

## In this Issue: Authors and Articles

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### Mueller's "Leading-edge-leadership"

Robert Kirk Mueller's essay "Leading-edge-leadership" offers a fascinating glimpse into the thinking that goes on at the top of the world's most successful general management consulting firm. Mr. Mueller is Chairman of the Board of Directors of Arthur D. Little, Inc., which in a recent *Business Week* survey ranked first among consulting firms with billings of \$ 121 000 000 in 1978.

Despite our avowed intention at HSM to be 'descriptive' rather than 'normative', our reviewers gave Mr. Mueller's essay a critical going-over based on the accepted canons of academic excellence. His elliptic references and elusive style clearly offended the 'rigorous' paradigm of the professoriat.

An approach that is descriptive rather than normative is an approach in which one studies things as they are rather than as (one thinks) they ought to be. Stated more directly, one does not argue with success. Arthur D. Little's clients, which include the bluest of the blue chips, *pay handsomely* for what ADL has to say. Mr. Mueller told me that even ADL has a hard time getting clients to pay for studies that are "perceptive, intuitive, simultaneous, and qualitative", let alone those that are "teleological-ideological, instinctive, spiritual, and charismatic" – but they do.

Mr. Mueller's essay should be considered a clue to the comprehension of the *business phenomenon* of ADL's success. As such, the essay must be read, analyzed, and understood in its own context, not spirited off to an academic isolation booth and condemned according to the priestly dicta of rigor.

Turning to the essay itself, Mr. Mueller evokes memories of Plato's philosopher-king as he gives an impressionistic overview of a new *type* of leadership. It is hardly surprising that both the type and its description are alien to the majority of both theorists and practitioners who, by definition, are drawn from the lower and middle echelons on their respective organizations. Top management evidently marches to a different drum. Leaders are the creators of values,

not their slaves. They decide not *how* to optimize, but *what* is to be optimized.

My own questions about this essay are not concerned with any lack of rigor but rather with an omission of any discussion of the human side of the top manager himself. Who exactly is the 'leader'? Where did he come from, how did he get his power, how does he hold on to it?. What's in it for him: what are his goals, aims, and rewards? We are left with the feeling that this leader is an all-powerfull altruistic outsider who reminds me of the protagonist of a recent science fiction movie "The Man Who Fell to Earth".

Nevertheless, this essay is stimulating precisely because of its omissions and gaps. It is a tantalizing portrait of the leader of the future. One can reject the entire thing as corporate window-dressing and insist that underneath it all, the top manager is still the profit maximizer of yore, but possibly this attitude puts one in the position of those who refused to look through Galileo's telescope.

### Lederberg's "The new literary"

The marriage of electronic telecommunications and computer technology has the potential to revolutionize the 'knowledge industries' – those sectors of the economy primarily engaged in gathering, processing, analyzing and disseminating information. Despite the existence of proven technology, implementation of this revolution may be delayed or postponed indefinitely because *humans* who interface with the technology refuse to cooperate for reasons which had been overlooked by the designers of the systems. For example, the spread of electronic funds transfer (EFT) has been frustrated by depositors' desire for legal proof of payment; cancelled checks serve as signed receipts and are retained for 6 to 7 years by the typical depositor.

Joshua Lederberg, distinguished geneticist, Nobel laureate, and now president of Rockefeller University, is an enthusiastic proponent of what he calls *eugraphy*, a new computer-based technology that facilitates communication among research workers in a given field and also provides an alternative to the conventional printed journal as an archival repository

of knowledge. In his article "Digital communication and the conduct of science: The new literacy", Lederberg defines eugraphy as the "economical integration of user, file, processor, and . . . communication link", Eugraphy combines the technologies of word processes, electronic mail, and computer data base management.

Such a system could inspire a "return to literacy" by replacing the proliferating journal articles that today provide the only 'authentic record' of scientific work. Nevertheless, as Lederberg concedes, the abandonment of the conventional journal is unlikely and the reasons are to be found not in technology, but in the sociology and politics of science. For example, acceptance of an article by a recognized journal provides peer recognition and helps to establish rank in the scientific community.

In practically every area where computer-based technology promises (or threatens) to revolutionize the way people work, there are similar 'extraneous: objections to the proposed innovation that effectively prevent its implementation.

### **Larson's "The changing urban patterns of a global society"**

"The changing urban patterns of a global society" by C. Theodore Larson, professor emeritus at The University of Michigan, focusses on two main themes:

(1) "Architects and urban planners in every country appear frustrated and uncertain as to their roles in community efforts to improve the built environment", and

(2) "All communities are rapidly being linked together by the still-evolving networks of transportation and electronic communications".

Larson implies that the second theme may represent a solution to the first theme.

Presumably, the architects of the urban design masterpieces of the past did not experience the frustration and uncertainties of their modern counterparts. Larson discusses some of these masterpieces he visited in Italy. Their esthetic unity derived from a corresponding political unity existing when and where they were built: autocratic city-states that could and did confer unlimited authority on a single master builder. The modern architect, as Larson explains, is but one of many specialists involved in a major urban project – each specialist with his own goals and each answerable to a different interest

group. Limited authority operating under onerous constraints produces compromise solutions and piecemeal development.

The solution to the problem of sub-optimal urban development will be found in improved human systems management. Implementation of any solution will require both the economic means and the political will to do so; these requirements are best satisfied today in the oil-rich countries of the Middle East. In response to the requirements of the endowed developing countries for integrated urban development, the developed countries have created new forms or organization to fulfill them. These new organizations are international corporations that "combine skills and knowledge of many specialists and offer a more fully integrated development service".

The integrated approach which has worked on a national level can be adapted to local and regional needs. Larson describes an experimental program developed by The American Institute of Architects to field regional and urban development assistance teams (R/URDAT). A team visits a community, confers with local people, and proposes alternative solutions to locally-perceived urban problems – all in the course of a long weekend.

Larson believes that "something of this sort should be going on in every community all over the world, continuously and not just spasmodically". Were this to occur, the needs of thousands of local development groups to communicate, share information, and maintain a common data base could best be met through eugraphy, as described in Lederberg's article.

### **Magee's "Management: an evolving technology"**

The article entitled "Management' an evolving technology" by John F. Magee, president of Arthur D. Little, Inc., complements the article on leadership by that firm's chairman of the board. Agreeing with Mueller that management is fundamentally an intuitive art, Magee questions the value of attempts to formalize this knowledge as a 'science'. Such attempts will succeed only on a 'lower', tactical level; top-level management (leadership) is never merely 'intellectual problem-solving'.

According to Magee, the fundamental characteristic that identifies a managerial situation is its "inherent ambiguity, as fundamental to management as death is to the doctor". In real-life managerial

problems, the information available is always incomplete and hence the solution cannot be known in advance. Solutions to managerial problems “emerge in the course of events”.

Magee speaks from experience. In the 1950's he was involved in the early development of operations research as a managerial tool. He found himself accused of trying “to invent a profession by clothing some simple tenets of common sense in a garment of heavy jargon”. Since all professions except the oldest were invented, there is nothing nefarious about attempting to invent another. However, Magee was not being a careerist; he was engaged in an attempt to ‘discover’ rather than ‘invent’ the managerial science. In the end, he concluded that the methods of experimental science have only limited application to managerial problems: “How far the managerial sciences will go toward making a science of management is . . . very much open to question”.

If management is an art rather than a science, the management scientist finds his domain sadly shrunk from the splendid kingdom he originally staked out. Far from being the master strategist he had hoped to be, his role is merely that of a provider of ancillary services. A great part of the academic work to date in the management sciences has concerned providing *general* solutions for certain *classes* of managerial problems. If Magee is correct, this academic approach, while methodologically elegant, works only for comparatively minor and routine problems. If a management scientist wishes to work on leading-edge problems, participate in major policy-making, and contribute to fundamental strategies, he must redefine his basic stance. If management is an art, the important academic contributions will be made by art historians and art critics, not by professors of esthetics.

### **Brix's “Systems and cybernetics”**

The title of V.H. Brix's paper, “Systems and cybernetics: a methodology for human systems management”, might sound like yet another tired attempt to apply the concept of cybernetic feedback and other mechanistic artifacts to the problems of management. But the reader should not be put off by the title!

Actually, it would be beneficial for most readers to read its Section 3, “Application of methodology”, first. Brix's examples are drawn from employment

bureaucracies and counter-bureaucracies, individual and institutional resistance to change, free information exchange as an expression of balanced power positions, etc. They are not only illuminating the preceding text but they motivate the reader to pull back to it as well.

C.V. Brix, a retired British Civil Service consultant, has been deeply influenced by the Soviet emphasis on cybernetics as a science of communication and control. Russian and East European preoccupation with the areas of ‘social cybernetics’, ‘cybernetic economics’ or ‘economic cybernetics’ is based on some twenty-five year old tradition of vigorous research and still enjoys almost a full support of economic, political and military institutions.

In Brix's article the reader receives an introduction into a western version of ‘sociocybernetics’. (Another, modern view of economic cybernetics is represented by Negoitã's paper in this HSM issue).

The first half of Brix's paper essentially compares the philosophies of Hobbes and Locke of the 17th century fame. But then an interesting attempt is made toward the reconciliation of the predatory egotism of the Hobbes' man with the egalitarian and cooperative man of Locke.

The link between the two, as observed by Brix, seems to be the propensity of human beings to reduce their dependence on others — thus producing a relative ‘balance of power’ or ‘relations of nondominance’, i.e. the conditions eminently conducive to cooperation. Enhancing human self-reliance, independence and individualism might be a prerequisite for true cooperation, information sharing and ‘freedom’.

Brix does not shy away from strong statements: “the concept of rational, economic man is pure nonsense”, or “freedom is balanced interdependence”, or “our brains are single-channeled processors of limited capacity” and “our environment is of unlimited complexity”.

The reader might, for example, ask: “Could it be that our environment is essentially simple and limited, but it is being perceived as complex as a reflection of almost unlimited complexity and potential of our brains?”

### **Loebl's “What is humanomics?”**

For most economists, theorists and practitioners alike, serious work in economics is necessarily predicated on a specific mathematical model of the system

under study. They accept without question that the analysis will rest on certain axioms; that conclusions will proceed from mathematical proofs or empirical induction; and that the final results will take the form of 'economic laws' that resemble the laws of the physical sciences.

Eugen Loeb, in his "What is humanomics?" has taken the radical step of challenging this fundamental methodology, the 'paradigm' that underlies nearly all academically acceptable work being done not only in economics, but in all social and managerial sciences. For Loeb, the approach, concepts, and very terminology of conventional economics, whether Keynesian, Marxist, or any of their neo-varieties, are 'slavish imitations' of the physical sciences, particularly Newtonian physics. Loeb insists that the abstractions of this hand-me-down approach are inadequate because they deliberately ignore the most basic fact about human societies: that these societies are composed of thinking, feeling human beings whose natures are intellectual and spiritual, as well as 'economic' in the crude sense of always wanting 'more'.

It is almost fair to say that for Loeb, 'thinking' in the broadest sense supplants the role of labor in the Marxist scheme. At a minimum, we are reminded that labor includes mental as well as physical labor. Loeb also recognizes the integration of previously independent sectors of the economy into an organic unity. However, the idea of society as an organism dates back at least as far as Thomas Hobbes' *Leviathan*. Similarly, Loeb's belief that the power of man's mind can solve any human problem was expressed in the eighteenth century by Condorcet in his essay "On the infinite perfectability of man".

In short, many of Loeb's ideas are well anchored in intellectual tradition and there are many of his statements with which no 'conventional' economist would quarrel. Where then lies the essential difference between humanomics and conventional economics?

At the heart of Loeb's critique of conventional economics is his positive repugnance toward the very idea of an economic law. He is repelled by determinism and universal laws where human behavior is concerned. For him, such 'laws' are self-imposed limitations on human creativity that serve only to prevent us from finding truly innovative solutions to our social and economic problems. Instead of encouraging work to *transcend* a problem such as the 'necessary' trade-off between pairs of objectives, a 'law' locks us into accepting such trade-offs as inescapable. Once such a law becomes enshrined in science, attempts to

achieve both objectives simultaneously would be unthinkable — simply ruled out from serious consideration.

Loeb is probably correct in viewing economic laws and human creativity as antagonistic. But it is not necessary that the final synthesis of a new economics exclude laws entirely. Economic laws *do* probably operate. But their consequences for human beings are generally destructive; economics has since its birth been called the 'dismal science'. Hence it is 'only human' to devise strategies to evade the operation of such laws.

For example, one of the oldest of economic laws is Ricardo's "Iron law of wages" that predicts wages necessarily sink to a subsistence level. Human attempts to escape this 'law' include forming professional groups, trade associations, and unions whose licensing, fair trade, and seniority rules blunt if not nullify the operation of Ricardo's law in most real life situations. Human attempts to subvert economic laws are as important as the laws themselves.

It is likely that, when Loeb attacks conventional economists' preoccupation with 'laws', he is really attacking the fatalism that has overtaken the profession, the acceptance of the built-in flaws of our or any other working economic system as fundamentally incurable. This fatalism is actually a profound discouragement produced by the recurrent pattern of economists' confidence in some set of ideas followed by utter failure, or at best partial success, in patting these ideas into practice. If economists wish to retreat from active policy making to being mere observers, it is perhaps to avoid further discouragement, discredit, and under totalitarian systems, personal danger.

To Loeb, this retreat is unacceptable. He insists the economics cannot merely be content to describe the past and predict the future. Economics must help to *create* the future. To this end, economists must seek to understand the past in terms of the human factors that make every situation unique. The past must be perceived as a 'historical category'; not as a time series in a regression analysis.

In reading Loeb's essay, one is swept along into agreement, much as if listening to a rousing political speech. But on second reading, it seems that his attack on 'laws' *per se* may represent 'overkill'. Stripped of its mathematical form, an economic law is simply an attempt to generalize about a certain class of phenomena. Every generalization is a simplification in which something is lost. The art of a science is to simplify without losing the essence of the

phenomena under study. In the physical sciences, laws expressed as mathematical laws have demonstrated an extraordinary, almost miraculous, ability to capture valid general truths about nature. In economics, a way to generalize without losing essence has not been found.

The lack of its own authentic methodology is therefore the central problem of economics. Certainly Loebel is correct in saying that slavish imitation of the physical sciences is no solution to the problem. But neither is there anything productive in a fixed hostility towards every concept that seems related to the physical sciences. In seeking a more human form of economics, we can neither uncritically accept nor categorically reject the results of the physical sciences. Fascinating analogies exist between the two branches of Knowledge: some analogies are only superficial; others while lacking fundamental validity may nevertheless inspire fruitful new lines of inquiry; a few analogies may capture a deep parallelism whereby an old idea may be converted to useful service in a new field. The inventory of concepts, structures, and models accumulated in the physical sciences is enormously rich. To successfully tap this intellectual storehouse will require flexibility, selectivity, and a sense of the appropriate.

T.S. Eliot said “The bad poet borrows; the good poet steals”. If those economists who ‘borrow’ from the physical sciences heed Eliot’s words, the deficiencies in their theories that Loebel has highlighted so well will disappear.

### Negoitǎ’s “Pullback versus feedback”

It is precisely the role of human perception, human values and valuations, that lead to *human* management of systems, as opposed to cybernetic *control* of human systems in the absence of such considerations.

C.V. Negoitǎ’s article, “Pullback versus feedback”,

is written by a Professor of Economic Cybernetics, a field of study so typical for Eastern Europe, as we discussed it above in connection with the paper by Brix.

Negoitǎ’s language is quite technical, non-redundant and full of abstractions. Even the style of writing is typical for the economic cyberneticians of Eastern Europe.

So, what is Negoitǎ’s chief message?

Management of human systems is based on evaluation processes carried out by humans. Such evaluations of actions, individuals, projects, plans, investment opportunities, etc., are often *multiple and conflicting*. As a result, there is a lot of undecidability, ambiguity and fuzziness within management tasks. Humans have a natural tendency to *aggregate* such partial and conflicting evaluations, *to reduce their variety*, in order to achieve a less conflict-laden view and thus achieve some temporary structural stability. Negoita calls this process of aggregation ‘*pulling back*’.

The article thus goes beyond characterizing goal-directed behavior as simply “a purpose controlled by feedback (informational)”. The human component is missing from such a mechanistic notion. Conflicting evaluations reflect the nature of human minds, not the nature of things. The feedback control law is simply not adequate for describing *human* systems management. Human being cannot be ‘cleared’ and ‘reset’ as a punched-card machine or a computer.

There is also an attempt for a definition: human systems management is equivalent to getting things done through people. Some might call it command and control as well.

Negoitǎ sees the progress in human systems management to be *obviously* dependent on three latest theoretical breakthroughs: *autopoiesis*, *multiple criteria*, and theory of *fuzzy systems*.

What do these three technical labels mean? What are the main ideas behind them? The HSM readers would like to know.