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SYSTEMS THINKING AS IF PEOPLE MATTERED:

TOWARD A KNOWLEDGE DEMOCRACY

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Abstract

One of the key issues of the coming decades will be the question of "knowledge": What counts as knowledge, and who defines what counts as knowledge? Understanding this issue may well be a key to understanding – and changing – the realities of our modern world. Like any other key resource, knowledge tends to be distributed unequally and to become concentrated in the hands of the relatively few who can produce or define it. The question that interests me in this Lecture is this: What can we offer against this *near-monopoly of knowledge and power* from which ordinary people in all societies are excluded? How can the knowledge society become a knowledge democracy?

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The Question of Knowledge: *Towards a "Knowledge Democracy"*

> *It is not enough simply to democratize access to existing information. Rather, fundamental questions must be raised about what knowledge is produced, by whom, for whose interests and toward what end.*
>
> John Gaventa, Toward a knowledge democracy (1991)

One of the key issues of the coming decades is likely to be the question of "knowledge"**:** What counts as knowledge, and who defines what counts as knowledge? Not unlike the importance that the concept of information has gained for our understanding of technology and organization, the concept of knowledge is getting more important for our understanding of society. Understanding the changing status and role of knowledge (or what counts as it) may well become a key to understanding – and changing – the realities of our modern world.

It cannot be irrelevant, for example, that in the fabric of contemporary societies there are so great inequalities of access to knowledge, and of *knowing how to understand and use it,* between the well educated and the not so well educated; the have's and the have-not's; the powerful and the powerless; those who have a voice and those who don't. Nor can it be irrelevant that a majority of ordinary people have hardly any role in producing *knowledge that counts,* or at least in deciding about what kind of knowledge *should* count and hence, should be produced and used.

What is our role as academics in this? Do we care? Of course we do. I do assume that most academics and professionals are dedicated to creating and disseminating knowledge that is useful and available to those who need it. I do not mean to suggest the contrary. Moreover, it is clear that thanks to information technology, access to knowledge has never been broader and easier in the history of mankind. The issue that interests me reaches further than this question of dissemination. It concerns the more fundamental question of *how knowledge is defined* and hence, as said at the outset, what in specific contexts of application counts as relevant "facts" and considerations. A related issue is the question of what counts as *proper use* of knowledge, that is, as good and rational practice. In particular, what role does such practice give to all those concerned but not necessarily involved (the so-called stakeholders), and what makes sure that genuine improvement – improvement that benefits society and persists over time – will result? "Improvement" for whom and for how long, that is? Can we claim that our efforts as academically trained researchers and professionals make our societies progress toward an enlightened, *open society* (Popper, 1966) or at least toward some post-industrial or post-modern version of it (see, e.g., Touraine, 1971; Bell, 1973; Feyerabend, 1980; Lyotard, 1986)? Or are we rather in the process of reverting to a *risk society* that systematically creates "organized irresponsibility" (Beck, 1992, 1995), if not a "new obscurity" (Habermas, 1989)?

I do not know your thoughts on this. But I believe the academic community has some responsibility for the ways ordinary people understand and use knowledge. Since we are engaged in the business of knowledge production, we cannot shut our eyes to this question of what counts as knowledge and how it is used.

The question has many dimensions**:** the technical, the commercial, and the political, just to name three. The fast technical development of information and communication technology is of obvious importance. It creates new possibilities for democracy as well as for manipulation. The commercial and political dimensions of "data processing" are also becoming more important. As the cliché has it, knowledge is power. But the reverse holds equally true**:** power is knowledge, for it takes power to define what counts as knowledge (but of course, ideally it would take wisdom, not power). Despite all technical progress in generating and disseminating knowledge, it remains a scarce resource and accordingly has commercial and political value.

The increasing commercial value of knowledge is mirrored in the development of both universities and business corporations toward a knowledge industry that deals with one and the same commodity**:** knowledge. Its political value grows with what the German sociologist Ulrich Beck (1992) has characterized as the change from a society of scarcity to a society of risk**:** in our so-called advanced societies, the social production of wealth systematically goes along with a *social production of risks.* Accordingly, problems relating to the production and distribution of risks move into the center of political struggles and become as important as problems of the social production and distribution of wealth. Since knowledge plays an important role in the identification of risks, or what *counts* as risks, it becomes a politically even more precious source than it has been in the past. Take for instance the management of environmental hazards and health risks**:** only in storybook accounts of science, such issues are still decided by academia's disinterested search for truth. In real-world practice, the scientific dispute on acceptable risks systematically turns into a struggle for the control of relevant knowledge and its use.

Since knowledge has such political and commercial value, it tends to be distributed unequally and to become concentrated in the hands of the relatively few who either can produce and *define* it or else can *buy* it**:** science, government, bureaucracy, industry and business, the free professions, strong interest groups, the wealthy, the so-called establishment, perhaps the media and other *elites* – but *not* the ordinary citizen. The question that interests me in this lecture is**:** What can we offer against this *near-monopoly of knowledge and power* from which ordinary people in all societies are excluded? Can the knowledge society become a knowledge democracy?

A *knowledge democracy* would be a society in which there is no such near-monopoly of knowledge production, definition, and ownership; a society in which democratic principles of the inclusion of all individuals, and of an equality of rights, opportunities, and treatment among them, would hold with respect to knowledge. This

is, of course, a utopia, but one to which I see only technocratic or elitist alternatives. I borrow the term from John Gaventa (1991), a North American action researcher who has used it to describe his utopia for participatory action research, both in a third-world context and in Western democracies. "It is not enough," he says, "simply to democratize access to existing information. Rather, fundamental questions must be raised about what knowledge is produced, by whom, for whose interests and toward what end."

Gaventa's plea for a knowledge democracy is like a summary of what I intend with the project of developing *critical systems thinking for citizens* (Ulrich, 1996a, b, 1998)**:** I want to help ordinary people, no less than ordinary professionals, gain *a new competence in citizenship.* It is not enough to give people more access to information; they must also have a voice in matters that are important to them. But what does it mean to have a voice if that voice can always be silenced by disparaging its competence as compared to that of the experts, whereby "competence" and "expertise" are of course defined by those who are in a position to define what counts as knowledge? So people must not only have a voice but a *competent* voice, one that cannot be silenced so easily.

So far so good. But what has all this to do with *systems thinking,* the attempt to understand the world we live in in terms of the properties of whole systems; in other words, the idea that we can better solve our human problems by considering them from the perspective of larger relevant systems*?* Isn't this idea of systemic thinking really something rather difficult and abstract, if not esoteric; something that is far away from the concerns of ordinary people?

Yes, and *no!* It is true, most systems theorists seem to be eager to prove the "yes," but I am more interested in proving the "no." Let me explain, then, why I think systems thinking may show us a way of giving ordinary people a more competent voice.

Facts, Values, and Boundary Judgments: *Why Systems Thinking is Relevant*

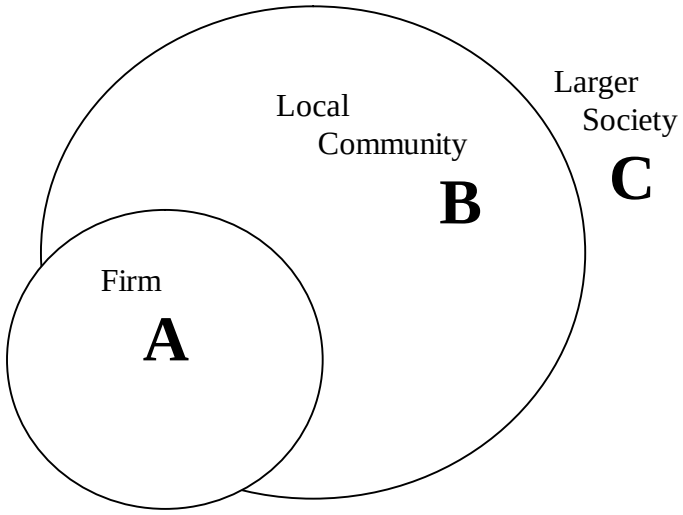
> *Who decides what knowledge is, and who knows what needs to be decided?*
>
> Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge* (1986)

Whenever we express an opinion or an argument about something that matters to us practically, whether we describe some problem or propose a solution, recommend an action or give an evaluation, we rely on assumptions about what *facts* (empirical statements) and *values* (normative statements) are to be considered and what is to be left out. I call these assumptions *boundary judgments* because they bound the context to which our observations and conclusions refer and for which they may be valid, or *justification break-offs* because they define the point at which justification ends.

The two concepts have a common origin in systems theory**:** when we conceive of some situation or issue of interest in terms of a "system," that is, a selection of interconnected problem aspects or ways of proceeding, we need to make prior boundary judgments about what belongs to it. More accurately, what *should* be considered as part of it and what should not? On this choice depends what are the relevant "facts" (circumstances) and "values" (concerns) to be considered. An everyday example may be helpful (**Figure 1**).

Figure 1: The "Turnaround" Problem

Boundary judgments at work**:** The social cost of corporate restructuring (downsizing, mergers, etc.)



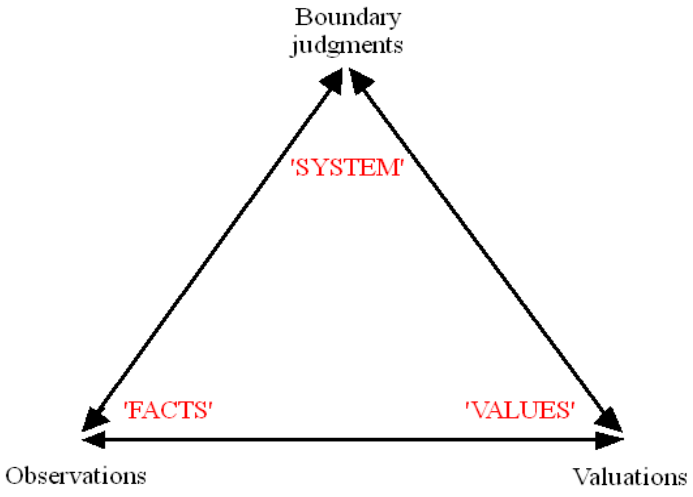
The "solution" – lay-offs? – depends on what is chosen to be the firm's proper system of concern**:** A, B, or C?

Take an industrial company in need of a turnaround (reference system A). Imagine that the firm is an important employer in its community (reference system B). Lay-offs are in the air. Community officials contact the firm's chief executive and remind him of the company's importance and responsibility for the community. The company's owners and managers face an ethical conflict**:** should they give priority to saving the endangered jobs and providing employment opportunities to the local community (B), or rather to ensuring the survival of the company, thus preserving at least the jobs of the remaining employees (A)? The way they deal with the social cost of corporate restructuring will depend heavily on the status of the unemployed in the larger society (reference system C). Should the unemployed – or those who might have to give up their jobs for the sake of allowing the company to survive – be considered to belong to the primary system of concern or not? What *is* the primary system of concern, social system A, B, C or any specific combination of them?

In practice, the answer tends to lean toward the short-term survival needs of the company (system of concern A), as the employees who lose their jobs and the social costs this may impose onto the local community and the larger society (boundary judgments B and C) are less important to the managers than the business as a whole. This type of boundary judgment allows the managers to find an effective and ethically defendable solution to *their* problem – lay-offs as a means for saving the company. If their boundary judgment were different, this solution might not be quite so adequate, considering both its effectiveness (e.g., underestimated longer-term costs such as a loss of skills and reputation; rising local taxes) and its ethics (e.g., the moral problem of instrumentalizing those who lose their jobs for those who keep them). The justification of the plan might then not stop with the narrowest of the alternative systems of concern.

Generally speaking, the "facts" we consider relevant, as well as the "values" involved, look different whenever we change underlying boundary judgments. Value judgments can make us change boundary judgments, which in turn may make the facts look different. Knowledge of new facts can equally make us change boundary judgments, which makes our previous values look different, and so on (**Figure 2**).

Figure 2: The interdependence of boundary judgments, observations, and evaluations



The facts we observe, and the ways we evaluate them, depend on how we bound the reference system. Different value judgments can make us revise boundary judgments, which in turn makes the facts look different. Knowledge of new facts can equally make us change boundary judgments, which in turn makes previous evaluations look different, and so on.

Source**:** W. Ulrich, *Systems Thinking as if People Mattered: Critical Systems Thinking for Citizens and Managers*. Lincoln, UK: Lincoln School of Management, University of Lincolnshire & Humberside, Working Paper No. 23, 1998, p. 8.

We have here a precise explanation of the *interdependence of facts and values*, an interdependence that is often asserted but rarely if ever explained in precise terms**:** they are connected by the boundary judgments they share. It is a genuine piece of what I call *critical systems thinking* that has just helped us to understand this interdependence and the way it matters for all our claims to knowledge or rationality. The next step is to translate this understanding into practical forms of critique.

Critical Systems Thinking: *Systems Thinking as a Form of Critique*

> *If we are not interested in understanding boundary judgments, systems thinking makes no sense; if we are, systems thinking becomes a form of critique.*
>
> Werner Ulrich, Critical systems thinking for citizens (1996b)

The first field of thinking that you would expect to consider the importance of boundary judgments is surely systems thinking. You would be wrong! Systems thinkers nowadays like to see themselves as "systems scientists." Their business is the serious science of complexity. They are busy dealing with feedback loops, fuzzy sets, fractals, chaos, evolution, self-organization, thermodynamics of irreversible processes, dissipative structures, and the like. This leaves them no time for dealing with boundary judgments. Yet without the will to examine the boundary judgments that condition our views and models of the world, it makes little sense to use systems thinking as a conceptual tool! *We do not need the systems concept at all if we are not interested in handling systems boundaries critically.* But if we are, then *systems thinking becomes a form of critique!* This is the fundamental critical kernel of systems thinking.

This is *bad news*, I'm afraid, to those who are looking for clean, "objective" and "scientific" problem definitions and solutions. They will probably not like the idea of critical systems thinking but rather, try to ignore it. But mind you, the difficulty is not caused by the systems idea. The systems idea is merely the messenger that brings us the bad news. Ignoring the bad news is no more intelligent than making the messenger responsible for it. The bad news is the *problem of holism:* we can hardly ever assume to understand the whole system of conceivably relevant circumstances and concerns on which our claims depend. That would mean to consider all the facts and values that might make a difference to our views of what is or should be the case – an endless undertaking.

The problem is serious because boundary judgments are practically inevitable, and theoretically precarious. Inevitable they are because we are human**:** only gods and heroes reliably – occasionally – think and argue holistically. Precarious they are because a theoretically sufficient justification is unavailable**:** due to the normative core involved in

arguing what circumstances and concerns "ought to" be considered relevant for understanding and improving a problem situation, nobody can claim to have "the" only right answers. When it comes to boundary judgments, there are always options.

We can of course assume or pretend that our reference systems are more or less self-evident, which is what many people choose to do. For instance, professional people often hide their boundary judgments behind a façade of routine procedures and professional standards: "All experts agree that this is the way to do it," they declare when they should really examine their boundary judgments, or "We don't know of any better way to do it." As the late philosopher of science, Paul Feyerabend (1980, p. 20), has observed, scientists are often quite unable to justify routine procedures and routine arguments on which they rely; in discussing the underpinning assumptions, they find themselves in a position that is similar to that of lay people. The concept of boundary judgments suggests one possible explanation**:** such routine premises embody the boundary judgments by means of which problems are made to fit a discipline's domain of competence. What falls outside this domain is relegated to an irrelevant or merely subjective status. The subjective character of the boundary judgments themselves is then concealed behind a façade of routine. Not only in professional practice but in everyday life as well, this is a proven device of status and competence preservation. I suspect we all, consciously or unconsciously, tend to bound issues so as to maintain our sense of competence. Unfortunately, the result is not competence but a loss of the larger picture.

Perhaps a better way to handle the bad news is to take it seriously and to try to deal with our reference systems in an open and critical way. This is what *critical systems thinking* is about. A critical approach to the problem of boundary judgments faces us with *two main methodological challenges**:***

*(1) Identifying boundary judgments systematically**:*** How can we teach people to recognize, uncover and unfold boundary assumptions systematically? Take the example of a turnaround proposal for a business. It has become a normal pattern of management thought to see such problems in terms of cost cutting, downsizing, and restructuring companies, often at the expense of job losses; but I am not sure whether most managers are thoroughly aware of the boundary judgments involved and how else they might see such situations if they were. So long as *boundary critique* – the discipline and art of handling boundary judgments in self-reflecting and transparent ways – is not a systematic part of management education, the situation will hardly change.

Or take an example from the public sector, say, a proposal for a nuclear waste disposal facility. A good proposal should lay open its underlying boundary judgments as to whose interests it serves; what environmental concerns it considers; for how many hundreds or thousands of years ahead it claims technical feasibility and safety; whom it considers to contribute relevant knowledge and whom not; and so on. A very good proposal would also tell us how different it might look if alternative boundary judgments were chosen. But in practice, not all proposals are very good proposals! If we want to make sure we understand a proposal's meaning, we better learn to identify hidden boundary judgments. We need, then, a

generic conceptual framework that would allow people to learn and practice the art of boundary critique (Ulrich, 1996a, b).

(2) *Challenging boundary judgments rationally:* Knowing how to uncover boundary judgments and handle them self-reflectively is not enough. Not everyone who puts forward a proposal will always be willing to listen, much less to lay open all the boundary judgments on which they rely (the nuclear waste issue provides an example). Hence we need to make sure that not only well-trained professionals and decision-makers are aware of their boundary judgments but equally ordinary citizens who may be affected by or concerned about them. Can we teach them ways to understand *and contest* the boundary judgments at work, or the claims linked to them, by rational arguments? For instance, can they learn to demonstrate the availability of options and thus to unmask false claims to objectivity and rationality? We consequently need a model of rational argumentation that would enable both experts and ordinary citizens to challenge claims that take their underlying boundary judgments for granted. We need to learn to cultivate *boundary discourse.*

Critical Systems Heuristics: *Critical Systems Thinking at Work*

> *This much is certain, that whoever has once tasted critique will be ever after disgusted with all dogmatic twaddle.…*
>
> Immanuel Kant,
> *Prolegomena to Any Future Metaphysics (1783)*

Let us begin with the first requirement, the need for a generic conceptual framework. Such a framework needs to be philosophically and theoretically grounded. But it also needs to be practicable for many people, that is, without requiring any special expertise. We need something like a *checklist* of the kinds of boundary judgments on which depends the practical meaning of a proposal. *Critical Systems Heuristics* (CSH, Ulrich, 1983), my attempt to operationalize critical systems thinking, offers a basic framework. I can only briefly introduce it here by means of three tables**:**

- **Table 1** shows a checklist of critically-heuristic boundary questions;
- **Table 2** gives an overview of the underlying boundary categories of CSH, each of which stands for a basic boundary issue; and
- **Table 3** suggests a format for structuring critically heuristic reflection and debate.

Table 1 shows a checklist of *twelve critically heuristic boundary questions* that was first proposed in Ulrich (1984 and 1987) and has since been presented in a number of minor variations (e.g., Ulrich, 2000), depending on the context in which they were used.

Table 1: Critically heuristic boundary questions

A checklist for examining the empirical and normative selectivity of proposals

SOURCES OF MOTIVATION

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

(2) What is (ought to be) the ***purpose****?* That is, what are (ought to be) the consequences of the inquiry or design?

(3) What is (ought to be) the ***measure of improvement****?* That is, how can (should) we determine whether and in what way the consequences, taken together, constitute an improvement?

SOURCES OF POWER

(4) Who is (ought to be) the ***decision-maker****?* That is, who is (ought to 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 are (should be) controlled by the decision-making body?

(6) What conditions are (ought to be) part of the ***decision environment****?* That is, what conditions does (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 specialist?* That is, who should be involved as an expert, e.g., as a researcher, designer, planner or consultant?

(8) What ***expertise*** is (ought to be) brought in? That is, what is (should) count as relevant knowledge or know-how, and what is (should be) its role?

(9) Who or what is (ought to be) assumed to be the ***guarantor*** *of success?* That is, where do (should) those involved seek some guarantee that their findings or proposals will be implemented and will secure improvement?

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 but may be concerned, including the handicapped, the unborn, and non-human nature?

(11) What secures (ought to secure) the ***emancipation*** of those affected but not involved from the premises and promises of those involved? That is, how do we treat those who may be affected or concerned but who cannot argue their interests?

(12) What ***worldview*** is (ought to be) determining? That is, what different visions of improvement are (should be) considered and how do (should) we deal with differing visions?

Each question has to be answered both in the "is" and in the "ought" mode. There are no definitive answers, in that boundary judgments may always be reconsidered. By means of systematic alteration of boundary judgments it is possible to uncover the partiality (selectivity) of an assumed system of concern from multiple perspectives, so that its empirical and normative content can be evaluated without any illusion of objectivity. Sources**:** Ulrich, 1984, p. 338; 1987, p. 279; and 2000, p. 258.

The twelve questions of the checklist are arranged in four groups, each of which stands for an essential type of boundary issues. These concern a proposal's sources of motivation, of power, of knowledge, and of legitimacy. Within each group, every question corresponds to a *boundary category*, that is, a form or type of boundary judgment or, to put it differently, an issue of delimitation that requires a boundary judgment. Since the terms designating these boundary categories are not necessarily self-evident to all users, each of the twelve basic boundary questions is followed by a second question (beginning with „That is, …") that defines the respective boundary category in plain language. Each question can (and usually should) be asked both in an "is" mode (What is the case?) and in an "ought" mode (What ought to be the case?).

The first question of each group addresses a *social role*, usually represented by a number of different persons or groups rather than one person only. In the first group, for example, the first question asks for the "beneficiary" of a proposal or systems design, that is, the group of people who are to benefit in the first place and who therefore have something to do with the interests and purposes served. In professional or commercial contexts the beneficiary usually includes and often focuses on a "client," but is not necessarily limited to it.

The second question addresses role-specific *concerns*, which in the example of the first group is the purpose that is to be achieved so as to serve the beneficiary. More generally speaking, the second question in all four groups of boundary issues asks for the essential concerns (or "stakes") of different stakeholders**:** What is to be achieved so as to do justice to their views and values, interests and needs?

The third question, finally, addresses a *key problem* that is methodologically crucial for understanding the previous two boundary judgments. Taking again the example of the first group of questions, there are usually a number of purposes that a proposal ought to consider in order to serve the intended beneficiary well, if only because those who are to benefit often comprise a heterogeneous group of people with different concerns. Except in ideal cases, these different concerns tend to compete with one another, in the sense that the extent to which we can achieve any particular purpose depends on how much we want to achieve (or are willing to sacrifice) with respect to other purposes. As long as we do not understand how we should determine such trade-offs between competing purposes, that is, how much any one purpose is worth giving up of all others, we do not really know how to define and measure improvement. This is why the key problem with respect to the first group of questions consists in determining the measure of improvement. In the other groups of boundary questions, the problem is different but each stands for a crucial methodological issue of its group.

Taken together, the three questions of each group address a major boundary issue. The *four main boundary issues* (already hinted at above) examine four major sources of intentionality in contexts of applied inquiry and professional practice, which are**:**

- A proposal's *value basis:* What are (ought to be) the sources of motivation that provide the necessary sense of direction and purposefulness? Whose purposes are they?
- The proposal's *basis of power:* What are (ought to be) the sources of control, e.g., who contributes the necessary resources and where does the necessary decision authority reside? What, on the other hand, is (or ought to be) environment to that decision power, that is, beyond its control?
- The proposal's *basis of knowledge:* What are (ought to be) the sources of expertise that contribute the necessary information, practical experience, know-how, and skills? What is the role played by expertise?
- The proposal's *basis of legitimation:* What are (ought to be) the sources of legitimacy vis-à-vis those who may be affected although they are not involved in the decision-making process, including nature and those not yet born? Who argues their case?

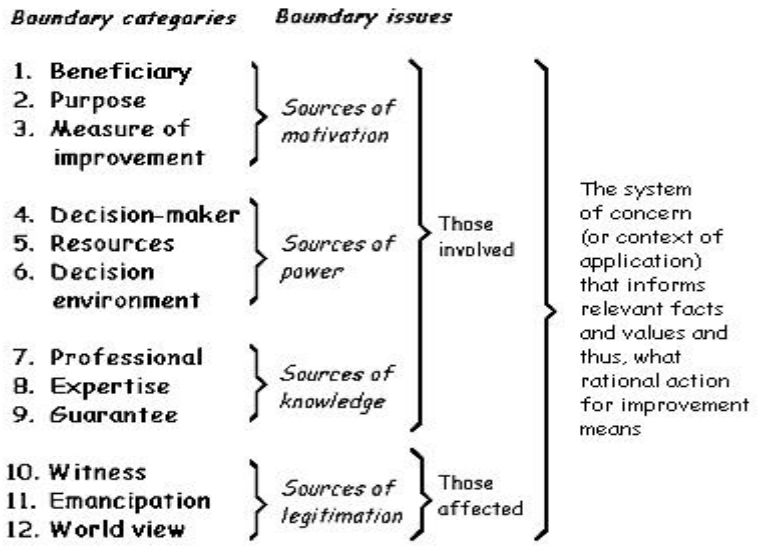
You may wonder why sociological rather than, say, natural-science categories and considerations should have such importance in trying to identify the boundary judgments that inform our understanding of situations, that is, the "facts" (circumstances) and "values" (concerns) we take to be relevant. Is there not a danger of hidden anthropocentrism in such a conceptual framework, for instance when it is applied to ecological issues? The answer is that even when assertions of facts and values concern nonhuman species or nature in general, they still need to be articulated by humans. The challenge is not to avoid any human-centered perspective but rather, to reflect on what are and what should be the *sources of intentionality* behind such assertions, so as to bring in human agents (now often called "stakeholders") who have something essential to contribute. To these agents belong, in the framework of CSH**:**

- those who have *the benefits* (the "beneficiary" or "client" category);
- those who have *the say* (the category of the "decision-maker");
- those who have *the know-how* or expertise (the categories of the "professional" and of the kind of "expertise" required); and finally,
- those who merely have to bear the so-called *side effects* such as cost, risks, or undesired impacts on their quality of life, without having a say and sharing the benefits (the categories of the "witness" and of people in need of "emancipation"). (Ulrich, 1996a, p. 22)

Together, these four groups of boundary questions are meant to provide a rich picture of a proposition's *anatomy of purposefulness* (Ulrich, 1983, p. 342).

Once you are familiar with the twelve boundary questions, it may be convenient to just remember them by means of the table of boundary categories (**Table 2**). This should then be sufficient to remind you of the questions and how they are arranged in four groups, but it saves you the trouble of memorizing the questions in their two versions ("is" and "ought," = a total of 24 questions).

Table 2: Critically heuristic boundary categories



The first category of each group refers to a *social role*, the second to role-specific *concerns*, and the third to the *key problem* in dealing with the clash of different concerns that is characteristic of social reality. For each question, boundary questions are to be formed both in the "ought" and in the "is" mode. Source: Ulrich, 1983, p. 258, similarly 2000, p. 256.

Alternatively, you may prefer a problem-field matrix such as the one suggested in **Table 3**, which offers a format not only for remembering the boundary issues and for structuring boundary discourse but also for recording it. (For full accounts of the derivation and use of the critically heuristic boundary categories, see Ulrich, 1983, Ch. 4, pp. 225-258, esp. pp. 244-258, and 1996a, pp. 19-44.)

So much for the conceptual framework of critical heuristics. Let us now turn to the second of the two main methodological challenges mentioned above (p. 8f), the need for a *model of rational critique* that would be available to all of us. The point is that critically heuristic reflection must not remain dependent on the goodwill of those who are involved in knowledge production and decision-making. A checklist of boundary questions *enables* those who wish to handle their own boundary judgments critically, but it may not *compel* them to do so or the circumstances in which they work may *prevent* them from doing so. Those in control of a situation may still take the boundary judgments at work for granted or for whatever reasons may prefer not to disclose them, despite realizing there might be options for defining them. (You may have come across a pertinent definition of power in the sociological literature**:** those have power who can afford not to learn.) How, then, can we give those who may be affected by such boundary judgments but have no say in them, as illustrated by the two examples given on pp. 5 and 8, a means to challenge boundary judgments in a compelling way? This is the aim of what I call the *polemical employment of boundary judgments*.

Table 3: Recording table for critically heuristic reflection and debate

		Social roles	Role-specific concerns	Key problems
Motivation	**"Is"**	**Beneficiary**	**Purpose**	**M. o. improvement**
	"Ought"			
	Critique "is" vs. "ought"			
Control	**"Is"**	**Decision-maker**	**Resources**	**Environment**
	"Ought"			
	Critique "is" vs. "ought"			
Knowledge	**"Is"**	**Professional**	**Expertise**	**Guarantee**
	"Ought"			
	Critique "is" vs. "ought"			
Legitimacy	**"Is"**	**Witness**	**Emancipation**	**World view**
	"Ought"			
	Critique "is" vs. "ought"			

Source: W. Ulrich, *A Primer to Critical Systems Heuristics for Action Researchers.* Centre for Systems Studies, Dept. of Management, University of Hull, Hull, UK, 31 Mar 1996 / rev. digital version, 10 Aug. 2014, p. 44.

The Polemical Employment of Boundary Judgments: *Towards a Symmetry of Critical Competence*

> *A critical employment of the systems concept is possible without the critic's knowing everything about the system in question.*
>
> Werner Ulrich, *Critical Heuristics of Social Planning* (1983)

> *Doubt: the only human activity capable of controlling the use of power in a positive way.*
>
> John Ralston Saul, *The Doubter's Companion* (1995)

The "polemical" employment of boundary judgment 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 covert reliance on boundary judgments, or on non-argumentative means of supporting them, becomes apparent. I call this kind of argumentation "polemical" as it relies on Kant's (1787, p. B766f) concept of the "polemical employment of reason."

For Kant, an argument is "*polemical"* if its critical force and its rationality do not depend on any positive validity claim. It aims not at asserting knowledge but only at exposing some dogmatic assertion. It need not, therefore, establish a theoretical claim to knowledge or a normative claim to rightness (or both). This is precisely what an openly subjective advancement of alternative boundary judgments for merely critical purposes achieves! It puts those who take their boundary judgments for granted (and only them) in a situation where they have to carry the burden of proof, or else it becomes obvious that they claim too much.

Experts caught in such embarrassing situations tend to take refuge to their advantage of knowledge and to argue that a non-expert's objections are "merely subjective" or "incompatible with the facts"; but that will do little to establish the objective necessity of *their* boundary judgments. On the contrary, once it has become plain that defining the system of concern is at bottom a subjective political act, experts who insist on their superior qualification with regard to boundary judgments actually disqualify themselves. Or, to say it more bluntly, *when it comes to debating boundary judgments, experts do not look good.*

Nor do decision makers, usually. Citizens, once they have got the idea, have a real chance to be just as competent as those who "know better." One might object that it is not entirely fair to accuse experts of not having all the answers; yes indeed. This is the very point and aim of boundary critique; it is directed only at those who handle their boundary judgments uncritically, by concealing them or merely asserting them. Whoever claims the rationality of a proposal without laying open the way it depends on boundary judgments, can be shown to argue on slippery, dogmatic grounds. It makes no difference

whether he or she is an expert or in a position of power. Ordinary people who understand this need no special access to knowledge or power in order to challenge such a claim. They can, then,

(a) uncover boundary judgments on which depends the contested position;

(b) advance with equal right and with open subjectivity their own boundary judgments, though only for the critical purpose of making apparent that there are options; and

(c) be confident that no expert will be able to point out politely that perhaps they do not know enough and are not competent participants!

The last point is particularly important. Since there is no theoretical justification of boundary judgments, their polemical employment is a perfectly rational form of argumentation. It is therefore apt to give ordinary people a new sense of competence. It enables them to oppose those who seemingly have the monopoly of knowledge through a simple form of cogent argumentation and thus ensures to them something like a *symmetry of critical competence* (Ulrich, 1993, p. 604f). Accordingly I also speak of an "emancipatory use of boundary judgments," or simply of *emancipatory boundary critique.*

Experts who lay their boundary judgments open need not fear any loss of "objectivity" and importance, quite the contrary Handling boundary assumptions in transparent and reflecting ways *is* a form of improved objectivity. Thus-understood expertise will not so quickly lose its importance. Relevant knowledge remains an indispensable and scarce resource that still gives experts an advantage of argumentation, *so long* as they employ it in critically tenable ways. Conversely, citizens who do not put their newly gained understanding of boundary judgments to a *critical use only* but instead begin to assert their own, private boundary assumptions, will have no argumentative advantage whatsoever over the experts. The burden of proof then shifts back to them. Boundary critique is a tool that is available and relevant to experts no less than to everyone else. People who handle their boundary judgments critically have nothing to fear. Those who don't, whether experts or not, will find themselves exposed. There is thus indeed an essential gain of symmetry in this regard, rather than any one-sided reversal of the burden of proof; the latter as well becomes distributed more evenly. In consequence, then, the symmetry of critical competence that I advocate does not supersede the role of expertise but on the contrary strengthens it, by ensuring its proper use.

Even so, such improved argumentative equality does not force those in power to listen. They still can simply ignore or terminate the discussion. Yet the situation has changed! If those in control of a situation are not willing to listen, or simply close down a local discourse, citizens are now basically competent to take the discourse to other arenas of debate and ultimately to the public, *without* having to fear that they might be convicted of lacking knowledge or competence. This is a significant improvement on

everyday situations of discourse, which as a rule are characterized by asymmetries of knowledge, skills, status, and argumentative chances.

Critical systems thinking thus offers us a fundamental lesson in citizenship**:** in spite of the usual asymmetry of knowledge and skills between ordinary citizens and professional people, there exists a *deep symmetry* among all claims to knowledge and rationality, whether professional or not. That gives us a chance of overcoming one of the most fundamental difficulties of the idea of an enlightened society, namely, the *conflicting demands of democratic participation and rational argumentation.*

Democratic participation demands that in principle, everyone who is potentially affected by a decision be entitled to equal participation in the discourse, regardless of whether or not he or she has any expertise. Rational argumentation, on the other hand, usually requires expertise and cogent reasoning on the part of all those who participate. As far as I can see, there is to this date no practicable model of rational discourse that could reconcile the two conflicting demands.

The available models have been advanced by philosophers such as Karl Popper (1959/2002, 1966, 1972), Paul Lorenzen (Kamlah and Lorenzen, 1967; Lorenzen, 1969, 1974; Lorenzen and Schwemmer, 1975), Jurgen Habermas (1970, 1973, 1979, 1984/ 87) and others. Their models of rational discourse are basic to the much-discussed *discursive* or *communicative turn* of contemporary philosophy. They have made an important contribution by demonstrating that the validation of theoretical as well as practical propositions is not a matter of proving their objective logical and theoretical necessity, as was previously thought (an assumption that prompted Kant to search for an ultimate, "transcendental" grounding of objective knowledge), but rather is a matter of pragmatic cogency, that is, of *dialogically* convincing all others concerned to agree, based on no other force than that of argumentation. Yet in a peculiar way, these models fall behind Kant's critique of reason. While the latter led Kant to the ultimate limits of human reason and hence, to the insight that "the critical path alone is still open" (1787, B884), the contemporary discourse models continue to search for a guarantor of truth and rightness in the form of discursively achieved "rational consensus." This is why they need to rely on ideal presuppositions such as "rational motivation" and "communicative competence" of all the participants. In consequence, they have remained largely impracticable and have not been able to mediate between the divergent demands of cogent argumentation and democratic participation.

To the best of my knowledge, the polemical employment of boundary judgments today represents the only available model of cogent argumentation which reconciles the divergent requirements of participation (of all those affected or concerned) and argumentation (of all those involved). It achieves this by renouncing the hopeless idea of "objective," that is, complete and definitive, justification of practical claims in favor of creating a symmetry of critical competence. Rationality and democracy need not be

opposites, after all! The critical kernel that I have associated with systemic thinking thus enfolds into a fundamental *emancipatory potential.*

You may object that once we renounce the idea of complete justification, we have opened the door to a bottomless ethical relativism. I do not think so, but even if it were true, once again, this kind of objection means to blame the messenger for the bad news. The unavailability of complete justification is not *caused* by the idea boundary critique; rather, it is rooted in the previously mentioned problem of holism (cf. p. 7 above). Systematic boundary critique is a way of taking the problem seriously *although* no definitive solution is available. To borrow a famous phrase from Kant (1787, B509)**:** since no objective solution is available, we must aim at "an least critical solution" to the problem of securing rational practice. This may be philosophically disappointing, but at least it leaves room for democracy and for the practice of critical reason by democratically minded citizens. I have consequently made this conclusion by Kant a guiding motto of my work on critical systems heuristics and reflective practice (see Ulrich, 1983, p. 5 for the motto and pp. 301-310 for a fuller introduction to the "polemical" or emancipatory use of boundary judgments, along with the accounts given in 1987, p. 281f and in 1993, pp. 599-605).

Summary & Conclusion: *Critical Systems Thinking for Citizens*

> *Citizenship can be defined as a set of practices which constitute individuals as competent members of a community.*
>
> Bryan S. Turner, Postmodern culture, modern citizens (1994)

One of the key issues of the coming decades will be *the question of knowledge:* What counts as knowledge, and who defines what counts as knowledge? As knowledge becomes a commercial and political key resource, its social definition, production, and control tend to become more unequally distributed among the members of society. Academia, the institutions of science and research, professional practice and expertise, play an obvious role. Many a reader working in academia may at first react skeptically, if not defensively, to this essay. There is no need for such defensiveness though. The knowledge society needs academia's contribution more than ever. We need more, not less, of it. What I question is not academia's eminent vocation to contribute but only the still frequent, often tacit assumption by academics of being the only *qualified* voice. Hayek's (1974) admonition regarding the *pretense of knowledge* comes to mind**:** as academics or researchers we should never assume that theoretical insights afford us complete or perfect knowledge, say, as to how economic reality comes about and hence, how to steer it through economic policies. Hayek's argument differs from that which we

have examined here, however, in that he sees the crucial limitation of applied research and knowledge in the *natural complexity* of real-world situations rather than in the *normative core* of the boundary judgments involved (cf. Ulrich, 2007, p. 3f, for a short comparison of the two arguments). Both arguments are relevant, and their consequence is similar**:** we need the best knowledge that scientists and professionals can give us, but we should never forget its inevitable limitations, as little as its normative core.

It is now widely recognized that normative choices – telling what is good and right for others – are not the prerogative of the experts. The question of what in a practical situation is to count as knowledge – as relevant facts and values – is such a question. In an enlightened and democratic society, it is upon all those concerned, that is, ultimately, the citizenry, rather than on any small elite of experts, to answer such questions. As citizens increasingly claim a voice in the making of knowledge that affects them, academia today can no longer avoid the question. To be sure, we cannot renounce the specialized knowledge and skills of experts; in this sense they obviously still "know better." But just as obviously, when it comes to the normative underpinnings and implications of their views and propositions, citizens can challenge them at eye-level.

Some of you may think this goes too far and fails to do justice to the special vocation of academia. I do not think so. The question of knowledge is too fundamental to be left to the experts. It's so fundamental that citizens not only need to be involved in answering it but are the ultimate instance and source of legitimacy. The question of knowledge, then, leads to a truly challenging and fascinating issue for our contemporary societies**:** *Can the knowledge society become a knowledge democracy?*

As I have tried to explain, my hope for a positive answer rests on a powerful systems-theoretical consideration**:** all propositions – those of experts no less than those of ordinary citizens – depend on strong assumptions as to how the relevant context or system of concern should be bounded. On such boundary judgments depends what counts as relevant facts and adequate values. When boundary judgments are revised, judgments of fact and of value need to be revised as well. Facts and values thus become understandable – and questionable – as what they are**:** claims to relevance and rightness. Faced with such claims, we can employ boundary judgments for critical purposes, that is, for systematically analyzing the conditioned nature of propositions – their validity and merits -- and for arguing cogently *against* claims that do not properly disclose their presupposed borders of concern. Once we have understood the role of boundary judgments, *boundary critique* becomes an essential requirement of critically tenable practice.

A *critical turn* is in order regarding our contemporary notions of knowledge, rationality, competence, improvement, practical reason, and so on. Faced with the inevitability of boundary judgments we must, as I cited Kant above, secure at least a *critical solution* to these problems of reason. It leads us to a new, *critically* normative concept of reflective practice, a concept that reaches deeper than the currently prevalent notion of reflective practice (Polanyi, 1966; Schön, 1983), by going to the normative

core of all practical claims and ask what are the *boundaries of concern* that inform them, whether consciously or not. When it comes to this is sort of question, experts and citizens must indeed be enabled to meet at eye-level. Boundary critique is an idea that both sides can understand and use to achieve such a critical solution.

You may doubt whether it will be possible. I do not mean to say that I have all the answers. But I believe there is a potential for giving citizens *a new competence in citizenship.* I think we ought to try it. Borrowing another famous phrase from Kant ("Thoughts without content are empty, intuitions without concepts are blind"; 1787, B75, similarly 314; cf. Ulrich, 1983, pp. 190 and 281), I am tempted to say**:**

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

The first part of the sentence concerns us as citizens, the second as academics. Yes, as academics, too, we can make a contribution to the *birth of a knowledge democracy:* We can stop using our theoretical knowledge and professional competencies in such a way as to put citizens in a situation of incompetence. We can *share* with them our insight into the role of boundary judgments. We can *explain* what boundary judgments we use in dealing with the situation at hand, and *encourage* them to advance theirs. We might discuss with them what *options* there are for alternative boundary judgments, and how these might make things look different.

We want to practice academic work as if people mattered. As I have tried to show, we have a chance to render citizens more competent with regard to the *question of knowledge* – who decides what counts as knowledge, and who knows what needs to be decided? If as academics we are not interested in this issue, how can we expect our work to contribute to an enlightened society? How, if not through a new competence in citizenship for all of us, can the knowledge society become a knowledge democracy?

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