basic problem with which CSH tries to come to terms.

Since we are referring to an ideal, it follows that no solution can at the same time be theoretically sufficient *and* practical. All theoretically sufficient solutions will of necessity rely on ideal presuppositions, whereas all practicable solutions will be incomplete, that is, selective, and thus disputable. In practice, the best we can hope to achieve is *cultivating reflective practice* with respect to the selectivity of our claims, by making it clear to ourselves and to all others concerned on what boundary assumptions they rely. Further, we will have to recognize that inasmuch as our claims serve as a basis for action, their selectivity translates into *partiality:* they will not respond equally to the different concerns of all the parties and in this sense are "partial" – they will promote some rationalities and conforming notions of improvement more than others, and thus benefit some parties more than others. The conflicts of views and concerns that often arise around efforts to resolve practical issues have a lot to do with this translation of (inevitable) selectivity into (changeable) partiality. It explains the inherently normative nature of all claims to rational practice. Unlike the current "reflective practice" mainstream (see Ulrich, 2008, for a critical view), CSH seeks to find rigorous ways for unfolding this normative core of practice.

Unfolding selectivity: the "eternal triangle" of boundary critique When ordinary citizens face professional researchers or experts, it can be difficult for them to defend their personal views and concerns against the claims of the specialists. Indeed, how can non-specialists dare to argue against the specialists and prove them wrong, given that the specialists have such an advantage of information, status, and routine?

As the idea of boundary critique helps us to understand, the answer is simple**:** they don't have to. There is in fact *no need* for proving anyone wrong. It is quite sufficient for cogent critical argumentation to demonstrate that *there are always options* for defining what counts as relevant knowledge and right action – the "facts" and "values" to be considered – because there are options for delimiting the reference system to which such claims refer, that is, the situation or context that matters. Whether the claims in question are those of professional people or of lay people makes little difference in

this respect. We face, as CSH describes it, an *eternal triangle* of practical reason (**Fig. 3**).

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Fig. 3: The eternal triangle of boundary critique

The boundary judgments by means of which we delimit our reference systems condition the facts and values we recognize to be relevant. Conversely, new facts or values can prompt us to revise previous boundary judgments, which then in turn may have us see previous observations or evaluations differently, and so on.

Since boundary judgments act as mediating third between judgments of fact and of value, surfacing them helps us understand not only the nature of their selectivity but also how they depend on one another. (Sources: Ulrich, 1998, p. 6; 2000, p. 252; and 2003, p 334)

The basic idea is that three major types of judgments inform all claims to knowledge, to rationality, improvement, morality, and so on – judgments of fact, judgments of value, and boundary judgments. While the former two kinds of judgments are well known, the latter are often ignored, be it because people are not aware of their existence or because they deliberately conceal them from others. Together, the three types of judgment make up – and explain – the selectivity of practical claims. This is what the eternal triangle of CSH is all about. Accordingly three essential – and interdependent – questions pose themselves in all rigorous thought and argumentation on practical issues**:**

- What *observations* and resulting judgments of "fact" or relevant circumstances and interdependencies matter? (e.g., for understanding the situation or issue at hand or for effective and efficient action);

- What *valuations* and conforming judgments of "value" or relevant notions of improvement are to guide us? (e.g., for improving the

situation or for evaluating the results of action); and new,

- What *reference systems* (S-E-A-U) and specific boundary judgments are to define the relevant context or situation? (e.g., for delimiting the system of primary interest S from the decision-environment E, or the context of responsible action A from the universe U of all conceivable consequences).

The additional concept of boundary judgments explains the way in which all our judgments of fact and of value are interdependent, namely, via shared assumptions about the reference system to be considered (S-E-A-U) and the specific boundary issues involved. It is no news of course that facts and values are interdependent; but the precise nature of this interdependence usually remains fuzzy and unexplained. The eternal triangle now makes this clear. It explains why both the circumstances we consider relevant and the ways we evaluate them – the considerations of fact and value we take to matter – depend on boundary judgments, that is, assumptions as to which situational aspects are to be treated as belonging to the situation of concern (or the "system" of primary interest) and what other aspects are to be treated as relevant environment (or decision-environment) and/or as context of application (or context of responsible action). When boundary judgments change, new circumstances may emerge to be relevant, which in turn may require us to adapt our value judgments; conversely, changed notions of improvement may change our appreciation of what are relevant circumstances and thus may have us revise our boundary judgments, which then in turn makes previous evaluations look different, and so on.

An untapped emancipatory potential By reminding us of the conditioned character of all our judgments, the eternal triangle has us deal more consciously and carefully with the pervasive issue of selectivity. Just as importantly, it helps us to understand – and to explain to others – why in dealing with selectivity, specialists and non-specialists can *meet at eye-level:* when it comes to making boundary judgments, experts and professionals have no natural advantage of competence over lay people. This is so because professional expertise does not protect against the need for making boundary judgments but depends on them just like everyday knowledge. Nor, to be sure, does it provide an objective or in other ways superior basis for defining boundary judgments. Boundary judgments cannot be separated from value judgments, but professional knowledge provides no claim to superior value

judgments. The only kind of superiority to which boundary judgments lend themselves is with respect to their transparent and self-reflective handling. Once we recognize the role of boundary judgments, we are compelled to take the critical (or critically-heuristic) turn, that is, to recognize that there can be only a "critical solution" to the quest for practical reason.[7]

I see in this critical consequence of the systems idea a largely untapped potential for giving ordinary citizens and managers a meaningful new competence vis-à-vis experts and professionals. Since relevant facts change with boundary judgments, and vice-versa; and since new facts or different boundary judgments may make us reconsider our values, that is, the way we evaluate facts, it is clear that boundary judgments strongly influence the outcome of professional as well as everyday discourse. Together, the three types of judgment involved – judgments of fact, value judgments, and boundary judgments – indeed form an eternal triangle that is always in play and which nobody claiming adequate knowledge and understanding has consequently a right to ignore. Since it does not allow of any definitive solution, the only arguable way to handle it is by democratically legitimate decision-making based on systematic and open processes of boundary critique – open, that is, for all those concerned. Boundary critique cannot of course preclude that those in a situation of power suppress or close the discussion on boundary assumptions by non-argumentative means; but at least, boundary critique then provides a means of rational critique by which the reliance on such non-argumentative means can be exposed. When the façade of professional objectivity crumbles and everyone becomes aware of the role of boundary judgments, it also becomes apparent that there are *options* for what counts as relevant knowledge, rational action, and genuine improvement.

It is indeed quite frequent that experts and decision-makers are as unaware of the role of boundary judgments, and hence of the need for boundary critique, as are ordinary citizens. They may be more or less aware of the element of choice and selectivity involved in their "findings and conclusions" yet prefer not to emphasize the circumstance too much, as they don't know how to deal systematically with it. It is so much easier for them to claim superiority or even "objective necessity" for their judgments, due to their particular expertise and status. But as the concept of boundary critique makes clear,

such references to superior insight move on slippery ground. People who have understood the idea can use boundary critique to expose the selectivity of the claims in question and the element of choice involved. We encounter here a situation in which lay people and professionals can indeed meet at eye-level. When it comes to a transparent and self-reflecting handling of the eternal triangle, we all meet as equals.

Towards symmetry of critical competence The epistemological implications of this concept of boundary judgments are significant. It means that in spite of the usual asymmetry of knowledge and skills between ordinary citizens and professional people there exists, at a deeper layer, a fundamental symmetry between them. At this deeper layer, professional people are in a situation that is no different from that of lay people. Their professional judgments depend no less on boundary judgments than do everyday judgments. Critical systems thinking thus teaches us a truly important lesson in citizenship**:** below the surface of expert knowledge and professional behavior, there exists a *deep symmetry* of all claims to knowledge and rationality, whether professional or not. They all depend on boundary judgments that cannot be justified by reference to expertise. Accordingly, this deep symmetry has implications not only for the practice of research and expertise but also for the practice of democracy. Rationality and democracy need not be opposites, after all!

The critical kernel that we associate with systems thinking thus unfolds into a fundamental emancipatory potential. The question is, can we realize this potential? Can we translate it into strategies for *training citizens in citizenship,* without presupposing cognitive skills that are not available to most of them?

With a view to meeting this democratic and emancipatory challenge, it will be important not to fall back upon a concept of the "competent" citizen that would once again exclude a majority of ordinary people. Present conceptions of systems thinking, due to their focus on the use of research and professional methods, do not always avoid this kind of elitist implication, not any more than contemporary notions of professionalism. Critical systems thinking for professionals and citizens should avoid this pitfall from the start. It must not make competent practice depend on any special competence that

would not be available to ordinary citizens. Citizens are not, and will probably never be, equally skilled; but in democracy this fact must not make any difference to their equality as citizens, according to the principle: "one citizen, one vote."

Three uses of boundary critique It is the goal of critical systems heuristics (CSH) to develop such an emancipatory systems approach. After what has been said thus far, even readers not familiar with critical heuristics will probably anticipate that one of its core concepts for achieving its end is a *process of systematic boundary critique,* and that the main vehicle driving this critical process is the critical employment of boundary judgments, by which I mean both their self-reflective use and their critical use against not so self-reflective assertions of boundary judgments (Ulrich, 1983, pp. 225-314; 1987; 1993). The idea, briefly, is that boundary judgments offer themselves for three kinds of critical employment, in three corresponding settings for boundary critique:

(1) *Boundary reflection,* that is, promoting *reflective practice* through boundary-questioning self-reflection: What boundary judgments do I/we presuppose? What is their selectivity as measured not only by the facts and values they exclude but also by their practical implications in the form of resulting partiality, that is, the ways they benefit some parties while neglecting the needs or concerns of others? Are there alternative boundary judgments that might be just as adequate, and what would be *their* selectivity and resulting partiality? What *ought* to be my boundary judgments so that I can share and defend them vis-à-vis those concerned? (Main setting: individual reflection)

(2) *Boundary discourse,* that is, undertaking a *dialogical search* for mutual understanding and possible consensus through boundary-questioning deliberation: Why do our opinions or validity claims differ? What different boundary judgments make us see different "facts" and "values"? What differences do they make in terms of resulting partiality? What if we adopt one another's boundary judgments, how do things then look to each of us? Can we agree on differing boundary judgments; and if we cannot agree, can we at least understand why we disagree and then limit our claims accordingly? (Main setting: cooperative deliberation)

(3) *Boundary challenge* or contestation, that is, engaging in *controversial debate* through an emancipatory employment of boundary judgments: What options are there for the boundary judgments assumed in a claim? How can I make visible to others the ways in which a claim depends on boundary judgments that have not been disclosed, and how different can I make the claim look in the light of alternative boundary judgments? How can I argue against an opponent's allegation that I do not know enough to challenge him or her? Can I make a cogent argument even though I am not an expert and indeed may not be as

knowledgeable as the opponent with respect to the issue at hand? (Main setting: emancipatory challenge)

All three types of boundary critique can help people understand how relevant facts and values depend on the choice of systems boundaries. The latters' optional character – the availability of alternative ways to bound the reference system in question, along with the unavailability of objective justifications for chosen boundaries of concern – should become clear and the normative presuppositions and conceivable consequences of all options should be visible. The important point is that people learn to identify the boundary judgments that inform a claim so that they can also question them systematically, by demonstrating that there are options and how these options make the claim look different. The usual, unreflecting reliance on undisclosed and unquestioned boundary assumptions – for instance, most characteristically, in the experts' "facts" and "objective necessities" – should thus give way to an openly and critically normative employment, and ultimately to democratic legitimation, of boundary judgments that affect third parties.

Emancipatory boundary critique Lest this aim should depend entirely on the willingness of experts and decision makers to disclose their boundary judgments, the constructive, self-critical handling of boundary judgments which is important in types 1 and 2 of boundary critique is complemented in type 3 by their critical employment *against* those who are not willing to handle their boundary judgments so self-critically. The emancipatory use of boundary judgments – or shorter, *emancipatory boundary critique* – aims to make visible the operation of power, deception, dogmatism or other non-argumentative means behind rationality claims. It accomplishes this purpose by creating a situation in which a party's reliance on undisclosed or unquestioned boundary judgments becomes apparent.

The idea is that whenever a claim depends crucially on some boundary judgments that are taken for granted rather than being disclosed and systematically questioned, or which are even asserted dogmatically (e.g., with reference to superior expertise) or consciously concealed (e.g., in connection with a hidden agenda), then the role of such non-argumentative motives and strategies can be exposed by simply advancing alternative

boundary judgments and claiming *their* relevance, as well as by showing how the claim in question now looks different. The other side is then forced to defend its boundary judgments but is of course quite unable to prove "objectively" why they should be of superior validity.

Experts caught in such embarrassing situations tend to take refuge in their advantage of knowledge and to suggest that a non-expert's objections are "subjective" or "incompatible with the facts," and in any case do not agree with "the way professionals see it"; but that will do little to establish the objective necessity of their own boundary judgments. On the contrary, once it has become plain that defining the system of concern (or any other reference system) is at bottom a subjective political act, those experts who insist on their superior qualification or objectivity with regard to boundary judgments will only disqualify themselves. The "deep symmetry" of which I have spoken is thus brought to the surface and creates a situation of improved argumentative equality, or what I have elsewhere described as a *symmetry of critical competence* (Ulrich, 1993, p. 604f).

In this way ordinary citizens may not only learn to see through the *appearance* of objectivity and rationality behind which people with an advantage of knowledge and power tend to conceal their boundary judgments, they may also begin to understand that (and why) this advantage is quite insufficient a basis for defining the system of primary interest – along with its relevant environment and the adequate context of responsible action – or for suppressing discussions on alternative conceivable borders of concern. They are then able to shift the *burden of proof,* as it were, and challenge the experts' claims to rationality without needing to be experts themselves.

What is more, this kind of emancipatory use of boundary judgments represents an entirely rational and therefore cogent way of argumentation. Following Kant's (1787, B767) concept of the *polemical employment of reason* – a concept that I have discussed elsewhere in detail (see Ulrich, 1983, pp. 301-310) – I also call this type of argument "polemical," for it is distinctive of a polemical argument as Kant understands it that its critical force and rationality do not depend on any positive validity claim. Since it serves not a theoretical purpose of asserting knowledge but rather an

emancipatory purpose of exposing a dogmatic assertion of knowledge, what matters is not that it be able to establish a positive claim to theoretical truth or normative rightness (or both) but only that nobody can prove it wrong by virtue of an advantage of expertise. This is precisely what an openly subjective advancement of alternative boundary judgments achieves! Just as it cannot be proven true or right or objectively necessary by theoretical means, it equally cannot be proven to be objectively wrong. Thus citizens who use boundary judgments in this way for *merely critical* argumentation need not be afraid that they will immediately be convicted of lacking expertise or competence. Because it entails no theoretical or normative validity claim, no theoretical or other kind of special knowledge is required. This is why I believe that the concept of boundary critique offers us a key to making accessible to citizens a new critical competence. I know it sounds like squaring the circle, but it seems to me that we have indeed identified here a new, untapped source of civil competence.[8]

Practicing Boundary Critique The reader who has followed me thus far will now want to know concretely how the boundary judgments in question look like. Obviously the general concept of boundary judgments needs to be operationalized so that people can apply it, that is, can identify and discuss boundaries of concern systematically.

The table of boundary categories With a view particularly to the applied disciplines, as well as to everyday problem solving and decision-making, critical systems heuristics (CSH) suggests twelve basic boundary problems or so-called *boundary categories* (see **Fig. 4**).
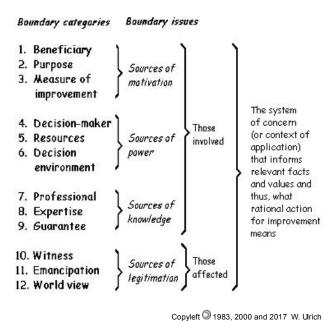
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Fig. 4: Table of boundary categories
The selectivity of practical claims is traceable to four basic boundary issues**:** a claim's sources of motivation, of power, of knowledge, and of legitimation. Each of these four issues is in turn operationalized by means of three boundary categories. The first refers to a type of stakeholder, that is, a social role ascribed to people depending on their specific way of being involved and/or affected; the second to a role-specific stake, that is, an essential concern of each group of stakeholders; and the third to a crucial stakeholding issue, that is, a main difficulty that needs to be resolved so as to gain a clear understanding of the boundary issue in question.

There are thus twelve boundary categories, each of which requires a boundary judgment in respect of both what is and what ought to be case. Together these twenty-four boundary judgments define an actual ("is") as compared to a desirable ("ought") reference system for assessing a practical claim's meaning and merits.
(Sources: Ulrich, 1983, p. 258, and 2000, p. 256)

In the terms of Kant's (1787) *Critique of Pure Reason,* which provided a major source of inspiration for the development of boundary critique (see Ulrich, 1983, chapters 3-5, pp. 175-314), the twelve boundary concepts represent categories of *relative a priori judgments.* They are *a priori* in that they come logically and temporally prior to the way we experience and evaluate so-called "real-world" situations; they are *relative* in that they are not prior to all possible experience and evaluation in general (as Kant claims for his a priori categories of pure theoretical and practical reason) but only to the specific contexts of inquiry and action in which practical questions arise (cf. Ulrich, 1983, pp. 188-193, esp. 191f). As explained above with the eternal triangle, we cannot meaningfully discuss a practical question or claim in terms of relevant "'facts" and "values" without assuming some boundary judgments by which we delimit the assumed real-world context or situation

to be improved (i.e., the intended system of primary concern) along with its "environment" (i.e., the assumed decision-environment) and its "context of application" (i.e., the assumed context of responsible action). The task of thinking through these issues of delimitation can then be understood in terms of giving both empirical and normative content to the twelve boundary categories (Fig. 4), in ways that deal openly and systematically with the selectivity involved. Reflective practice cannot avoid this task; for whenever we advance or rely on some observational or evaluative statements, we have already – whether consciously or not – assumed what is or should be the content of these categories.

Like Kant's (1787, B106) categories of experience, which go back to Aristotle's (1984) *Organon,* the boundary categories of critical heuristics are arranged in four groups of three categories each. In Kant's work, each group stood for an essential source of understanding and unity in phenomenal experience, and consequently also for a basic form or type of valid judgments about nature (the world of phenomenal experience).[9] In critical systems heuristics, each group stands for a source of human intentionality or purposefulness that is essential for understanding the empirical and normative selectivity of a practical proposition or claim. As Fig. 4 shows, the first group asks for the *sources of motivation* and corresponding ends that condition a claim; the second group, for the available *sources of power* and corresponding means and reach of control; the third, for the essential *sources of knowledge* and corresponding forms of expertise; and the fourth group, finally, for the required *sources of legitimation* and corresponding forms of accountability.

Unlike Kant's categories, the critically-heuristic categories are derived from sociological rather than metaphysical and logical considerations;[10] they address the social actors or "stakeholders" (a term that was not available in the late 1970s when critical systems heuristics was first developed) whose views and intentions determine what in a situation of concern to them counts as relevant knowledge and proper practice**:**

- The *first category of each group* refers to a social role (or type of stakeholder) that is or should be involved in defining the reference system in question (i.e., a system of concern S, or its relevant environment E, or the context of responsible action A).
  Example: the role of "professional"
  Corresponding boundary question: Who is/is to be involved as professional

(e.g., researcher, designer, expert)?

- The *second category of each group* addresses role-specific concerns (or stakes) that are or should be included.
  Example: the need for "expertise"
  Corresponding boundary question: What counts / should count as relevant expertise?

- And finally, the *third category of each group* relates to key problems (or stakeholding issues) that are crucial for understanding the previous two boundary judgments.
  Example: the inevitable lack of "guarantee" that reliance on expertise and professional guidance will indeed secure improvement.
  Corresponding boundary question: What are / should be the assumed sources of guarantee that improvement will effectively result, as distinguished from assumed sources of guarantee that risk being false or deficient guarantors of success?

Applying the three types of boundary categories to each of the four basic boundary issues of Fig. 4 yields a *set of twelve kinds of boundary judgments* that together define a claim's reference system, that is, the context that matters when it comes to assessing the meaning, merits and defects of a proposition (Ulrich, 2000, p. 251; Ulrich and Reynolds, 2010, p. 254). More precisely, each category prompts us to reflect on what contextual assumptions are *actually* taken to matter and what alternative assumptions might or should *ideally* matter. Each of the twelve boundary categories can thus be understood to give rise to two corresponding *boundary questions,* the one asking for what *are* and the other for what ought to be the boundary judgments at issue.

A checklist of boundary questions From what we just said, it follows that a useful way to introduce the boundary categories is by means of a checklist of boundary questions. The reference system informing a specific claim can accordingly be understood to be defined by the set of answers given in a situation of concern to the twelve boundary questions of CSH**:**

> *Definition:* The **reference system** informing a *specific* claim is defined by the set of answers given in a situation to the twelve boundary questions of CSH.

As I have recently introduced such a checklist in a previous *Bimonthly* essay (Ulrich, 2017b), I present it here is a slightly different form; however, its intent and content remain the same (**Table 1**).

Table 1: Checklist of boundary questions

The boundary questions operationalize boundary critique as a systematic process of questioning. The order of the questions may be chosen freely, according to what appears particularly relevant or interesting to ask for a start. Each boundary question has two parts; the second part, beginning with "That is…," serves to define the intent of the underlying boundary category. Each question should be answered both in an "is" mode (What are the actual boundary assumptions informing this claim?) and in an "ought" mode (What should or would ideally be the reference system to be considered?).

Differing "is" and "ought" answers point to unresolved boundary issues. The aim is to uncover such issues and to explore options for resolving them, so as to see a situation and related claims in different ways, rather than to find definitive answers. Even where "is" and "ought" answers agree, it may be advisable to ask how well-funded such a consensus is.

The aim is boundary testing, not boundary fixing. It is therefore always a good idea to systematically vary one's boundary judgments and see how different the "facts" and "values" taken to be relevant then look. In this way, systematic iteration of boundary judgments can convey a sense of the selectivity and resulting partiality of claims without presupposing a given basis of judgment, that is, without an illusion of objectivity.
(Source: adapted from Ulrich, 2000, p. 258, and prior versions in 1987, p.279f, and 1993, p.597)

Sources of Motivation

(1) Who is (ought to be) the **beneficiary** (or client)? That is, whose interests are (should be) served?

(2) What is (ought to be) the **purpose**? That is, what are (should be) the consequences?

(3) What is (ought to be) the **measure of improvement** (or measure of success)? That is, what trade-offs between conflicting purposes are (should be) built into the way success is measured?

Sources of Power

(4) Who is (ought to be) the **decision-maker**? That is, who is (should be) in a position to change the measure of improvement?

(5) What **resources** are (ought to be) controlled by the decision-maker? That is, what conditions of success can (should) those involved control?

(6) What conditions are (ought to be) part of the **decision environment**? That is, what conditions can (should) the decision-maker *not* control (e.g., from the viewpoint of those not involved)?

Sources of Knowledge

(7) Who is (ought to be) considered a **professional** (or expert)? That is, who is (should be) involved as an expert, e.g., as a researcher, designer or consultant?

(8) What kind of **expertise** is (ought to be) consulted? That is, what counts (should count) as relevant knowledge?

(9) What or who is (ought to be) assumed to be the **guarantor** of success? That is, where do (should) those involved seek some guarantee that improvement will be achieved (e.g., in consensus among experts, a valid and relevant data basis, a scientific attitude of objectivity, a moral stance of impartiality or fairness, involvement of all stakeholders, consultation of independent and impartial third parties, blind peer review, crowd wisdom / crowd voting / crowd sourcing, support by power-holders, etc., or are they perhaps false guarantors)?

Sources of Legitimation

(10) Who is (ought to be) **witness** to the interests of those affected but not involved? That is, who argues (should argue) the case of those stakeholders who cannot speak for themselves, including future generations and non-human nature?

(11) What secures (ought to secure) the **emancipation** of those affected from the premises and promises of those involved? That is, where does (should) legitimacy lie?

(12) What **worldview** is (ought to be) determining? That is, what different visions of "improvement" are (should be) considered, and how are they (should they be) reconciled?

Introducing the boundary judgments in this way offers three advantages. First, it allows formulating the boundary questions so as to define the intent of each boundary category; in the table above this is done by means of the "That is …" part of every boundary question. Second, it allows formulating the questions so that they explicitly call for both a descriptive ("is") mode and a normative ("ought") mode of questioning, that is, for asking both "What is currently the case?" and "What should really be the case?" And third, it provides a systematic order for examining boundary judgments and thus relieves the user (especially beginners) from each time determining the best order for using the boundary questions.

At the same time, introducing the boundary issues as a checklist of boundary questions may also involve some traps. In particular, there is a danger that the boundary questions are misunderstood to call for definitive answers, and moreover that the order in which they are listed is followed mechanically. These and a few other issues of good practice is what I propose to briefly consider now. I'll begin with two possible misunderstandings that would make boundary critique an unduly cumbersome process.

Boundary critique: how to start   Boundary critique depends more on the quality of the reflective and discursive process it inspires than on the completeness of the answers we give to the boundary questions. In any case, a certain focus is always recommendable with a view to keeping the effort manageable. While the idea obviously is that all of the boundary questions have critical significance for reflective practice, not all may be of equal relevance or equally helpful in each application. Rather, the importance of the different boundary questions tends to be situational. Further, the most important thing in the process of boundary critique is that it actually gets going and then, as interesting and relevant issues emerge, fuels itself. It is a good idea, therefore, to vary the time dedicated to the different questions, as well as the order in which they are examined, according to such situational considerations.

It is recommendable, then, to start with a few selected boundary questions that make an obvious difference to how a problem or situation is seen, and subsequently to follow up the further boundary issues that emerge. Make sure though that in the end, at least one question from each of the four groups

of boundary issues has been considered, as a way to ensure that the concerns of all four stakeholder groups will receive due attention.

The reason why such a start – and the procedural economy it brings – does not lead to an arbitrary result is that the boundary questions are strongly interdependent. When we modify one of the boundary judgments, all others are likely to change as well. That is, the answers we give to any particular boundary question is likely to influence the answers we subsequently give to all other questions, and it may in fact compel us to revise previously given answers to other questions. In short, in a thoroughly handled process of boundary critique, the order in which we consider the questions may be more or less efficient but should not really determine the resulting understanding of the boundaries of concern (i.e., of the reference system that matters). Due to the strong interdependence of boundary judgments, users may indeed feel free to start the process of boundary critique with any of the boundary questions that they find particularly relevant or interesting, *if only* they are then willing to pay attention to the further boundary issues that their answers raise.

Boundary critique and the S-E-A-U scheme Equally important with regard to procedural economy is a second basic consideration. In view of our earlier discussion of the different types of reference systems, some readers might wonder whether the boundary questions have to be applied to each of the four basic reference systems (S-E-A-U), so that effectively four rounds of boundary critique would be required. They might accordingly worry about the practicality of boundary critique. However, there is no need for such worries. The boundary questions have been formulated from the start so that together, they cover all four basic reference systems. And, as we just learned in the previous comment, due to their strong interdependence they will do so even if not all the questions are unfolded with equal detail. As a rule, it is thus not necessary to develop four different sets of answers to properly identify and unfold the selectivity of claims. A better idea is to carefully think of all four reference systems, and of the main two types of delimitations involved (i.e., A/U no less than S/E, cf. the discussion of this topic in Part 1), while unfolding each and any boundary question.

Another argument against the need for (and wisdom of) four separate rounds

of boundary critique is that most real-world claims rely on a set of considerations that are inspired by several of the S-E-A-U perspectives. The four reference systems S-E-A-U are therefore best understood as ideal-types that in practice we hardly ever encounter in pure form. When we apply the twelve boundary questions with a view to promoting rational practice rather than considering them theoretically, we may thus expect them to touch on all the issues intended by the four types of reference systems; a circumstance that does not prevent us of course from temporarily focusing on one type of reference system so as to deal with specific issues as they may emerge in a process of boundary critique.

As a last consideration, the use of the boundary questions not only in a descriptive ("is") but also in an openly normative ("ought") mode equally helps boundary critique avoid the trap of a one-sided focus on reference system S, which would then need to be compensated as it were by separate rounds of boundary critique from the perspectives of E and A. In a well-understood process of boundary critique, examining the boundary assumptions of a system or situation of interest S, or of related claims to systemic or situational rationality, quite naturally leads to the two crucial boundary problems of delimiting the system of interest S from its (decision-) environment E on the one hand and the context of application (or of responsible action) A from the universe U on the other hand, and thus to including the reference systems E and A. It would be rather artificial indeed, if not plainly impracticable, to assign these closely interdependent issues to separate rounds of boundary critique.

Boundary critique as a "process of unfolding" Boundary critique is often misunderstood to be about boundary setting. While it is correct that boundary critique should help us remove uncertainty about boundary assumptions, such a removal of uncertainty is not to remove boundary assumptions from the agenda, in the sense that they would then require no further consideration. The idea is not to check them off – get them "done and dusted" as it were – but to make sure they are and remain transparent to all the parties concerned, so that their selectivity can be unfolded and challenged and alternative assumptions can be examined. In short, the aim is *boundary testing* rather than boundary setting or fixing**:** *"*How different does the claim look if we change this or that boundary judgment?"

Perhaps the best way to describe this process of tracing the implications of alternative boundary judgments is in terms of a *process of unfolding* (Ulrich, 1983, whole Ch. 5). That which is to be unfolded is of course the selectivity and resulting partiality of boundary assumptions, in one word, their normative content. As there is no natural end to this process, boundary assumptions need to remain open to revision and it should become common practice that all claims to relevant knowledge, rational action, and resulting improvement are to be qualified with respect to them. Such claims can then be limited accordingly, so that decisions based on them can be taken *without claiming too much.*

Boundary critique as an iterative process We have seen that in the practice of boundary critique, there is no need to adhere to any specific order in which the boundary questions are unfolded. Users should feel free to start the process with any question that looks particularly relevant or interesting to begin with, and then to continue with whatever next question may come up in the light of the considerations inspired by the first question, and so on. Since all the boundary questions are interdependent, in the sense that the answers to any one will influence the answers to all others, it does not really matter with which question one begins. Boundary critique should be understood as an *iterative* process that can and should follow the logic of a boundary discussion as it unfolds rather than any strict linear order (**Fig. 5**).
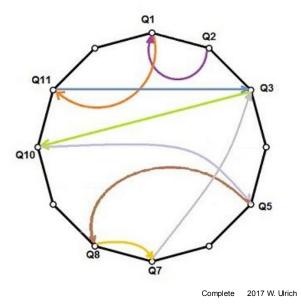

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Fig. 5: Boundary critique as iterative process
The process of unfolding the boundary questions can
be handled as a process of free iteration

Personally I have often found it useful to follow the sequence marked as an example in Fig. 5. So I will usually start with question (2) before turning to question (1), which then may lead to question (11) and on to questions (3), (10), or conversely to question (10) followed by questions (3) and (11), and so on. In the "is" mode, the logic of reflection is then something like this:

(Q2)
The purpose question:
What is the main purpose
(the big idea)?
▼

(Q1)
The client question:
Who stands to benefit
(the beneficiaries)?
▼

(Q11)
The emancipatory question:
What requirements of accountability and participation are assumed
to free those affected from the premises and promises of those involved
(the sources of legitimacy)?
▼

(Q3)
The measure-of-improvement question:
What is the standard of improvement
for handling conflicting expectations
(the trade-offs assumed in defining success)?
▼

(Q10)
The witness question:
Who may have to bear negative consequences without benefiting
and/or having a say, and who speaks on their behalf
(those affected but not involved)?
▼

(And so on)

Perhaps easier to remember for beginners is another standard sequence that I have found useful particularly for teaching purposes, first suggested by Reynolds (2007) (**Fig. 6**):
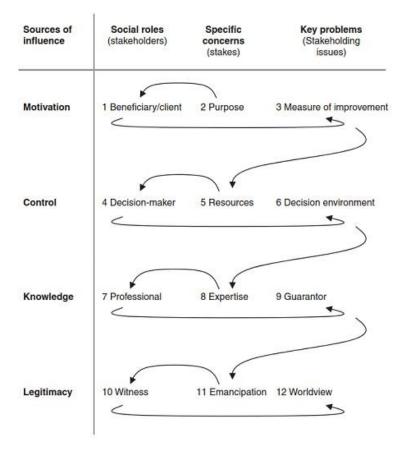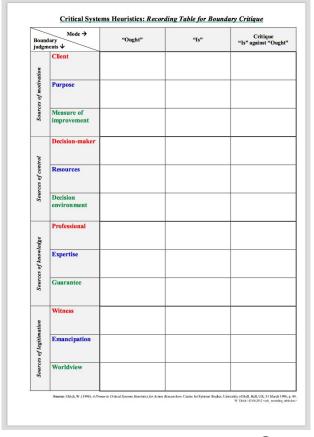
Fig. 6: A standard sequence for unfolding the boundary categories
For beginners it may be useful to follow this easily remembered standard
sequence of boundary critique (Sources: Ulrich and Reynolds, 2010, p. 259;
adapted from Reynolds 2007, p. 106)

But again, the order in which the boundary questions are considered may
really be left to the way a discussion develops or a facilitator suggests. It is
also possible at all times to go back to an earlier-discussed boundary
question, if subsequent considerations call for its revision. This is what it
means to say that boundary critique is an *iterative* process. It should be clear
then that the point of the checklist is not to impose a rigid order but rather, to
facilitate a meaningful choice of the next question one might want to
consider at any stage of a boundary reflection or discourse.

A recording table for boundary critique   Given the iterative nature of the
process of unfolding the boundary categories, it makes sense to keep a record
of the ideas as they come up. Here is a recording table to this end that can be
increased to A4 format or letter size for printing out as a worksheet (see
Table 2).

Table 2: Recording table for boundary critique *(click to open)*
(Source: Ulrich, 1996, p. 44)

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Combined table Instead of the answers we can enter the boundary questions themselves in each field of the above table. In effect this combines the table of boundary categories with the checklist of boundary question into a single table, although such economy of representation comes at the expense of dropping the explanatory "That is …" clause of the full list. Even so, this combined table may provide a useful *aide-mémoire* of the issues to be addressed in boundary critique (see **Table 3**).

Whether (especially as a beginner in boundary critique) one prefers to rely on the full checklist of boundary questions or on the combined table, or rather (as an experienced practitioner) finds it sufficient to have the table of boundary categories at hand, the aim remains the same**:** it is to get a sense of the boundary judgments that are actually operative in a claim, as distinguished from alternative boundary judgments that might seem more appropriate.

Table 3: Combined table of the boundary categories and questions of CSH

(Source: adapted from Ulrich and Reynolds, 2010, p. 244, Table 6.1, which in turn was inspired by the "Recording Table" for boundary critique originally suggested in Ulrich, 1996a, p. 44)

Sources of influence	Boundary judgments informing a practical claim and constituting the reference system for assessing its meaning and merit			Those concerned
	Social roles *(Stakeholders)*	Role-specific concerns *(Stakes)*	Key problems *(Stakeholding issues)*	
Sources of motivation (The claim's value basis)	*1. Beneficiary (or client)* Who ought to be/is the beneficiary?	*2. Purpose* What ought to be/is the purpose?	*3. Measure of improvement* What ought to be/is the measure of success?	**Those involved**
Sources of control (The claim's basis of power)	*4. Decision maker* Who ought to be/is in control of the conditions of success?	*5. Resources* What conditions of success ought to be/are under the decision maker's control?	*6. Decision environment* What conditions of success ought to be/are outside the decision maker's control?	
Sources of knowledge (The claim's basis of competence or know-how)	*7. Professional* Who ought to be/is involved as expert (researcher, designer, or consultant)?	*8. Expertise* What ought to be/is considered relevant knowledge (expertise and experience)?	*9. Guarantor* What ought to be/is regarded as assurance of successful implementation?	
Sources of legitimacy (The claim's basis of legitimation)	*10. Witness* Who ought to be/is articulating the concerns of those affected but not involved?	*11. Emancipation* What ought to be/are the chances for those affected to emancipate themselves from the premises and promises of those involved?	*12. Worldview* What space ought to be/is available for reconciling differing world views in play?	**Those affected**

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Actual and ideal mapping   A basic tool that can drive the process of unfolding the implications of boundary assumptions for the parties concerned, and thus to identify problematic as distinguished from more appropriate boundary judgments, is by systematically examining them from both an "is" (actual mapping) and "ought" (ideal mapping) perspective. Combining these two modes of boundary questioning helps to identify unresolved conflicts of views and values as to what "the problem" and its "solution" is. It allows for a certain rigor not only in dealing with questions of "fact" but also in dealing with questions of "value," in that it makes it apparent at all times that due to the underlying boundary judgments, both types of statements are always selective and accordingly can be better understood by asking for their normative along with their empirical content. In this way it becomes transparent that *there are always options* for defining relevant facts and values, for the simple reason that there are always options

for defining appropriate boundary judgments. It also helps in better understanding how different (groups of) people can arrive at different notions of what are "the" relevant facts and values. It can make us more tolerant for the differing positions of others and thus provide a better basis for mutual understanding.

Clarifying design ideals or visions for improvement Ideal mapping also lends itself to a more specific, independent use, namely, as a tool for the creative exploration of design ideals or options for the future along the lines of Ackoff's (1974, pp. 26 and 29f; 1981, pp. 104ff) concept of *idealized design* and Churchman's (1979, p. 82f) similar concept of *ideal planning;* my own version of it in CSH is "ideal mapping" as distinguished from "actual mapping" of reference systems (cf. the two case studies in *Critical Heuristics,* Ulrich, 1983, pp. 377-414).

Towards a new rigor in evaluation research Further, the combination of actual mapping with a previous round of ideal mapping lends itself to a specific application in evaluation research and other types of research or practice that aim at systematic valuation based on research or vice-versa, at research based on a clear value basis. By beginning with ideal mapping, one can first clarify the value basis for the subsequent effort of research or professional intervention. Boundary critique thus allows a new rigor in the task of *value clarification* and at the same time provides a basis for evaluation *without any illusion of objectivity.* "When the optional character of underpinning boundary judgments becomes obvious, the mask of objectivity slips." (Ulrich, 2000, p. 259) The discipline of evaluation research, which since its emergence in the 1960s and 1970s has been understood and practiced mainly as an empirical-analytic science, might thus finally find ways to deal systematically with its value content, namely, in the form of *pluralist evaluation* grounded in, and combined with, systematic efforts of boundary critique (for some emerging proposals in this direction, see, e.g., Gates, 2017; Reynolds, 2014; and Schwandt, 2017).

When are boundary judgments appropriate? I mentioned above that since there is no such thing as definitive, objectively right boundary judgments, the more modest aim of boundary critique can only be to improve the basis for choosing "appropriate" boundary judgments – more appropriate, that is, than

the ones who may presently be taken for granted. But what does "appropriate" mean if there are no definitively "right" boundary judgments? A basic test that I use to assess an alternative boundary judgment as compared to a current one is by asking myself whether I could *better argue* it to be conducive to improvement, for example, because it embodies a more comprehensive or long-term perspective or is acceptable to a larger group of people concerned. Similarly, I identify appropriate boundary judgments by considering whether I could *publicly share* them with all the parties concerned, as a touchstone for their not representing a merely or mainly self-serving interest or even some hidden agenda.

The quest for appropriate boundary judgments is never a quick and trivial matter. As I have emphasized, boundary critique (as the name suggests) is not primarily a tool for boundary fixing but for boundary testing, that is, for surfacing the boundary judgments on which a claim depends and thus for being able to see the claim in the light of alternative boundary judgments. Since there are no objectively superior boundary judgments, boundary critique cannot be expected to bring forth quick, simple and obvious answers. This is why we need it in the first place – because no such answers exist. Further, boundary critique can also be demanding because each boundary question has the potential to inspire reflections or deliberations that really go the heart of a problem situation and compel us to think and argue more carefully and deeply than we usually do about what in a specific situation should count as relevant knowledge, rational action, and adequate improvement. The sequence of boundary questions by which I earlier illustrated a useful way to start the process of boundary critique (Q2 – Q1 – Q10– Q3) provides an example; I find it useful as it makes me think early on in the process about core issues such as what is a proposal's "big idea" (Q2) and what kind of trade-offs between conflicting aims or expectations should flow into the assumed measure of improvement (Q10).

That such questions are difficult to answer does not mean they are irrelevant or impractical, quite the contrary – they are difficult *because* they are deeply relevant, in the double sense of being crucial for effective pragmatic action *and* for relevant critique. If pragmatic performance is measured by the aim of securing effective action towards genuine and defensible forms of improvement – doing things right *and* doing the right thing – then boundary

critique is certainly a powerful pragmatic tool.

The best way to get a personal sense of this pragmatic performance is by *experiencing* it, that is, by trying for oneself and beginning to apply the boundary questions in practical situations, and be it only by listening to people's arguments and trying to identify their underlying boundary judgments. Once we have understood the concept of boundary judgments, we can learn as much about them on the bus or in a street café as in the lecture room and in research practice. A skilled practitioner of boundary critique will make it a personal *habit* to be attentive to the boundary judgments people use, and also to ask what options there might be for them. People's ways to think and talk about matters of concern to them is the best training ground there is for boundary reflection and discourse. Reading case studies may also help a bit, but it cannot replace personal trying and experience.[11)]

Too abstract and demanding for ordinary citizens and managers? Readers who have not been exposed to critical heuristics before may think that all this is quite nice but so abstract and complex that it is difficult to see how ordinary citizens and managers could apply it. Are we not dealing here with fundamental philosophical difficulties of the systems idea and of the theory of knowledge and rationality in general, for example, concerning the meaning of practical reason and the unavailability of comprehensiveness and objectivity?

Precisely! If boundary judgments are indeed as fundamental to everyday speech and argumentation as I argue, it must be possible to explain their nature and also their emancipatory implications to ordinary citizens. It is true, we are dealing with a concept of systems-theoretical origin here, and systems theory may well be beyond the interest and understanding of a majority of citizens. But at the same time, the concept of boundary judgments is so elementary that grasping it can hardly be reserved to systems theorists. Boundary judgments are not an esoteric invention of mine, they are an all-pervasive everyday reality; so why should it be impossible in principle to demonstrate their importance by means of everyday language and everyday examples?

Indeed, as I have tried to show, we do not really need systems language to

grasp the idea that the practical meaning of a proposition – the difference it makes in practice – depends on how we bound the system of reference. Instead we may talk of the relevant "situation," or of the definition of the "problem," of the "context that matters," and so on. Similarly, instead of using the abstract notion of boundary judgments, we can speak of "borders of concern," of the reach of responsibility, and so on. I can't see why ordinary people should not be able to understand that when they differ with others, this is not necessarily so because all others got their facts and values wrong or are stupid but rather, because their borders of concern are different.

The everyday observation that people are *"at cross-purposes"* gets a new and relevant meaning here; it means that people's boundary judgments differ, not only with respect to boundary category No. 2 (Q2) but also to other boundary issues. It is then quite normal that different facts and values matter to them, a circumstance that need not mean people are unreasonable or lack good will. On the contrary, wouldn't it be surprising if despite differing boundary judgments, people would arrive at the same observations and concerns?

Yet it is so easy – easier than questioning one's boundary judgments or those of others – to assume that people lack understanding or good will (or both) if they don't agree with us, although chances are it is simply because their boundary judgments are different. Unfortunately, too many people are still not aware of the role that boundary judgments play, in everyday observations and valuations no less than in academic and professional discourses. If only they were aware of the concept, it could make mutual understanding and tolerance so much easier and thereby could also provide a basis for rational deliberation and cooperation.

Conclusion: Systems Thinking, Management, and Citizenship A proper concept of good management education today should probably equip future managers to assume more responsibility than is now usual for the longer-term consequences and side-effects of their actions. How managers conceive of managerial problems, and what solutions they perceive as "rational" solutions, has a lot to do with their boundary judgments. To take two examples that look more obvious than they are from a methodological point of view, the call for ecologically sustainable forms of industrial production increasingly require managers to include within their assumed

contexts of rational action the concerns of future generations and non-human nature; but then, to make this *rationally* possibly, they need new tools of cost accounting and financial reporting in which costs imposed on those affected but not involved *matter.* Accounting has as much to do with boundary judgments as have environmentally sustainable forms of production and business ethics, yet boundary critique is not as yet a systematic part of it.

To be sure, we cannot expect managers to be altruists in charge of everyone and everything and thereby to neglect their core business of making business. But we should indeed expect them to be competent in what they do as managers, and such competence certainly involves systematic reflection on the boundary judgments that inform their decisions and consequent efforts, together with concerned citizens, to handle these boundary judgments in transparent and responsible ways.

The day may not be so far away when citizens begin to pay more attention than at present to the boundary judgments behind managerial decisions that affect them. They will then want to challenge these decisions both argumentatively and through their decisions as consumers. So managers should have every interest in learning early on how to deal carefully with managerial boundary judgments. It cannot be too early for management education to begin to prepare future managers now and to form their understanding of competent management accordingly. In this new understanding of management, c*ompetent management* has something to do with *competent citizenship;* far from being in opposition to it, it will depend on it.

I do not want to be misunderstood. The point is not to renounce professionalism or diminish its role but to *deepen* our understanding of it. In spite of the increasingly important role that I would like to assign to competent citizenship, and that is, to ordinary citizens, I am convinced that management will remain a key function in society, one that requires well-prepared people and should be fulfilled as professionally as possible. I am thus not arguing against *professionalism,* only against our contemporary notion of professional competence, especially in the field of management. This present notion is a rather superficial one, it seems to me, in that it ignores the "deep symmetry" of professional and non-professional judgments of which I have spoken. Contemporary management theories and fads

(Jackson, 1995), due to their ignoring the role of boundary judgments, suffer not only from a defect of modesty and self-reflection but also from a lack of relevance and depth for management education and practice. Academically trained managers engaged in responsible positions could tell us about that! [12]

For the same reason, present-day notions of professionalism still tend to put non-professional people in a situation of incompetence, even when they are supposed to serve them (Ulrich, 2000). They thereby miss important sources of motivation, as well as of knowledge and legitimation, for successful practice. Along with this deficit come the manifold gaps between theory and practice, science and politics, and "facts" and "values" (or expertise and ethics), of which we are all more or less aware in this epoch of "organized irresponsibility" (Beck, 1992; 1995) but for which we have no *methodological* answers in the form of clear theory and practicable tools. Perhaps the principle of boundary critique and its underlying theoretical and philosophical framework of critical systems heuristics (CSH) can contribute a small piece to the difficult puzzle we face, by helping us to deal a bit better with these deficits.

The time has come, I think, to start preparing today's management students for their future jobs by training them not only to master technical management know-how but also to handle such know-how truly professionally – that is, as I see it, by taking the *critical turn* towards a reflective kind of competence that would be informed by the concept of boundary critique.

A complementary vision that could motivate and sustain such a critically reflective stance might be competent citizenship, according to the double motto:

> *Citizenship without some sense of competence is empty;*
> *competence without some sense of citizenship is blind.*

If we educate future managers to associate their professional competence with competent citizenship, they will not only gain a deeper understanding of their own societal role but will also be prepared to give ordinary citizens a competent role to play in the societal definition and legitimation of good and professional managerial decisions. I cannot think of a more meaningful

vision for a truly systemic concept of rational management than that of *management as competent citizenship.*

I don't know whether you, the reader, agree; but if you do, you will not need to give young people the kind of advice that the German satirist Karl Kraus is reported to have given to a student who wanted to study business ethics and which I here adapt a little to the critical study of systems management**:**

> *"You want to study critical systems thinking in management?*
> *Then decide yourself for the one or the other!"*

This surely cannot be the answer we offer contemporary management students. The time is ripe for promoting forms of systems thinking in management and professionalism that make a difference. The case for boundary critique is strong indeed. Let us train future managers in systems thinking *as if citizens mattered.*

Notes

7) Interested readers will find discussions of this basic critical consequence of well-understood systems thinking in many of my writings. See, e.g., Ulrich, 1983, pp. 20, 157, 176f, 227-229, 265f and passim; 1993, p. 587f; 1994, p. 35; 1996, p. 11f; 2001, pp. 8, 20, 22-25; 2003, p. 326f; 2006a, pp. 56f, 70f; 2007b; p. 3f; 2012b, p. 1237f; 2012c, pp. 1313-1316. *[BACK]*

8) For a more detailed argument and some examples, see Ulrich, 1983, pp. 305-310; 1987, p. 281f; 1993, pp. 599-605; and 2000, pp. 257-264. *[BACK]*

9) More precisely, Kant takes the categories of experience to be constitutive of the synthesis of the manifold of particular sense-experiences into clear and general concepts, whereas the forms of judgments provide the basis for employing such concepts in propositions about the real world (predications, inferences, hypotheses, etc.). For example, in the first group of forms of judgment (1787, B95) and of corresponding categories (1787, B106), Kant distinguishes universal from particular and singular judgments, as three forms of judgments that are grounded in three different notions of "quantity" that we can associate with phenomena – the categories of unity, plurality and totality. Or, taking the second group, since human judgments can be affirmative, negative, or limiting (i.e., delimiting between what is real and what is not), there must also be three conforming categories referring to the "quality" of experience – the categories of reality, negation, and limitation. As the two examples may already suggest, the precise interpretation and justification of Kant's "Aristotelian" categories raises many difficulties; however, these need not concern us here, as the only point that matters for our purpose is the intrinsic connection between the categories of experience and the forms of judgment assumed to be constitutive of knowledge in general (in Kant's case, especially about nature) or of knowledge of specific contexts of inquiry and practice (in CSH). Accordingly different is the nature of the "boundary categories" and "boundary judgments" of CSH as compared to Kant's categories and judgments; but what remains the same is that in CSH as well, each boundary category is constitutive of an indispensable form of boundary judgments and *vice-versa. [BACK]*

10) For accounts of the systematic derivation of the boundary categories of CSH, see Ulrich, 1983, pp. 231-258, and 1996a, pp. 19-22 *[BACK]*

11) This is not the place to engage in a case study of boundary critique, but I may refer the reader to the four case studies that were presented in the original book (Ulrich, 1983, chapters 7 and 8, pp. 343-417) and in a more recent publication (Ulrich and Reynolds, 2010, pp. 248-250 and 266-283). In addition, there is an uncounted number of applications to be found in the specialized literature of many fields of inquiry and practice. Among the more recent studies, a few that I can recommend (which need not mean I agree with

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everything they say about boundary critique) are**:** Carr and Levidow, 2000; Vos, 2003; Achterkamp and Vos, 2007; Reynolds, 2007, 2008a, b, 2014; Schwandt, 2015; Coombes et al., 2016; de Loë and Patterson, 2017; Freeman and Yearworth, 2017; Gates, 2017; and Johnstone and Tate, 2017. *[BACK]*

12) For a fuller account of my notion of professional competence, see Ulrich, 2001 and 2012a. The underlying concept of *"deep" professionalism* is introduced in Ulrich, 2000, pp. 264-266. For my understanding of managerial competence also compare Ulrich (1984), where I define management as "the art of taking decisions that affect others" or, in the original German wording, as "die Kunst Entscheidungen zu treffen, die andere *be*treffen." Finally, see Tochon (2010) for an inspiring, if somewhat effusive, discussion of the notion of "depth" in education. *[BACK]*

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Picture data   Digital photograph taken on 18 February 2013, around 4:15 p.m., near Wald, Canton Bern, Switzerland. ISO 200, exposure mode aperture priority with aperture f/8.0 and exposure time 1/1325 seconds, exposure bias -0.67. Metering mode multi-segment, contrast normal, saturation normal, sharpness normal. Focal length 32 mm (equivalent to 51 mm with a conventional 35 mm camera). Original resolution 5184 × 3456 pixels; current resolution 700 x 525 pixels, compressed to 233 KB.

November-December, 2017

Wishing you
a good start into the new year
... and a clear view throughout it!

Boundary critique can provide a clear view of situations "as if people mattered"

„Selectivity, not comprehensiveness, is the fate of all practice."

(Ulrich, 2007b, p. 1010, and 2016, p. 9)

Previous Picture

Personal notes:

Notepad for capturing
personal thoughts »

Write down your thoughts before you forget them!
Just be sure to copy them elsewhere before leaving this page.

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