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Formerly "Picture of the Month"

March-May 2018
The Idea of Boundary Critique
Farewell to Ulrich's Bimonthly

PDF file

Note: This essay's original title was "Toward a knowledge democracy: farewell to Ulrich's *Bimonthly.*" This title did not really capture the intent of the essay, which is to offer a personal look back at the origin and importance of "boundary critique" in my work, whereas the concept of a "knowledge democracy" is the subject of a separate article (my *Erskine Lecture* of 1999) that is made available as an appendix to the present essay. I have therefore changed the present essay's title to "The idea of boundary critique," which is what it is all about. The subtitle remains unchanged; it refers to the fact that this is the last issue of *Ulrich's Bimonthly*. [12 Sep 2019]

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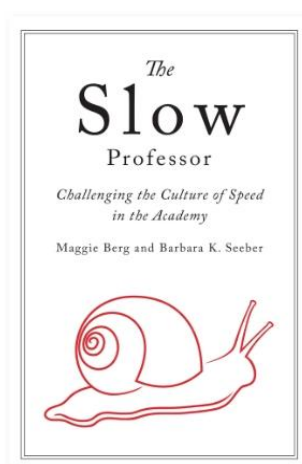
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Systems get in the way.
(John Gall, *How Systems Work and Especially How They Fail,* 1978, p. 127)

The occasion: farewell to *Ulrich's Bimonthly* There was a time when the Rolls-Royce Motor Cars Company famously cited the horsepower of their engines as "sufficient," which I always found an elegant and so unmistakably British understatement for saying "more than needed." Perhaps in academia, where (it seems to me, at times) the number of publications now is everything and their quality almost nothing, we might do well to adopt a similar convention, say, by describing everything over 100 as "sufficient." But of course, this risks being a therapy for the symptom rather than for the problem; which is that quantity (if not overproduction) appears to go at the expense of quality. It might become necessary to limit the number of publications that everyone is entitled to publish or, at least, to get academic credit for, so that people would have a real incentive to focus on quality rather than quantity. Be that as it may, I have come to the conclusion that the number of *Bimonthly* essays that I have written is "sufficient." Consequently, I'll stop writing more of them. *Motto:* "Enough is enough."

I do not promise to stop writing altogether, though. Just to do it in a freer, and slower, rhythm. I'll become a *Slow Professor* (Berg and Seeber, 2016; cf. the short reviews by Farr, 2016, and Hanson, 2017; also see Honore, 2005, the pioneer of the "slow" movement, and Boulous Walker, 2017). My focus will no longer be on writing new essays but on (slowly) completing those

The **Slow** Professor

Challenging the Culture of Speed in the Academy

Maggie Berg and Barbara K. Seeber

series of essays which are not complete as yet, such as the series dedicated to the role of general ideas in Western and Eastern thought, titled "The Rational, the Moral, and the General"; the "What is Good Practice?" series; then the "Reflections on Critical Pragmatism"; and finally, based on all the others, the "Reflections on Reflective Practice" series. Further, as the *Bimonthly* will no longer be able to serve its function of giving my readers an easy access to some of my latest writings, I will eventually embark on an extension and partial restructuring of my website in terms of thematic streams, that is, sections of the site that will more or less converge with the main themes I dealt with in the *Bimonthly,* among them the series of essays just mentioned.

In this last regular issue of *Ulrich's Bimonthly,* then, I would like to do something a bit special. Beginning with a glance back, I would like to reflect on some key considerations and motives that led me to conceive of "boundary critique" as an indispensable (though neglected) idea of systems thinking and hence, as a methodological core principle of my attempt to imagine what I then called a *critical systems approach* (Ulrich, 1983, p. 25 and passim) to social planning and other fields of applied science and professional practice. To help me step back in time to the late 1970s and early 1980s, when I set out to develop what is now known as *critical systems heuristics* (CSH), I will adopt a dialogical format and think of the kind of answers that I might have given then (and still could give today) in an interview about my work. The result is a fictitious interview with myself about the reasoning that gave rise to what has been the focus of my work ever since, the role and importance of "boundary judgments" in all matters practical.

This will lead us quite naturally to the second topic of the present essay, which focuses on the nature of the boundary judgments in question and their adequate handling. I will try and give an overview of some major *tools and guidelines* that are available today for practicing boundary critique, especially as proposed by CSH. For this purpose as well, I will benefit of the interview setting.

Third and last, I will turn to the vision of a *knowledge democracy* that has been motivating my work and which, as I believe, remains a meaningful aim

for future work. I take this opportunity to publish an edited version of the "Erskine Prestige Lecture" that I was allowed to present to the staff and students of the University of Canterbury in Christchurch, New Zealand, on 26 May 1999. At the time, I was asked to bring along and make available a written version of my lecture, which subsequently was circulated within the University. However, as my appointment ended shortly after, I did not find the time to edit it as planned and in consequence it was never published. The present "Farewell" Bimonthly provides a decent occasion, I think, for finally publishing it. To keep this first publication of my Erskine Lecture as close as possible to the original, and the last *Bimonthly* issue as short as one might expect and wish, at least optically, I'll offer the Lecture as a downloadable *appendix* that comes in the same form and layout in which it was originally circulated, except for the edits of course. Some passages have been expanded or are new, and some of the references have been updated; but on the whole, the paper remains fairly close to the original lecture.

AN INTERVIEW WITH MYSELF

Any author is easy if you can catch the center of his vision.
(William James, American philosopher of pragmatism, 1977, p. 44)

Q1: What basic idea led you to develop critical systems heuristics (CSH)?

The German social theorist and philosopher Jürgen Habermas (1985, p. 173), asked about his basic motive for grounding critical social theory in a *Theory of Communicative Action* (Habermas, 1984/1987), once remarked that at bottom his version of a critical theory of society explicates one central intuition, namely, that reasonable speech contains an intrinsic *telos* (finality) of *mutual understanding*. Whenever we communicate, we *anticipate* that the people we talk to can understand what we want to tell them, so that there is a chance to reach mutual understanding. This anticipation, Habermas believes, is necessarily built into speech as without it, it makes little sense to communicate.

Similarly, if you ask me what led me to conceive of a critical systems approach, I might explain it as an attempt to work out a central intuition,

namely, that there is an intrinsic *telos* in systems thinking that to this day has not received adequate attention**:** whenever we try to think systemically, we cannot help but *anticipate* that the way we delimit a system of interest is adequate for understanding and improving the situation or issue in question. Systems thinking implies an intrinsic need for *understanding systems boundaries* or, as I prefer to say so as to make their judgmental nature clear, the *boundary judgments* that inform our systems concepts. Epistemologically speaking, these boundary assumptions stand for *justification break-offs,* that is, points at which our chains of argumentation break off, both on the side of presuppositions or conditions and on the side of effects or implications; normatively speaking, they stand for assumed *borders of concern.* Both the meaning and the validity of propositions depend on them. Without an effort to understand these unavoidable limitations of argumentation and commitment, we cannot expect systems thinking (or for that, any other kind of systematic inquiry and practice) to be conducive to clear and relevant thought. Indeed, as I noted in the *Primer* (Ulrich, 1996, p. 17), we do not need the systems concept at all if we are not interested in handling systems boundaries critically. But if we are, as I added in the *Erskine Lecture* (Ulrich, 1999/2018, p. 7), then *systems thinking becomes a form of critique.* Therein I see the fundamental critical kernel of systems thinking.

This, then, is the central intuition that I link to the idea of systems thinking. I owe it to a period of two years in my life, the years 1978-79, that I dedicated almost exclusively to the study of Kant's (esp. 1786, 1787) critical philosophy as applied to both the theoretical-empirical and the practical-normative use of reason, that is, to the search for knowledge (guiding ideal**:** the idea of science) and for rational action (the moral idea). Kant woke me up from my previous, pre-critical understanding of the scientific idea as well as of the moral idea and, linked to both, the systems idea. As it slowly dawned on me, all three ideas imply a *quest for comprehensiveness,* that is, for some kind of holistic (e.g., Churchman, 1968, 1982) or interconnected (e.g., Vester, 2007) thought. It is one of the most fundamental principles of reason to take into account everything that is conceivably relevant to an issue or argument. So reason has no choice but to try and consider all the conditions and implications of its own conjectures. In principle, there is no

natural or conceptual limit to this endeavor in that we can always expand the boundaries of what we take into account; in practice though, it is always limited and thus deficient. *While comprehensiveness is a meaningful quest, it is not a meaningful claim,* a claim that would be critically tenable.[1]

After Kant, I could no longer understand the systems idea in the same way as before. It had become to me what Kant would have called a *critical idea of reason,* an idea that compels us to reflect on the limited and conditioned nature of all our understanding and reasoning. The limiting factor at issue is the inevitability of boundary judgments – judgments as to what constitutes the relevant "whole system," the total situation or context to be considered – in all our cognition, that is, in our ways of seeing, thinking, communicating and doing things. At the same time, however, the systems idea must itself remain forever problematic to our understanding, as we can neither give it a definitive empirical content nor ultimately justify the normative content of any claims to systems rationality. Its use, even for critical purposes, is not immune to the problem it helps us diagnose, the inevitable *selectivity* of all our claims and justifications due to underlying boundary judgments. The only tenable use of the systems idea, then, is a self-reflective and self-limiting employment, as against any holistic pretensions. This is the sort of thoughts which, although still rather unclear to me then, sent me onto what Kant famously called the *critical path* – the only path still open after leaving behind us the dogmatic (i.e., uncritical) and the skeptical (i.e., nihilistic) paths (Kant, 1787, B884). I now refer to it as the *critical turn* of systems thinking and, linked to it, of all our notions of knowledge, rational action, professional or any other form of competence, applied science and expertise, improvement, and even morality (compare, for example, my discussion of research competence, critically turned, in Ulrich, 2001a and 2017b-c).

Q2: Given this basic motive of a critical turn in systems thinking, how did you seek to translate it into a systematic framework for reflective practice?

From what we've discussed so far it follows that the central methodological aim of critical systems heuristics (CSH) is to *support systematic processes of boundary critique,* that is, a transparent and critical handling of boundary

judgments. When I was setting out to develop CSH, in the years 1976-80 during my stay at the University of California, Berkeley, the field of systems theory and systems thinking (including the so-called systems methodologies) had not begun to cultivate any kind of reflective practice with respect to boundary judgments. Nor had any other field of inquiry and practice of which I would have been aware. (But of course it was the systems theorists whom one might have expected in the first place to take care of the problem of boundary judgments.) Hence, some new tool of thought needed to be developed. It was clear to me that such a new approach would not be a stand-alone approach but rather should aim to complement and enrich existing practices of inquiry in all fields, systems research / systems design as well as other applied disciplines, many of which have by now been influenced by systems thinking or in any case face similar issues of delimiting the reach of valid findings and conclusions.

I should emphasize in this context that "boundary judgments" are not an invention of mine, nor a specific problem of systems theory. Rather, they have been there all along, in virtually all fields of research and professional practice of which I can think. But apparently few people saw them or wanted to see them; and those who did failed to come up with a systematic framework for handling them. Nor are they a problem *caused* by the systems approach – the systems idea is only the messenger of the bad news (Ulrich, 1981). Ignoring the bad news or accusing the messenger of being its cause does not help. The problem of boundary judgments is pervasive and accordingly is in need of a *systematic* critical handling. So it was obvious that whatever framework would eventually be developed to support such a critical handling, it was indeed to *support* and complement, not replace, existing tools and practices of inquiry. In this self-limiting sense, CSH was not going to establish or justify any positive claims to knowledge and rationality in its fields of application but would only serve to limit and qualify such claims, as grounded in existing, specialized disciplines and increasingly also in the emerging fields of inter- and transdisciplinary research and practice.

Even with a view to this limited and self-limiting end, it was clear that a careful *theoretical grounding*, both philosophical and methodological, was

required; philosophical, that is, in terms of both epistemology (theory of knowledge) and practical philosophy (theory of rational practice, including theory of moral reasoning). Only thus could the framework be expected to reach academics in different fields and to provide a clear and convincing explanation of its systematic intent**:** of *clarifying what rational practice could still mean* in the face of the unavoidability of boundary judgments, that is, of inevitable selectivity as to what counts as relevant knowledge and as rational argumentation. This is how I would describe the systematic intent of CSH from a theoretical point of view..

Just as obviously, *practicability* was essential if the approach was to be broadly accepted. Whatever theoretical grounding of a "critical solution" to the problem of boundary judgments would emerge, it would have to prove its value in the practice of applied research and professional intervention, as well as in everyday problem solving and decision-making. A majority of people should be able to understand and apply it, not only well-trained professionals or even just a small group of philosophers or theorists. Accordingly it needed to be translated into *heuristic concepts* that would be accessible to "ordinary" researchers, professionals, decision-makers, and citizens regardless of whatever specialized knowledge and expertise they had concerning the situation or issue at hand. It's the heuristic concepts in question, not the people who want to apply them, which need to be theoretically well-grounded; whereby "well-grounded" includes the qualification of being formulated so that a majority of non-specialists can understand and use them. (Remember that even academics and experts do most of the time belong to the non-specialists, namely, as soon as the expertise required lies outside of their field of special competence). Although it is a common misunderstanding that "heuristic" concepts are a kind of theory-free concepts of low argumentative value, this is not so in my understanding of a critical systems approach, in which heuristic concepts are to serve as critical ideas in support of self-reflective practice. *"Heuristics is epistemology brought down to earth."* (Ulrich, 1983, p. 41)

The name I chose for such a solution to the problem of boundary judgments, *"critical systems heuristics"* (CSH), stands for three basic aims. CSH should**:**

1. support *critical* reflection and discourse with respect to the inevitable selectivity, due to the problem of boundary judgments, of all claims to knowledge, rationality, and improvement;

2. embody a critical turn of *systems* thinking that would be accessible to a majority of people without any specialized knowledge; and

3. amount to a flexible and widely applicable framework of critical *heuristics* of social practice rather than of critical theory of society.

Heuristic concepts as I understand them can help us ask relevant questions and examine the assumptions and implications of different conceivable answers, but they do not serve to justify any particular answers as the only correct ones. The proper use of heuristic concepts is moreover a self-reflective use. The *critically-heuristic* nature of such a framework of systemic thinking does not, however, dispense it from being grounded in a careful and explicit theoretical foundation.

In sum, the *systematic intent* of CSH was to work out the philosophical and methodological implications of the central intuition we were talking about at the outset, and then to translate these implications into critically-heuristic tools for reflective practice. Accordingly, the two crucial questions to be clarified were**:**

1. Inasmuch as our claims to knowledge, to rationality, competence, and improvement, are conditioned by boundary judgments, how should we understand the meaning and validity of such claims? (aim**:** theoretical grounding; basic thrust**:** qualifying claims in terms of assumed boundary judgments).

2. Can we develop tools that a majority of people might use to systematically examine the resulting selectivity of claims, that is, to identify the boundary judgments at work and unfold their practical implications? (aim**:** securing practicability; basic thrust**:** supporting reflective practice with respect to boundary judgments and their implications for all those concerned).

CSH was to be my attempt to clarify the meaning of this "systematically."

Q3: Can you hint at some of the key concepts to which this attempt gave rise and which belong to its intended "pragmatic" side?

As said above, the methodological core idea of CSH is *to support systematic processes of boundary critique.* The question is, what kind of conceptual tools does CSH propose to this end? Or, to put the same question differently, how does CSH try to operationalize boundary critique? Let me try to hint at some of the key concepts to this end. I say "hint" as this is not the occasion for a systematic introduction; at best I can give a bit more space to two or three of them while treating the others in a rather cursory fashion. I shall, however, give references to sources where readers can find fuller accounts.

Settings for boundary critique: To begin with, CSH distinguishes between three basic settings and corresponding uses of boundary critique**:**

(1) Self-reflective boundary questioning:

"*What are my (our, their) boundary judgments?*"

Aim**:** cultivating reflective practice as to boundary judgments that inform current views and values and related claims to relevant knowledge, rational action, and resulting improvement.

Typical questions**:** What boundary judgments do I /we /they presuppose? What is their selectivity as measured by the facts and values they exclude from consideration? How partial are they in the sense of benefiting some parties while neglecting the needs or concerns of others (i.e., resulting partiality)? Are there options for less selective and partial boundary assumptions? What alternative boundary judgments would I prefer (e.g., so that I could share and defend them vis-à-vis those concerned)? (Main setting**:** individual reflection)

(2) Dialogical boundary questioning:

"*Can we agree on our boundary judgments?*"

Aim**:** reaching mutual understanding on boundary judgments.

Typical questions**:** 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?

(3) Controversial boundary questioning:

"*Don't you claim too much?*"

Aim**:** rational critique of claims that rely on boundary judgments taken for granted by others.

Typical questions**:** Can I make visible to others the undisclosed boundary judgments on which a claim depends? Can I with equal right advance some alternative boundary judgments? How different does a disputed claim then look? How can I defend such emancipatory boundary questioning against an opponent's allegation that I do not know enough to challenge him or her?
(see Ulrich, 2000, p. 15; 2017e, p. 10f)

All three types of boundary critique can help people understand how what they see as relevant facts and values depends on the choice of systems boundaries. Their shared aim is to uncover the optional character of all boundary judgments. On this basis, mutual respect and understanding can grow even where views and values continue to differ. People no longer need to assume that the other parties argue dishonestly or irrationally or in any case got their "facts" and "values" wrong. That may be so at times; but much more often they simply rely on different boundary judgments, and nobody has a claim to own the only correct ones. Cultivating the habit of *boundary reflection* (the first use of boundary critique) and providing opportunities for systematic *boundary discourse* (the second and third uses) can get people accustomed to such considerations and thereby, over time, will enable them to develop a new critical competence.

Boundary categories, boundary questions, and other tools: Basic to all three uses of boundary critique is that people learn to *systematically* identify the boundary judgments that inform a claim. On this basis people can then question their own boundary judgments as well as those of others. This can happen by tracing their empirical and normative *selectivity* with respect to the "facts" and "values" they include as against those they exclude or marginalize, as well as by then unfolding the resulting *partiality* of the claim informed by these boundary judgments, that is, its implications for the different parties concerned. People will thus also learn to demonstrate to others what options there may be for some boundary judgments they consider crucial, and how these options may make a specific claim – its selectivity and partiality, that is – look different.

Systematic identification and unfolding of boundary judgments can be facilitated by a number of simple conceptual tools such as a table of boundary categories; a checklist of boundary questions; a standard sequence

for raising them; and a form for recording observations or conjectures generated by boundary critique. In principle, once people have understood the idea of boundary critique, I would encourage them to feel free and address any boundary assumptions that they find particularly important for understanding a specific situation, in whatever terms they find useful. However, in the practice of boundary critique it is often useful to have a basic typology of boundary judgments at hand, so that the focus can be entirely on the situation and not on first finding out what types of boundaries might need to be considered. Especially beginners might be lost in the latter case.

CSH supplies such tools in the form of twelve boundary categories, structured into four groups of thee, and twelve corresponding boundary questions that are to be asked both in a descriptive (what is the case?) and in a normative mode (what ought to be the case?), thus yielding 24 questions overall. A standard sequence and a recording table are also available (the latter in particular offering itself for digitalization). These tools are easily found in my writings, so I need not present them here in any detail (see, e.g., Ulrich, 1983; 1987; 1996; 2000; 2017e; Ulrich and Reynolds, 2010). Suffice it to say that they have proven themselves to be applicable and relevant in many domains of research and practice, as well as for didactic purposes. Where users find this is not so, and especially also with increasing experience in boundary critique, they should feel free to adapt these tools or the ways they use them, including their language, to their specific needs; what matters is not the terms but the underlying concepts and their critical intent.

Emancipatory boundary critique: Since boundary critique will in practice often give rise to disagreements about boundary judgments or to attempts at concealing or imposing them, it is vital for a framework of boundary critique that it expands and operationalizes the notion of a critical handling of boundary judgments by a practicable model of *cogent critical argumentation* against boundary judgments that are not handled so critically. This is the essential concern of the third of the three above-mentioned settings and uses of boundary critique, the controversial case. I refer to it as *emancipatory*

boundary critique (Ulrich, e.g., 1999/2018, p. 16; 2000, pp. 257-260; 2001c, p. 95f; 2006, p. 78f; 2017e, pp. 7-9 and 11-13). It is such an important concept that it merits a somewhat more detailed discussion.

The methodological key concept by means of which CSH operationalizes the idea of emancipatory boundary critique is the *polemical employment of boundary judgments* (Ulrich, 1983, pp. 301-310; 1987, p. 281f; 1993, pp. 599-603; 1996, p. 41f). It takes up a rather neglected concept from Kant's critical philosophy, the "polemical employment of reason" (Kant, 1787, B766-797). By a polemical argument Kant means an argument that aims not to establish any claim to objectivity (or, as we would rather say today, to empirical truth or normative rightness) but only to demonstrate the dogmatic, underargued nature of an assertion. It achieves this aim by relying on a counter-assertion that nobody can prove to be objectively false or impossible, as little as anyone can prove it to be objectively correct or even necessary. As it claims and requires no theoretical validity, its relevance and proper use do *not* depend on its prior positive justification and thus, on any theoretical or specialized knowledge that only experts could have. Its only use is a critical one.

A polemical argument, then, has only critical validity; but as such it must be relevant (i.e., make a difference) and cogent (i.e., rationally arguable). Kant's notion of the polemical employment of reason has thus nothing to do with "polemics" in today's popular sense of the term; it aims at the cause, not the person, and it must be logically compelling. It is an entirely rational, because anti-dogmatic, kind of argumentation, *so long* as it is used for critical purposes only.

Boundary judgments perfectly lend themselves to such a critical use, although Kant does not of course mention them as an application of his concept of the polemical employment of reason. Since they do not admit of theoretical justification or falsification, nobody can prove them to be objectively false, as little as objectively right or necessary. Ordinary citizens can thus use them to show the dogmatic character of propositions that do not lay open their underlying boundary judgments. Taking an example from the domain of energy policy, the extent to which we take future generations to

belong to the beneficiary (e.g., should it be the next two or the next thousand generations?) is essential for deciding how economically competitive, environmentally friendly, safe and morally arguable renewable energy paths are as compared to fossil fuels or nuclear power. The longer the time horizon, the better renewable energy performs and the more problematic the other options become. The beneficiary question obviously makes an essential difference here, and the critical concerns that go with it can indeed be rationally argued in terms of foreseeable and well-known environmental effects, costs, and safety issues. No special knowledge is required that would not be available to a majority of ordinary citizens. When it comes to such crucial boundary judgments, the "objective necessities" to which many an expert likes to refer (not surprisingly so, as experts still have a near-monopoly in identifying and defining them) crumble and their mask of objectivity slips. As soon as people begin to recognize and question underpinning boundary judgments, new ways of seeing things become available that previously were dogmatically excluded or underrated.

What is more, ordinary citizens can advance alternative boundary judgments or question those of the experts *without* needing to fear that they will immediately be convicted of lacking the expertise required. Since boundary judgments do not involve a claim to theoretical justification but express subjective and value-laden borders of concern, nobody can prove them objectively wrong or impossible; the question is only how different they make a disputed claim look. Indeed it is not even necessary to conceal or deny their personal, merely subjective character; they can be introduced in overt subjectivity and for the only purpose of putting those who take their own boundary judgments for granted in a position in which it becomes obvious that they argue dogmatically. It becomes then clear that experts who still present their findings and conclusions as "objective necessities" move on slippery ground. Citizens can thus demonstrate three essential points:

   (a)   that an expert's propositions and recommendations depend on underlying boundary judgments for which there are options;

   (b)   that the expert's theoretical competence is insufficient to justify his or her boundary judgments or to falsify those of the critic; and

   (c)   that experts, inasmuch as they claim the objective necessity of their

professional findings and conclusions without qualifying them in terms of the underlying boundary judgments, argue dogmatically and thereby disqualify themselves (Ulrich, 1987, p. 282).

Emancipatory boundary critique is not, however, a cheap argumentative weapon that merely disregards the importance and value of special expertise and thus could be said to give the uninformed and uneducated an unfair advantage; for it is effective only against those who do not handle their own boundary assumptions overtly and critically. Experts who properly qualify their claims have nothing to fear. Conversely, ordinary citizens lose the argumentative advantage of emancipatory boundary critique – of arguing "from the safe seat of the critic," as Kant (1787, B775) puts it – as soon as they forget its merely critical validity and start to assert the superiority or even unique validity of their own boundary judgments.

The polemical use of boundary judgments is always on the side of those who cultivate a reflective handling of their boundary judgments. It thus provides an effective *and fair* methodological basis for boundary critique. It shifts the burden of proof from those who argue carefully and limit their claims, whether as concerned citizens or as professionals and decision-makers, to those who don't and claim too much. No more, no less. In this sense it entails a *qualified shift of the burden of proof* that is both fair and rational. Given that it does not depend on any special knowledge that would be beyond the reach of ordinary people, yet is still widely unknown to a majority of people, I see in it an *emancipatory potential* that remains largely untapped today. I'll say a little more on this potential in a moment, when I'd like to point to a personal vision that might inspire future work on the idea and uses of boundary critique, I mean the idea that the contemporary "knowledge society" might develop toward a "knowledge democracy," a term I borrow from Gaventa (1991). First, however, I would like to hint at two, three more key concepts of CSH, concepts I consider more basic.

Systemic triangulation: Common to all uses of boundary critique, including its emancipatory employment, is an idea that I find very helpful for explaining how boundary critique works, especially also for didactic purposes. I call it the *eternal triangle* of boundary critique. It says that three

types of interdependent judgments are unavoidably involved in all thought applied to real-word issues and situations**:**

- "FACTS" – relevant observations or factual judgments;
- "VALUES" – relevant evaluations or value judgments; and
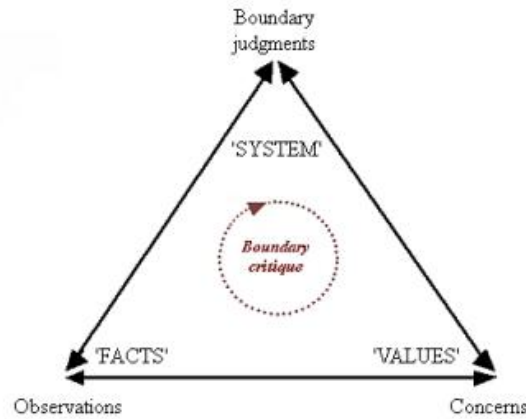- "SYSTEM(S)" – relevant boundary judgments or reference systems

(see **Fig. 1**).

Fig. 1. The "eternal triangle" of boundary critique:
Argumentation tasks in applied research and expertise
(Source: Ulrich, 2012c, p. 11; earlier versions 2000, p. 252, and 2003, p. 334)

The three corners of the eternal triangle stand for the *argumentative tasks* that inevitable come up with the three mentioned types of judgments. In a triangle we cannot modify any of the three angles (in this case, arguments) without affecting at least one of the other two. The triangle reminds us to examine the ways each argumentative task depends on the other two and is likely to change with them. The result is a circular movement of thought, of exploring the interdependencies in question, which is indeed the basic point of boundary critique.

The basic point, of course, is that both judgments of fact (relevant observations) and value judgments (relevant evaluations) depend on boundary judgments (relevant reference systems). In addition, the eternal triangle also explains the often asserted but rarely well-understood interdependence of factual and normative judgments: they both are conditioned by the ways we delimit the relevant situation or issue. Consistent judgments of fact (relevant observations) and value judgments (relevant evaluations) share the same boundary judgments as to the situation to be

considered (relevant reference systems). Consequently we cannot change the former without adapting (or at least, checking) the latter. Conversely, when our concerns and corresponding value considerations change, it is to be expected that new facts come into the picture, which in turn may prompt new considerations as to how the relevant situation may need to be redefined, and so on (see, e.g., Ulrich, 2000, p. 252f; 2003, p. 334; 2017a, pp. 6-8; 2017e, pp. 5-7).

This understanding of boundary critique leads to a conceptual tool to which I refer as *systemic triangulation,* an extension of the better known conventional concept of "triangulation" in the sciences. Conventional triangulation suggests to analyze and test theoretical hypotheses in the light of different, independent data sets, as well as to interpret the data one relies upon in the light of different theories. *Systemic* triangulation goes beyond this conventional concept by also reviewing empirical and theoretical statements (judgments of fact) in the light of different reference systems (boundary judgments) as well as different normative assumptions (judgments of value). Triangulation of validity claims thus becomes a systematic process of *thinking through the eternal triangle.* By examining each corner of the triangle in the light of the two other, we can gain a deeper understanding of a claim's *anatomy of selectivity* (see, e.g., Ulrich, 2003, p. 334; 2012c, pp. 11-13; 2017a, p. 8f).

Reference systems for boundary critique: A specific, situational set of boundary judgments defines what CSH calls a "reference system," that is, a perspective for understanding the context that is taken to matter for assessing and handling a situation or issue of interest. But of course, there is not usually a single set of boundary judgments that could be identified and justified as amounting to the one best or definitive reference system. It is the very core idea of boundary critique that any delimitation of relevant contexts should always be kept fluent and should in fact be systematically varied, rather than ever being taken for granted. It's a way of keeping some critical distance, of not becoming prisoners of our own boundary judgments. Although in practice there always comes the moment in which we have to pass from reflection and discourse to action, I would argue that in our minds

we should keep the option of alternative boundary judgments open, lest we become blind to the selectivity of our own assumptions and their consequences. "We have to maintain the contradiction or else we allow ourselves to be overwhelmed by the consistent." (Churchman, 1968, p. 229)

Boundary critique can in this respect be understood as a form of *multiple perspectives* thinking. With a view to maintaining multiple perspectives in applied science and expertise, as well as in everyday situations of practical thought, CSH distinguishes between four basic types of reference systems**:**

- the situation of concern or *system* of primary interest (**S**);
- the relevant *environment* or decision-environment (**E**);
- the *context of application* or of responsible action (**A**); and
- the total conceivable *universe* of discourse or of potentially relevant circumstances (**U**).

Together, these four reference systems embody *four complementary rationality perspectives* for thinking through claims to relevant knowledge, rational action, and resulting improvement, especially in complex contexts of action. I also speak of the *S-E-A-U formula of boundary critique* ("seau" is French for bucket or pail, **Fig. 2**).

Fig. 2. The S-E-A-U imagery
of a complete set (or pail) of
reference systems for boundary critique

I have offered an introduction to the concept of reference systems, along with the four types of reference systems and their interpretation as complementary rationality perspectives, in some recent *Bimonthly* essays and thus may refer interested readers to these sources (see Ulrich, 2017d, pp. 15-28, 2017e, pp. 2-4 and 19-21; and 2018, pp. 2-12 and 15f); specifically on the relation between "situation" and "system," I also recommend the short discussion in Ulrich and Reynolds (2010, pp. 251-253). At present I just want to point out that there is no need, in the face of such distinctions, for

worrying that boundary critique is overly complex. The previously mentioned checklist of twelve questions covers all four perspectives, so that it is not usually necessary to engage in separate rounds of boundary critique, each with a focus on one of the four types of reference systems. The S-E-A-U formula is not meant to complicate things but rather, to facilitate a deeper understanding of what boundary critique at bottom is all about – in one word: *rationality critique* – as well as to support its practice when some specific boundary questions are found particularly difficult to answer; it may then help to examine the concerned boundary judgments with an explicit and changing focus on each of the four rationality perspectives.

Suffice it here to note that

- a *reference system* is a whole of circumstances or conditions selected from the (assumed) universe that together make up a context for assessing the meaning and validity of a specific claim; whereas

- *boundary judgments* are the acts of selection by which we delimit a specific reference system from other conceivable reference systems and/or from the universe (as an ultimate reference system for reflecting on the selectivity of all other reference systems, an idea that in practice becomes important especially in moral reasoning).
(Ulrich, 2017d, p. 16)

The three-level concept of rational practice: This concept explains the two-dimensional, Kantian concept of rationality that underpins CSH. At the same time it seeks to operationalize it, by extending Kant's (1786, 1787) two dimensions or "standpoints" of reason – theoretical (-empirical) and practical (-normative) reason – into a vertical model of *three complementary levels of systems rationalization.* In the latest version, the three levels now explicitly (rather than, as in previous versions, only implicitly) refer to the three reference systems S, E, and A, with U serving as an ultimate reference system for questioning the delimitations of the other three (especially E and A). The model embodies CSH's overall approach to *systematic rationality critique* and as such serves as an important background concept for practicing boundary critique (see Ulrich, 2018, pp. 12-27; earlier accounts are found in 1988, pp. 146-159; 2001b, p. 78-82; and 2012a, pp. 8-37, esp. 28-34). A complementary concept is the principle of *critical vertical*

integration of rationality levels; interested readers will also find it explained, as well as illustrated by two major examples, in the mentioned sources (see esp. Ulrich, 2012a, pp. 34-44; 2018, pp. 27-31).

So much for some hints about the key concepts for which you asked me. I think I should not get longer. Readers not yet familiar with my work may wish to follow up some of these hints and consult some of the literature references I've given.

Q4: Now that you consider to become a "slow professor" and to "slowly" reduce your amount of academic writing, do you have any regrets as to unaccomplished aims or remaining deficits of your work on CSH?

Certainly. I am thinking, for instance, of the didactic challenge. I was so busy studying the philosophical and methodological ("critically-heuristic") challenges that I postponed an idea that I always had, namely, to test CSH in school classes and, based on such experience and with their help, perhaps to "translate" its terms into a language that would be closer to young people. I am also thinking of the Irish program for civil, social, and political education in secondary schools (CSPE, 2016), which might be an exemplary kind of school project for introducing CSH to young people and testing or developing it *with* them. As a general stance, I propose that in future, no child should leave school without having received some training in boundary critique.

A similar idea was to test CSH in adequate settings of adult education and active citizenship, for example, as a tool to equip participants of "planning cells" (Dienel, 1989 and 1991) or "citizens' juries" (e.g., Crosby et al., 1986), "hybrid fora" of scientists and citizens (e.g., Gibbons et al., 1994), stakeholder-based evaluation (e.g., Bryk, 1983; Achterkamp and Vos, 2007; Gates, 2017), participatory action research (e.g., Fals-Borda and Rahman; 1991; Whyte, 1991; Reason, 1994; Ulrich, 1996) and other forms of participatory and community-based research and citizen engagement.

Alas! Nobody can do everything. I focused on work that I felt I was best prepared for and which might not be done otherwise, I mean the job of working out the basic philosophical and methodological ideas that I had in

mind. I am confident, however, that there are plenty of people out there who are better qualified than I am to take on the didactic task. I trust this will eventually happen.

More theoretically speaking, I have not finished my attempts to translate the ideas gained through my work on boundary critique into a framework of what I'd like to call *philosophy for professionals.* As I currently see it, such a framework would rest on two main pillars that are still under construction. First and most importantly, I see an urgent need for a renewal of pragmatism toward what might justly be called *critical pragmatism.* I have published a few articles in which I outline my ideas on this (see, e.g., Ulrich, 2006 and 2007/2016). I have also begun a Bimonthly series titled "Reflections on critical pragmatism" with so far seven essays published between 2006 and 2016. I may continue to add more such reflections. The other pillar on which I have been working a bit is the methodological concept of *critical contextualism,* which I think could support a framework of critical pragmatism by helping both to ground it epistemologically and to operationalize it with a view to systematic practice. This idea was an important (although not the only) motive for my Bimonthly series, equally uncompleted, on "The rational, the moral, and the general**:** an exploration." Another, related motive was to explore the use of general ideas as *critically-heuristic ideas,* that is, as standards for boundary critique or, more accurately, as *limiting concepts* towards which, as explained in these essays, critical contextualization can orient itself. A third motive has emerged while working on the series, the opportunity it brought to explore entirely new territory in the form of ancient Indian ideas, especially of the Upanishadic tradition and, still in work, of the subsequent tradition of Buddhist logic and philosophy. I do hope to complete this work eventually.

Q5: What other hopes do you associate with CSH for the future?

Similarly to what I just said about school education, I could have imagined to engage myself more in introducing boundary critique to professionals. I believe that boundary critique is deeply relevant to our contemporary notions of professional competence (cf. Ulrich, 2000, 2001a; 2011a, b; 2012b) and professional ethics (cf. Ulrich, 2006; Schwandt, 2015). I did have a good

number of opportunities though to introduce CSH to practicing and future professionals from a broad array of fields, and the experience was encouraging throughout. Based on this experience, I tend to think that just as no school kid should in future leave school without some basic training in boundary critique, no professionals should end their professional education or training without it. Those who did not have such an opportunity in the past should have it in the form of future continuing education offers. The *Lugano Summer School* of Systems Design was such an offer that I initiated in the past, aimed at practicing professionals as well as doctoral or postdoctoral researchers.

Further, I have some hope that my work on boundary critique might contribute in the future to a new kind of citizenship training, aimed at conveying to citizens not only knowledge about politics and citizen rights but also the kind of *competencies* they need for exerting their rights. How else can they become active citizens who know to argue their concerns, even if at times it means to challenge those who claim to know better what is good and right for them? I believe this need not remain a mere utopia. The concept of the polemical employment of boundary judgments, or of emancipatory boundary critique as briefly introduced above, explains why and how ordinary people can be prepared to meet experts on equal terms, at least for critical purposes.

I believe that people who have understood the idea of boundary critique and perhaps have received some training in it, have a realistic chance to help create a basic *symmetry of critical competence* (Ulrich, 1993, pp. 604-606; 1999/2018, pp. 15-17; 2017c, p. 9f, 12) among all the parties involved and/or concerned by a proposal or project, regardless of what their special skills or deficits of expertise are (remember that even experts are in most questions facing them non-experts). I refer to this vision of a new, reformed kind of citizenship training as *critically-heuristic training in citizenship* (e.g., Ulrich, 1983, pp. 397, 407; 1993, p. 608; 2000, p. 261). Adult education and continuing professional education are related fields of application for this vision.

My ultimate vision though goes even further. I hope that based on new

concepts such as boundary critique, along with other ongoing developments such as the forms of active citizenship I have mentioned above, the contemporary knowledge society will eventually become what we might call a *knowledge democracy.*

I am not going to say more about this vision here, as it is the topic of my so-far unpublished *Erskine Prestige Lecture,* appended below. This was a lecture delivered to the University of Canterbury in Christchurch, New Zealand, in May 1999, and circulated internally thereafter but not formally published. What better occasion could there be for finally making it available to everyone than this "Farewell" Bimonthly? Please find the PDF file below if you'd like to see it.

Q6: Let us end with a personal note. Could you share with us some favorite quote, whether from the academic or the belletristic literature, that captures the spirit of your academic work and life?

With pleasure. One quote that currently is on my mind is the observation that I cited in my last bimonthly essay, of January-February 2018, from Pirsig's *Zen or the Art of Motorcycle Maintenance:*

> **The true system, the real system, is our present construction of systematic thought itself, rationality itself.… There's so much talk about the system. And so little understanding.**
>
> (Robert M. Pirsig, *Zen or the Art of Motorcycle Maintenance,* 1975, p. 94)

There you have it all, the reason why we need to engage in "systems thinking" and allow a majority of people to acquire some critical competence in it. Pirsig's book was the first I read after arriving at UC Berkeley, in March 1976, where I had come to work with the pioneer of the "systems approach," C. West Churchman (cf. my appreciations in Ulrich, 2004 and 2012b), and to pursue what then was still a rather vague project of developing a "critical systems approach" that would be practicable for many people (1983, p. 25). Along with Churchman's books, Pirsig's *Zen* was indeed one of the books that got me started. So isn't it quite fitting that at the end of this series of Bimonthly essays I return to it, thanks to your question.

To be sure, I would not do justice to the one major source that really has shaped my personal "critical turn," Kant's (1787) *Critique of Pure Reason,* without also offering a quote from it. I had started to read the original

German text before moving to Berkeley, but there I started to read it in English, as I would anyway need to cite it in English. I was fortunate enough to select the outstanding translation of Norman Kemp Smith, which for me has remained the best. It is such a fine translation, faithful to the spirit as well as the language of Kant yet somehow more modern and easier to read than the German original. My understanding of Kant benefited enormously from this translation, the more as I could always go back to the German text in cases of difficulties or doubts as to how to interpret what I read.

It was inevitable that sooner or later I would also find in the book some passage that captured it all – the original intuition and the ensuing inspiration and enduring hope that at least a *critical solution* must be possible to the difficulties and limitations of human reason in dealing with this messy world of ours. Kant remains of ongoing importance, I think, when it comes to understand the need for such a critical solution and its basic requirements. As Kant would say, we have no choice but to try and handle the key contemporary problems that mankind is facing *"with reason."* I take Kant's word, therefore, that as an alternative to dogmatism and nihilism, a critical solution to the questions of reason might still be possible:

> **We cannot, by complaining about the narrow limits of our reason, escape the responsibility of at least a critical solution to the questions of reason.**
>
> (Immanuel Kant, *Critique of Pure Reason,* 2nd edn., 1787, B509; my own transl.)[2]

I found this comment of Kant so important that I made it the guiding motto of my book on *Critical Heuristics* (Ulrich, 1983, p. 5). I have never regretted giving Kant's observation this central place in my thinking; it has always remained an inspiration to me. What better way could there be to explain the idea of boundary critique?

You also hinted at the possibility of a quote form the belletristic literature, so as to end with a somewhat personal note. When you said that, I immediately knew what it would be. It can only be that most beautiful line from a poem by the French poet, essayist, and philosopher, Paul Valéry, a line that I never forgot since I first encountered it some forty years ago and which, as I grow older, gains more and more meaning:

> **Le vent se lève !… Il faut tenter de vivre !**
> **("The wind is rising !… Let us try to live !")**
>
> (From Paul Valéry's poem "Le cimetière marin," orig. published in 1920; for a bilingual edn. see *Collected Works, Vol. 1, Poems,* 1971, p. 220f)

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ERSKINE PRESTIGE LECTURE

University of Canterbury, Christchurch, New Zealand
Wednesday, 26 May 1999, 1 p.m., Science Lecture Theatre S2

"Systems Thinking as if People Mattered:

Towards a Knowledge Democracy"

VIEW and DOWNLOAD the Lecture here:[3]

Notes

1) Interested readers will find a thorough-going account of Kant's concept of reason and the
way I relate it to the systems idea in *Critical Heuristics* (Ulrich, 1983, chapters 3-5); see
particularly the section on "Kant's Concept of Reason and the Systems Idea" (pp. 217-230).
   [BACK]

2) Since the rendering of this passage in Norman Kemp Smith's usually so elegant translation
is for once rather awkward, I use my own translation here, as I already did when I used the
passage as a motto for the entire book, *Critical Heuristics* (Ulrich, 1983, p. 5). I have seen
it cited since as if it were original sound from Kant. The original text reads: "The
obligation of an at least critical solution of the questions which reason thus propounds to
itself, we cannot, therefore, escape by complaints of the narrow limits of our reason
[…]." – Kant's thought is one of my preferred ways to introduce the idea and practice of
boundary critique, the methodological core idea of my work on critical systems thinking.
   [BACK]

3) Suggested citation: Ulrich, W. (1999 / 2018). Systems thinking as if people mattered:
Toward a knowledge democracy. *Erskine Prestige Lecture,* University of Canterbury,
Christchurch, New Zealand, 26 May 1999. Edited version of 1 May 2018 (first published
version). https://wulrich.com/downloads/ulrich_1999_2018_erskine_lecture.pdf *[BACK]*

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March 2018

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Picture data Digital photograph of a detail of a Greek poet or philosopher, probably of the 4th century B.C., discovered in the 19th century on the west slope of the Acropolis of Athens, Greece. I photographed a replica that is in my own possession, bought in 1974 from the museum store of the National Archaeological Museum in Athens. Adapted from an earlier *Bimonthly,* titled "In search of practical reason," of September-October 2008. Technical details: aperture priority mode, ISO 100, aperture f/4.7, shutter speed 1/500, focal length 25 mm (equivalent to 50 mm with a conventional 35 mm camera). Original resolution 3648 x 2736 pixels; current resolution 700 x 550 pixels, compressed to 102 KB.

March-May, 2018
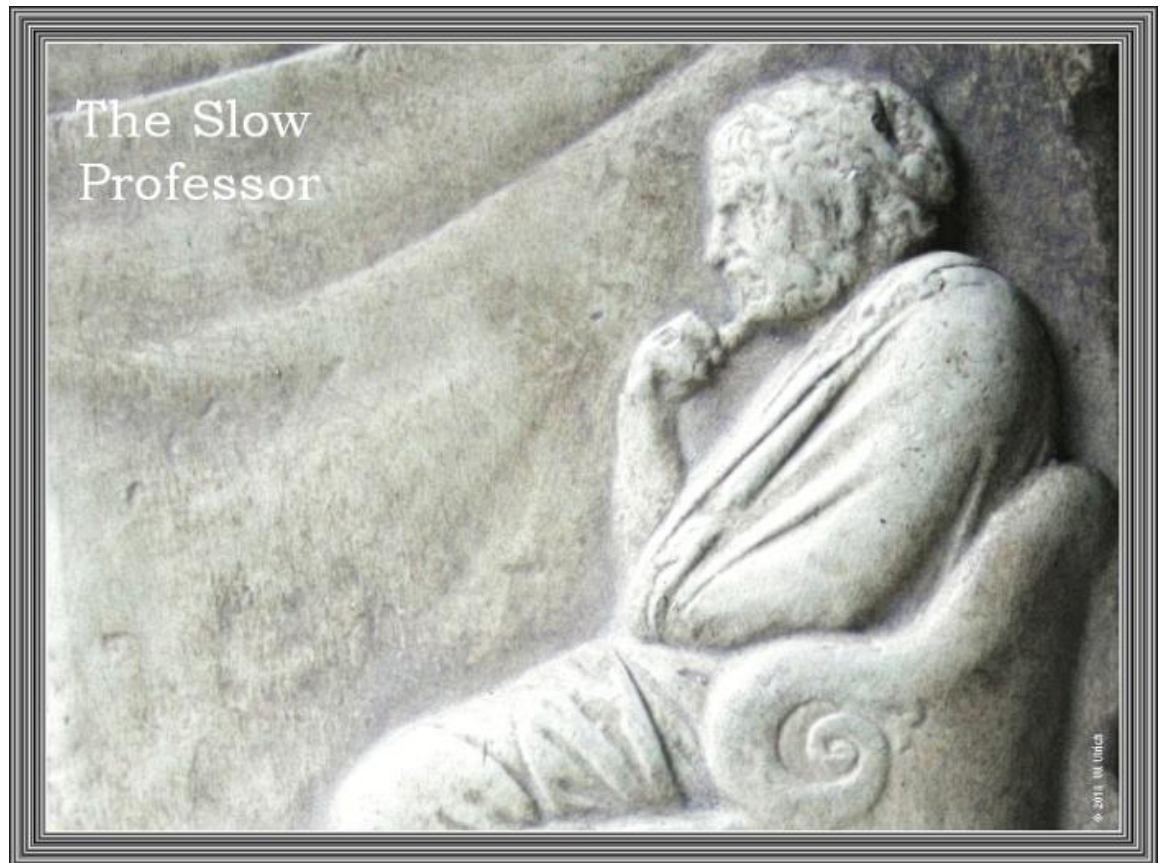
Pondering the critical turn of reason

„We cannot, by complaining about the narrow limits of our reason,
escape the responsibility of at least a critical solution
to the questions of reason."

(Immanuel Kant, *Critique of Pure Reason,* 2nd edn., 1787, B509; my own transl.)[2]

◆ Previous Picture

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Notepad for capturing
personal thoughts »

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