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My Systems Thinking Before and After a Year of Social Systems Sciences

Steven F. Freeman, PhD
Thomas Jefferson University

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MY SYSTEMS THINKING BEFORE AND AFTER

A YEAR OF SOCIAL SYSTEMS SCIENCES

It is heartening to me to see such internalization of your reading.
This is what "absorbing" means. Your evolution is very much
like the one I went through – so I can easily identify with it.
Come around and talk.

Steve Freeman   *A*

October 6, 1986

Essay for Methodology, SOSYS 650

Professor Russell L. Ackoff

MY SELECTION OF BOOKS

Fred E. Emery & E L Trist. <u>Towards</u> <u>a</u> <u>Social</u> <u>Ecology</u>, Plenum
Press, New York, 1973: Due to many references both personal
and in print made to Eric Trist, and, to a lesser degree,
Fred Emery, I wanted to familiarize myself with their work.

Russell L. Ackoff & Fred E. Emery. <u>On</u> <u>Purposeful</u> <u>Systems</u>,
Intersystems, Seaside CA, 1972: I had wanted to read it
since having sat in on several sessions of your course in
behavioral variables last spring.

Russell L. Ackoff. <u>Creating</u> <u>the</u> <u>Corporate</u> <u>Future</u>, J. Wiley &
Sons, New York, 1983: Assigned for the course. I went ahead
to read the whole thing in order to get started on our
interactive design project, and also to do my own personal
idealized design.

These three books helped make me aware of my systems
consciousness before and after formal systems study. Systems
thinking had apparently been diffused throughout my thoughts,
education, and experience prior to arriving in the Social
Systems Science department last year, but these thoughts were
vaguely formulated or unformulated. Social systems study has
already helped to clarify and work through some of my concerns
and seems to offer great possibilities for the future. <u>Towards</u>

a Social Ecology seems quite along the lines of things I had already seen in other places or thought about: a recognition of problems in traditional ways of thinking and direction towards a new way, more wholistic and interrelated. Important thoughts, but incomplete in themselves. In contrast, the ideas in both Creating the Corporate Future and On Purposeful Systems could hardly have been more new to me than if a Martian had delivered them. In different ways they bring to maturity these thoughts informally generated and haphazardly grown.

INFORMAL SYSTEMS AWARENESS

Before my acquaintance with Social Systems Sciences, I had never been aware of systems in an academic context outside of computers, but systemic thinking nevertheless infused my thoughts and studies. I imagine that most of my contemporaries grew up with an awareness of environmental concerns, some understanding of ecology and the value of planning, and at least jargon about interrelatedness or "the big picture."

Towards a Social Ecology, while perhaps striking when it was written, presently seems to add little to this informal understanding — at least upon first reading. In part it is because the book is not particularly concrete or inspiring (rereading it after Creating the Corporate Future and On Purposeful Systems, I see many valuable ideas I missed the

first time through); but more importantly, I believe this sort of vague comprehension of the need for systems thinking now permeates modern understanding. Perhaps this is a dramatic change in the course of the past generation.

Study of ecological relationships and the environment were an important part of my early education. I remember quite clearly the emphasis in Junior High biology on the food web, and the deleterious effects of DDT, mercury and other poisons throughout the food chain.

This type of study emphasizes the interrelatedness of parts and actions, and also brings attentions to questions of science and planning. As Trist points out, people generally have neutral or even negative feelings toward science. Learning about the effects of modern weapons, nuclear power, PCBs, DDT, processed foods, etc.... gives one a very different opinion of science than learning about polio vaccines. The role and focus of science has already been reevaluated —— at least by the younger generation.

Problems resulting from lack of planning dominated my early political experience. Although growing up on Long Island is not as amusing as your story about the Mexican, the American, the Russian and the genie; it makes the point about

planning as forcefully. A beautiful island, overflowing with natural bounty and advantages, is now a polluted, overcrowded, urban sprawl.

There are many popular books which address these issues. Three which particularly stand out in my mind: <u>Exploring</u> <u>New</u> <u>Ethics</u> <u>for</u> <u>Survival</u> by Garrett Hardin, which I suppose is, in Ackovian terms, a reference scenario -- very funny in parts, and raising interesting paradoxes about growth, survival, and genius; E. F. Schumacher's <u>Small</u> <u>is</u> <u>Beautiful</u>, for its down-to-earth logic, and timely challenge to a cultural preoccupation with growth; and a succinct pamphlet by modern Iroquois Indians, <u>A</u> <u>Basic</u> <u>Call</u> <u>to</u> <u>Consciousness</u>, a mystical and persuasive challenge to narrowly—focused American values and policy.

These books are all systemic in thought about societal questions, applicable and important for governments and big institutions -- something I could hope for, or lobby for, but yet essentially beyond my control, and for which I, and perhaps all of us, are dependent on the actions of others.

THE NEW CONTRIBUTION: MISSING PIECES OF THE PUZZLE

For me, <u>Creating</u> <u>the</u> <u>Corporate</u> <u>Future</u>, is altogether new, an unsuspected missing piece of the puzzle. It makes "systems"

meaningful to me and my associations. Like the U.S. and other "big" systems, I have my own mission, and parts which need to be recognized, and an environment with which 1 wish harmony. I have my family, and network of friends, and my workgroups which I hope to help thrive. All these groups, as much as any institution, have ends for which to strive and need means to get there, a structure to promote the association, and an understanding of the environment to be reckoned with.

On Purposeful Systems, likewise, is unlike anything I have ever seen. It takes on a very different subject matter, and systematically sets out to formulate social and behavioral concepts as precisely as physical concepts have been formulated. It is a system about systems — striking in the precision with which it treats social and psychological concepts and in the way it interconnects these terms.

DIFFERENT DIMENSIONS OF SYSTEMS

Although "system" is precisely defined in On Purposeful Systems, Social Systems Thinking seems to have many dimensions. These include:

(l) A link between the sciences, and links in general. Almost a science of relationships.

(2) The commonalities and differences of all systems, from
    inanimate to social leviathans.

(3) A way to look at any "set of interrelated elements" i.e.
    a functional part of a larger system and composed of
    functional parts.

(4) A guide to action. Methodology for directed, purposeful
    living.

   Between them, On Purposeful Systems and Creating the
Corporate Future explore all four of these dimensions.

THE RELATIONSHIP OF SYSTEMS TO SCIENCE AND PHILOSOPHY

   Before social systems study, my general opinion of the
value of scientists ranged between worthless and negative. This
was so troubling that I left my job designing electrical
circuits to spend some time studying philosophy. (The result of
which was a general devaluation of philosophers to the same
plane as the scientist.) Basically, the value of work of the
typical academic is so compartmentalized as to make it
unintelligible to all but a few comrades from the same
subspecialty. The knowledge of the universities makes me think
of those great big mounds of corn throughout the Midwest,
stuffed in every conceivable storehouse, and purchased by the

government for no other reason than to keep the farmer employed.

I suppose now that it is hopelessly reactionary to oppose science and technology. Both may serve as well as trouble; and, regardless, both are here to stay. In an enlightening section of Towards a Social Ecology, Trist introduces the idea of problem—oriented research domains as a means to more effectively utilize science. In On Purposeful Systems, I was particularly impressed that you began the book by addressing the problem of compartmentalization and offered means for making sense of these vast storehouses of science.

On philosophy, I'm particularly impressed by the concept of the ideal. A preoccupation with problem solving had always offended my sensibilities. I remember as a boy waking up with a terrible nightmare -- that by the time I was grown up, all the problems of the world would be solved and there would be nothing left for me to do. Imagine the simpleminded could have their way in making a life without struggle or exigency! This recognition on the part of all three authors of the basic need in people for challenge and meaningful work strongly enhances their credibility.

SYSTEMS THOUGHT AND (IN)ACTION

A problem I had faced with my informal systems thinking is that I found it almost paralyzing. One could wonder about the ultimate point of anything. It seemed that any problem solving just created a bigger one. For example, I recall my own dispiritedness in local politics on Long Island. When the Long Island Railroad announced it was embarking on improvements, all the local politicians got involved to try to make sure that stations in their communities would be among those receiving improved service. For them, the only problem was costs, but I was troubled about the consequences, notably encouragement for yet another increase in population. But when I discussed this with several officials, there were two response "You think too much," or "You worry too much."

Basically I agreed. It seemed as though if I were successful in protecting the environment or limiting the population, this would also have consequences such as choking off opportunity and limiting freedom.

Popular pseudo-systemic works are preachy and limiting: Thou shalt not exploit the environment; thou shalt not exploit thine fellow man; thou shalt be aware of the consequences of thine actions. Take it all too seriously and thou shalt not do anything. To a large degree, Trist and Emery do the same.

The problem with attempting too big a view of things is that it is not our view; it is more than we can handle. Friedrich Nietzsche noted that,

> from an infinite horizon [man] returns to himself, to the smallest egoistic enclosure, and there he must grow withered and dry.[1]

I think that present day conservatism may be a product of this paralyzing tendency of pseudo—systems thinking. We are reluctant to tamper with something whose entirety we don't understand. And since we obviously don't understand anything in entirety, social mores go largely unchallenged. Perhaps men have, *en masse*, retreated like radical—turned—stockbroker Jerry Rubin, from an infinite horizon to the smallest egoistic enclosure.

Perhaps the most attractive quality of Creating the Corporate Future is that provides inspiration rather than discouragement. Not what we mustn't do, but what we can do! It's a method to make dreams come true, applicable to small groups, even to one person (especially us schizos with many different parts to satisfy) as well as corporations and nations.

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[1] Friedrich Nietzsche, Untimely Meditations (Cambridge U. Press) p. 115

SYSTEMS AND ME AND EXPANSIONISM

I have kept in mind while reading these books, the question you asked in your first lecture: If Reductionism ultimately fails because we never can find an ultimately irreducible part, of what value is Expansionism, when there is always a greater system which encompasses the system at which we are looking?

I'm sure that the work of Trist and Emery was and is still important. They set down many thoughts about how we as a world and a nation may alter our course, but it is not of immediate direct import to me. This is because of my own present place in the world. The principal interest of Emery and Trist and most pseudo—system authors is that of healthy national institutions or a healthy nation and world —— not my present principal interest. I am, for the most part, insignificant in the context of the nation. I am significant but to myself and my family, my network of friends, my workgroups and workplace, and perhaps S— cubed. I can presently effect these as systems; but no one has yet deigned to give me responsibility for anything greater -- despite my belief that I have valuable contributions to make. Perhaps if I successfully concern myself with what I can have an effect upon, I may be able to assume responsibility for a larger system.

The problem of expansionism is the problem of the ideal.
Of course no one can ever understand the totality of all the
Universe; it is an unachievable ideal for which men will
forever be able to strive. We may understand whatever system is
relevant for us by looking at it functionally within a larger
system. How far a man can see into the consequences of actions,
into the totality of relationships, and into the future is a
measure of wisdom and perhaps his greatness much as a chess
player's ability to see relationships, possibilities,
consequences, is a measure of his greatness.

It surprises me a bit that, until coming to this
department, I never realized the existence of analogous
relationships between parts, system, and environment exist no
matter what system we consider. I doubt that this awareness has
permeated general thinking. Perhaps it is only partly
ignorance. As you discussed in your section on constrained and
unconstrained design, people would frequently rather blame some
outside force than actively take responsibility for their own
future. For some reason, perhaps flight or just laziness, we
assume all kinds of constraints on our individual power until
we explicitly state and explore those assumptions.

SYSTEMS AND WISDOM

All this reminds me of a prayer one occasionally sees hanging in kitchens or bathrooms: "God grant me the Courage to change the things I can, the Patience to accept the things I cannot, and the Wisdom to know the difference." I've always thought that these were very decent requests to make of God. Remarkably, these books seem to provide a methodology for obtaining this wisdom.

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