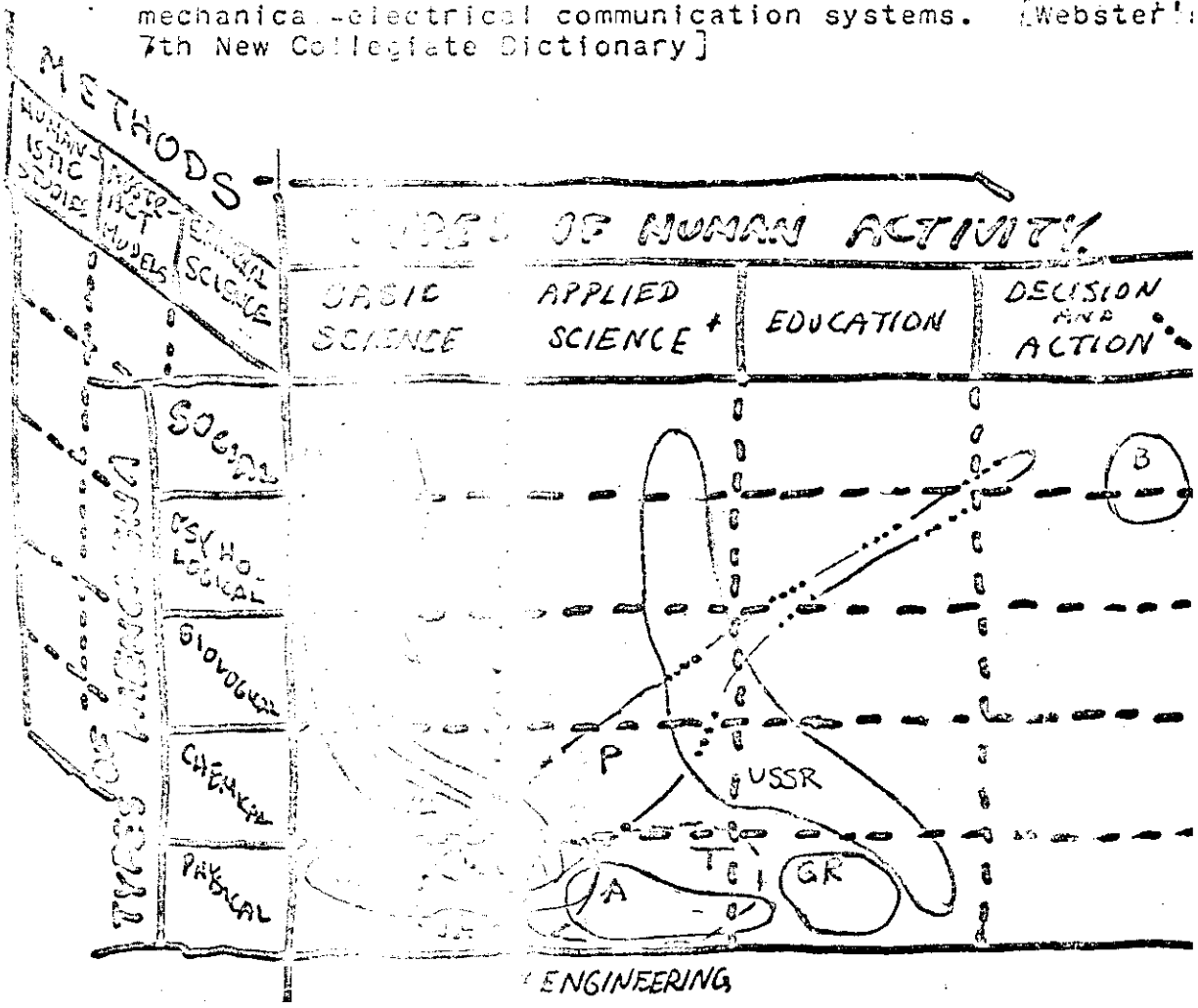
A SHORT BIBLIOGRAPHY OF CYBERNETICS, INFORMATION THEORY, AND GENERAL SYSTEMS THEORY.

The major books in each of these fields are represented by the approximate areas of coverage on the 'types of human activity' vs. 'types of phenomena' chart. The third coordinate, 'methods' is suggested for future use in developing a finer structure to the graphical plotting of extent of coverage.

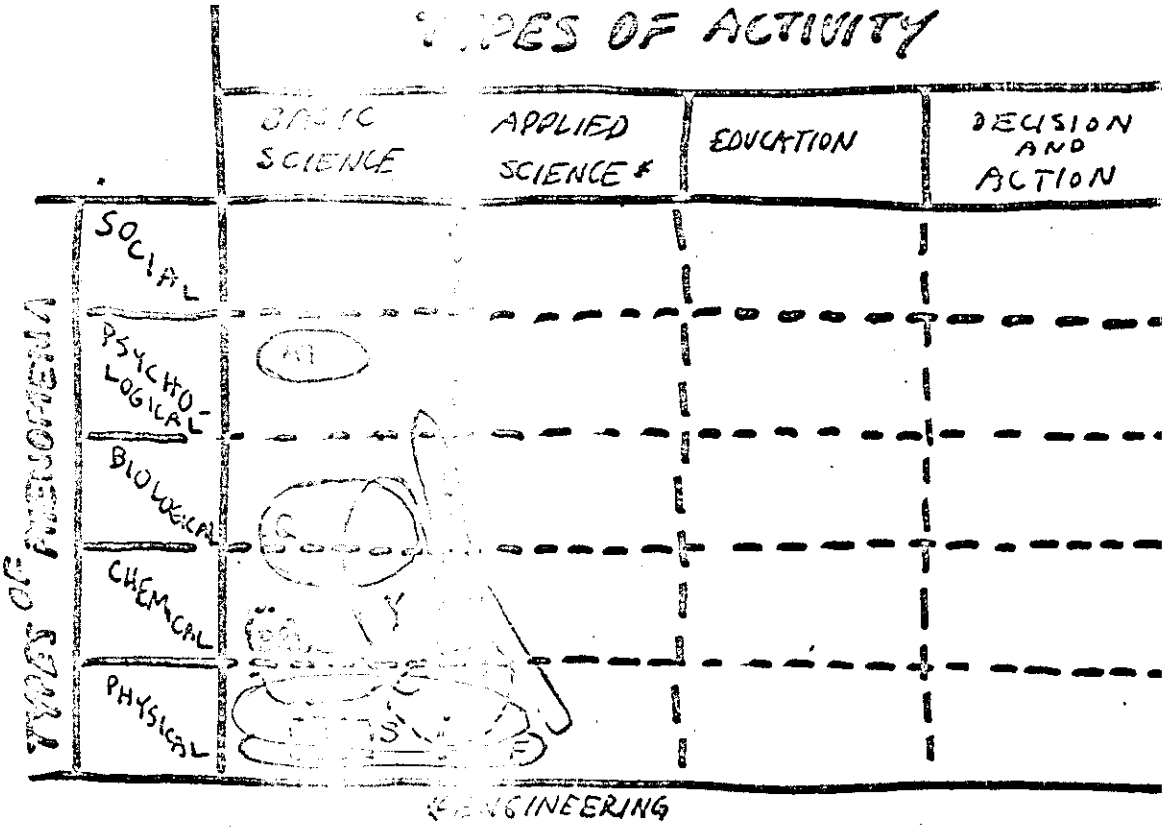
CYBERNETICS: Comparative study of the automatic control system formed by the nervous system and brain and by mechanical-electrical communication systems. [Webster's 7th New Collegiate Dictionary]



P = Pask, An Approach to Cybernetics, (1961)
A = Ashby, An Introduction to Cybernetics, (1956)
B = Beer, Cybernetics and Management,
J = Stanley-Jones, Kybernetics of Natural Systems, (1960)
W1 = Wiener, Cybernetics, (1948)
W2 = Wiener, The Human Use of Human Beings, (1956)
M = Transactions of the Macy Conferences on Cybernetics, (1949-1953)
GR = Greniewski, Cybernetics Without Mathematics, (Warsaw, 1960)
T = Tsien, Engineering Cybernetics, (1954)
RL = M.I.T. Radiation Laboratory Series, Theory of Servomechanisms, (19
USSR=Conf. Proc. "Philosophical Problems of Cybernetics," (Moscow, 1961

See also: Cybernetica, Problems of Cybernetics [ПРОБЛЕМЫ КИБЕРНТИКИ] I.E.E.E. Trans. on Automatic Control, U.S.Sup't. Documents Monthly Catalog (trans. of Cybernetics articles)

INFORMATION THEORY: A [illegible] deals statistically with the efficiency of processes of communication between men and machines (as in tele-communication or in computing machines). [Webster's 7th New Collegia Dictionary].



S = Shannon, Mathematical Theory of Communication, (1949)
G = Goldman, Information Theory, (1953)
Q = Quastler, Information Theory in Biology, (1953)
BR = Brillouin, Science and Information Theory, (1956)
C = Cherry, On Human Communication, (1957)
F = Feinstein, Foundations of Information Theory, (1958)
K = Khinchin, Mathematical Foundations of Information Theory, (Uspekhi Matmaticheskikh Nauk, 1953-1956; reprint Dover, 1957)
Y = Yockey, Symposium on Information Theory in Biology, (1958)
AT = Attneave, Application of Information Theory to Psychology, (1959)

See also: London Symposia on Information Theory (1st publ. Brit. Min. Supply; 2d - 4th publ. Butterworth's, London)
I.E.E.E. Trans. on Information Theory, METHODOS

Other significant references not yet entered on diagram:
Luce, Developments in Mathematical Psychology, (1960)
Pierce, Symbols, Signals and Noise: The Nature and Process of Communication, (1961)
Machol and Gray, Recent Developments in Information and Decision Processes, (1962)

GENERAL SYSTEMS THEORY: [Statement of Purpose of S.G.S.R.]

The principal aim of the Society for General Systems Research is to encourage the development of theoretical systems which are applicable to more than one of the traditional departments of knowledge. All sciences develop theoretical systems of concepts, relationships and models. Many of these systems are isomorphic, but their similarity is undetected because of differences in terminology and of other barriers to communication among specialists. Furthermore, systems which have been well worked out can be of assistance in the development of others.

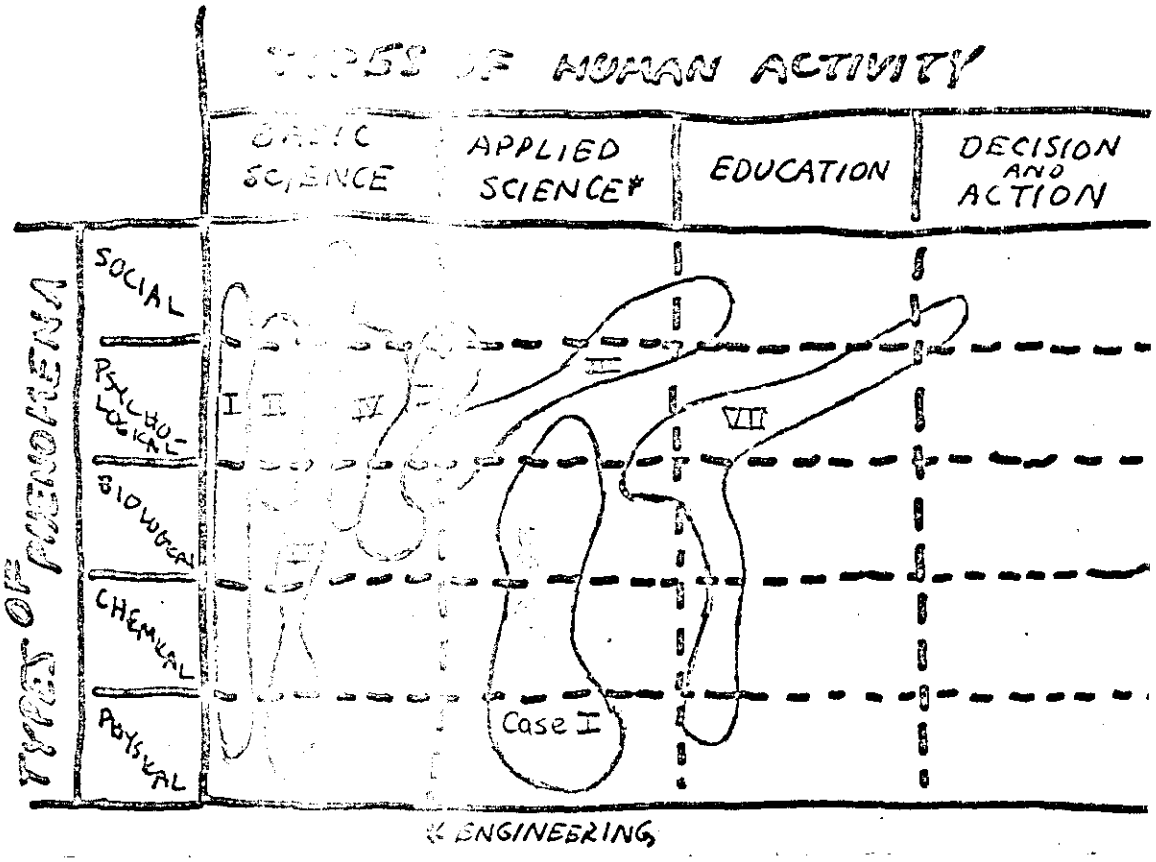
The major functions of general systems research are therefore:

1. To investigate the isomorphy of concepts, laws, and models in various fields, and to help in useful transfers from one field to another;

2. To encourage the development of adequate theoretical models in the fields which lack them;

3. To minimize the duplication of theoretical effort in different fields;

4. To promote the unity of science through improving communication among specialists.



I-VII = Volume Nos. of Yearbook of the Society for General Systems Research, (787 United Nations Plaza, New York City), 1955-1962.

Case I = Eckman, Systems: Research and Design; Proc. First Systems Symposium Case Institute of Technology, (1961)

See also: Behavioral Science, Bulletin of Mathematical Biophysics.