
Conversations

Testament to Conversations¹ on Critical Systems Thinking Between Two Systems Practitioners²

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This is a testament to conversations held in Berne and Fribourg, Switzerland, in late 1988. The main theme that we present concerns seeking to find an adequate epistemology for systems practice, to find a "truly" critical approach, by shifting our interests from "systems science" to "systems rationality" (i.e., by "reaching out" toward a systems epistemological ideal) and by dealing with sociological phenomena such as the "effects of material conditions" and false consciousness and inequalities associated with these. Social rationalities relating to positivism, interpretivism, and critique are considered. Limitations and legitimacies of these rationalities in social contexts are made explicit in these discussions.

KEY WORDS: Critical Systems Theory; systems rationality; social rationality; pluralism; Liberating Systems Theory.

1. INTRODUCTION

The systems view has often been misunderstood to "embrace all in its outlook." Now it is certainly true that comprehensiveness is in fact an ideal

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of systems thinking, but from an epistemological point of view this ideal is in need of careful qualification. If epistemology is “reflection on the gaining and disseminating of knowledge and on the validity of that knowledge,” then the epistemological ideal of classical comprehensive rationalism would require systems thinkers “to know everything and know it is valid.” This is evidently impossible. Such an ideal does not even have a “regulative function” for systems thinking because it tells us absolutely nothing about how to deal with our inescapable lack of comprehensive knowledge and understanding.

The call, as will be understood more clearly later, is for a switch in emphasis from “*systems science*” to “*systems rationality*”, systems science referring to a conventional understanding of what systems scientists do [explained, among other things, in Flood and Carson’s (1988) eclectic work] and systems rationality referring to a critical (Kantian) rather than an untenable pre-Kantian understanding of rationality. More specifically, by systems science we mean any effort to employ a systemic outlook in doing basic or applied science according to the conventional ideals of non-reflective positivistic empirical-analytical rationality (objective data, testable hypotheses, valid modeling, and so on), whereas by systems rationality we mean an ideal that may orient applied inquiry toward a critically rational social practice *in the face of incomplete knowledge and understanding*.

We propose that an appropriate epistemological ideal for systems thinkers is not the systems-scientific ideal but must be sought *through* the critical idea of systems rationality, *by giving back to the systems idea its originally critical sense* (as forwarded by Immanuel Kant and reconstructed by Ulrich (1983)]. Unfortunately, the critical intent of the systems idea has been almost completely lost in contemporary systems science, said to have originated in the 1940s with Bertalanffy’s (e.g., 1968) abstract ontological conceptualization of General Systems Theory. This historical reflection today translates into what we would like to designate a *call for a second epistemological break* toward a critical approach in systems thinking (Flood, 1990b). The *first epistemological break* in our understanding is marked by Checkland’s (e.g., 1981) moving away from instrumental control of positivist approaches toward mutual understanding through interpretivistic systems thinking and is characterized by a routing attack on modern systems science. Consequences of interpretivism are that systems thinking must free itself from dominance by scientism with its roots in ontological realism.

The second epistemological break, that we support, builds onto the achievements of the first and thus should be seen as an advancement on that line of thinking. Consequences of this critically normative systems thinking are that the two knowledge-constitutive interests in instrumental control (positivism) and in mutual understanding (interpretivism) need to be complemented (and reflected upon) in terms of an emancipatory interest in enlightenment and

liberation of people from domination by people or machines, by false consciousness or by whatever conditions which prevent people from truly realizing their potential as individuals.

We will find, therefore, that such a “truly” critical systems thinking cannot “merely” reflect against a backboard of a systems epistemological ideal as sketched out earlier in terms of just systems rationality. Further issues of sociological epistemology are equally important. We believe, in fact, that this is an exceptional point which demands that we find a way of pursuing and somehow bringing these together (i.e., sociological and systems epistemologies) through an epistemological ideal of critical rationality. Witness a first attempt at this below.

We wish to develop an expression of an *adequate epistemological ideal for social inquiry*. This we shall do by linking “our” difficulty with the “problem of metaphysics.” We therefore propose to introduce the difficulty in question as one that is “equivalent” to the “classical philosophical problem of (inevitable) metaphysics.”

Metaphysics refers to our theories (conceptions or understandings) of social reality, which always go beyond that which the empirical (the phenomenal surface reality that we can observe) apparently tells us. But we need to remind ourselves continually that the difficulty in question not only is (or even primarily) one of theoretical explanation (via concepts and understanding) but is also (or rather) one of taking into account and justifying the normative assumptions flowing into our theories of social reality. These *normative assumptions* concern, for example, “political” issues such as assumptions about the “right” distribution of power but may be complicated by the possibility of “false consciousness” and “effects of material conditions.” These are likely to produce genuine conflicts of world views and interests and may lead to coercive conditions.

Ulrich (1983) has suggested that we use the term *social metaphysics* (finding Kant’s metaphysics of experience inadequate to social inquiry in terms of social theory and systems practice) in order to help us appreciate these very relevant concerns. Social metaphysics can be explained as the totality of relative *a priori* judgments that flow into social theories or designs but cannot be validated either empirically or logically.

Now this is helpful because we can clearly see the need for a critical approach, in the precise sense of a politically conscious or self-reflective approach, distinguished by an *openly declared* emancipatory interest in an equal distribution of power and chances to satisfy personal needs and in liberating people from dominance by other people [see Flood (1990a) for a manifesto on Liberating Systems Theory in terms of discursive *and* non-discursive practices]. So we now need only one small conceptual step to realize the earlier stated desire that *our* concern with sociological epistemology must also deal with systems rationality. In other words we propose

a *dialectical approach* to the problem of practical discourse. This should occur between those claiming the *whole systems rationality* of some design (i.e., of its normative implications) and those bearing witness to the *life-practical irrationality* of the designs in question. Hegelian (or Churchmanian) dialectics, working in an adversarial mode, is complementary to our desire for practical discourse between “a rationality” and “an irrationality.” This amounts to our adequate epistemological ideal for social inquiry.

At last we have some regulative and methodologically directive ideas. Let us not be mistaken, however, by concluding that critique should be distinguished from other main areas of social theory (i.e., positivism and interpretivism). Being critical is not a quality of a certain position or approach; rather it is the quality of remaining self-reflective *with respect to* particular and all positions or approaches. This tells us that every conceivable approach to systems thinking *can be dealt with* by a critical handling of its inevitable limitations.

In these systems and sociological terms we conclude over the course of this conversation that

- (a) *non-reflective positivistic approaches*, by denying the relevance of social metaphysics, inevitably deny subjectivity and the notion of “whole systems rationality” and are *epistemologically untenable* (hence the need for a first epistemological break);
- (b) *non-reflective interpretivistic approaches*, despite recognizing the inevitability of social metaphysics and in this way *moving toward* an adequate epistemological ideal for social inquiry, sidestep sociological issues of critical significance such as “effects of material conditions” and the possibility of “false consciousness” and therefore have an *impoverished epistemology* (hence the need for a second epistemological break); and
- (c) critical, or *self-reflective*, ideas amount to an *adequate epistemological ideal* for social inquiry in terms of systems rationality, sociological epistemology, and of course systems practice.

We will therefore consider the legitimacies and limitations of these three contrasting conceptions of rationality in the spirit of Flood (1990b).

2. CONTRASTING CONCEPTIONS OF RATIONALITY: LEGITIMACIES AND LIMITATIONS

2.1. Introduction

Over the years there have been many attempts at reasoning out rational approaches to enquiry. Of particular interest in the social sciences, and

somewhat belatedly in systems thinking, are three rationalities: positivistic, interpretivistic, and emancipatory theories. In one interesting critique of these three types of "science" Fay (1975) uncovered some reasoning as to the limitations of positivistic and interpretivistic rationalities and suggested why an emancipatory approach might be legitimate where the other two are not (in fact it is fair to say that in this work Fay's emancipatory ideas conflated radical with critical). There has been vigorous debate in social theory along these lines. This is a serious matter because it then becomes too easy to slip into an unwanted adversarial mode of reasoning such as emancipatory approaches are legitimate while instrumental control represents an inferior kind of inquiry. This would merely reintroduce old prejudices such as the humanities against the natural sciences, with a value continuum marked bad on the right positivistic side and good on the left emancipatory side. What we require is an approach to rational systems practice which makes plain the idea that we are dealing with complementary concepts of rationality, each of which has its place and is legitimate so long as we respect its limitations (see Ulrich's, 1988a, research program; Flood, 1989a, b; Jackson, 1990). This is an extremely important point that should stay with us throughout the following discussion lest we slip into a competitive rather than a critical mode of thinking.

We can now look carefully at three sciences/rationalities in order that we may expose some limitations and assess the legitimacies and think about the epistemological breaks which might be proffered with respect to each type. The rationalities are non-reflective positivism, non-reflective interpretivism, and emancipatory (the last defining both a metatheoretical framework through which all rationalities may be dealt with and the fundamental ideas for emancipatory theories as such). Toward the end of this testament we summarize our findings on limitations and legitimacies in tabular form which then broadly explains the contrasting relationship among the three types of science/rationality.

2.2. On Positivistic Science/Rationality

A positivistic approach to science offers a traditional rationality that we can critically examine in various contexts, but in particular in our application domain we can legitimately ask, "Why should we pursue a traditional social science and what would be the consequence of this?"

Brian Fay (1975), somewhat along the lines of Habermas (1971a, b), proposed on behalf of traditional social scientists the following reasoning. The natural sciences have very effectively provided mankind with "knowledge" with which the natural environment can be controlled, making it "more

hospitable and productive.” This is a power based on knowledge for control. If this is so, then we might be inclined to conclude from Fay’s account that it would be a reasonable suggestion to apply the same epistemological (of truth, neutrality, and objective knowledge) and methodological ideas in social contexts, discarding the notion of our needs and values in order to give us the requisite power for objectively based social control, thus making for a more certain and rewarding social environment.

If this idea of a social science sounds appealing (it does not in our or Fay’s judgment), then surely we must find out how we can have a social systems science. “How can the ideas of reductionism be translated into those of holism?” The answer is simple. Generally, traditional scientific investigation promotes the identification of causal laws between variables according to *observational* properties. By “building” these into a “system” of causal laws in a clearly specified (holistic) way, we might begin to understand how phenomena are related so that by manipulation of input or internal variables, or by changing structure as defined by model parameters, future scenarios can be generated (along with a whole host of descriptive, predictive, and explanatory investigations). For example, through this, feedforward control can be imposed in order to avoid undesirable future ends by steering toward the more desirable. This would presumably make way for an optimal social environment; i.e., in this strategic means–end fashion it is possible to identify one best way to maximize (or, at worst, satisfice). Thus there would be “universally recognisable decisive solutions to particular problems” (Fay, 1975).

Now the question of theory-neutrality and value-freedom over means and ends must surface here. It is argued by scientists of the postivistic persuasion that objective and neutral decisions can be realized by determining the most efficient means to an end. “But what of ends?” Traditional science cannot inform us of what teleological goals we *ought* to be pursuing since it is fact-based. It is not possible to have neutral social goals. If we are informed of a *should* approach, then we will at least know that it is value-laden. Perhaps, then, the idea of means–end might be considered respectively as fact-value, and so the scientific approach might play an important role in determining an efficient means to a subjectively based end? But, we might ask, “Efficient in terms of what?” “Who is to say that we *should* maximize in terms of money, manpower, time, or happiness or what?” as Fay questioned. We see again that what is required to be neutral is actually value-riddled.

Simply referring the choice of efficiency criteria to the definition of ends and then hoping that, once ends have been selected decisions on means can be value-neutral, will not deal with the difficulties of value judgments.

This is so because the underlying means–end dichotomy is epistemologically untenable. Counter to what the eminent German sociologist

Max Weber (1949) assumed in his decisionistic model of the relation of science (theory) to politics (practice), decisions on means cannot be kept free of normative implications by referring all value judgments to the choice of ends; for what matters is not the value judgments that an inquirer consciously makes (or not) but the life-practical consequences of his propositions (regardless of whether they concern “means” or “ends”) for those affected.

It is true that Weber’s intent originally was a self-critical one: he found it necessary to avow that decisions on the adequacy of ends cannot be justified scientifically but ultimately remain matters of personal faith. Weber was willing to pay this price because he hoped it would make accessible to scientific justification the selection of appropriate means for “given” ends. Once ends are chosen, he argued, decisions on means can be kept value-neutral because they only need to refer to relationships of cause–effect. What Weber apparently did not see is that in a context of applied science, propositions regarding means have not only instrumental but also life-practical consequences; and these cannot be justified *vis-à-vis* those affected by reference to theoretical-instrumental knowledge of cause–effect (relating to the surface) relations, but only by demonstrating their normative acceptability to all concerned citizens. Weber’s and his followers’ (notably Popper) error was to conceive of (applied) social science in non-life-practical terms. The implication of this for our ideal of practical reason (normative acceptability) is that it is reduced to instrumental reason (feasibility). This approach cannot therefore yield what it claims, namely, an immunization of propositions on means against value judgments. Rather, it immunizes such propositions against the critical efforts of practical reason. We must conclude that any social science, and likewise any social systems science, that adopts the means–end scheme is in great danger of succumbing to positivism.⁹

So we have reasoned the following.

- (a) Traditional social science claims objectivity: means to end \equiv fact to fact.
- (b) Ends *are* value-laden, so means to end \equiv fact to value.
- (c) Criteria of “efficiency” are also value-laden, so means to end \equiv value to value.

Therefore a positivistic science claims an objective epistemology, which we have proven above is untenable.

⁹Checkland (1978) was probably the first systems author to recognize clearly that the means–end scheme is the common defining feature of all variations of “hard” systems thinking. Unfortunately, Checkland has never been similarly clear with respect to the fact that switching from hard to “soft” systems thinking does not automatically buy immunity from positivism. An additional step is required, that is the step from an “interpretivistic” to a “critical” (critically normative) understanding of soft systems thinking [(Ulrich, 1983, 1988a); the second epistemological break (Flood, 1990a,b)].

A powerful argument against a positivistically oriented “hard” approach to systems “problem solving” in social contexts that would be based on such theoretical premises as outlined above has been proposed by Checkland (e.g., 1981). He shows through practical considerations that the “designation of objectives (i.e., ends) is itself problematic.” Notably, however, Checkland misses the opportunity to highlight the ideological implications of this positivism.¹⁰ Ideological considerations are important and concern us with issues relating to order and change, a central aspect of our attitude toward problem solving in social situations that must be explicitly addressed.

Positivistically oriented traditional science,¹¹ according to its advocates, can tell us of the laws of social being according only to empirical relationships as derived by scientific *experts*. Once *that* structure has been identified, traditional science will go on to explain *how* it functions, but never will ask *what* value implications it has and how to assess them, for questioning is beyond the traditional scientific ideal of objectivity (see again Weber, 1949). But this way of avoiding value judgments often has paradoxical consequences: by not questioning structure and its function with respect to its value content, traditional science implicitly accepts its being there *as if* it were *necessarily and naturally* that way. Proposals are therefore made in terms of continued existence. Dominant–submissive social relations tend to be accepted to positivist social science as natural and unchallengeable. Hence positivism is as a rule conservative, reconciling people to any social order that is being investigated. Systems methodologies that hold a positivistic rationality advocate instrumental reason in telling us how to do things, the *ought* having been “sold out” to empirically based scientific findings of *what is* (accordingly only to surface observation or beneath the surface theory).

We proposed at the outset that it is necessary for us to “look through” our systems (scientific) models to uncover normative assumptions that are inherent in them. If this is done, then these assumptions could, *in principle*, be subject to critical reflection. This, of course, cannot be achieved with a non-reflective positivistic view of the assumptions.

In summary on non-reflective positivistic rationality in social contexts we note that

- (a) it does not lead to objectivity;
- (b) it is expert driven;

¹⁰A neglect that more generally is evident in his work and which has serious consequences in terms of limiting possibilities for change (Flood, 1990a, b), and this is despite his “radical in principle” comments (see Checkland, 1981, p. 283).

¹¹Let us here make clear that positivism is not a type or paradigm of science in its own right. No inquirer, regardless of what science is pursued, is ever immune from falling back into positivism (e.g., in the way the means–end distinction is handled). In essence, *positivism is not an approach to inquiry but a sloppy way of dealing with its assumptions and results.*

- (c) the systems epistemological ideal will always be ignored;
- (d) what is claimed is epistemologically untenable;
- (e) what is said is ideologically conservative; and
- (f) therefore what would be achieved is maintenance or strengthening of power relations.

If the positivistic view of science must be abandoned in social contexts, and we have shown that it must on epistemological grounds and believe that it should on ideological grounds, then the question will arise whether there are alternative views (or rationalities) and, if so, then “What can be determined about them epistemologically and ideologically?” “What is legitimate and what limitations are there?”

In recent systems thinking there have been two alternative views—broadly speaking, the introduction of interpretivism or of critical thinking. These are considered in the next two sections, respectively.

2.3. On Interpretivistic Science/Rationality

In this section we consider (along the same lines as the prior section) interpretivistic science and its strengths and weaknesses as a systems and a sociological epistemology and what ideological thinking is inherent in the tenets of the theory. We found Fay’s (1975) framework of ideas useful here.

Interpretive social theory is concerned with situations as “defined” through action concepts [hence the need for an interpretive systems language (Flood, 1988)]. Understanding cannot arise merely from observation and theory (surface and beneath the surface material analyses of the traditional scientific approach) since the human actor will have reasons, or intentions, that “lie behind” each action (these are not material). For example, slapping someone on the back might be interpreted as either a friendly or a hostile action, or kneeling in the street could be interpreted as religious or an inebriated act. Mere observation is not enough to appreciate properly these actions. Deeper understanding is necessary; for example, from the above two situations we could begin by saying, well we need at least intentional and conventional action concepts. But how can we progress beyond the descriptive/observational (surface) approach to realize an explanation for actions? Surely it is nonsense to search for material generative mechanisms that lie beneath a material surface?

The interpretivist moves completely away from issues of materialism and introduces the idea that a specific action concept can be transparent only in the context of a certain set of *social rules*. It is in terms of these that an actor can be said to be doing some particular thing. “Beyond” an observation,

we are told, is a *set* of social rules, a *social practice*, that can be drawn upon to explain the action.

There is also a third “non-material deeper layer” that the interpretivist introduces, that of *constitutive meaning*. This is the least accessible layer to the actors, for as a social practice lies behind an observation, a constitutive meaning lies behind the social practice. It is in terms of these meanings that people speak and act. In order that these meanings can be more fully appreciated, it is necessary for an actor to adopt a contrasting constitutive meaning and thus “take a look” at his/her own world view from “the outside.” In this, admittedly difficult, way it is possible to “get a handle” on one’s own reality.”

An interpretivist social theorist is not, therefore, concerned with privileging views by asking questions such as “What is the correct action in a certain social context (typical of what a scientific view would be)?” Rather than asking what is appropriate, an interpretivist thinker would pose the question “What makes it appropriate (surely a key question also to ask a systems practitioner about designs)?” A constitutive meaning, then is equivalent to a world view or *Weltanschauung* that reflects a *culture’s* conception of human needs and purposes.

Interpretivistic rationality can more easily be seen as systemic in outlook because it helps us to “see” peoples’ lives as a whole by uncovering subjective meaningfulness (i.e., conceptual interactiveness) of the social rules (i.e., the social practice) in terms of an *a priori* constitutive meaning. To elucidate and summarize this we have drawn up two examples and present them in tabular form (see Table I).

There are clearly advantageous points to such a theory. For instance, the ideas should increase the possibilities for communication by accepting subjectivity and by making dialogue possible where previously only suspicion and distrust “filled the air.” Interpretivistic rationality does this by “opening up” one’s own situation to others (and *vice versa*) and by encouraging mutual understanding about what is being done and why it is being done. “Truth” is approached as communication increases, and in an ideal world, a “valid” systems intervention would require full participation of those involved (Flood and Robinson, 1989a, b).

A penetrating critic might, however, say, “Well these ideas are all ‘well and good’ as far as they go, but what of *material conditions*? It seems that with your subjective idealism you have forgotten to deal with the ‘effects of material conditions!’”

Now we have some sympathy with “this critic” but also have some concern about how such matters might be dealt with. It is tempting to claim that there is a missing fourth layer, i.e., “What material conditions underlie constitutive meanings and what is the history of these?” This argument might

Table I. Three Layers of Interpretive Analysis: Action Concepts, Social Practice, and Constitutive Meaning

"1st level," Conventional and Intentional Actions	"2nd Level," Social practice	"3rd Level," Constitutive Meaning
What is done	Set of negotiated rules that explain what is done	Fundamental assumptions that underlie what is done and make it meaningful.
Implicit reference to social practice	Implicit reference to constitutive meaning	Fundamental <i>a priori</i> assumptions
<i>Example: Family Embracing</i>	Generally understood rules referred to by the concept family which define embracing, e.g., to embrace involves some perceived emotional exchange of love and affection	The family unit is something that has a particularly important role in our lives and within society ^a
<i>Example: Market place^b</i>		
Buying and selling	Generally understood rules referred to by the concept market place which define buying and selling, e.g., to buy involves exchanging my money for someone else's goods	It is right to exchange goods and services to maximize one's own resources; open competition is fundamentally important ^c

^aIn large sections of Western society two men embracing would come across as natural if they were family and strange if they were friends.

^bAdapted and tabulated from Fay (1975).

^cThere are other possible constitutive meanings for the concept market place.

continue; material conditions do inevitably affect social life since social structure will adapt to *changes* in the natural and/or technological environment. And so, following on, the social communicative world of the interpretivist is not all; it cannot be independent of the physical stage on which the actions are performed.

Our concern with such a rationality is that it is apt to produce confusion about the nature of the social reality (the "material conditions") in question. The danger is that such a rationality sets a tightrope to walk, with a substantial danger of toppling into the positivistic trap of hypostatizing (relating to an underlying substance as distinct from an interpretation or idea) "material

social conditions” as if there were some kind of science that could have access to a social reality of concern. This is in distinction to other types of inquiry that content themselves with considering interpretations and ideas only. It makes no sense to distinguish, say, a “radical” as opposed to less critical kinds of inquiry in terms of ontological realism vs idealism.

The relevant distinction here must be an epistemological one, for the issue of interest is “What are the epistemological requirements that interpretive science does not meet but which are indispensable for adequately dealing with ‘material conditions’?” Our answer is that the *crucial difference* is whether or not an inquirer accepts the proposition that rational justification *always* implies claims to *both* theoretical *and* practical rationality. Both a realist and an idealist can adopt a critical stance with respect to this crucial issue. Following Kant, however, critical (or “problematic” as Kant says) idealism is a much better position to depart from because realism tends to hypostatize the “real world” and hence to succumb to a fundamental objectivist illusion. Since we have no direct access to reality, we cannot know reality in all *its* pristine clarity; all reality is real to us only through our minds and all knowledge that we can have is perspective-bound and therefore selective. It is dependent on our world views, values, interests, and so on. Ulrich (1983, p. 185), referring to Korzybski, explains that the *fundamental and indispensable message of critical idealism* is that all our knowledge is in terms of “maps” and we should never confuse the map with “objective” reality.

A critical idealist will know to avoid the danger of hypostatizing social material conditions because it is accepted that *there are no social realities a priori to constitutive meanings*. To the critical idealist it is the other way round: human intentionality is constitutive of the perception and experience of phenomena, such as power, unequal distribution of resources, social stratification, discrimination, and so on, just as it is constitutive of (subjectively) rational action.¹² Critical idealists distinguish themselves from subjectivist idealists by accepting that “out there” are some hard factual conditions that do not exist in the mind only. It is incorrect, however, for interpretivists to make accusations of positivism and hypostatization. Critical theorists depart from the assumption that we might gain some “truly” positivist direct “objective” access to describing those conditions scientifically. We can describe maps of social material reality and the analogy suggests, a good map will lay open the perspective and scale it uses; but we do not distinguish ourselves from “merely interpretive” inquirers by claiming some more direct access to “the” material social world. From a critical point of view, we can claim only to provide adequate maps of “our” (or a defined client’s or participant’s) social reality.

¹² Ulrich (1983, p. 237) therefore argues that “the idea of mental determinism is crucial for understanding the ‘facts’ of social reality in much the same way that the idea of physical determinism has been crucial for the success of the natural sciences in understanding the ‘facts’ of nature.”

This type of analysis must involve what Fay (1975) terms quasi-causal accounts of the way “certain” material conditions give rise to “certain” forms of action. “Quasi”, we would argue, because the “causes” in question are the subjective acts of human intentionality—human motives, purposes, and so on, including impulses and desires not controlled by the human will—rather than the nomological laws ruling the physical world. In other words, the social communicative world of the interpretivist (of mutual understanding) does of course depend upon “material social conditions” (and should be critically recognized as such), but these conditions have a quasi-causal rather than a strictly causal importance, i.e., they condition our subjective perception of social reality (and of possible improvement) and hence can become obstacles to *mutual understanding* in need of critical reflection. This is the point rather than the fact that (of course) social reality or social practice is never independent of physical reality.

There is also a further metacomplication. Interpretivistic rationality assumes that if only we could break out of our world view, our actions could be clearly seen for what they are, perceptions of actions on certain *a priori* constitutive meanings. Yet this ignores the possibility of coercive forces working against the potential for emancipation that an interpretivistic view apparently offers, forces which may be designed to “freeze” the dominant constitutive meaning (freeze emancipation) by claiming, through nontransparent false means, that the situation is good or necessarily as it is. This is the case of *false consciousness* built on lies, propaganda, half-truths, and so on.

Perhaps interpretivistic inquiry does indeed offer hermeneutic scientists the means for uncovering “false consciousness”, e.g., with respect to a historian’s possibly faulty (nonauthentic) interpretation of historical documents. But it seems to us that the art of hermeneutics, thus understood, still clings to an ideal of objectivity that is unacceptable for us as applied inquirers. Hermeneutic inquiry, to the extent that it succeeds in decoding the authentic message of its subject, might claim to be “objective”; applied inquiry, however, never can. For us, there is no hermeneutic (interpretivist) “royal way” to seizing social reality objectively (much less to redesigning it), simply because there is no such thing as *the* “objective” authentic interpretation of social reality as such. As Ulrich (1983, p. 64) has written,

there is only one way in which we can claim “objectivity”—in the general sense of freedom from hidden presuppositions—for our empirical basis of rational discourse: namely, by acknowledging, in each case, the knowledge-constitutive interests on which the validity and meaning of “facts” depend. *To claim objectivity for one’s knowledge by referring to the objectivity of one’s empirical basis is an impossible undertaking; but to pursue the ideal of objectivity in the sense of emancipating oneself and others from the objectivist illusion is an indispensable idea.*

Our conclusion must be that for the applied sciences, the ideal of objectivity translates into what Habermas (1971a) has called the “emancipatory” interest of the critical sciences.

The translation, basically, reads like this. Mutual understanding (or more generally speaking, as a hermeneutic scientist would probably prefer to say, *authentic* understanding) is a necessary but not a sufficient condition for critical applied science. Authentic understanding of each other's subjective intents is alright in that it allows rationally motivated discourse, but it does not secure by itself the "right" standards of value being applied. Authentic understanding will take the message it believes to have understood authentically as providing the "right" standard, but what about ethically reprehensible implications of the message? Clearly, following the understanding yielded by "authentic" interpretation leaves little room for discrimination, so that every viewpoint must be accepted as equally valid—otherwise, the interpretation is no longer authentic. This poses a major difficulty in terms of ways forward in practical situations since there is no critical means of directing decision making.

This last exact point can be directed at interpretivistically *oriented* systems practitioners such as P.B. Checkland (1981) and soft systems methodology (SSM) that he largely developed. Throughout the methodological process, as SSM has been defined, we are encouraged to work out ideal systems views that are relevant to participants of a problematic situation, but there is no indication as to what might be chosen as most relevant and on what basis this choice should be made; save for the "constraints that must be met" defined by "the unique norms, values and roles of the problematic situation" (i.e., cultural feasibility as Checkland defines it).

Following another line, in an ideological sense interpretivistic science is implicitly conservative since the only possible way of explaining social tensions is in terms of imperfect communication between involved and affected actors. This accordingly can be corrected only at the communicative level through the promise of enhanced communication, which cannot be promoted merely by "clearing up" misunderstandings with the view that the *natural flow of discourse and order can be reestablished*. The point is that a lack of authentic understanding is always involved in situations of coercion but mutual understanding alone cannot secure emancipation; critical reflection on the norms implied in that which is authentically understood can ["critical reflection" meaning to examine the justifications of conflicting norms with respect to their generalizability, thus distinguishing rational from merely factual consensus emanating from practical discourse (see Ulrich, 1983, pp. 144–147)].

In summary, on non-reflective interpretivistic rationality in social contexts we note that

- (a) it promotes the notion of subjectivity;
- (b) there are no explicit directives in the theory that aim to prevent the approach from being expert driven;

- (c) by recognizing social communicative action it takes one of several necessary steps for “reaching out” toward the systems epistemological ideal;
- (d) it would be epistemologically tenable in its own sociological terms if full participation was facilitated, however, because false consciousness and the “effects of material conditions” are not dealt with critically, the rationality is clearly epistemologically impoverished;
- (e) it may well lead to ideological conservatism; and
- (f) therefore there is nothing in the rationality that helps to prevent the maintenance of power relations.

Presumably, and since earlier we noted that only positive criticisms would emerge that would contribute to the development of the interpretive line of thinking, we can expect there to be an alternative sociological theory that takes on board some of the lessons drawn out above. This is the case, and the theory comes under the broad heading of critique.

2.4. On Critical Science/Rationality

We noted earlier that a “truly” critical systems approach must satisfy the two following requirements:

- (a) it must “reach out” toward the systems epistemological ideal in terms of “systems rationality,” and
- (b) it must be consistent with the sociological emancipatory spirit of critique as such.

We propose that the two requirements, far from being mutually exclusive, ultimately imply each other. Whoever takes seriously the *systems epistemological ideal* cannot help but conclude that beyond the positivistic (objectivist) and the interpretivistic (hermeneutic) ideals of science, the emancipatory force of critical self-reflection is necessary—critical self-reflection, that is, on the gap that will always separate the practice of inquiry from those ideals. Similarly, whoever takes seriously the *ideal of critical science*—emancipation from hidden presuppositions—will have to conclude that they cannot easily dispense of what Kant termed the “unavoidable” transcendental idea of a totality of conditions conditioning their knowledge and understanding, i.e., the systems idea.

This becomes apparent if we consider the danger that a one-sided pursuit of either requirement poses to the inquirer. The systems epistemological ideal—a critically motivated quest for comprehensiveness—in practice only too easily lends itself to uncritical claims to comprehensive rationality, neglecting the fact that we never know and understand “the whole system” (the totality of relevant conditions). On the other hand, the ideal of critique just as well

lends itself to an uncritical absolutism of one's critical standpoint, for it is an impossible imperative permanently to question all one's presuppositions, including one's standards of critique; but presupposition-free critique is impossible. It seems to us that the two requirements mutually complement each other in a useful way: "*Think systems, but don't ever assume to grasp the whole!*" implies the system's inquirer's need for critical self-reflection, and "*Think critically, but don't ever allow your standards of critique to become absolute!*" implies the critical scientist's need to think beyond any particular standpoint and to look for comprehensiveness in understanding.

Ulrich's (1983) program of a critical systems heuristics¹³ builds on the assumption that the two requirements are both indispensable and mutually interdependent (neither can be practiced without the other) for a "truly" critical systems approach. A wealth of powerful ideas on the notion of a critically understood systems epistemological ideal is contained in this program. Basically, Ulrich suggests that the key to a critical understanding of the systems idea can be found in the works of Immanuel Kant. Ulrich's modern-day reconstruction of Kant's ideas is what Flood (1990b) has termed the second epistemological break for modern systems inquiry. Systems thinking, as understood through Kant's writings, refers to the totality of relevant conditions on which theoretical or practical judgments depend, including basic metaphysical, ethical, political, and ideological *a priori* judgments. For those systems thinkers who argue that the holistic concept is of no practical significance and who are denying Kant's position, we must point out that such a systemic concept offers us a *critical ideal of reason*; i.e., we must reflect heuristically on the *unavoidable incomprehensiveness and selectivity* in every systemic definition. *Reflection*, that is, on the normative content of the *a priori* "whole systems" judgments flowing into our systems designs. And *heuristic* in that it does not attempt to ground critical reflection theoretically, but to provide a method by which presuppositions and their inevitable partiality can be kept constantly under review (Jackson, 1985).

Ulrich's work demands that we carefully reflect upon the epistemological ideal of holistic thinking, but its critical effort is directed at the *practical* goal of *understanding* why "social reality is the way it is" exactly and "*of improving it.*" Both goals will require us to deal with the "effects of material conditions" and false consciousness that we recognized earlier as additional to the three layers of interpretivism.

Let us now consider some critical objections that may (and perhaps need) to be raised against such a program. For instance, it has been argued by Jackson (1985) that Ulrich's critical systems heuristics neglects the importance

¹³For brief first introductions to critical heuristics, see Ulrich (1984, 1987). Some of the underlying ideas are also summarized by Ulrich (1977, 1980, 1981a, b, 1988a, b, 1989, 1991).

of material conditions because “it is critical in terms of the idealism of Kant, Hegel and Churchman but is not critical in terms of the historical materialism of Marx and the Frankfurt School of Sociologists.” In terms of our argument above, we must indeed *appreciate* the material conditions that shape our perception of social reality (just as our world views are constitutive of our perceptions of material conditions). Jackson (1985) noted that Ulrich’s style of critical analysis would help to point to such material conditions but could not help in the examination and explanation of the nature and development of those conditions (the possibility of Jackson slipping into hypostatizing “material social conditions” cannot be excluded according to the formulation of his words). Ulrich would reply that critical heuristics and critical theory pursue different, perhaps complementary, ends and that neither can replace the other. Habermas, for example, pursues a difficult *theoretical* purpose, and Ulrich a likewise difficult *practical* (heuristic) purpose; it makes little sense to dismiss either one by raising the charge of “missing” the other’s “problem.”

Regarding the charge of idealism, we feel it is important to understand the critical significance of Kantian idealism. Kant conceived of his idealism in terms of “problematic” or “critical” idealism, in distinction to the solipsist’s extreme subjective idealism. Kant’s point is not of course that the world exists only in the mind, but rather that *all our knowledge of the real world is in terms of maps, and “the map is not the territory”* (after Korzybski). That is to say, all our knowledge is perspective-bound, selective, or (in Kant’s terms) phenomenal only; not even the most comprehensive systems approach or any kind of “objective” theory will ever be able to change this fact. The critical idealist, unlike the realist, will always be reminded that all knowledge and understanding of the “real world” are in terms of phenomenal maps only and that a good map ought to lay open its perspective and scale, its selectivity and purposes, and should never allow itself to be taken for the territory.

Given this understanding of the basic message of critical idealism, we find it to be an indispensable part of a critical systems approach. Although we are in sympathy with Jackson’s critical intentions, we feel it is not possible to identify a “truly” critical or “radical” approach in terms of ontological realism vs idealism, as Jackson’s argument implies. Nor can it be identified in terms of ideological “radicalism” vs “idealism,” whatever those labels may be taken to mean specifically. The point in trying to be critical is not adopting the one or the other ontological, epistemological, theoretical, or ideological position but rather to keep reflecting on the limitations and value implications of one’s position in every specific context of application, *whatever that position may be*.

There also remains the question, raised by Jackson (1985), “Why should the powerful bother to take account of the views and interests of those

affected but not involved?" Of course, no methodology, not even a "truly" critical systems approach, can by itself make the powerful less powerful; but this is not different from even the most radically "materialist" social theory. A more relevant point is this. As a rule, the powerful are interested in concealing, rather than laying open, their access to power (strategic action) instead of achieving won consensus (rational communicative action). They seek to conceal their specific private interests behind some facade of common interest, of generally acceptable norms or "objective necessities." A critical approach, although it cannot "force" the powerful to take account of the less powerful, can at least unveil this facade of rationality and objectivity which is so characteristic of the strategic action of powerful vested interests in present-day "interest-group liberalism" (Lowi, 1969). Thus it can deprive the powerful of what Habermas designated "the peculiar force of the better argument"—a "force" on which no individual or interest group, not even the most powerful, will renounce voluntarily.

Critical heuristics, more than any methodology or theory before, specifically addresses this issue with its unique tool of the "polemical employment of boundary judgments" (or whole system judgments); it pays careful and explicit attention not to presuppose that those in control of "decision power" are willing to take account of the views and interests of those affected, but only that they are interested in making their own views and interests appear to be defensible on rational grounds. We intend to come back to this important issue in one of our next *Conversations*.

Let us now start to summarize our position. A critical theory is (at least partly) rooted in the felt needs and sufferings of groups of people and therefore the interpretive approach of *understanding people from their own view* is fundamentally important. This is not enough, however, since we have already recognized that social action (as expressed through action concepts, etc.) may be shaped by the "effects of material conditions" and by the possibility of false consciousness.

We wish to work toward *both* the systems and the sociological dimensions of a critical theory. It is therefore important for a critical approach to tie its knowledge claims to the ability to satisfy human purposes and desires, and thus "validity" of the theory must be judged primarily in terms of its potential in bringing about practical application and emancipation. It is therefore important to build in a facility whereby practical judgments can be constantly reflected upon in transparent nonexpert terms, and their partiality revealed by everyday accounts of the nature of social experience in ordinary language. Only in this way can we conceive of a theory that might be translatable into practice so that those involved and those affected can share in the heuristic and critical approach to design and decision making.

Drawing this section to a close we wish to point out that notions of convergence, or absolutisms, should be avoided in critical studies (Flood, 1990). For instance, it is anticritical to expect that we can work toward a view with which “we all feel comfortable” (a bounded idea promoted by several eminent “systems thinkers”), be it with the outputs of methodological activities or indeed the methodological approach itself! Contrary to this, we propose that we should remain uncomfortable. A “truly” critical approach must be open to emancipation from itself and even to calls of abolishment, as must the “output” of methodological activities. As we take our theories to the practical world of men and women, we must equally allow those practical people to bring their worlds to our systems intervention.

These ideas, we propose, form the basis of a “truly” critical systems thinking of which, in summary we note that

- (a) it promotes subjectivity;
- (b) it is explicit about preventing the approach from being expert driven;
- (c) it “reaches out” toward the systems epistemological ideal by accepting the critical idealism of Kant, Hegel, and Churchman and Marx’s critical ideas of historical materialism;
- (d) it is epistemologically tenable in both systemic and sociological terms;
- (e) it is explicitly ideologically emancipatory; and
- (f) therefore it promotes emancipation from all repressive conditions.

3. CONCLUSION

At the outset we called for a switch in emphasis from “systems science”—the use of systems ideas in traditional scientific practice—to “systems rationality”—a critical understanding of rationality. We suggested that a “truly” critical systems thinking cannot “merely” reflect against a background of a systems epistemological ideal in terms of systems rationality. The proposal we made was to integrate sociological and systems epistemologies through an epistemological ideal of critical rationality. This could be achieved only by dealing with the difficulties of social metaphysics—the totality of relevant *a priori* judgments that flow into social theories or systems designs but cannot be validated either empirically or logically—and by addressing normative assumptions that may be complicated by the possibility of “false consciousness” and “effects of material conditions.” Three rationalities were considered in the context of these issues and aspirations—positivistic, interpretivistic, and critical.

Of non-reflective positivistic approaches we considered the unappealing (in our view) idea of transferring ideas from the natural sciences to promote

objective and neutral power for social control. This was easily shown to be epistemologically untenable because there cannot be theory-neutrality or value-freedom with the notion of means-end; i.e., we must ask what *should* be done and how it *should* be done (normative assumptions flowing into these questions are emphasized by the use of “should”).

Also, since positivist approaches adopt traditional scientific rationality, then we expect similar conclusions to arise like—what is discovered is naturally and inevitably that way—which highlights the inherent conservative ideology of positivism.

Of non-reflective interpretivistic approaches we found that the empirical (surface) and structuralist (beneath the surface) approaches were replaced with ideas relating to action concepts. Actions are defined surface events, but these are made meaningful only if two non-material deeper layers are introduced. Social rules are the second layer, in terms of which actors can be said to be doing some particular thing. A third, deeper layer is of constitutive meaning that lies behind the social practice and makes the actions and rules meaningful. This does promote mutual understanding but can be shown to be epistemologically impoverished because interpretive science does not adequately deal with effects of, say, material conditions. The critical idealists distinguish themselves from subjectivist idealism (interpretivism) by accepting that “out there” are some hard factual conditions that do not exist in the mind only. The critical idealists, however, do not expect to achieve direct access to those conditions, separating themselves from interpretive inquirers by claiming to provide adequate “maps” of “our” social reality. Interpretivist epistemology is equally impoverished because the notion of freezing constitutive meaning (freezing emancipation) through nontransparent false means (i.e., false consciousness) is not explicitly dealt with.

Also, interpretivist science is implicitly conservative since the explanation of social tensions in terms of imperfect communication can lead to correction at the communicative level only through the promise of enhanced communication. We have argued that correction cannot be promoted “merely” by “clearing up” misunderstandings with the view that the natural flow of discourse and order can be reestablished. The point is that a lack of authentic understanding is always involved in situations of coercion, but mutual understanding alone cannot secure emancipation; critical reflection on the norms implied in that which is authentically understood can. Table II summarizes the findings of this paper.

In Ulrich’s view *a critical solution to the problem of practical reason* is the most urgent of all, for other kinds of inquiry have already developed methodological frameworks that work fairly well in (systems) practice: the experimental or “scientific” method works well for the purpose of securing instrumental rationality (it becomes “scientific” in a derogative sense if its

Table II. Summary of Findings Toward on Adequate Epistemology for Systems Practice

	Positivism	Interpretivism	Critique
Assumed view of the nature of social reality	Objective	Subjective	Subjective
Key actor(s) in methodological activities	Expert (elitist)	No explicit directives that prevent expert domination (potentially elitist)	All involved or affected (democratic)
The systems epistemological ideal	Ignored or neglected	It takes one of several steps that can be achieved by recognizing the subjectivity of man and the importance of the social communicative world	It “reaches out” in terms of critical idealism of Kant, Hegel, and Churchman <i>and</i> Marx’s historical materialism
Epistemological validity for social inquiry	Untenable	Impoverished	Tenable and adequate
Ideological status	Conservative	Conservative	Emancipatory
Means of dealing with power relations	Maintenance or strengthening	Accepts	Attempts to emancipate, in particular by dealing with effects of material conditions and false consciousness

limitation to instrumental action is forgotten); the humanities have their hermeneutic method for securing communicative rationality and mutual understanding; but the applied disciplines, among them systems practice, have not satisfied the quest for some kind of critically comprehensive rationality and have not established an intersubjectively reproducible way of ensuring rational practical discourse on disputed (because of conflict) norms of action.

In Flood’s view developing such an emancipatory rationality for systems practice is vital. Equally important, however, is the accompanying idea of complementarity among the three sciences, that can be developed in terms of legitimacies and limitations as set out in this conversation. The aim is to ensure that diversity is accepted as a strength, rather than fragmentation as a weakness, in systems-based “problem solving” by drawing upon approaches of various rationalities. There has been very little space available

in this testament for discussion of such pluralist issues, but we will return to this important matter in one of our following conversations.

The issues of emancipatory and pluralist ideals, above all else, are the concern of Flood (1990b), Flood and Jackson (1990a, b), Jackson (1991), Oliga (1988), and Ulrich (1983, 1988).

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¹⁴Brian Fay’s account of this debate on types of rationality is useful in that it is relatively short and easily accessible. The reader should note, however, that the book does not (and could not, according to its aims) reach the level of sophistication of Habermas’ work and does not attempt to deal with the systems debate herein. Furthermore, there is a real danger in Fay’s work of conflating radical with critical. This said, we would still recommend the book as a background read to our debate.

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