SYSTEMS PATHOLOGY: REVIEW OF CONFLICTS WITHIN HISTORICALLY UNQUESTIONED CONCEPTS

James N Rose
3466 Long Drive
Minden, NV. 89423
integrity@prodigy.net

ABSTRACT

Historically revered concepts could be the focal problems preventing developing a successful single General Theory of Systems. Certain previously accepted ideas need to be re-analyzed for possible logical incompleteness, for harboring errors based on limited information, or containing logically or relationally based conflicting principles. Conflicting math axioms and hypotheses, conflicted philosophical premises, dysfunctional interpretations of historically accepted models of what was observed and devised using ancient limited knowledge – require re-analysis, reconsideration and correction, based on expanded logic and coordination, in consideration of later knowledge improvements and scientific developments.

The author discusses problematic logic conflicts he identifies in - and between - the systems relations models of Plato, Descartes, Gödel, Mandelbrot, and Prigogine. He also describes previously unconsidered relations that exist in certain conventional statistics models that are based on too-narrowly defined real physical systems (including previously omitted important constraint conditions), putting into question the mathematics, which math any viable General Theory of Systems must include to be considered valid.

The thesis of this analysis is an extension of the Biological Systems Pathology SIG premise that imperfect mechanisms and irregular systems relations also have to be considered, in expansion from modeling only "healthy functioning" (organic) systems. Logic irregularities and concept deductions based on incomplete information sets are also issues that need to be addressed when composing/achieving a General Theory of Systems, and need to be explicitly considered.

Key words: Integrity Paradigm, information transforms, open systems, closed systems, incomplete data bases, theory consistencies and coherence.

Historical supporting citations – remarks by scientists – General Systems & other fields.

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von Bertalanffy and Rapoport (Editors), "General Systems", Yearbook V, 1960.

Preface:
The editorial policy (for papers chosen for inclusion in the yearbook is based on) the criteria of .. "boldness of imagination and originality." (p.xvii)

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Ludwig von Bertalanffy: "*General System Theory*", Brazillier, 1968. (*JRose **highlighting***)

"It seems legitimate to ask for **a theory**, not of systems of a more or less special kind, but of **universal principles** applying to (*all*) systems in general."

and:

"General System Theory, therefore, is a general science of 'wholeness'.
(1) There is a general tendency towards integration in the various sciences, natural and social.
(2) Such integration seems to be centered in **a** general theory of systems.
(3) Such theory may be an important means of aiming at exact theory in the nonphysical fields of science.
(4) Developing **unifying principles** running 'vertically' through the universe of the individual sciences, this theory
brings us **nearer to the goal of the unity of science**.
(5) This can lead to a much-needed integration in scientific education."

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J. Robert Oppenheimer: "The Open Mind", Simon & Schuster, 1955.

"… fields can open themselves to all reasonable men willing to take the time to inquire."

"… when I talk of science as a great and beautiful word. There *is* a unity to it;"

"I know it is a very happy occasion at the Institute when some piece of work turns up which is of interest to both the mathematicians and the physicists. It is a very rare occasion and we tend to ring bells when a small bit of cement can be found between their interests."

"… I must say I never stop being impressed, by the great sweep of *general order* in which particulars are recognized and united."

"…places where things that appeared to be separate, and each having its own order, appear as illustrations of more general order. … science is a search for regularity and order in those domains of experience which have proven accessible to it."

"…many particulars can be understood and subsumed by a general order."

"Far more subtle recognition of the nature of man's knowledge and of his relations to the universe is certainly long overdue, if we are to do justice to the wisdom of our tradition has in it and to the brilliant and ever-changing flower of discovery which is modern science."

"… the very process of discovery will shatter the concepts that we today use to describe our puzzlement."

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"It is from this vast high-altitude survey that one sees the general surprising quantitative features."

"This cannot be an easy life. We shall have a rugged time of it to keep our minds open and to keep them deep."

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Bela Banathy Sr., "*Designing Social Systems in a Changing World*", Plenum, 1996.

"… ongoing relationships, interactions, information, and energy between a system and its environment."

"Critical awareness closely examines the values and assumptions that enter into systems inquiry"

"Dear Jamie, we are for now on traveling together in the service of humanity."
(personalized book inscription to JNRose.)

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James Grier Miller, "*Living Systems*", McGraw-Hill, 1978, p5.

"**The potential contributions of a general theory.**

In 1949 when our work in systems science began, an integrative theory of living systems seemed desirable, but barely possible. The outlook is better today. The potential of such general theory is more generally recognized.

Many scientists have expressed the need for a commonly accepted language, systematic theories, and basic laws to organize the huge volume of research findings and bridge the gaps of our knowledge about living systems. George Miller's description of scientific journals as ". . . catalogs of spare parts for a machine they never build" is an eloquent statement of need for an integrative theory. Royce defines the place of theory in psychology:

'The big contribution which theory makes is that it brings order out of chaos; it provides meaning where it had previously not existed. Note, however, that this orderliness cannot be provided unless the previously unrelated mass of facts has first been funneled through the cortex of some thinking scientists. . . . Empiricism without conscious attempts at conceptualizing and showing logical relationships simply does not lead us automatically to theoretical unification. The history of science is replete with instances of all the facts being in, but because of the lack of an interested and insightful theorist, the development of the unifying concept, law, or theory was retarded. Facts remain isolated until some synthesizing mind brings them together.' "

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Systems Pathology: Review of Conflicts within Historically Unquestioned Concepts

Churchman & Anaxagoras

"In everything is everything"

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D Bohm & B.J.Hiley, "*The Undivided Universe*", Routledge, 1993.

".. better to keep all options open and to consider the meaning of each of the interpretations on its own merits, as well as comparison to others."

"the key new feature here is that of the *undivided univers*e of the measuring instrument and the observed object"

"(we), and Stapp, and Mann & Hartle .. deal with the whole question .. introducing mathematical concepts that enable them to describe actual histories of processes taking place in the cosmos, from the beginning of the universe to the end."

"In this way we come to a deep unity between quantum theory and geometry"

"What we have done here opens up the possibility of an overall approach that encompasses all aspects of objective nature and of our subjective experience." ".. which we call the implicate order." "implicate means *enfolded*"

"There is no need, therefore, to regard the observer as basically separate from what he sees .. indeed the notion of separateness is an abstraction .. valid for only certain limited purposes."

"Underlying all this is unbroken wholeness *even though* our civilization has developed in such a way as to strongly emphasize the separation into parts."

"In principle, all structures have to be understood as forms in a generalized field"

"We need a new notion of order that will encompass these different kinds of unbroken wholeness"

"It is clear from all this that one can have an indefinitely extending hierarchies of similar differences and different similarities of these differences"

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Robert Rosen, "*Anticipatory Systems*".

"generalizations are among the deepest and most interesting areas of contemporary mathematics"

"*the same observable* [modeling relation] can be manifested by many distinct natural systems."

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