CHAPTER 10
SAMPLE POPULATION OF INTERDISCIPLINARY SPECIFIC SUBJECTS AND FACET ANALYSIS

INTRODUCTION

This Chapter presents facet analysis of 360 specific subjects. These subjects were chosen after scanning a large number of subjects (about 2,500). The criteria for the choice of selection of the sample is as delineated in Chapter 4 of this thesis. The selected sample falls into four different groups of interdisciplinary basic subjects - namely, General Systems Theory, Sociobiology, Solar Energy Studies, and International Relations. The examples are facet analysed as per Ranganathan’s postulates and presented in four different sets formed according to the different basic subjects. Section A presents the subjects going with General Systems Theory, Section B the subjects going with Sociobiology, Section C the subjects going with Solar Energy Studies, and Section D the subjects going with International Relations. Section E presents a problem-wise index of these 360 examples. Each entry in Sections A to D presents the title, the locus of the title, a short annotation, problems identified, principles used and the facet analysed title of the subject of the document. The arrangement of entries under a basic subject is alphabetical by title. The typology of problems identified is studied in the chapters 6 and 7 of this Thesis. The principles formulated are presented in Chapter 8 of the thesis. The study of the interdisciplinary nature of the subject is presented in chapters 3 and 5.
A. GENERAL SYSTEMS THEORY: FACET ANALYSIS OF SPECIFIC SUBJECTS

A.1 Addendum to *volterra systeems* with random inputs: A formalised approach. (IEEE Transactions and Communications. (USA). 27, 3; 1979, March; 636-8).

Study of the volterra systems with random inputs. It brings in a formalised approach to the addendum.

Problems identified: Qualifiers to (P).

Principles used: Principle 2.

General Systems Theory (BF), Volterra system (1P1) - with random inputs (Qualifier to 1P1); Addendum (IE).


The study is on the applications of standard algebraic concepts to the fuzzy rational systems.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 2 and 15.

General Systems Theory (BF), Rational system (1P1) - Fuzzy (Qualifier to 1P1); Application (1E) - Standard algebraic concepts (qualifiers to 1E).

A.3 Analysis and optimisation of dendritic reserve systems with respect to reliability. (Respect Electrotechnology (Poland). *14; 1978; 949-59).

Study of the optimisation of the reliability of dendritic reserve systems.

Problems identified: Qualifiers to (P). Heterogeneity of formation of (E).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Dendritic system (1P1) - Reserve (Qualifier to 1P1); Reliability (1MP1). Analysis and optimisation (1E).
A.4 Analysis of conservative systems by approximately area-preserving point-mapping. (Journal of Frankst in Instrumentation, 299;1970;25-30).

The study presents analysis of conservative system. The technique used for analysis is approximately area-preserving point mapping.

Problems identified: Qualifiers to (E). Multiconnotation of "Conservative system". Is it (P) or (M) or (E)?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Conservative system (1P1). Analysis (1E) - Area preserving point mapping (qualifier to 1E).

A.5 An approach to large-scale dynamical systems. (Asimolar Conference on Units System and Computers. 1977).

Study of the dynamical systems. Investigation uses the components connection models. The system studied is a large-scale system.

Problems identified: Qualifiers to (1P1) and (1E).

Principles used: Principles 2 and 15.

General Systems Theory (BF), Dynamic system (1P1) - Large scale (qualifier to 1P1) : Investigation (1E) - Component connection model (qualifier to 1E).


Study of the available models of a parallel redundant complex system.

Problems identified: Qualifiers to (1P1).

Principles used: Principle 2.

General Systems Theory (BF), Systems (1P1) - Complex (qualifier to 1P1) = Parallel redundant (qualifier to qualifier of 1P1).
A.7 A canonical form and canonical realization for bilinear systems. (Memoirs of Faculty of Engineering, Kobe University, (Japan). 24;1978;1-11)

Study of the canonical of bilinear systems.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BF), Systems (1P1) - Bilinear (qualifiers to 1P1): Description (1E) - by canonical form (qualifier to 1E).

A.8 Categories in systems and control theory. (International Journal of Systems Science. 8;1977;1090)

Study of the categories of systems from the point of view of control theory.

Problems identified: Multiconnotation of the role of the term 'Categories'. Is it (P) or (M)? Qualifiers to (E).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Systems (1P1); Categories (1MP1); Investigation (1E) - through control theory (qualifier to 1E).

A.9 Causal linear dynamical systems. (University of Rome report No.R73-05. 1975, April)

Application of realization theory to the causal linear dynamical systems.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Dynamic Systems (1P1) - Linear (qualifier 1 to 1P1) Causal (qualifier 2 to 1P1): Analysis (1E) - Realization theory (qualifier to 1E).


General dynamic system and their properties. In particular, the investigation provides for a characterisation of causality for such systems.

Problems identified: Qualifier to (P).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Systems (1P1) - General dynamic (qualifier to 1P1); Causality (1MP1): Characterization (1E).
A.11 Class of non-linear systems with explicit solutions.
(Proceedings of IEEE. 67;1979; 439-40).

Study of the non-linear systems and identifications of systems with explicit solutions.

Problems identified: Qualifier to (P).

Principles used: Principle 2 and its notes.

General Systems Theory (BP), Systems (1P1). - Non-linear (qualifier 1 to 1P1) with explicit solutions (qualifier 1 to 1P1).

A.12 Class of state observers for bilinear systems.
(International Journal of Systems Science. 9;1978;1199-205).

Study of the state observers for bilinear systems.

Problems identified: Multiconnotation of the concept "State observers". Is it (P) or (N)?

Principles used: Principles 2 and 8.

General Systems Theory (BP), Bilinear systems (1P1), State Observer (1P2).

A.13 Closure properties and homographics of time varying systems.
(Mathematical Systems Theory (USA). 12;1978;41-59).

Study of the closure properties and homographics of the time-varying systems.

Problems identified: Qualifiers to (P) and heterogeneity of the (MP). Heterogeneity of the subject in general.

Principles used: Principles 2, 8, 15, 30 and 21.

General Systems Theory (BP), Systems (1P1) - Time varying (qualifier to 1P1); Closure properties and homographics (1MP1).

A.14 Coherent systems with multi state components.
(Mathematical Operations Research (USA). 3;1978;273-8).
Analysis of coherent system and their components.

Problems identified: Qualifier to (P).

Principles used: Principle 2.

General Systems Theory (BP), Coherent system (P) - with Multi-state (qualifier to P) - Binary (qualifier to P) : Analysis (IE).


Study of the structure of a hierarchical system. Analyses of the continuous representation of two media system.

Problems identified: Qualifier to (P) and (£).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), Hierarchic system (1P1) - Two media (qualifier to 1P1). Structure (1M1) : Representation (1E) - Continuous (qualifier to 1E) : Analysis (2E).

A.16 Complexity and information technology in dynamic systems. (Kybernetics. 4; 1975: 129-41).

Study of the complexity in information technology in dynamic systems.

Problems identified: Qualifiers to (£).


General Systems Theory (BP), Dynamic systems (1P1); Complexity (1M1) : Study (1E) - Information technology (qualifier to 1D).


Study of the parameter systems. A non-linear theoretical foundation is attempted.

Problems identified: Qualifier to (P) and (WP).

Principles used: Principles 2 and 8.
General Systems Theory (BF), Parameter systems (1P1) - Distributed (qualifier to 1P1); Non-linear theory (1MP1); Contribution (1MP2).

A.18 Cost effective mail room and mailing operations.
(Journal of Systems Management. 30;1970;13-17)

A concept of mail room system offers considerable cost saving opportunities for most organisations.

Problems identified: Qualifiers to (P).

Principles used: Principles 2, 8 and 15.

General Systems Theory (BF), System (1P1) - Main room (qualifier to 1P1); Cost (1MP1): Saving (1IE).

A.19 Critical stability in a conserved nutrient ecosystem.
(International Journal of Systems Science. 8;1977;651-8)

Study of the balance in a concerned nutrient system.

Problems identified: Qualifier to (1P1).

Principles used: Principles 2 and its notes.

General Systems Theory (BF), Ecosystems (1P1) - Nutrient (qualifier to 1P1) - Conserved (qualifier to qualifier of 1P1); Critical stability (1MP1).

A.20 A decomposition method for computing system reliability by a matrix expression.
(IEEE Transactions on Reliability (USA), 27;1978;342-4)

Study of application of matrix expression to the computation of system reliability. The decomposition method is used.

Problems identified: Qualifiers to (E).


General Systems Theory (BF), Systems (1P1); Reliability (1MP1); Computation (1IE) - Decomposition method (qualifier to 1E) = by a matrix expression (qualifier to qualifier of 1E).

Study of decentralization and coordination of the reliability of large scale systems.

Problems identified: Heterogeneity of (I).


General Systems Theory (BF), Large scale system (IPI); Reliability (IIP1); Decentralization and coordination (IIE).


Study of the design procedures for the discrete time dead beat reduced state observer system.

Problems identified: Qualifiers to (IPI). Multiconnotation of design. Is it (IIP1) or (IE)?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Systems (IPI) - Non-linear (qualifier to IPI), Order state observer (IIP2) - Discrete time (qualifier 1 to IPI) - Dead beat (qualifier 2 to IIP2) - Reduced (qualifier 3 to IIP2): Design (IE).

A.23 The design of finite time system optimal multivariable system. (International Journal of Systems Science. 9;1978;311-34)

Study of the designing procedures of the finite time optimal multivariable systems.

Problems identified: Qualifiers to (IPI). Multiconnotation of 'Design'. Is it (IIP) or (IE)?

Principles used: Principles 2, 8, 10, 20 and 21.

General Systems Theory (BF), Systems (IPI) - Optimal multivariable (qualifier 1 to IPI) - Finite time (qualifier 2 to IPI): Design (IE).


Study of design of a tracking system with delays and linear multivariable characteristics.
Problems identified: Qualifier to (1P). Multiconnotation of design. Is it (MP) or (E) ?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Tracking system (1P1) - Multivariable (qualifier 1 to P) - Linear (qualifier 2 to P) - Design (1D).

A.25 Design of linear multivariable continuous time tracking systems incorporating error-actuated dynamic controllers.

Study of design features of a time tracking systems with linear multivariable characteristics incorporating error-actuated dynamic controllers.

Problems identified: Qualifier to (1P1). Multiconnotation of "Design". Is it (MP) or (E) ?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Tracking system (1P1) - Continuous (qualifier 1 to 1P1) - Multivariable (qualifier 2 to 1P1) - Linear (qualifier 3 to 1P1) - Incorporating error-actuated dynamic controllers (qualifier 4 to 1P1) - Design (1MP1).

A.26 Design of linear time-varying tracking systems.

Study of the design features of time tracking systems.

Problems identified: Qualifier to (P). Multiconnotation of "Design". Is it (1MP1) or (1E) ?

Principles used: Principles 2, 8, 15, 20 and 41.

General Systems Theory (BF), Tracking system (1P1) - Time-varying (qualifier to 1P1) - Linear (qualifier to qualifier of P) - Design (MP)

A.27 Design of optimal input signals for the identification of distributed parameter systems.

Study of the design of optimal input signals for the identification of distributed parameter systems.

Problems identified: Qualifiers to (P) and (E). Multiconnotation of "Design". Is it (MP) or (E) or Rounds of (E) ?
Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), Systems (1P1) - Distributed parameter (qualifier to 1P1) : Identification (E). Optimal input signals (qualifier to E) : Design (2E).

A.28 Dynamical transformation in a dissipative open system. (Applied Mathematical Model. 3;1979;75-8).

Study of the dynamical transformations in a dissipative open system.

Problems identified: Qualifiers to (P). Multiconnotation of "dynamical transformation". Is it (MP) or (1E)?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), Open system (1P1) - Dissipative (qualifier to 1P1) : Transformation (1E).


Study of the multidimensional models of the economic system.

Problems identified: Multiconnotation of the concept "Multidimensional model". Is it (P) or (MP)?

Principles used: Principles 2 and 8.

General Systems Theory (BP), Economic System (P); Multidimensional model (MP).


Study of largescale composite systems. In particular, development of efficient algorithm for determining controllability and observability.

Problems identified: Qualifiers to (P) and (E). Heterogeneity of (MP).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), Systems (1P1). Composite (qualifier 1 to 1P1) - Large-scale (qualifier 2 to 1MP1) : Determining (1E) - Efficient algorithm (qualifier to 1E).
A.31 Elements for a general information model in the thermodynamic open systems. (Seams Academy of Science. 278; 273-6).

Application of general information model to the analysis of thermodynamics property of open systems.

Problems identified: Qualifier to (E). Multiconnotation of "Thermodynamics". Is it (MP) or (E)?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Open systems (P); Thermodynamics (MP). Analysis (IE) - General Information model (qualifier to IE).

A.32 Energetic structure of multibody dynamic systems. (Journal of Franklin Institute. 306; 1979; 165-81).

Study of energetic structure of the multibody dynamic system.

Problems identified: Qualifier to (P). Multiconnotation of "Energetic structure". Is it (P), (MP) or (E)?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Dynamic systems (1P1) - Multibody (qualifier to 1P1); Energetic structure (1MP1).


Investigation of the identification procedures for non-linear Volterra systems. In particular, error analysis and optimal estimation procedures are discussed.

Problems identified: Qualifier to (P) and (E). Heterogeneity of (E).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BF), Volterra systems (1P1) - Nonlinear (qualifier to 1P1); Identification (1E); Error analysis and optimal estimation procedures (2E).


Tracing of the evolution of a virtual machine system.
Problems identified: Qualifiers to (P). Multiconnotation of "Evolution". Is it (MP) or (E) ?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (GP), Subsystem (1P1) - Virtual machine (qualifier to 1P1) : Evolution (E).


Characterisation of flow model of the hierarchical ecosystem with migration.

Problems identified: Qualifiers to (P). Multiconnotation of "Flow model". Is it (MP) or (E) ? Multiconnotation of 'characterisation'. Is it (MP) or (E) ?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), Ecosystem (1P1) - Hierarchical (Qualifier 1 to 1P1) - with migration (qualifier 2 to 1P1) ; Flow model (1MP1) : Characterisation (1E).

A.36 A further note on selecting a law order system using the dominant Eigen value concept. (IEEE Transactions of Automatic Control. 24;1979;135-6).

Application of dominant Eigen value concept to selecting law order system.

Problems identified: Qualifiers to (P) and (E). Multiconnotation of the concept "Selection". Is it (MP) or (E) ?

Principles used: Principles 3, 8, 15, 20 and 21.

General Systems Theory (BP), System (1P1) - Low order (qualifier to 1P1) : Selection (C) - Dominant Eigen value concept (qualifier to 1E).


Study of the Nerode concept of the state of dynamic systems and its generalisations.
Problems identified: Qualifier to (MP).

Principles used: Principles 2, 8 and 15.

General Systems Theory (BF), Dynamic system (1P1); State (1MP1) - Nerodic concept (qualifier to 1MP1) : Generalisation (1E).

A.38 Generalised approach for approximating linear time-invariant systems.

Investigation of the generalised approach approximating time-invariant system.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BF), Systems (1P1) - Time-invariant (qualifier 1 to 1P1) - Linear (qualifier 2 to 1P1) : Approximating (E) - Generalised approach (qualifier to 1E).


The study of deterministic problems of complex static systems with hierarchical structure: Global identification method.

Problems identified: Qualifiers to (P).

Principles used: SSL Principles 2 and 15.

General Systems Theory (BF), Systems (1P1) - Complex static (qualifier 1 to 1P1) - Hierarchical (qualifier 2 to 1P1) : Identification (1E) - Global (qualifier to 1E)

A.40 Handling rejected input transactions.
(Journal of Systems Management. 30;1970;26-7).

Handling of input transactions rejected by a system's edit, validation and update routines is a critical processing point in automated financial accounting systems design.
Problems identified: Qualifiers to (P) and (MP).

Principles used: Principles 2 and 8.

General Systems Theory (BF), Systems (1P1) - Financial transactions (qualifier to 1P1); Inputs (1MP1) - Rejected (qualifier to 1MP1); Handling (1E)

A.41 Heuristic structure synthesis in a class of systems using a fuzzy automation.
(IEEE Transactions on Systems, Man and Cybernetics. 9;1979;73-9).

Synthesis of heuristic structure of fuzzy automation systems.

Problems identified: Qualifiers to (1P1)

Principles used: Principle 2.

General Systems Theory (BF), Systems (1P1) - Using automation (qualifier to 1P1) - Heuristic structure (1MP1); Synthesis (1E).

A.42 Hierarchy and speed up in evolutionary systems.

Study of the speed up and hierarchy in evolutionary systems.

Problems identified: Heterogeneity in (NP).

Principles used: Principle 8.

General Systems Theory (BF), Systems (1P1) - Evolutionary (qualifier to 1P1); Hierarchy and speed up (1MP1); Study (1E).

A.43 Identification of a class of time variable linear systems via its output covariance function.
(International Journal of Systems Science. 0;1978;259-64).

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BF), Systems (P) - Time varying (qualifier 1 to 1P1) - Linear (qualifier 2 to 1P1); Identification (1E) - via its output covariance function (qualifier to 1E).
A.44 An information theoretical consideration for optimisation of observation system.
(Electrical Engineering. 95;1975;120-8).

Analysis of control variables for optimisation of the structure of observation system.

**Problems identified:** Qualifiers to (P) and (E).

**Principles used:** Principles 2, 15, 20 and 21.

General Systems Theory (BF), System (1P1) Observational (qualifier to 1P1); Structure (MP) : Optimisation (E) - Control variable (qualifier to 1E).

A.45 Informational approach to the decomposition of complex systems.
(Engineering Cybernetics. 16;1978;91-6).

Investigation of informational approach to the decomposition of complex systems.

**Problems identified:** Qualifiers to (P) and (E).

**Principles used:** Principles 2, 15, 20 and 21.

General Systems Theory (BF), Complex systems (1P1) - Stochastic (qualifier to 1P1); Decomposition (1E) - Informational approach (Qualifier to 1E).

A.46 Input-output stability of large systems
(Azelomar Conference on Circuits. 18).

Study of the input-output stability of large systems.

**Problems identified:** Qualifiers to (1P).

**Principles used:** Principle 2.

General Systems Theory (BF), System (P1) - Large-scale (qualifier 1 to P) - Time varying (qualifier 2 to P) - Interconnected (qualifier 3 to P); Stability (MP) : Analysis (1E).
A.47 Introduction to systemsorgie
(International Congress on Cybernetics, 1971)

Systemsorgie in the development of natural auto-regulation systems

Problems identified: Qualifiers to (P) and (E). Multicausation of the concept 'Development'. Is it (MP) or (E)?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (SF), System (1P1) - Natural auto-regulator (qualifier to 1P1): Development (IE) - Systemsorgie (qualifier to IE).

A.48 Linear systems on free groups.
(IEEE Transactions, 1078:1062-5).

Identification of free groups in the linear systems.

Problems identified: Qualifiers to (1P1).

Principles used: Principle 2.

General Systems Theory (SF), System (1P1) - Linear (qualifier 1 to 1P1) - Free groups (qualifier 2 to 1P1).

A.49 Logarithmic norm and stability of linear systems with random parameters.

Stability and logarithmic norm of random parameter linear system.

Problems identified: Qualifiers to (P). Heterogeneity in the formation of (MP).

Principles used: Principles 2 and 8.

General Systems Theory (SF), Linear systems (1P1) - Random parameters (qualifier to 1P1); Stability and logarithmic norm (1MP1).
A.50 Mathematical models for the time evolution of stochastic systems in two-phase flow.
(Application of Mathematical Model. 3;1970;41-4).

Study of the stochastic systems in two-phase flow. Application of mathematical models for the time evolution.

Problems identified: Qualifiers to (P) or (MP).

Principles used: Principles 2 and 8.

General Systems Theory (BP), Systems (1P1) - Stochastic (qualifiers to 1P1).

A.51 A method of speeding up the procedure of estimating the indices of reliability of complicated systems.
(Engineering Cybernetics (USA). 16;1978;163-6).

Methods of speeding up the estimating procedure of the reliability of indices of complicated systems.

Problems identified: Qualifiers to (P), (M) and (E).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), Systems (1P1) - Complicated (qualifier to 1P1); Reliability (1MP1); Indices (1MP2); Estimating (E) - Procedures (qualifier to 1E); Speeding up (2E) - Methods (qualifier to 2E).

A.52 A model of the eco-system with the concentrating processes of a pesticide.
(International Journal of Systems Science. 9;1978;1207-14).

Pesticides for concentrating processes for eco-system.

Problems identified: Qualifiers to (P).

Principles used: Principle 2.

General Systems Theory (BP), Eco-system (1P1) - with Concentrating processes (qualifier 1 to 1P1) - for Pesticides (qualifier 2 to 1P1).
A53. Monte Carlo simulation for reliability evaluation of complex systems.
(International Journal of Systems Science. 9;1978;1303-6).

Study of complex system. The evaluation of reliability by
Monte Carlo simulation.

Problems identified: Qualifiers to (P) or (E).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BF), Complex system (IPI);
Reliability (1MP1) - Evaluation (IE) - by Simulation (qualifier to IE) - Monte Carlo (qualifier to qualifier of IE).

A.54 Minimality of ordinary linear time-invariant differential systems.
(Proceedings of the European Meeting on Cybernetics and
System Research. 1;1972;23-5).

Application of the polynomial matrix to the construction of
minimality of linear time-invariant differential systems.

Problems identified: Qualifiers to (P).

Principles used: Principles 2, 15, 20 and 31.

General Systems Theory (BF), Systems (1P1) - Differential
(qualifier 1 to 1P1) - Time-invariant (qualifier 2 to 1P1) -
linear (qualifier 3 to 1P1); Minimality (MP) - Construction (E) -
Polynomial matrix (qualifier to IE).

A.55 Multidimensional systems theory: Matrix pade approximation.
(Proceedings of the 1978 IEEE Conference on Decision and
Control including the Seventeenth Symposium on Advance

Application of Matrix Pade approximation theory to multi-
dimensional systems.

Problems identified: Qualifier to (P) and (MP).

Principles used: Principles 2, 8, 15, 20 and 31.

General Systems Theory (BF), Systems (1P1) - Multidimensional
(qualifier to 1P1); Theory (1MP1) - Matrix Pade approximation
(qualifier to 1MP1).
A.56 Multi-person control of large-scale system.

Study of the multiperson control of large-scale system.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BP), Large-scale system (1P1) - Inter­
connected (qualifier to 1P1); Control (1E) - Multiperson
(qualifier to 1E).

A.57 A new measure of sensitivity for social system simulation models.
(IEEE Transactions on System, Man and Cybernetics. 9;1970;105-14).

Measurement of the sensitivity of dynamic simulation models of
social system.

Problems identified: Qualifiers to (P) and (MP).

Principles used: Principles 2 and 8.

General Systems Theory (BF), System (1P1) - Social (qualifier
to 1P1); Simulation models (1MPl) - Dynamic (qualifier to 1MPl);
Sensitivity (1MP2) - Measurement (1E).

A.58 Non-linear system identification with limited time data.
(Automatica. 15;1979;73-84).

Study of limited time data identification of non-linear system.

Problems identified: Qualifier to (P).

Principles used: Principle 2.

General Systems Theory (BP), System (1P1) - Non-linear (quali­
fier 1 to 1P1) - Time varying (qualifier 2 to 1P1); Identifi­
cations (1E).
A.59 Numerical identification of continuous time systems.  
(International Journal of Systems Science. 8;1977;601-10).  
Study of continuous time systems and numerical identification processes.  
Problems identified: Qualifiers to (P) and (E).  
Principles used: Principles 2, 15, 20 and 21.  
General Systems Theory (BF), System (1P1) - Continuous time (qualifier to 1P1) - Identification (E) - Numerical (qualifier to IE).

A.60 Object-handling system for manual industry.  
Study of object-handling system for manual industry.  
Problems identified: Qualifier to (P).  
Principles used: Principle 2.  
General Systems Theory (BF), System (1P1) - Object handling (qualifier 1 to L 1P1) - Industry (qualifier 2 to 1P1) - Manual (qualifier to qualifier 2 of 1P1).

A.61 On observability of sampled data systems.  
(International Journal of Systems Science. 8;1979;697-704).  
Study of the systems with time-invariant continuous with piece-wise constant.  
Problems identified: Qualifiers to (P). Multiconnotation of "observability". Is it (M) or (E)?  
Principles used: Principles 2, 8, 15, 20 and 21.  
General Systems Theory (BF), System (1P1) - Time invariant (qualifier 1 to 1P1) - Continuous (qualifier 2 to 1P1) - with Piece-wise constant inputs (qualifier 3 to 1P1); Observability (1MP1).
A.68 On causality of general dynamical system.
(Proceedings of the European meeting on Systems, Man and

Analysis of the causality of general dynamical system with
time variance.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), System (1P1) - Dynamic (qualifier 1
to 1P1) - Time (qualifier 2 to 1P1); Causality (1MP1): Analysis (1E).

A.63 On the estimation of state variables for discrete-time
interconnected sub-systems.

Study of the gradient method of estimation of state variables
in two-level discrete time interconnected subsystem.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Subsystem (1P1) - Interconnected
(qualifier 1 to 1P1) - Discrete time (qualifier 2 to 1P1) -
Two-level (qualifier 3 to 1P1); State variables (1MP1); Estimation (1E) - Gradient method (qualifier 1 to E).

A.64 On a generalised dynamic of bistate social interaction processes.
(International Journal of Systems Science. 5;1974;499-502).

Application to non-linear model to the study of interaction
of bistate social system.

Problems identified: Multiconnotation of "interaction". Is it
(MP) or (E)? Qualifiers to (P) or (E).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Social system (1P1) - Bistate
(qualifier to 1P1) Interaction (1MP1); Study (1E) -
Non-linear model (qualifier to 1E).
A.66 On reachability of dynamic systems.

Study of the continued reachability of dynamic systems.

Problems identified: Qualifiers to (P) and (MP).

Principles used: Principle 8.

General Systems Theory (BF), Systems (1P1) - Dynamic (qualifier to 1P1); Reachability (IMP1) - Continued (qualifier to IMP1).

A.66 On the representation and identification of structure systems.

Study of the representation and identification of structure systems.

Problems identified: Heterogeneity of the formation of (E) Qualifier to (P).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BF), Systems (1P1) - Structural (qualifier to 1P1); Identification and representation (1IMP1).

A.67 On the stability of interconnected systems.
(Bell Systems Technical Journal. 57;1978;3031-46).

Study of constant stability of interconnected systems.

Problems identified: Qualifiers to (P) and (MP).

Principles used: Principles 2 and 8.

General Systems Theory (BF), Systems (1P1) - Interconnected (qualifier to 1P1); Stability (1IMP1) - Constant (qualifier to IMP1).
A.68 On the theory of optimal systems.  
(Cybernetics (USA). 8;1972; 135-7).

Analysis of systems on the basis of optimal systems model.

Problems identified: Qualifiers to (E).

Principles used: Principles 2, 15, 20 and 27.

General Systems Theory (BF), Systems (1P1) - Analysis (1E) - Optimum Systems Model (qualifier to 1E).

A.69 On the uniqueness of linear compartmental systems. 

Study of the linear compartmental systems. The uniqueness of the same.

Problems identified: Qualifiers to (1P1).

Principles used: Principle 2.

General Systems Theory (BF), Systems (1P1) - Compartmental (qualifier 1 to 1P1) - Linear (qualifier 2 to 1P1); Uniqueness (1MP1).

A.70 On the use of single register sequences as instrumental variables for the recursive identification of multivariable linear systems.  

Recursive identification of multivariable linear systems. The application of the single register sequence as instrumental variable to the system.

Problems identified: Qualifiers (P) and (E).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BF), Systems (1P1) - Linear (qualifier 1 to 1P1) - Multivariable (qualifier 2 to 1P1); Identification (1E) Recursive (qualifier 1 to 1E) - Instrumental variables (qualifier 2 to 1E) - Single register sequence (qualifier 3 to 1E).
A.71 Optimal control of a Ward Leonard system.

Two-method optimal control with quadratic performance in Ward linear system.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BP), Ward Leonard system (1P1) - with Quadratic performance (qualifier to 1P1) : Control (IE) - Optimal (qualifier 1 to 1E) - Two models (qualifier 2 to 1E).

A.72 Optimal histogram matching by monotone fray-level transformation.

Study of the transformations of systems by optimal histogram matching at monotone fray level.

Problems identified: Multiconnotation of 'transformation'. Is it (MP) or (E)? Qualifiers to (IE).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), Systems (1P1) Transformation (1E) - by Optimal histogram matching (qualifier to 1E) - at Monotone fray level (qualifier to qualifier of 1E).

A.73 Optimal response of linear dynamic systems using the innovation approach.
(Mid-West Symposium on Circuits and Systems. 1;1979;261-71).

Study of the optimal response of linear dynamic systems using the innovation approach.

Problems identified: Qualifiers to (1P1) and (1E). Multiconnotation of 'optimal response'. Is it (MP) or (E)?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), System (1P1) Dynamic (qualifier 1 to 1P1) Linear (qualifier 2 to 1P1) ; Optimal response (1MP1) : Measurement (IE) - Innovations approach (qualifier to 1E).
A.74 Optimum feed forward control of distributed parameter systems.
(International Journal of Systems Science. 8;1977;81-5).

Study of the controls of distributed parameter systems in particular optimum feed forward controls.

**Problems identified**: Qualifiers to (1P1) and (1E).

**Principles used**: Principles 2, 15, 20 and 21.

General Systems Theory (BF), Systems (1P1) - Distributed parameter (qualifier to 1P1): Control (1E) - Optimum feed forward (qualifier 1 to 1E).

A.75 Overlapping coordination of hierarchical structures.

**Problems identified**: Multiconnotation of 'hierarchical structures'. Is it (P) or (MP)? Multiconnotation of 'coordination'. Is it (MP) or (E)?

**Principles used**: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), System (1P1) Hierarchical structures (1M1): Coordination (1E) - Overlapping (qualifier to 1E).

A.76 Practical stability of large-scale discrete-time systems on product spaces.

Study of the large-scale discrete-time systems on product spaces.
The practical stability of such systems.

**Problems identified**: Qualifiers to (P). Multiconnotation of 'product space'. Is it (P) or (MP)?

**Principles used**: Principles 2 and 8.

General Systems Theory (BF), Systems (1P1) Large-scale (qualifier 1 to 1P1) - Discrete time (qualifier 2 to 1P1), Product spaces (1P2); Practical stability (1M1).
A.77 Parametric aspects of mode and stability diagrams for general periodic systems.
(IEEE Transactional Circuits and Systems. 24,5;1977, May;241-7).

Application of Hill's infinite determinant method to the investigation of stability of natural models to general linear time varying periodic systems.

Problems identified: Qualifiers to (1P1).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Periodic systems (1P1) - Time varying (qualifier 2 to 1P1), Models (1P2) - Natural (qualifier to 1P2); Stability (1MP1) - Investigation (1E) - Hill infinite determinant method (qualifier to 1E).

A.78 Probabilistic characteristics of hierarchical systems with complicated ordering.
(Engineering Cybernetics (USA). 12,2;1974,Mar; 44-51).

Study of the examination of probabilistic characteristics for complicated ordering of hierarchic systems.

Problems identified: Qualifiers to (1P1).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), System (1P1) - Hierarchic (qualifier to 1P1) - Complicated ordering (qualifier to 1P1); Probabilistic characteristics (1MP1) - Examination (1E).

A.79 Problem identification indicators.
(Journal of Systems Management. 22;1978; 36-9).

Measurement of indicators to the active problem identification system.

Problems identified: Qualifiers to (1P1).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Systems (1P1) - Problem identification (qualifier to 1P1) - Active (qualifier to qualifier of 1P1). Indicators (1MP1) - Measurement (1E).

Study of the decision and control operations in adaptive processes in systems.

Problems identified: Heterogeneity of (E). Multiconnotation of 'adaptive processes'. Is it (MP) or (E).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Systems (1P1) - Adaptive processes (1MP1) - Decision and control (1E).

A.81  Qualitative analysis of large-scale systems: Stability, lmitability and boundaries. (Mid-West Symposium on Circuits and Systems. 1;1979:241-56).

Qualitative analysis of large scale composite interconnected systems in relation to the stability and boundaries of the system.

Problems identified: Heterogeneity in the formation of (MP).

Qualifiers to (P) and (E).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Systems (1P1) - Large-scale (qualifier 1 to 1P1) - Composite and interconnected (qualifier 2 to 1P1) - Stability, lmitability and Boundaries (1MP1) - Analysis (1E).


Application of discrete time systems, using a modified Routh stability. Criterion to reduction of discrete linear systems.

Problems identified: 1 Qualifiers to (1P1) and (1E).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BF), Systems (1P1) - Linear (qualifier 1 to Lp1) - Discrete (qualifier 2 to 1P1) - Reduction (1E) - Using modified Routh stability criterion [qualifier to 1E).
A.83 A relativistic approach to modelling dynamic systems involving human factors.
(International Journal of Systems Science. 10;1979; 89-112).

Study of the relativistic approach to modelling of human dynamic systems.

Problems identified: Qualifier to (1P1) and (1E).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BP), Systems (1P1) - Dynamic (qualifier 1 to 1P1) - Human (qualifier 2 to 1P1) - Modelling (1E) - Relativistic approach (qualifier to 1E).

A.84 Routing and flow control of systems network architecture.
(IBM Systems Journal. 18;1970 ; 298-314).

Analysis of routing and flow control in systems network architecture.

Problems identified: Heterogeneity in the formation of (E).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), Systems network (P) ; Architecture (1UP1) ; Routing and flow control (1E).

A.85 Sensitivity analysis and reliability calculations in digital protection systems.
(Power Industry Computer Applications Conference. (1979 May 15-18) (Cleveland)(USA) ; 42-6).

Applications of reliability calculations and sensitivity analysis to the study of digital protection systems.

Problems identified: Qualifiers to (P) and heterogeneity of (E).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BP), Systems (1P1) - Digital protection (qualifier to 1P1) ; Reliability calculations and sensitivity analysis (E).
A.36 Sequential method for system identification in hierarchical structures.
(Proceedings of the IFAC Symposium on Identification and System Parameter Estimation, 3;1078).

Study of the application of sequential methods to the identification of hierarchical structures to systems.

Problems identified: Qualifiers to (P).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), System (1P); Hierarchical structures (MP); Identification (1E) - Sequential method (qualifier to 1E).

A.37 Shift operators and bilinear system theory.
(Proceedings of the IEEE Conference on Decision and Control including the 17th Symposium on Adaptive Processes (USA), 10-12; 1979; 551-6).

Study of the shift operators and bilinear systems theory.

Problems identified: Qualifiers to (P) and (MP).

Principles used: Principles 2 and 8.

General Systems Theory (BF), System (1P); Bilinear (qualifier to 1P); Theory (1MP); based on shift operators (qualifier to L 1MP).

A.38 SNA multiple systems working
(IBM Systems Journal, 18;1979;263-97).

Study of the SNA multiple systems networking.

Problems identified: Qualifiers (P) and (MP). Multiconnolation of configuration? Is it (MP) or (E)?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), System networks (1P); Multiple (qualifier to 1P); Architecture (1MP); Configuration (1MP).
A.89 Stable state estimators for binary systems.
(International Journal of Control (UK). 29; 1979; 181-8).

Study of the stable state estimator for binary systems.

Problems identified: Qualifiers to (MP).

Principles used: Principles 2 and 8.

General Systems Theory (BF), Binary systems (1P1); Stability (1M1) - Lyapunov (qualifier to 1M1); Estimation (E); Norms (3M1).

A.90 Standard bench marks aid in competitive system selection.
(Journal of Systems Management. 30; 1970; 6-11).

Helpfulness of standardised bench marks in the selection process in competitive systems.

Problems identified: Qualifiers to (F) and (E).

Principles used: Principles 2 and 15.

General Systems Theory (BF), System (1P1) - Competitive (qualifier to 1P1); Selection (1E) - Using Standardised bench marks (qualifier to 1E).

A.91 A structural approach to stability in linear system: A sufficient condition.

Structural approach to the stability of linear systems and criterion for the same.

Problems identified: Qualifiers to (1M1). Levels of (1M1).

Principles Used: Principles 2 and 8.

General Systems Theory (BF), Linear systems (1P1); Stability (1M1) - Structural approach (qualifier to 1M1); Criterion (1M2).
A.92  Subsystem cycles for MIS.
(Journal of Systems Management. 30;1979; 11-5).

Cycles of transactions in business are the framework for managing information on systems.

**Problems identified**: Qualifiers to (P) and (E).

**Principles used**: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), System (1P1) - Business (qualifier to 1P1): Transactions (1E) - Cycles (2M1): Analysis (2E) - through MIS (qualifier to 2E).

A.93  A survey of design methods for failure detection in dynamic system.
(Automatica. 12;1976; 601-11).

Study of design methods to the detection of failure to stochastic dynamic system.

**Problems identified**: Qualifier to (P) and (E).

**Principles used**: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), Dynamic system (1P1) - Stochastic (qualifier to P); Failure (1M1): Detection (1E) - Design methods (qualifier to 1E).

A.94  Systems insights: The ultimate generalist.

System analysis requires a mastery of several skills in conducting a project and obtaining a perspective approach to system reviewing.

**Problems identified**: Qualifiers to (1E). Heterogeneity of (E).

**Principles used**: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BF), System (1P1): Analysis and review (1E) - through Perspective approach (qualifier to 1E).
A.08 System theoretic concepts of system engineering.

Study of the application of systems engineering to operational analysis of concepts in man-machine systems.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 2 and 8.

General Systems Theory (BP), System (1P1) - Man machine (qualifier to 1P1); Concepts (1M1): Operation (1E) - Systems engineering (qualifier to 1E).

A.96 The system theory of sampling process.
(Electron. 20;1970; 133-7).

Study of the systemic processes in systems of electrons, classification and description of the system.

Problems identified: Qualifiers to (P), Heterogeneity in the formation of (E).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), System (1P1) - Electron (qualifier to 1P1); Systemic properties (1M1): Classification and description (1E).

A.97 A theory of system complexity.
(International Journal of General Systems. 1;1974; 19-33).

Application of information theory to the analysis of error behaviour in the complexity of systems.

Problems identified: Qualifier to (E) and Levels of (MP).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), System (1P1); Complexity (1M1): Error behaviour (MP2): Analysis (E) - Information theory (qualifier to E).

Application of non-linear partial differential equations for determination of adaptiveness of time varying linear systems.

Problems identified: Qualifiers to (P) and qualifiers to (E). Multiconnotation of 'adaptiveness'. Is it a qualifier of (P) or an (MP)?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), Systems (1P1) - Linear (qualifier 1 to 1P1) - Time varying (qualifier 2 to 1P1); Adaptiveness (1MP1) - Determination (1E) - Non-linear partial differential equations (qualifier to 1E).

A.99 Topological structural systems analysis: An aid for selecting policy and actions for complete socio-technological systems - A case study; the cultural communication. (Symposium on Systems Approach to Developing Countries. 1970 May 28-31).

Application of topological structural systems analysis to selection of policy and action to complex socio-technological systems.

Problems identified: Qualifiers to (1P) and (E). Heterogeneity of (IP).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), System (1P1) - Sociotechnological (qualifier 1 to 1P1) - Complex (qualifier 2 to 1P1); Policy and action (1MP1) - Selection (1E) - by topological structural systems analysis (qualifier to 1E).

A.100 Towards integrating two-system theories by Mesavonic and Wymore. (International Journal of General Systems. 1;1974; 35-6).

Integrative mapping of Wymore system into Mesavonic time system.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 2, 15, 20 and 21.

General Systems Theory (BP), System (1P1) - Time (qualifier to 1P1); Mesavonic (qualifier 2 to 1P1), Wymore system (1P2) - Mapping (1E) - Integrative (qualifier to 1E).
A.101 Usage of multiparametric linear programming for systems analysis
(Proceedings of the 10th European meeting on Systems, Man and
Cybernetics. 1977; 211-25).

Application of multiparameter linear programming to the analysis
of linear systems.

Problems identified: Qualifier to (E).

Principles used: Principles 2, 15, 20 and 31.

General Systems Theory (BP), Systems (1P1) - Linear (qualifier
to 1P1); Programming (IE) - Multiparametric linear (qualifier
to IE).

A.102 Used need analysis,
(Journal of Systems Management. 30; 1970; 12-3).

Study of systems life cycle. Identification of plan on the
basis of user need analysis.

Problems identified: Qualifiers to (E).

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), Systems (1P1); Life cycle (1MP1);
Plan (1MP2); Identification (IE) - User need analysis (qualifier
to IE).

A.103 A Walsh series approach to time-delay control system observer
design.

Problems identified: Qualifiers to (P) and (E). Multiclassification
of 'observer design'. Is it (MP) or (E)?

Principles used: Principles 2, 8, 15, 20 and 21.

General Systems Theory (BP), System (1P1) - Time-delay control
(qualifier to 1P1); Observer design (IE) - Walsh series approach
(qualifier to IE).
B. SOCIOBIOLOGY

B.1 Abnormal antler cycle in deer as a result of stress inducing factors. 
(Acta Theriologica. 20;1975; 267-74).

Social hierarchy and fear affects the antler pattern in deer, 
sika deer, roe deer, and red deer. This results in the creation 
of an abnormal antler cycle.

Problems identified : Qualifiers to (P) isolates. Multiconnotation 
of the term "antler cycles". Is it (P) or (MP)?


Sociobiology (BF), Antler cycle (1P1) - Abnormal (qualifier to 
1P1) - In deer (qualifier to 1P1) : Impact (1E) - Stress inducing 
factors (qualifier to 1E).

B.2 An age irrelevant concept of development. 
(Merrill Palmer Quarterly. 16;1970; 238-45).

Study of the concept of development of living organisms free 
from age concept.

Problems identified : Multiconnotation problem of "development". 
Is it an attribute or process? Qualifiers to (MP) isolates.


Sociobiology (BF), Development (1P1) ; Concept (1MP1) ; Free 
from age (qualifier to 1MP1).

B.3 Alcohol excess in the elderly. 
(Quarterly Journal of Studies on Alcohol. 32;1971;530-59).

The characteristics and causes of drinking problems in elderly 
psychiatric and geriatric patents in UK are described. Women 
were found to outnumber men. Environmental circumstances were 
more prominent than personality factors.

Problems identified : Multiconnotation regarding alcoholic 
excess. Is it (P) or (MP)? Then, qualifier of (P).
Principles used: Principle 3 and its notes 1 and 2.

Sociobiology (BF), Alcohol excess (1P1) - In elderly (qualifier to 1P1).

B.4 Assertive behaviour in depressed alcoholics.
(Journal of Behaviour Theory and Experimental Psychiatry. 9;1978; 103-6).

Administration of assertive situations varying in social interpersonal contact to the depressed alcoholic patients by means of role playing. Assertive behaviour varied as a function of sex and social context providing further support for a stimulus specific theory of assertiveness.

Problems identified: Qualifier problem in all the three facets (P), (MP1) and (MP2).


Sociobiology (BF), Depression (1P1) - Alcoholics (qualifier to 1P1); Behaviour (1MP1) - Assertive (qualifier to 1MP1); determinants (1MP2) - Situational (qualifier to 1MP2).

B.5 Attitude relationships: A reexamination of the postulate of contingent consistency.
(Paciifid Sociological Review. 15;1972; 149-88).

Study of the behaviour relationships on the basis of the postulate of contingent consistency.

Problems identified: AUP in (P) and multitconnotation in (MP). "Attitude behaviour relationship" is concept recently formed in a loose assemblage. Contingent consistency (MP1) has a multiple role. It can be a (P) as well as an (MP).


Sociobiology (BF), Attitude behaviour relationships (1P1); Contingent consistency (1MP1); Postulate (1MP2); Examination (1E).
B.6 The birth interval in defining patterns of family upbringing. (In Dutch). (Men in Maatschappij. 44; 1966; 386-93).

The study of family upbringing and its pattern definition being influenced by birth interval.

Problems identified: Multiconnotation of family upbringing: Is it a Personality or Matter (Property)? Birth interval is a Matter or a Qualifier to (E).


Sociobiology (EF), Family upbringing (1P1); Pattern (1MP1); Definition (1MP2); Influenced by (IE); Birth interval (qualifier to IE).

B.7 Birth order and dependence pattern of college students in Lebanese. (Journal of Marriage and Family. 34; 1972; 301-74).

The study of birth order and its impact on dependency tendencies of family members.


Sociobiology (EF), Birth order (1P1) - Lebanese (qualifier 1 to 1P1) - College students (qualifier 2 to 1P1); Influencing (MP) - Dependence patterns (qualifier to MP).
Changes in fertility rates and family size in response to change in age at marriage: The trend away from arranged marriages and increasing urbanization. (Population Studies, 25; 1971; 1181-9).

The study of changes affecting fertility and family size by marriage and changes in the marriageable age. The impact of urbanization is also studied.

Problems identified: Heterogeneity in the formation of (1P1). AULP in the formation of Matter and Energy facets.


Sociobiology (8F), Fertility rates and family change (1P1): influenced by (E) - Changes in age of marriage (qualifier to E); Trends (2M1) - Due to urbanization and arranged marriages (qualifier to 1M1).

Changes of the static system in old age and social behaviour. (Aktuel Gerontology, 5;1975; 533-7).

Study of the social behaviour in old age and the static nature of the same.

Problems identified: Heterogeneity in the formation of Matter. Multiconnotation of 'old age'. Is it P or MP? Qualifier to (E).


Sociobiology (8F), Old age (1P1); Social behaviour (1M1): Influenced by (E) - Changes in static system (qualifier to 1E).
B.10 Characteristics of the social behaviour of white mice after destruction of sympathetic nerve terminals with 6-hydrocyclopamine. (Ekologiia. 6;1979; 27-31).

Study of the social behaviour on white mice. The impact of removal of sympathetic nerve terminals with 6-hydrocyclopamine.

Problems identified: Qualifier to P) and multiconnotation of 'social behaviour'. Is it (P) or MP )?


Sociobiology (BF), Social behaviour (1P1) - White mice (qualifier to 1P1) - Without sympathetic nerve terminals (qualifier of qualifier to 1P1).

B.12 Communication mechanisms and social integration in the black spider monkey. (Smithsonian Contributions to Zoology. 213; 1976; 1-108).

Development of communication mechanisms and social integration in the black spider monkey. Case studies.

Problems identified: Qualifiers to P. Heterogeneity in (P). Multiconnotation of 'social integration'.

Principles used: Principle 3 and its notes 1 and 2.

Sociobiology (BF), Social integration and communication mechanisms (1P1) - in Black spider monkey (qualifier to 1P1).
B.12 Comparative studies of social behaviour in Calliebus (Titi monkey) and Siam male and female emotional attachments. (Behaviour Biology. 16;1976; 185-87).

Studies of social behaviour of titi monkey with Siam male and female emotional attachments.

Problems identified: AMLP due to loose formations of qualifiers to (P). Qualifiers to (P) and multiconnotation of the term 'social behaviour'.


Sociobiology (BF), Social behaviour (1P1) - Calliebus (titi monkey) (qualifier to £ 1P1) compared with Sociobiology (BF), Siam male and female (1P1) - Emotional attachments (1MP1).

B.13 Continuation in the explanation of fertility control. (Journal of the marriage and family. 34; 1972; 315-23).

Sociobiological studies of fertility control.

Problems identified: Multiconnotation of the term 'fertility control'. Is it (P), (MP) or (E)? Incidence of two rounds of (E).


Sociobiology (BF), Fertility control (1P1) : Explanation (1E) ; Research (4E).
B.14 Crossing social boundaries: Cosmopolitanism among black and white adolescents.
(Social Science Quarterly. 52; 1971; 602-24).

Studies of the barriers between black and white adolescents in USA. The cosmopolitanism in metropolis provides a method of overcoming some of these barriers.

**Problems identified**: Qualifiers in (P) facet and the heterogeneity due to a combination of qualifiers.

**Principles used**: Principle 3 and its notes 1 and 2.

Sociobiology (BF), Cosmopolitanism (1P1) - Among black and whites (qualifier to 1P1) - Adolescents (qualifier to qualifier of 1P1).

B.15 Cultural contradiction and roles: The masculine case.
(American Journal of Sociology. 78; 1973; 873-84).

This study aims to ascertain whether recent social changes and the consequent malintegration with regard to sex roles of men.

**Problems identified**: Multiconnotation of the term 'sex roles'. Is it (P) or (M)? Qualifiers' problems in relation to (P) and (E).


Sociobiology (BF), Sex roles (1P1) - Men (qualifier to 1P1) - Impact (1E) - of Social change (qualifier to 1E).
D.18 Degree of human genetic isolation measured by isonymy and material distances in two communities in an Italian Alphine valley. (Human Biology. 44;1972; 351-60).

The Italian Alphine Communities of Bellino and casted with persons of the same surname were common. But a few marriages were always exogeneous often with individuals from distant places.

Problems identified: Multiconnotation of the term 'roles of human genetic isolation'. Is it (P), (M) or (E)? Heterogeneity in the formation of (E) and qualifier to (P).


Sociobiology (BF), Human genetic isolation (1P1). With Italian Alphine community (qualifier to 1P1). Measurement (IE). By isonymy and material distances (qualifier to IE).


Study of the variations of the age at the first marriage in sixteen Latin American cities. They exhibit a differential age-behaviour in relation to marriage.

Problems identified: Multiconnotation of role of 'differential female age'. Is it (P) or (M)? Qualifier problems in relation to (P). Heterogeneity in the formation of (P).

Principles used: Principle 3 and its notes 1 and 2.

Sociobiology (BF), Differential age (1P1) - Female (qualifier 1 to 1P1) - First marriage (qualifier 2 to 1P1) - Latin American community (qualifier 3 to 1P1).

Study of the impact of differential fertility on the birth order of children among Philippines.

Problems identified: Multiconnotation of role of differential fertility. Is it (P) or (M) and its impact. Is it (MP) or (R) ?


Sociobiology (BF), Fertility (IP1) - Differential (qualifier 1 to IP1) - Among Philippines (qualifier 2 to IP1); Impact (MP) on birth order (qualifier to 1MP1).

B.19 Differential labour force participation of women in Latin American and Middle-Eastern countries: The influence of family characteristics. (Social Forces. 51;1972; 135-53).

The relative importance of marital and fertility characteristics upon female employment rates is listed in an attempt to explain the frequent difficulties in women's management participation rates between Latin American and Middle-eastern countries.

Problems identified: Multiconnotation of 'role of family and marital characteristics'. Is it (P) or (M) ? AULP in relation to formation of (P) isolates.


Sociobiology (BF), Martial and family characteristics (IP1) - Latin American and middle-eastern communities (qualifier to IP1) - Influence on (MP) - Employment rates (qualifier to (actand) to MP).
Dimensions of illness behaviour in survivors of myocardial infraction.
(Journal of Psychosomatic Research. 22;1978;485-92)

Examination of 120 survivors of myocardial infraction for psychological responses to illness. Eight clinically meaningful factors were found out after the analysis of the data. Semantic concern, psychosocial precipitate, affective disruption, affective inhibition, illness recognition, subjective tension, sick role acceptance, and trust in doctor. Nature of myocardial infraction imparts a unique quality of illness behaviour developed after it.

Problems identified: Multiconnotation problem: Is 'illness behaviour' (P) or (M)? Problem of qualifiers to (P).

Principles used: Principle 3 and its notes.

Sociobiology (BF), Illness behaviour (1P1) - among survivors of myocardial infraction (qualifier to 1P1)

Drug use among public and private secondary school students in Puerto Rico.
(International Journal of Addiction. 14;1979;243-59)

Socio-economic factors influence on the Puerto Rico adolescent drug behaviour. A great proportion of adolescents have used alcohol and tobacco than any of the other illegal drugs.

Problems identified: Multiconnotation of 'drug use'. Is it (P) or (M)? Qualifiers to (P).

Principles used: Principle 3 and its notes.

Sociobiology (BF), Drug use (1P1) - Students (qualifier to 1P1) - Secondary school (qualifier to qualifier of 1P1) - Private (qualifier to qualifier of qualifier of 1P1).
B.22 The easy rider syndrome: A pattern of hatred and homosexual relationships in a heroin-addict population. (Family Process. 9;1970; 425-30).

Study of the homosexual relationships and hatred in a population of addicts to heroin. The happy-go-lucky type of the addicts is discussed.

Problems identified: Multiconnotation in relations to homosexual relationships. Is it (P) or (M)? Qualification problem in (P).

Principles used: Principles 3 and 9 and their notes.
Sociobiology (3F), Homosexual relationships and hatred (1P1) - Heroin-addict population (qualifier to 1P1); Pattern (MP).

B.23 An ecological analysis of urban mortality rates. (Social Science Quarterly. 52;1971; 574-87).

The study investigates mortality rates in urban areas. Ecology analysis is done.

Problems identified: Multiconnotation of the term; "Mortality rates". Is it (P) or (M)? Qualifiers to (P). Multiconnotation and qualifier problem in (E).

Principles used: Principles 3 and 16 and their notes.
Sociobiology (UF), Mortality rates (P) - Urban (qualifier to 1P). Analysis (E) - Ecological (qualifier to 1E).
B.24 Ecologically oriented family intervention. 
(Family Process. 11;1972; 499-505).

An ecologically oriented approach to family treatment is relevant for all social classes. The method of intervention should not be determined by social class factors alone, but on the diagnosis and perception of the balance of forces in an ecological framework.

Problems identified: Multiconnotation problems - in relation to 'Ecological balances'. Is it (P) or (M)? Impact of (E) or (MP). Qualifiers to (MP).


Sociobiology (BF), Ecological balance/Homeostasis (1P1); impact (1MP1) - Family (qualifier to 1MP1).

B.25 Effects of delta - a tetrahydro cannabinol - on social behaviour in the laboratory mouse and rat. 
(Psychopharmacologia. 44;1975;287-9).

Study of the behaviour of laboratory mouse and the impact of tetrahydro cannabinol.

Problems identified: Multiconnotation of 'social behaviour'. Is it (P) or (M)? Qualifier problems in (P) and (E). Heterogeneous formation of the subject.


Sociobiology (BF), Social behaviour (1P1) - Laboratory mouse and rat (qualifier to 1P1); influenced by (1B) - Delta tetrahydro cannabinol (qualifier to 1B).
B.26 Effects of some factors on natural and post-neonatal mortality: Analysis of a binary variable multiple regression method.
(Milbank Memorial Fund Quarterly. 49;1971;33-57).

A study of the natural and post-neonatal mortality. The study uses binary variable multiple regression methods.

Problems identified: Multiconnotation of 'mortality'. Is it (P) or (M)? Qualifier problems in (P) and (E). Multiconnotation of binary variable multiple regression method. Is it (E) or (M)? Heterogeneous formation of the subject.


Sociobiology (BF), Natural and post-neonatal (qualifier to 1P1): Analysis (E) - Binary variable multiple regression method (qualifier (method) to 1E).

B.27 Effects of septat fibre infectants on rat - Open field social behaviour.
(Physiological Behaviour. 15;19;177-84).

Study on the social behaviour. Effects of septat fibre infectants on social behaviour of the rats.

Problems identified: Multiconnotation of 'social behaviour'. Is it (P) or (M)? Qualifiers to (P) and (E). Heterogeneous formation of subjects.


Sociobiology (BF), Social behaviour (1P1) - Rat (qualifier 1 to 1P1) - Open field (qualifier 2 to 1P1): Effect (1E) Septat fibre infectant (qualifier (actor) to 1E).
B.28  Effects of social incentives on task performance in the elderly.
(Journal of Gerontology. 33;1073; 562-6).

Effect of social pressure, social reproof and comments on the task performance and behavioural change in the aged.

Problems identified: Multiconnotation of the term 'task performance'. Is it (P) or (M)? Qualifiers to (P). Multiconnotation of the term 'effects'. Qualifier to (P).


Sociobiology (BP), Task performance (IP1) - Of elderly persons (qualifier to IP1) ; Effects (IE) ; Social incentives (qualifier (actor) to IP1).

B.29  Emotional attitudes and political choices.
(Politics and Society. 2;1972; 209-33).

A scientific basis for the study of emotional attitudes in relation to political positions in the US is sought. The concept of biophilia (love of life) vs necrophilia (love of death) is suggested as a key factor to understand the psychological polarity involved in political choice.

Problems identified: Heterogeneity in the formation of (P). Multiconnotation of the term 'influenced by'. Is it (E) or (M)? AULP in the formation of subject. Qualifier to (E).


Sociobiology (BP), Biophilia compared with Necrophilia (IP1) : Influenced by (E) - Political polarity (qualifier (actor) to (E).
B.30 Estimating the prevalence of alcoholism from alcohol consumption and mortality data. (Quarterly Journal of Studies on Alcohol, 31;1971;957-64).

Methods for measuring alcoholism. Confidence in estimation is enhanced when reasonable agreement is obtained with the estimates based on mortality data.

Problems identified: Multiconnotation of the term 'alcoholism'. Is it (P) or (M)? Qualifiers to (E). Heterogeneity in (E) facet.


Sociobiology (BP), Alcoholism (1P1); Prevalence (1MP1): Estimation (1E) - Alcohol consumption and mortality data (qualifiers (actors) to 1E).


P. ni rufescens display behaviour pattern which seems to be disappearing as a result of their parasitic way of life. Disappearance of certain elements of behaviour is inhibited by a social way of life.

Problems identified: Multiconnotation of the term 'functional degeneration'. Is it (P), (M) or (E)? Qualifier problems to (P). ADLP effect on the formation of (E) facet.


Sociobiology (BP), Functional degeneration (1P1) - Stiassen ant (qualifier to 1P1) - Influenced by (1E) - Socially parasitic way of life (qualifier to 1E).
B.32 Evolution of human behaviour.
(Social Biology. 19;1972; 163-70).

Here, the concern is with the evolution of human biology with reference to primate behaviour. It is noted that the anatomy must respond with the whole range of behaviour by which a species adopts itself.

Problems identified: Multiconnotation of 'role of human behaviour'. Is it (P) or (MP)? Multiconnotation of 'role of influence'. Is it (MP) or (B)?


Sociobiology (BP), Human behaviour (1P1) - Influenced by (IE) - Anatomy (qualifier to IE).

B.33 Evolution in fertility in Western Europe: Some recent advances.
(Population. 27-1972; 338-74).

The increase in fertility rates observed in most of the western countries until 1964 was a result of earlier marriage and shorter intervals between marriage and the Birth of the first child.

Problems identified: Multiconnotation of the role of fertility. Is it (P) or (MP)? Qualifiers to (P) or (M).


Sociobiology (BP), Fertility (1P1) - Western Europe community (qualifier to 1P1); Rates (1MP): Increase (IE) - Recent trends (2MP1).
B.34 Evolution of the social mode of life in ants. (Zoulzh. 54; 1975; 861-72).

The 'social mode of life' of ant is observed. The evolution of its behaviour is discussed.

Problems identified: Multiconnotation of roles of 'social mode of life'. Is it (P) or (MP)? Qualifiers in (P) or (M). Multiconnotation of the role 'evolution'. Is it (MP) or (E)?


Sociobiology (BF), Social mode of life (1P1) - in Ants (qualifier to 1P1); Evolution (1MP1).

B.35 Experimental effect and the reports of Jamaican adolescents on beauty and body image. (Social and Economic Studies. 21; 1972; 353-90).

The investigation is principally concerned with personal attributes of experimental effects that may be manifested in the survey research employing an open mind which requires subjects report on their concept of physical beauty and their caltresses of body images.

Problems identified: Heterogeneity in the formation of subject. Heterogeneity in (P). Multiconnotation of the role of 'effect'. Is it (MP) or (E)? Qualifiers problem in relation to (E) and (MP).


Sociobiology (BF), Beauty and body images (1P1); Perception (E) - by Jamaican adults (qualifier (actor) to (E)): Survey results (1MP1) Effect (1MP2) - on experimenter (qualifier to 1MP).
B.36 Extralimbic mediation of emotionality and social cohesiveness effects.
(Physiological Behaviour. 15; 1977; 271-6).

Study of the problems in emotional aspects and social cohesiveness among rats through the extralimbic mediation.

Problems identified: Multiconnotation of 'social cohesiveness and emotionality'. Is it (P) or (M)? Multiconnotation of 'effects'. Is it (MP) or (E)? Qualifier to (MP) or (E).


Sociobiology (BE), Social cohesiveness and emotionality (1P1); Effects (1MP1) - on Rats (qualifier to 1MP1).

B.37 Factors affecting non-participation in a country-wide tuberculin testing programme in Southern Appalachia.
(Social Science and Medicine. 3; 1970; 575-96).

Study of the causal factors affecting the non-participative population in tuberculin testing programme of a country.

Problems identified: Multiconnotation of 'influencing factors'. Is it (M) or (E)? Qualifier to (P). AULP in (E) facet.


Sociobiology (BF) - Non-participation (1P1) - in Tuberculin testing programme (qualifier to 1P1) - Country-wide (qualifier to qualifier to 1P1) - Southern Appalachia (specific case of qualifier to qualifier to 1P1); Influencing factors (1MP1).
B.38 Family therapy with the families of recovering alcoholics. (Quarterly Journal of Studies on Alcohol, 31; 1970; 393-413).

The study of the family therapy application - a sociobiological approach to rehabilitation of the alcoholics.

Problems identified: Multiconnotation of the role 'family therapy'. Is it (P), (M) or (E)? Multiconnotation of 'effect'. Is it (M) or (E)? Qualifiers in (M) or (E). AULP in the formation of the subject.

Sociobiology (BF), Family therapy (P): Effect (MP) - on recovering alcoholics (qualifier to 1P1).

B.39 Father's age and infant mortality (Social Biology, 18; 1972; 275-84).

Previous research has suggested an increase in the relative risk of infant mortality. The older the father in relation to mother, the greater the infant death rate. Statistics from the National Centre for Vital Statistics (1962) are compiled and analyzed in this study.

Problems identified: Multiconnotation of 'infant mortality'. Is it (P) or (MP)? Qualifier problems in the formation of (E). Heterogeneity in the structure of the subject.


Sociobiology (BF), Infant mortality (1P1): Influenced by (E). Father's age (qualifier to (E)).
B.40  Fission-fusion and linear effect aspects of the population structure of the semai Senoi of Malaysia. 

Study of the phenomena of disintegration and reintegration on the familial structure of the population of Malaysia.

Problems identified : Multiconnotation of the term 'population structure'. Is it (P) or (MP)? Multiconnotation of 'influence'. Is it (MP) or (E)? Qualifiers to (MP) or (E).


Sociobiology (BP), Population structure (IP), Family (IP): Influenced by (E) - Fission and fusion (qualifier to (E)).

B.41  From genesis to genocide: The meaning of human nature and the power of behaviour control. 1979. (Monograph).

The effort to solve social problems linked with the theories of human behaviour can be viewed as instruments of behaviour control.

Problems identified : Multiconnotation of 'human behaviour'. Is it (P), (MP) or (E)? Qualifier problems in relation to (E). AULP effect on the subject formation.


Sociobiology (BP), Human behaviour (IP), Theories (MP): Influenced by (E) - Instruments of behaviour control (qualifier to E).
B.42 Genetic and cultural pools: Some suggestions for a unified theory of biocultural evolution.
(Human Ecology. 1;1973; 201-15).

An analysis is proposed between cultural evolution and synthetic theory of genetic evolution and it is suggested that both may be placed into a unified conceptual framework.

Problems identified: Multiconnotation of 'bioculture'. Is it (P) or (NP) ? Multiconnotation of 'evolution'. Is it (NP) or (E) ? Qualifier to (NP) or (E).


Sociobiology (BP), Bioculture (1P) : Evolution (E) - Unified theory (qualifier to E).

B.43 The growing edge of family therapy.
(Family Process. 10; 1971; 143-56).

Study of the growing influence of family therapy.

Problems identified: Multiconnotation of 'family therapy'. Is it (F), (M) or (E) ? Qualifier to (NP) or (E). Multiconnotation of 'influence'. Is it (NP) or (E) ? AULP in the formation of subject.


Sociobiology (BP), Family therapy (P) : Influence (1E) - Growing (qualifier to E) : Study (2E).
B.44  Health seekers behaviour and social networks of the aged living in single room occupancy hotels.  
(Journal of American Geriatric Sociology. 27;1979; 270-3).

The elderly who reside in single room occupancy (SRO) hostels are isolates lacking the interest or ability to engage private secrecy support systems. Differences in network size, complexity, intensity, connections and directions in relation to varying degrees of physical and psychiatric health.

Problems identified: Multiconnotation in relation to 'health seeking behaviour'. Is it (P) or (MP)? Qualifiers to (PI).


Sociobiology (BP), Health seeking behaviour (IP) Aged (qualifier to IP1) Living in single room (qualifier to qualifier of IP1) Survey (E).

B.45  Illness and the legitimation of failure.  

Study of the causes of failure. The illness as a cause of such failure. The legitimation of the same.

Problems identified: Multiconnotation of 'legitimation'. Is it (MP) or (E)? Qualifiers in (MP) or (E). Multiconnotation of role of 'failure'. Is it (P) or (MP)?


Sociobiology (BP), Failure (IP1): Legitimation (E) - Through Illness (qualifier (actor) to E).
B.46 Influential factors in the acceptance of birth control and the consequential approaches to family planning. (Sociological Forces. 6;1973; 68-82).

Statistics in the progress of national family planning centres in Egypt indicate that the increase in the number of these centres has not been matched by a corresponding increase in the adoption of public use of birth control methods.

Problems identified: Multiconnotation of roles of birth control (P), (MP) or (E). Choice of methods. Is it (MP) or (E)? Influencing factors: (MP) or (E)? AULP affects the formation of the strings.


Sociobiology (BF), birth control (1P1): Choice of methods (1E); Influencing factors (E 2MP1).

B.47 Interpersonal speaking distance as a function of age, sex and relationships. (Sociometry. 35; 1972; 491-8).

A study which examines into personal speaking distance in face-to-face talks which occur in neutral, outdoor settings, using a precise unobstrusive measurement technique.

Problems identified: Multiconnotation of 'interpersonal interaction'. Is it (P), or (M) or (E)? Multiconnotation of 'speaking distance'. Is it (P), (MP) or (E)? Multiconnotation of 'influence'. Is it (P), (MP) or (E)? Heterogeneity in the formation of the subject.


Sociobiology (BF), Interpersonal interaction (1P1): Speaking distance (1MP1): Influenced by (E) - Age and sex relation (2MP1).
B.48 Labelling theory and community psychiatry: The impact of psychiatric sociology on ideology and practice in the American psychiatry. (Psychiatry. 34; 1971; 378-90).

Problems identified: Multiconnotation of the role 'community psychiatry'. Is it (P), or (M) or (E)? Multiconnotation of 'impact'. Is it (MP) or (E)?


Sociobiology (BP), Community psychiatry (1P1): Impact (E). Labelling theory (qualifier to E).


Study of the mortality of men. The increase in mortality is analysed. The leading components affecting the mortality are studied.

Problems identified: Multiconnotation of the role of 'mortality'. Is it (P) or (MP)? Multiconnotation of 'upturn'. Is it (MP) or (E)? Influencing factors: Is it (MP) or (E). Heterogeneous formation of subjects.


Sociobiology (BP), Mortality (1P1) of men (qualifier to 1P1): Upturn (E); Influencing factors (2MP1).
B.50 Levels of conceptual analysis in environment-infant interaction research.
(Merrill Palmer Quarterly. 15;1960; 7-47).

Study of the infant interaction with its surrounding environment. The various levels of conceptual analysis in this connection are studied.

Problems identified: Multiconnotation of 'interaction'. Is it (P) or (E) or (M)? AULP in the formation of the subject.


Sociobiology (SF), Infant interaction (IP1) - with Environmental (qualifier to 1P1); Conceptual analysis (1E); Levels (2HP1).

B.51 Migration and the ecological complex.

Study of the pattern of migration among Americans. The influence of ecological complex is highlighted.

Problems identified: Multiconnotation of the concept 'migration'. Is it (P) or (MP) or (E)? Multiconnotation of 'influence'. Is it (MP) or (E)?


Sociobiology (SF), Migration (1P1): Influenced by (1E) - Ecological complex (qualifier to 1E).
B.52 The mobility of academic scientists: A comparison of male and female faculty members. 
(Cornell Journal of Social Relation. 5;1970; 120-32).

Study of the mobility of academic scientists. It is correlated with the faculty members and in relation to their sex roles.

Problems identified: Multiconnotation of 'mobility'. Is it (P) or (M)? Multiconnotation of 'influence'. Is it (P) or (M)? Qualifier in relation to (P). Heterogeneity of the formation of the subject.


Sociobiology (BP), Mobility (F) - Academic scientists (qualifier to 1P); Influence (E) - of Sex roles (qualifier to 1P).

B.53 Mycosociological research in the forest of upper Belgium: Essay on the foundations of the sociology of higher fungi. 
(Instruments Science Naturale Belk Member. 21;1973; 1468).

Study on the parasitic nature of the ecology of higher fungi in Belgium forest.

Problems identified: Multiconnotation of 'social ecology'. Is it (P) or (MP) or (E)? Qualifier to (P). Multiconnotation of 'mycosociology'. Is it (MP) or (E)? Qualifier to (MP).


Sociobiology (BP), Ecology (1P1) - Forests (qualifier to 1P1) - Upper Belgium (qualifier to qualifier of 1P1); Mycosociology (MP).
B.54 The myth of male superiority: Rise and demise.  
(American Anthropology. 81;1979; 280-309).

The review of evidence from ethology developmental psychology, and cross cultural investigations lead to a social exchange model involving differences in the elasticities of male and female labour contributions in social evolution.

Problems identified: Multiconnotation of the role 'social evolution'. Is it (P), or (M) or (E)? Multiconnotation of role of 'contributions'. Is it (P) or (MP) or (E)? Qualifiers to (P), (MP) or (E). AULP in (E).


Sociobiology (PF), Social evolution (1P1): Contributions (E) - from Labour (qualifier to 1E) - Male compared with females (qualifier to 1E with phase relation).

B.55 Natural selection and differential population growth of human races.  
(Social Biology. 19;1972; 171-3).

The focus is on the distinction Charles Darwin made between sexual selection and natural selection. The distinction is considered false. Human breeding is generally selective rather than random and this is bound to have both demographic and genetic consequences.

Problems identified: Multiconnotation of role 'population growth'. Is it (P), or (MP) or (E)? Qualifiers to (P). AULP in the formation of subject.


Sociobiology (BF), Population growth (1P1) - Human races (qualifier to 1P1): Natural selection (E).
B.56 Notes on fertility measurement
(Milbank Memorial Fund Quarterly. 49;1971; 109-27).

Study of the variation in fertility and its measurement.

Problems identified: Multiconnotation of role of 'fertility'.
Is it (P), or (MP) or (E)? Multiconnotation of 'variation'.
Is it (MP) or (E)?

Principles used: Principle 3 and its notes. Principles 9,
16, 20 and 21.

Sociobiology (EF), Fertility (1P1); Variation (1MP1);
Measurement (1E); Research (2E).

B.57 On the evolutionary foundation of language.
(American Anthropologist. 74;1972; 308-17).

This is a study of the linguistic ability and its evolutionary
foundations.

Problems identified: Multiconnotation of 'language ability'.
Is it (P) or (MP)? Evolutionary foundations. Is it (P)
or (MP)?

Principles used: Principle 3 and its notes. Principles 9,
16, 20 and 21.

Sociobiology (EF), Ability (P) - Linguistic (qualifier to P);
Foundations (MP) - Evolutionary (qualifier to 1MP1).
B.58 Organ transplantation with an incompetent donor: Kentucky resolves the dilemma of Strunk vs Strunk. (Kentucky Law Journal. 68;1969-70; 123-60).

Study of the sociological dilemma of organ transplantation from incompetent donors.

Problems identified: AULP in the formulation of (P). Heterogeneity in the formation of the subject.


Sociobiology (BF), Organ transplantation (1P1) - from an incompetent donor (qualifier to 1P1); Socio-legal dilemma (MP).

B.59 An organism-oriented concept of development. (Miller Palmer Quarterly. 16;1970; 246-52).

Study of the development influenced by organism-oriented concept.

Problems identified: Multiconnotation of the role 'development'. Is it (P) or (M) or (E)? Multiconnotation of 'influence'. Is it (MP) or (E)? AULP in the formation of the subject.


Sociobiology (BF), Development (1P1): Influenced by (E) - Organism-oriented (qualifier to 1E).

Study of the application of a behavioural model for premarital intercourse.

Problems identified: Multiconnotation of the role 'sexual intercourse'. Is it (P), or (MP) or (E)? Qualifier to (P). Multiconnotation of 'behavioural model'. Is it (MP), or (E)? AULP in the formation of the subject.


Sociobiology (BF), Sexual intercourse (1P1) - Premarital (qualifier to 1P1) : Test (E) - Behaviour model (qualifier to IE).


Study of the smoking recidivism. Identifying the methods of prediction. Use of psychosocial indicators.

Problems identified: Multiconnotation of the role 'smoking recidivism'. Is it (P) or (MP) or (E)? Qualifiers in (E).


Sociobiology (BF), Smoking recidivism (P) : Prediction (1E) - Using psychosocial indicators (qualifier to 1E).
B.62 Sex control and society: A critical assessment of sociological speculations.
(Social Problems. 20; 1973; 310-18).

Medical scientists have predicted that parents will soon be able to preselect the sex of their children (sex control). Social scientists have, in turn, projected some of its potential social consequences of first born males and females relations.

Problems identified: Multiconnotation of sex control. Is it (P) or (M) or (E)? Multiconnotation of 'sociological speculations'. Is it (P) or (M) or (E)? AULP in the formation of the subject and in particular in (MP).


Sociobiology (BP), Sex control (1P1); Sociological speculations (1MP1) - Assessment (1E).

B.63 Similarities in values and other personality characteristics in college students and their parents.
(Merrill Palmer Quarterly. 15; 1939; 323-36).

Study of the personality and values of college students. The identification of similarity of these values to their parents.

Problems identified: Multiconnotation of the role of the term 'personality and value'. Is it (P) or (MP)? AULP in the formation of the subject. Qualifiers to (P) or (MP).


Sociobiology (BF), Personality and values (1P1) - Among college students (qualifier to 1P1); Influenced by (1E) - their parents (qualifiers to 1E).
B.64 Social aspects of leprosy.
(Mann in India. 51;1971; 130-41).

Study of the leprosy in India and its sociological implications.

Problems identified: Multiconnotation of 'leprosy'. Is it (P) or (MP)?

Principles used: Principle 3 and its notes. Principle 0.

Sociobiology (BP), Leprosy (1P1) in India (qualifier to 1P1) - Social aspects (MP).

B.65 Social attributes to sexually transmitted diseases.
(Bulletin of Postgraduate Institute of Medical Education Research (Chandigarh), 12;1978; 175-86).

Lack of realization of social attributes has led to the increasing incidence of sexually transmitted diseases in India. Due recognition should be given to the fast changing sociocultural and economic concepts.

Problems identified: Multiconnotation of the role of 'sexually transmitted diseases'. Is it (P) or (M)? Effect of AULP in the formation of subject cn (E). Heterogeneity of the facet structure.


Sociobiology (BP), Sexually transmitted diseases (1P1) - Influenced by (1E): Social activities (qualifier to 1E).
Social class and alienation correlate of protestant fertility.
(Journal of Marriage and the Family. 35;1973; 83-8).

The interest is in establishing further relationship which may ultimately contribute to a socio-psychological model for different fertility and family planning behaviour.

Problems identified: Multiconnotation of the role of 'fertility'. Is it (P) or (M) or (E) ? Qualifiers to (P) and (E).


Sociobiology (BF), Fertility (1P1) amongst protestants (qualifiers to 1P1) - Influenced by IE) - Social alienation (qualifiers to IE).

Social class and lay explanation of the etiology of arthritis.

Study was made of the effect of social class upon layman's etiological explanations of symptoms. Interview of 160 middle-aged Americans from different social strata who had specific symptoms for their ideas about the cause of the symptoms.

Problems identified: Multiconnotation of the role of 'arthritis'. Is it (P) or (MP) or (E) ? Qualifier to (E).


Sociobiology (BF), Arthritis (1P1) : Etiology (MP) : Explanation (1E) : Based on social class (qualifier to 1E).
B.66 The social effect of hunting Toni chorea on reproductive effectiveness.

Problems identified: Multiconnotation of reproductive effectiveness. Is it (P) or (M)? Qualifier to (P) or (M).


B.69 Social experience affects the development of Dendrine spines and branches of tectal interneurons in the Jewel Fish. (Development Psychological Biology. 12.1979; 347-58).

African jewel fish reared with systems same fish but without visual tactile contact with non-specifics exhibit hyper responsive behaviour after release in community again.

Problems identified: Multiconnotation of 'community behaviour'. Is it (P) or (W) or (E)? Qualifier to (P) or (W) or (E). AULP in the formation of the subject.


Sociobiology (BF), Community behavior (1P1): African jewel fish (qualifier to 1P1).
B.70 Social inhibition of saturation in natural populations of x varieties.
(Science. Washington DC. 201; 1359; 1973; 933-5).

The more adults, the fewer maturing males are present, the larger the average juvenile, the greater the number of males maturing. Evolution of this system understood best by individual selection consequences, buffer the hope against the prediction.

Problems identified: Multiconnotation of the role of 'saturation'. Is it (P) or (MP)? Qualifier to (P) or (MP). Multiconnotation of the term 'social inhibition'. Is it (MP) or (E)?


Sociobiology (BP), Maturation (1P1): In natural population (qualifier to 1P1) - x varieties (qualifier 2 to 1P1); Social inhibition (1MP1).

B.71 Social structure and homosexuality: A theoretical appraisal.
(British Journal of Sociology. 33; 1972; 146-58).

Study of the influence of social structure on homosexuality.

Problems identified: Multiconnotation of the role of ' homosexuality'. Is it (P) or (M)? AUPP effect on the formation of (E). Heterogeneity in the formation of the subject.


Sociobiology (BP), Homosexuality (1P1) - Influenced by (E); Social structure (qualifier to 1P1).
B.72 Sociocultural aspects of tuberculosis defaultation: A case study.
(Social Science and Medicine. 6-1972; 397-412).

Study of the social and cultural aspects of tuberculosis defaultation in India.

Problems identified: Multiconnotation of the role of 'tuberculosis defaultation'. Influence of AULP in the formation of the subject.


Sociobiology (BF), Tuberculosis defaultation (IP1) - Sociocultural aspects (MP).

B.73 Sociocultural correlates of fertility among tribal rural and urban populations in Iran.
(Social Biology. 22; 1975; 151-66).

Study of the fertility in Iran. The study is intensified using socio-cultural correlates. It encompasses tribal, rural and urban populations.

Problems identified: Multiconnotation of the role of 'fertility'. Is it (P) or (MP)? Qualifiers to (P) or (MP). Heterogeneity of the formation of the subject.


Sociobiology (BF), Fertility (IP1) - Among tribal, rural and urban groups (qualifier to IP1) - Correlates (IMPI) - Sociocultural (qualifier to MP).
B.74 Socio-economic and seasonal variations in births: A replication.
(Sociobiology. 19;1972; 65-8).

Study of the replication of seasonal and socio-economic variations in births.

Problems identified: Multiconnotation of the role of 'birth'. Is it (P) or (MP) or (E)? AULP's influence on the formation of (M). Heterogeneity in the formation of the subject.


Sociobiology (BP), Birth (IP1): Variations (IMP): Socio-economic and seasonal (qualifier to IMP1).

B.75 Sociogenic brain damage.
(American Anthropologist. 74;1972; 1045-61).

Study of the brain damage in human beings due to sociogenic causes.

Problems identified: Multiconnotation of the role of 'brain damage'. Is it (P) or (M)? AULP in the formation of the strings.


Sociobiology (BP), Brain damages (P): Causes (MP): Sociogenic (qualifier to MP).
B.76 The sociology of health: Some questions.
(Midbank Memorial Fund Quarterly. 40;1071; 133-9).

Study of the socio-biological aspects of health.

Problems identified: Multiconnotation of the term 'health'.
Is it (P) or (MP)? AULP's influence on the formation of (P).

Principles used: Principle 3 and its notes.

Sociobiology (BF), Health (IP).

B.77 Smoking, psychological status and stress.
(Social Science and Medicine. 6-1972; 583-91).

A report on the relationship between life crisis and smoking
behaviour in a community sample of 336 adults in New Heaven,
Connecticut. Data are presented on smoking behaviour as it
is related to both stress and psychological impairment. Find­
ings on a positive relationship between smoking and psycho­
logical impairment.

Problems identified: AULP effect in the formation of (P).
Heterogeneity in the formation of the string.

Principles used: Principle 3 and its notes. Principles 16,
20 and 21.

Sociobiology (BF), Smoking i. Psychological stress i. Psychological status (P): Analysis (E).
B.78 Sterilization: A case of extension practice in a developing nation.
(Milbank Memorial Fund Quarterly. 49-1971; 363-78).

Study of the practice of sterilization for population control as an extension activity in a developing nation.

*Problems identified*: Multiconnotation of the role of 'population control'. Qualifiers to (P).

*Principles used*: Principle 3 and its notes.

Sociobiology (BF), Population control (1P1) - In developing countries (qualifier to 1P1) - Through sterilization (qualifier to 1P1).


Influence of the culture on disease is studied.

*Problems identified*: Multiconnotation of the role of 'disease'. Is it (P) or (M) or (E)? AULP effect on the formation of subject.


Sociobiology (BF), Disease (1P1): Influenced by (1E) - Culture (qualifier to 1E): Investigation (2E).
One major complaint of female workers was pain in the lower back and fatigue feelings after the day/night duty which showed a high frequency of drowsy symptoms followed by physical dis-integration of difficulty in concentration. The observed high frequency of general mental fatigue and local fatigue complaints of these workers.

Problems identified: Multiconnotation of the role of 'fatigue feeling'. Is it (P) or (MO)? Qualifiers to (P) or (M).

Principles used: Principle 3 and its notes.

Sociobiology (BP), Fatigue feeling (IP1) - Women workers (qualifiers to IP1) - Social welfare (qualifier 3 to IP1).

B.81 The timings of the first birth, female role and black fertility. (Milbank Memorial Fund Quarterly. 19;1971;32:3-61).

Study of the influence of timings on sociobiological aspects of first birth, female role and black fertility.

Problems identified: Heterogeneity in the formation of (P). AULF effect in the formation of subject.

Principles used: Principle 3 and its notes.

Sociobiology (BP), First birth in Female role in Black fertility (IP1) ; Timings (MP).
B.82 Traditional healers in a region of Mysore. 
(Social Science and Medicine. 5;1971; 500-601).

Study of the sociobiological influence of traditional healings in the Mysore-City.

Problems identified: Multiconnotation of the term 'traditional healing'. Is it (1P1) or (1MP1)?

Principles used: Principle 3 and its notes.

Sociobiology (BF), Traditional healing (1P1) - Mysore (qualifier to P).

(Sociobiology. 19;1972; 231-6).

Cultural and genetic evolution are viewed as interdependent. The widely held idea that cultural evolution has replaced genetic evolution is considered a misconception. Both types of evolution are still continuing.

Problems identified: Multiconnotation of the term 'environment'. Is it (P) or (EP) or (E)? Multiconnotation of (M) or (E). Qualifiers to (E).

Principles used: Principle 3 and its notes.

Sociobiology (BF), Environment (1P1); Information (1MP1); Transmission (1E) - To human species (qualifiers to 1E) - Study (aE) - Cybernetics (qualifiers to 2E).
B.84 Unsolved Issues in research on fertility in Latin America.
(Milbank Memorial Fund Quarterly. 49;1971; 379-88).

Study of the unsolved issues in research in fertility among Latin Americans.

Problems identified: Multiconnotation of the term 'fertility'. Is it (P) or (MP)? Heterogeneity in the formation of the subject. Incidence of (MP) in the second round.


Sociobiology (BF), Fertility (1P1) - Latin America (qualifier to 1P1): Research (1E); Unsolved issues (2KPI).

B.85 Urban structure and the black and white fertility differential.
(Social Science Quarterly. 52;1971; 538-601).

Study of the fertility among black and whites. Influence of urban structure on the same. Analysis on the basis of an assimilationist model.

Problems identified: Multiconnotation of the term 'fertility differential'. Is it (P) or (M)? Qualifiers to (P) or (M). Multiconnotation of the term 'influence'. Is it (MP) or (E)? AULP effect on the formation of (E). Heterogeneity in the formation of the subject.


Sociobiology (BF), Fertility differential (1P1) - Black and white (qualifiers to 1P1): Influenced by (E) - Urban structure (qualifier to 1E).
The evolutionary effects of warfare gave rise to the evolution of the human brain. Warfare evolved as a necessary consequence of the circumstances of early hominids.

Problems identified: Multiconnotation of 'warfare'. Is it (P), (MP) or (E)? Multiconnotation of 'effects'. Is it (MP) or (E)? Qualifiers to (MP) or (E). AULP in the formation of the subject.


Sociobiology (BP), Warfare (1P1) ; Effect (IM1) - Evolutionary (qualifier 1 to IM1) - On human brain (qualifier 2 to IM1)

What the action is: A cross cultural approach.

Problem identified: Multiconnotation of the term 'action'. Is it (P) or (MP) or (E)? Qualifiers to (E). AULP in the formation of the subject.

Principles used: Principles 9, 16, 20 and 21.

Sociobiology (BP), Action (1P1) ; Analysis (1E) - Cross-cultural approach (qualifier to 1E)
Study of the ageing process and its work potential.

Problems identified: Multiconnotation of the term 'ageing'. Is it (P) or (M) or (E)?


Sociobiology (SP), Ageing (1P1); Work potential (MP).
C SOLAR ENERGY STUDIES
FACET ANALYSIS OF SPECIFIC SUBJECTS

C.1 Analysis and comparison of actual to predicted collector array performances. (IBM Journal of Research and Development. 23;1979; 253-69).

Comparative study of the performances of solar collector arrays.

Problems identified: Qualifiers to (P) and (E). AULP in the formation of (M).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar energy (1P1): Collection (E) - Through collector arrays (qualifiers (device) to 1E). Performance (2MP) - Predicted compared with Actual (qualifier to 2MP1): Analysis (2E).


Study of the lined tilt collector of solar radiation. The collector has reversible vee-trough reflectors and vacuum tube receiver.

Problems identified: Qualifier to (P). Heterogeneity in the formation of (P).

Principles used: Principles 4, 11, and 18.

Solar Energy Studies (BF), Solar energy (1P1) Collector (qualifier to 1P1) = with reversible vee-trough reflectors (qualifier 1 of qualifier of 1P1) = Lined tilt (qualifier 2 of qualifier to 1P1) = Vacuum tube receiver (qualifier 3 to qualifier of 1P1). Performance (MP) Testing (1E).
C.3 Analysis of solar radiation measurements at Athens observatory and estimates of solar radiation in Greece.


Estimation of solar energy in radiation at Greece through measurements of radiation at the Solar observatory at Athens.

Problems identified: Heterogeneity in the formation of (E). Qualifiers to (P).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar Energy (1P1) - Radiation form (qualifier 1 to 1P1) - in Greece (qualifier 2 to 1P1). Estimation (1E) - through measurements in Athens' Solar laboratory (qualifier 1 to 1E).

C.4 Analysis of the terminal concentrator concept for solar central receiver system.

(Solar Energy. 12;1979;493-504)


Problems identified: Qualifiers to (P1). Multiconnotation of "Terminal concentrator concept" is it (P) or (MP). Multiconnotation of contribution. Is it (MP) or (E).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar Energy (1P1) - at Central Receiver Station (qualifier to 1P1); Contribution (1E). Terminal concentrator concept (qualifier to 1E). Analysis (2E).

C.5 Analytical models and simulation codes for the solar input determination irradiance maps.

(Solar Energy. 21;1978;201-10).

Application of Irradiance maps for simulation codes for the solar input determination.

Problems identified: Multiconnotation of "Inputs" is it (P) or (M). Qualifiers to (M).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar Energy (1P1) Inputs (1MP1): Determination (1E); Simulation Codes (2MP1) - Irradiance maps (qualifier to 2MP1).
C.6 Angular sensitivity characteristics by semiconductor photoconverters. (Applied Solar Energy. 14;1978;7-12)

Study of the angular sensitivity of photoconverters.

Problems identified: Qualifiers to (1P1). AULP influence on the formation of subjects.

Principles used: Principle 4, 11 and 18.

Solar Energy Studies (BP), Solar Energy (1P1) - Photoconverters (qualifiers 1 to 1P1) - Semiconductor (qualifier 2 to 1P1); Angular sensitivity characteristics (1MP1).

C.7 Atmospheric model for computing direct and diffuse solar radiation. (Solar Energy. 22;1979;225-8)

Application of the atmospheric model for computing direct and diffuse solar radiation.

Problems identified: Qualifier to (P) and (E). Heterogeneity in the formation of (P).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BP), Solar Energy (1P1) - Radiation form (qualifier 1 to 1P1) - Direct and diffuse (qualifier to qualifier 1P1); Measurement (E) Atmospheric model (qualifier to 1E).

C.8 Augmented Solar Energy collections using differentiated types of planar reflective surfaces, theoretical calculations, and experimental results. (Solar Energy. 21;1978;497-501)

Study of solar energy collection using differentiated types of reflective surfaces.

Problems identified: Qualifiers to (E)

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BP), Solar Energy (1P1): Collection (1E) - augmented (qualifier 1 to 1E) - using differentiated type reflective surfaces (qualifier 2 to 1E); Calculation (1E) - Theoretical (qualifier to 1E).

C.9 Average distribution of solar radiation - correlation between diffuse and hemispherical aid between daily and hourly insolation values. (Solar Energy. 22;1979;155-64)

Study of the average distribution of diffuse and hemispherical aid between daily and hourly insolation values.
Problems identified: Heterogeneity of the formation of (E). Multiconnotation of "distribution" is it (MP) or (E). Qualifier to (P), (E) and (MP).

Principles used: Principle 4, 11, 18.

Solar Energy Studies (BF), Solar Energy, (1P1) - Radiation form (qualifier 1 to 1P1): Transmission (1E) - Diffuse and Hemispherical (qualifier to 1E); Insolation values (2MP1) daily and hourly (qualifier 2MP1).

C.10 Behaviour of phase solar collectors under transient condition.
(International Chemical Engineering. 19; 1979; 51-65).

Study of the behaviour of phase solar collectors under different transient condition.

Problems identified: Qualifier to (P) and (MP): Multiconnotation of 'behaviour' is it (MP) or (E).

Principles used: Principle 4, 11, 18.

Solar Energy Studies (BF), Solar Energy (1P1) - Collectors (qualifier 1 to 1P1) = Plane (qualifier to qualifier of 1P1); Behaviour (1MP1) - under transient condition (qualifier to 1MP1).

C.11 Calculating the radiant field of concentration with artificial sources.

Study of the calculation of the radiant field of concentration with artificial sources.

Problems identified: Multiconnotation of 'concentration'. Is it (MP) or (E). Qualifiers to (E).

Principles used: Principle 4, 11, 18.

Solar Energy Studies (BF), Solar Energy (1P1); Concentration (1MP1); Radiant field (1MP2); Calculating (1E) - Artificial sources (qualifier to 1E).

C.12 Capture cross section of convex symmetric micro-algae layers for various Sun elevations and uniformly bright sky.
Study of the capture cross section of convex symmetric micro-algae layers for various sun-elevations and uniformly bright sky.

**Problems identified:** AULP influence on the subject. Heterogeneity of (P).

**Principles used:** Principles 4, 11, 18, 20 and 21.

**Solar Energy Studies (BF), Solar Energy (1P1) -** Radiation form (qualifier to 1P1): Elevations (MP), Influence (E) on convex symmetric cross section of Micro-algae (qualifier to (E)).

C.13 Cavity type surfaces for solar collectors.

*(Applied physics. 18;1979;307-9)*

Study of the cavity type surfaces amidst solar collectors.

**Problems identified:** Multiconnotation of 'Cavity type surfaces' is it (P) or (M). Qualifier to (P) and (M).

**Principles used:** Principles 4, 11 and 18.

**Solar Energy Studies (BF), Solar Energy (1P1) -** Collectors (qualifiers to 1P1), Surfaces (MMX - Cavity type (qualifier to 1P1).

C.14 Chemical vapour deposition research for Fabrication of Solar energy converter.

*(Technical report for NSF/RANN Grant SE/G1 - 36731. 1974.)*

Study of the chemical vapour deposition in fabrication of solar energy converters.

**Problems identified:** Qualifiers to (P) and (E).

**Principles used:** Principles 4, 11, 18.

**Solar Energy Studies (BF), Solar Energy (1P1) -** Converters (qualifier to 1P1): Fabrication (1E), Effect (2E) - Chemical vapour deposition (qualifier (Actor) to 2E): Research (3E).

C.15 Comparison of compound parabolic and simple parabolic concentrating solar collectors.

*(Solar Energy. 22;1979;21-5).*

Study of comparison of the performance of simple and parabolic concentrating solar collectors.

**Problems identified:** Qualifier to (P) and AULP in the formation (P).
Principles used: Principles 4, 11, 18.

Solar Energy Studies (BP). Solar Energy (1P1) - Collectors (qualifier to 1P1) = Parabolic (qualifier to qualifier of 1P1) = Simple compared with compound (qualifier of qualifier of qualifier 1P1).


Study of the enhancement of concentration of the current density and diffusion length of ternary compound solar cells.

Problems identified: Qualifier to (P).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BS), Solar Energy (1P1) - Cells (qualifier to 1P1) = Ternary compound (qualifier to qualifier of 1P1); Current density and diffusion length (1MP1); Concentration (1MP2): Enhancement (1E).

C.17 Control of the radiant flux of high temperature solar energy with respect to two parameters. (Applied Solar Energy. 14;1978;18-20).

Study of control of the radiant flux of high temperature solar energy with respect to two parameters.

Problems identified: Qualifiers to (P) and (M).

Principles used: Principles 4, 11 and 18.

Solar Energy (BF), Solar energy (P) - High temperature (qualifier to P), Radiant flux (MP): Control (1E).

C.18 Cover systems for high temperature flat plate solar collectors. (Solar energy. 22;1979;555-61)

Problems identified: Multiconnotation of 'Cover systems' is in (P) or (M). AULP influence on (E).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BF), Solar energy (1P1) - Collectors (qualifier to 1P1) - Flat plate (qualifier 1 to 1P1) - High temperature (qualifier 2 to 1P1); Cover systems (MM).

C.19 Dependence of optical properties on the structural composition of solar absorbers: Gold Black. (Solar Energy. 21;1978;465-8)
Study of the optical properties and their influence on structural composition of shock absorbers.

Problems identified: Heterogeneity of formation in (E) and (M). Multiconnotation of 'Influence' is it (MP) or (E).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar energy (1P1) - absorbers (qualifier to 1P1), Composition (1MP1) - Structural (qualifier to 1MP1): Influence (E) on optical properties (qualifier to E).

C.20 Determination of the minority carrier diffusion length in silicon Solar cells. (International journal of Electronics. 46;1979;529-33)

Study of the methods of determination of the minority carrier diffusion length in silicon solar cells.

Problems identified: Multiconnotation of 'Minority carrier' is it (P) or (MP). Qualifier to (P).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar energy (1P1) - Silicon (qualifier to 1P1), Minority carrier (1P2); Diffusion length (1MP1): Determination (1E).


Study of development of high irradiance solar simulator for efficient approximation of solar thermal absorptive materials.

Problems identified: Multiconnotation of 'Absorptive materials' is it (P) or (M) qualifiers to (E).

Principles used: Principle 4, 11, 18.

Solar Energy Studies (BF), Solar energy (1P1) - Thermal absorptive materials (qualifier to 1P1): Appreciation (E) - Efficient (qualifier to 1P1): Effect (1E) - Solar simulator (qualifier to 1E) - High irradiance (qualifier to 1E): Development (2E).

C.22 Diffuse solar radiation on a horizontal surface for a clear sky. (Solar energy. 21;1978;503-9)
Problems identified: Multiconnotation of the term 'Diffusion' is it (P) or (M). Qualifier to (E).

Principles used: Principle 4, 11, 18.

Solar Energy Studies (SP), Solar energy (1P1) - Radiation form (qualifier to 1P1): Diffusion (E) - horizontal surface (qualifier to 1E) - Clear sky (qualifier to 1E).

C.23 Direct Solar transmittance for a clear sky.
(Solar energy. 22:1979;297-301)

Study of direct solar transmittance for a clear sky.

Problems identified: Multiconnotation of 'Transmittance' is it (M) or (E).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (SP), Solar energy (1P1) - Radiant form (qualifier to 1P1): Transmittance (1P): Measurement (E); Indicators (2MP) - Clear sky (qualifier to 2MP1).

C.24 Econometric analysis of concentrators for solar cells.
(Solar Energy. 21:1978;371-5)

Study of econometric analysis of concentrators for solar cells.

Problems identified: Qualifier to (P) and (E).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (SP), Solar Energy (1P1) - Concentrator (qualifier to 1P1): Analysis (1E) - Econometric (qualifier to 1E).

C.25 Effect of errors in their shape on the characteristics of ellipsoidal concentrators of radiant energy.

Influence of error in the shape on the performance characteristics of ellipsoidal concentrators of radiant energy.

Problems identified: Heterogeneity of (E). Qualifier to (P).

Principles used: Principles 4, 11, 18.
C.26 Effect of grain boundaries on the performance of polycrystalline tunned Solar Cells.
(University of Arizona (Tucson) (USA), Environment Research Laboratory, 1979).

Problems identified: Qualifier to \( P \) and \( E \). Multiconnotation of 'Influence'.

Principles used: Principles 4, 11, 18.

C.27 Effect of optical surface properties on high temperature Solar thermal energy conversion.
(Journal of Energy. 3;1979;62-9).

Study of the effects of optical surface properties on high temperature solar thermal energy conversion.

Problems identified: Multiconnotation of 'Conversion' is it \( P \) or \( E \). Multiconnotation of 'Effect' is it \( M \) or \( E \). Qualifier to \( P \) and \( E \).

Principles used: Principles 4, 11, 18.

(IEEE Journal of Solid State Electron Device. 2;1978;359-61)

Study of the effect of optical surface properties on conversion of thermal properties on high temperature on solar energy.

Problems identified: Qualifier to \( P \) and \( E \).

Principles used: Principles 4, 11, 18.
Solar Energy Studies (BF), Solar energy (1P1) - Cells (qualifier 1 to 1P1) - Cds and Cu2S thin films (qualifier of qualifier to 1P1) - Low cost (qualifier to qualifier of 1P1): Cadmium Sulphide (MM): Preparation (1E) - Electrochemical (qualifier to 1E).

C.29 Energy from biological substances: Engineering and economical aspects of microbial conversion methods; (Electrotech Zhurnal (FDR). 99;1978;351-55).

Study of the microbial conversion methods of the biosubstances to energy. A study in conversion of solar energy through biosubstances to other forms of energy.

Problems identified: Multiconnotation of 'Biosubstances' is it a (P) or (M). Qualifiers to (E). AULP in the formation of the subject.

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar Energy (1P1) - (in) Biosubstances (qualifier to 1P1): Conversion (1E) - Microbic methods (qualifier to 1E); Economic aspects (2MP1).

C.30 Estimation of half-hour solar radiation values from hourly values. (Solar energy. 21;1978;409-14).

Study of the estimation methods of flow of radiation from sun to earth. An hourly radiation rate is obtained. On this basis half-hour radiation rate is estimated.

Problems identified: Qualifier to (P), (M) and (E).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar Energy (1P1) - Radiation (qualifier to 1P1); Rate of flow (1MP1) - in half-hour (qualifier to 1MP1): Estimation (1E) - through observation of hourly flow (qualifier to 1E).

C.31 Evacuated glass tube solar cell collector and its application to a solar cooling, heating, and hot water supplying system for the hospital in Kinki Universities. (Solar energy. 22;1979;335-45)

Application of solar energy obtained through evacuated glass tube to the heating and cooling of hospitals in Kinki Universities.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principle 4, 11, 18.
C.32 Examination of grain boundaries in polycrystalline solar cells using a scanning optical microscope.
(Electron letters, 14;1978;507-8)

Study of the grain boundaries in polycrystalline solar cells with aid of a scanning optical microscope.

Problem identified: Qualifiers to (P) and (E). Multiconnotation of "Grain boundaries". Is it (P) or (M).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BP), Solar Energy (1P1), Cells (qualifier to 1P1), Polycrystalline (qualifier to qualifier of 1P1), Grain boundaries (qualifier to qualifier of qualifier of 1P1); Examination (1E), Scanning optical microscope (qualifier to IE).

C.33 Experimental investigation of a physical system capable of using solar energy.
(Journal of Physics, Part D Applied Physics, 11;1978;L 207-9)

Study of the experimental investigations on the use of solar energy. A physical system model for the use.

Problems identified: Qualifier to (E). Multiconnotation of 'Physical System' is it (P) or (M).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BP), Solar Energy (1P1), Utilization (1E), Models (2M1), Physical System (qualifiers to 2M1); Experimentation (2E).

C.34 Extensive data sets of the diffuse radiation in realistic atmospheric models with aerosols and common absorbing gases.
(Solar Energy, 21;1978;361-9)

Study of the extensive data sets of the diffuse radiation in realistic atmospheric models with aerosols and common absorbing gases.

Problems identified: Qualifiers to (P). Heterogeneity of (P).
Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar energy (1P1) - Radiation (qualifier 1 to 1P1) = Diffuse (qualifier of qualifier 1 to 1P1) - in realistic atmospheric models (qualifier 2 to 1P1) = with aerosols and common absorbing gases (qualifier to qualifier 2 to 1P1); Data sets (1MP1) - Extensive (qualifier to 1MP1): Analysis (E).

C.35 Facility with sectional photo-receiver and laser radiator for determining solar radiation concentrator accuracy characteristics. (Applied solar energy. 14; 1979: 24-8)

Study of the facilities with sectioned photo-receivers and laser radiators for determining solar radiation concentrator accuracy characteristics.

Problems identified: Qualifiers to (P). Heterogeneity on the formation of (E). ATOP influence on the specific subject.

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar energy (1P1) - Radiation (qualifier 1 to 1P1) - Concentrators (qualifier 2 to 1P1); Accuracy Characteristics (1MP1): Determination (1E) using sectioned Photo-receivers and laser radiators (qualifier to 1E).

C.36 Flat plate solar collector efficiency in terms of stagnation temperatures and a two parameter representation. (Mechanical Engineering Bulletin. 9; 1978: 31-5).

Analysis of the indicators to the efficiency of the performance of flat plate collectors. The use of stagnation temperatures and a time parameter representation as indicators for this purpose.

Problems identified: Qualifiers to (P) and (M). Heterogeneity in the formation of (M).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar energy (1P1) - Collectors (qualifier 1 to 1P1) = Flat plate (qualifier of qualifier to 1P1); Performance (1MP1); Efficiency (1MP2); Indicators (1MP3) - Stagnation temperatures and two parameter representation (qualifier to 1MP3): Analysis (1E).
C.37 Fundamentals of mathematical modelling of solar-radiation mode
energy structure.

Analysis of the fundamental concepts in mathematical modelling of
the regime energy structure of solar energy radiation.

Problems identified: Qualifiers to (P), (M) and (E).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar energy (1P1) - radiation (qualifier
to 1P1); Structure (1M1), Regime energy (qualifier to 1M1):
Modelling (1E), Mathematical (qualifier to 1E); Fundamental concepts
(2MP1); Analysis (2E).

C.38 General design methods for closed loop solar energy systems.
(Solar energy. 22;1979;269-82)

Study of the designing of the closed loop solar energy systems.
Application of the general methods of design.

Problems identified: Qualifier to (P) and (E). Multiconnotation of
'Design'. Is it (M) or (E)?

Principles used: Principles 4, 11, 18, 20 and 21.

Solar energy Studies (BF), Solar energy (1P1) - System (qualifier to
1P1) - Closed loop (qualifier to qualifier of P); Design (1E) -
General methods (qualifier to 1E).

C.39 General method for the evaluation of possible systems for electric
generation with solar energy.
(IEEE Transactions on Power Application Systems. 97;1978;1656-64)

Study of the evaluation of the systems for electric generation with
solar energy. Methods of evaluation among the alternatives.

Problems identified: Qualifier to (P) and (E).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar energy (1P1) - Converters (qualifier
to 1P1) = to electrical energy (qualifier of qualifier to 1P1); Alter-
natives (1M1), Evaluation (1E) - General methods (qualifier to
1E).
C.40 General principles of multielement concentrating systems design.
(Applied Solar Energy; 14;1977;19-23)

Examination of the general principles in the design of multielement solar radiation concentrating systems.

Problems identified: Qualifiers to (P). Multiconnotation of 'Multielement' is it a (P) or a qualifier to (P). Multiconnotation of 'Design' is it (M) or (E). Influence of AULP on the formation of the subject.

Principles used: Principles 4, 11, 18, 20, and 21.

Solar Energy Studies (BF), Solar energy (1P1) - Radiation (qualifier 1 to 1P1). Concentrators (qualifier 2 to 1P1) - Multielement (qualifier 3 to 1P1); Design (1E); General principles (2MP1): Analysis (2E).

C.41 Geometric Brownian distribution of solar radiation with an economic application.
(University of Arizona (Tucson), Environment Research Laboratory, 1980)

Study of the economic aspects in particular cost-effectiveness of the geometric Brownian distribution of solar radiation.

Problems identified: Qualifiers to (P), (M). Multiconnotation of the term 'Distribution' is it (M) or (E).

Principles used: Principles 4, 11, 18, 20, 21.

Solar Energy Studies (BF), Solar Energy (1P1) - Radiation (qualifier to 1P1). Distribution (1MP1), Geometric Brownian (qualifier to 1MP1). Economics (1MP2).

C.42 Health and safety hazards associated with solar concentration systems.
(Solar Energy, 32;1979;229-33)

Study of the health and safety hazards associated with solar fluorescent concentrations for conversion of solar to thermal energy.

Problems identification: Qualifiers to (P) and qualifiers to (E).

Principles used: Principle 4, 11, 18.

Solar Energy Studies (BF); Solar energy (1P1) - Concentrators (qualifier to 1P1) = Fluorescent (qualifier to qualifier of 1P1); Conversion (1E) to thermal energy (qualifier to 1E); Hazards (2MP1) - Health and Safety (qualifier to 2MP1).
C.43 Heliotherapy unit.
(Applied Solar Energy. 14;1978;53-6)
Study of the effect of solar radiation on heating human body.

Problems identified: Qualifier to (P) and (M). Multiconnotation of 'Effect' is it (E) or (E).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BP), Solar energy (1P1) - Radiation (qualifier to 1P1); Effect (MP) - on heating human body (qualifier to MP); Research (E).

C.44 Influence of bath composition on thermal stability of electroplated black chrome solar coating.
(Plant surface environment. 65;10;1978;Oct.;43-3)

An analysis of the influence of bath composition on thermal stability of electroplated black chrome solar coating.

Problems identified: Qualifiers to (P) and (E). Heterogeneity of formation (N). Multiconnotation of 'influence' is it (M) or (E).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar energy (1P1) - Converters (qualifier to 1P1); Solar coating (qualifier of qualifier to 1P1) - black chrome (qualifier of qualifier to qualifier to 1P1) - Electro-plated (qualifier of qualifier of qualifier of qualifier to 1P1); Thermal stability (1MP1) Influenced by (IE) Bath composition (MP).

C.45 Influence of Ion bombardment on Silicon photo cell energy characteristics.

Research on the influence of Ion bombardment of silicon photo cells energy characteristics.

Problems identified: Qualifier to (P) and (E). Multiconnotation of 'Influence' is it (M) or (E).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar energy (1P1) - Photocell (qualifier to 1P1) - Silicon (qualifier to qualifier of 1P1); Energy characteristics (MP); Influenced by (E) - Ion bombardment (qualifier to IE).
C.46 Influence of temperature on operational parameters of pedestrian film photo converters.
(Applied Solar Energy. 14;1978;23-5)

Study of the influence of temperature of operational parameters on pedestrian film photo converters.

Problems identified: Qualifiers to (P) and (E). Multiconnotation of 'Pedestrian film' as it (P) or (M). Multiconnotation of 'Operational parameters' is it (H) or (E). Heterogeneity of (P).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BP), Solar energy (1P1) - Photoconverters (qualifier to 1P1) = Pedestrian film (qualifier of qualifier to 1P1); Operational parameters (MP): Influence (IE) of Temperature (qualifier to 1E).

C.47 Interlaboratory comparison of selective surfaces for photo-thermal conversion of solar energy.
(USA NSF/ASHE report. GI 36731 X 1975)

Study of the comparison of selective surfaces for photo-thermal conversion of solar energy.

Problems identified: Qualifier (P) and (E). Multiconnotation of selective surfaces is it (P) or (M).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BP), Solar Energy (1P1) - Converters (qualifier to 1P1) = Photo-thermal qualifier of qualifier to 1P1), Selective surfaces (EU); Comparison (E) - Interlaboratory (qualifier to 1P1).

C.48 Investigation of the photoelectric characteristics of high resistivity silicon photo-converters.
(Applied solar energy. 14;1978;1-6)

Investigations of the high resistivity silicon converters and their photoelectric characteristics.

Problems identified: Heterogeneity of formation (P). Qualifiers to (P).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BP), Solar Energy (1P1) - Photoconverters (qualifier to 1P1) = Silicon (qualifier of qualifier to 1P1) = High resistivity (qualifier of qualifier of qualifier to 1P1); Photoelectric characteristic (MP) Investigation (1E).
C.49 Isotropic distribution of approximation in solar energy estimation.
(Solar energy. 22;1979;15-9)

Research on the isotropic distribution of approximation in solar energy radiation estimation.

**Problems identified:** Qualifier to (P) and (E): Heterogeneity of the (E).

**Principles used:** Principles 4, 11, 18.

Solar Energy Studies (BF), Solar energy (1P1) - Radiation (qualifier to 1P1); Estimation (1E) - Isotropic Distribution of Approximation (qualifier to 1E); Research (2E).

C.50 Low cost encapsulation materials for terrestrial solar-cell modules.
(Solar energy. 22;1979;386-96)

Study of low cost encapsulation materials for terrestrial solar-cell modules.

**Problems identified:** Qualifiers to (P) and (M): Multiconnotation of "Encapsulation materials" is it (P) or (M)?

**Principles used:** Principles 4, 11, 18.

Solar Energy Studies (BF), Solar energy (1P1) - Cell modules (qualifier to 1P1); Terrestrial (qualifier to qualifier of 1P1); Encapsulation materials (MM) - Low cost (qualifier to MM).

C.51 Low temperature engineering application of solar energy.
(American Society of Heating, Refrigerating, and Air conditioning Engineers (ASHRAE) 345E, 47th Street, New York, N.Y.10017)

Study of low temperature engineering application of solar energy.

**Problems identified:** Qualifiers to (E).

**Principles used:** Principle 4, 11, 18.

Solar Energy Studies (BF), Solar energy (1P1) - Application (1E) - to Low temperature engineering.

C.52 Measurement of minority carrier life time in solar cells from photo-induced open-circuit voltage decay.
(IEEE Transactions of Electron Devices, ED 26, 5;1979;733-9)

Study of measurement of minority carrier life time in solar cells from photo-induced open-circuit voltage decay.
Problems identified: Multiconnotation of ' Minority carrier' is it (P) or (M). Qualifier to (M). Heterogeneity of (M).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BF), Solar Energy (1P1) - Cells (qualifier to 1P1); Life time (1MP1) - Photo induced open circuit voltage decay (qualifier to 1MP1); Measurement (1E).

(Solar energy. 21; 1978; 193–9)

Study of the measurement methods for optical properties of selective surfaces using a solar calorimeter.

Problems identified: Qualifier to (E). Influence of AULP on the facet structure.

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BF), Solar energy (1P1): Incidence (E) - selective surfaces (qualifier to 1E); Optical properties (2MP1): Measurement (2E) - Solar calorimeter (qualifier to 2E).

C.54 Measurement of solar ultraviolet radiation at a temperature and a tropical site using polysulphine film.
(Polymer Degradation Stabiliser. 1;1979;121–32)

Study of the measurement of solar ultraviolet radiation at a temperature and a tropical site using polysulphine film.

Problems identified: Qualifier to (P) and Qualifier to (E).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BF), Solar Energy (1P1) - Radiation (qualifier to 1P1) = Ultraviolet (qualifier to qualifier of 1P1) - at a tropical site (qualifier to 1P1); Measurement (1E) using polysulphane film (qualifier to 1E).

C.55 Ni-cerment selective absorbers for solar photothermal conversion.
(Solar energy. 22; 1979; 479–82)

Study of the Ni-cerment selective absorbers for solar photothermal conversion.
Problems identified; Multiconnotation of 'Photothermal conversion' is it (M) or (E). Qualifier to (E).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar Energy (1P1): Conversion (E) - Photothermal (qualifier 1 to E) - using Ni-cerment selective absorbers (qualifier 2 to E).

C.56 Numerical solar radiation model based on standard meteorological observation.
(Solar energy. 27;1978;163-70)

Use of standard meteorological observation for numerical solar radiation model.

Problems identified; Multiconnotation of Radiation. Is it (P), (M) or (E). Qualifier to (M).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar energy (1P1) - Radiation (qualifier to 1P1); Model (1MP1) - Numerical (qualifier 1 to 1MP1) - standard Meteorological observation (qualifier 2 to 1MP1).

C.57 On the relation between insolation and climatological variables.
(Energy conversion. 18;1978;31-7)

Studies on the estimation of availability of solar energy on the basis of relation between insolation and climatological variables.

Problems identified; Qualifier to (E).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BF), Solar energy (1P1) Estimation (1E) - using climatological variables (qualifier to 1E).

C.58 Optics in equipment for the utilisation of solar energy.
(State Publishing House, Moscow, Translation of AEC-tr-4471, USAEC, OTS, Department of Commerce, Washington DC. 1959)

Study of the equipment for the utilisation of solar energy.

Problems identified: Qualifiers to (E).

Principles used: Principles 4, 11 and 18.
C.59 Optimal distribution of heat conducting materials in the finned pipe solar energy collector.
(Solar energy. 21;1978;477-84)

Studies on the optimal distribution of heat conducting materials in the finned pipe solar energy collectors.

Problems identified: Qualifier to (P) and (E). Multiconnotation of conducting materials is it (P) or (M).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BP), Solar energy (1P1) - collector (qualifier to 1P1) = finned pipe (qualifier to qualifier of 1P1); conducting materials (MM): Distribution (E) - Optimal (qualifier to E) of Heat (qualifier to 1E)

C.60 Optimal geometries for one and two faced symmetric side-wall booster mirrors.
(Solar energy. 21;1978;385-91)

Study of optimal geometries for one and two faced symmetric side-wall booster mirrors.

Problems identified: Qualifiers to (P) and (M).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BP), Solar Energy (1P1) - Concentrators (qualifier to 1P1) = Reflecting mirrors (qualifier 1 to qualifier to 1P1) = Two faced Side walls (qualifier 2 to qualifier to 1P1); Geometries (MP) - Optimal (qualifier to 1MP1).

C.61 Optimization of exponential alloying impurity distributions in semiconductor photoconversion base.
(Appplied Solar Energy. 14;1978;17-22)

Study of the optimization of exponential alloying impurity distributions in semiconductor photoconversion base.

Problems identified: Qualifier to (P) and (M). Heterogeneity of (P).

Principles used: Principles 4, 11 and 18.
Solar Energy Studies (BF), Solar energy (1P1) - Photoconverter (qualifier to 1P1) = Semiconductor (qualifier to qualifier to 1P1), Base (1P2); Alloying impurity (1MP1); Distribution (1MP2) - Exponential (qualifier to 1MP1): Optimization (IE).

C.62 Outline of a mathematical model for the evolution of the interrelationships between the urban form and solar radiation in the tropical regions.
(Building Environment. 14;1979;83-81)

Study of the solar radiation in the tropical region and its interrelationship with urban form. An outline of mathematical model for this evolution is presented.

Problems identified: Heterogeneity in the formation of (P). Multiconnotation of Interrelationship. Is it (M) or (E). Qualifier to (E).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar energy (1P1) - Radiation (qualifier 1 to 1P1) - Tropical region (qualifier 2 to 1P1) - Interrelationship (1MP) - with urban form (qualifier to 1MP1); Evolution (E) - Mathematical model (qualifier to IE); Outline (2MP1).

C.63 Output power variations with solar power satellites.
(Solar energy. 21;1978;323-30)

Study of the variations in the output of solar power satellites.

Problems identified: Multiconnotation of output power is it (P) or (M). Multiconnotation of 'Variation'. Is it (M) or (E). Qualifier to (P).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar energy (1P1) - Power satellite (qualifier to 1P1); output power (1MP1); Variations (1MP2).

C.64 Physical principles of converting the energy of concentrated solar radiation by means of semiconductor phototransducers.
(Power engineering. 15;1977;99-103)

Study of the physical principles for conversion of the energy of concentrated solar radiation by means of semiconductor phototransducer.

Problems identified: Multiconnotation of 'Conversion' is it (M) or (E). Qualifier to (E).
Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar energy (1P1) - Radiation (qualifier to 1P1): Conversion (1E) - Phototransducers (qualifier to 1E); Physical principles (1MP1).

C.65 Practical design considerations for CDC Solar collectors.
(Solar energy. 22;1976;373-81)

Study of the practical design considerations for CDC solar collectors.

Problems identified: Multiconnotation of 'Design' as it (M) or (E). Qualifier to (1P1).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar energy (1P1) - Collectors (qualifier to 1P1) = CDC; Design (E).

C.66 Proceedings of the chemical vapour deposition conference. (1975)
(Electrochemical Society Inc, Princeton N J 1975)

Study of the deposition of chemical vapours on the fabrication process of the solar radiation collectors.

Problems identified: Qualifier to (P) and (E).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BF), Solar energy (1P1) - Radiation (qualifier 1 to 1P1) - Collectors (qualifier 2 to 1P1): Fabrication (1E): Influence (2E) - Chemical vapour deposition (qualifier to 2E).

(NSF/RANN Report, G1-43795. 1976)

Study of the contributions of the materials sciences to solar energy conversion.

Problems identified: AULP effect on the formation of the subject. Qualifiers to (P) and (E).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar energy (1P1) - Radiation (qualifier to 1P1): Conversion (1E) - Contributions of Materials Science (qualifier to 1E).
C.68 Prospects for rotational casting in the fabrication of large reflecting surfaces.
(Applied Solar Energy. 14;1978; 9-12)

Rotational casting of fabrication of large reflecting surfaces of solar energy.

Problems identified: Multiconnotation of 'Fabrication' is it (M) or (E). Heterogeneity in the formation of (E).

Principles used: Principles 4, 11, 18.

Solar Energy Studies (BF), Solar energy (1P1) - Concentrators (qualifiers to 1P1) - Large Reflecting surfaces (qualifiers to qualifiers to 1P1): Fabrication (1E) Casting (2E) - Rotational (qualifier to 2E). Prospects (3MP)

C.69 Relation between concentration and acceptance in solar collection.
(Solar energy. 22;1979;521-5)

Study of the solar energy collection. Influence of the relation between concentration and acceptance on the solar energy collection.

Problems identified: Heterogeneity in the formation of (E) and qualifier to (E).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar energy (1P1): Collection (1E) Influenced by (2E) concentration and acceptance (qualifier to 2E).

C.70 Relationship of optical degradation to surface morphology changes in solar absorbers.
(Journal of Vaccum Science Technology. 16;1979;233-5)

Influence of optical degradation on the surface morphology changes of solar absorbers.

Problems identified: Qualifiers to (P) and (E). Heterogeneity in the formation of (M).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BF), Solar Energy (1P1) - Absorbers (qualifier to 1P1); Surface morphology changes (1MP1) Influenced by (1E) optical degradation (qualifier to 1E).
C.71 Selection of method for calculating the parameters of wind and solar power station storage facilities. (Applied Solar energy. 14;1977;55-8)

Study of the calculations of the parameters of wind and solar power storage facilities. Selection of methods for the same.

Problems identified: Qualifiers (P) and (E).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BP), Solar Energy (1P1) - Power storage station (qualifier to 1P1) influenced by (E) - parameters of wind (qualifier to IE): Calculation (2E), Methods (qualifier to 2E): Selection (3E).

C.72 Semiconductor solar energy converters. (Translation consultants' bureau, New York, 1969)

Study of the semiconductor solar energy converters.

Problems identified: Qualifiers to (1P1).

Principles used: Principle 4.

Solar Energy Studies (BF), Solar energy (1P1) - converters (qualifier to 1P1) = Semiconductor (qualifier to qualifier of 1P1).

C.73 Simulation of the impact of financial incentives on solar energy utilization for space conditioning and water heating 1985. (Energy builders. 2;1979;77-84)

Studies on the Solar energy utilisation of space conditioning and water heating. The impact of financial incentives on the same and the simulation of the process.

Problems identified: Qualifier to (1E). Heterogeneity in the formation of (E).

Principles used: Principle 4, 11 and 18.


C.74 Solar concentrating properties of Truncated Hexagonal Pyramidal and Circular cones. (Applied optics. 17;1978;2431-49)
Analysis of the truncated hexagonal pyramidal circular cones of solar energy collectors.

**Problems identified:** Qualifier to (P). AULP in the formation of the facet structure.

**Principles used:** Principles 4, 11 and 18.

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Solar Energy Studies (BF), Solar energy (1P1) - Concentrators (qualifier to 1P1) = Circular cones (qualifier to qualifier to 1P1) = Hexagonal and Pyramidal (qualifier to qualifier to qualifier to 1P1) = Truncated (qualifier to qualifier to qualifier to qualifier to 1P1)

C.75 Solar distillation utilising multiple effect humidification. (University of Arizona, Tucson, Environmental Research Laboratory. 1966)

Analysis of the utilisation of multiple effect humidification through solar distillation.

**Problems identified:** Qualifier to (E).

**Principles used:** Principles 4, 11 and 18.

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Solar Energy Studies (BF), Solar energy (1P1): Distillation (1E) - using multiple effect humidification (qualifier to 1E).

C.76 Solar energy conversion using platinum group metal coordination complexes. (Platinum Metal Review. 22;1978;118-25)

Influence of platinum group metal coordination complexes on solar energy conversion.

**Problems identified:** Qualifiers to (E). Heterogeneity of (E).

**Principles used:** Principles 4, 11 and 18.

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Solar Energy Studies (BF), Solar energy (1P1): Conversion (1E) - using platinum group Metal coordination complexes (qualifiers to 1E).

C.77 Solar energy installations for pumping irrigation water. (Solar energy. 21;1978;255-62)

Studies in the installations for pumping irrigation water using solar energy.

**Problems identified:** Qualifiers to (P).
Principles used: Principle 4.

Solar Energy Studies (BF), Solar energy (1P1) - Installations (qualifiers 1 to 1P1) - for pumping irrigation water (qualifier 2 to 1P1).

C.78 Solar energy thermoreceiver with selective coating and vacuum thermo isolation.

(Application solar energy. 14;1978;37-40)

Selective coatings on vacuum thermo-isolation for solar energy thermoreceiver.

Problems identified: Qualifiers to (P). Multiconnotation of Thermo isolation, is it (M) or (E). Heterogeneity in (M).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BF), Solar energy (1P1) - Thermoreceiver (qualifier to 1P1); Vacuum Thermo Isolation (MP) and Selective coatings (MP).

C.79 Solar eyeball: An automatic sun tracking concentrator for use with photovoltaic generators.

(IEEE Journal of solid state electronic devices. 2;1978;374-8)

Application of photovoltaic generators to automatic solar concentrators.

Problems identified: Qualifier to (P) and (E). Multiconnotation of 'Application' is it (M) or (E).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar energy (1P1) - Concentrator (qualifier to 1P1) = Automatic (qualifier to qualifier to 1P1); Application (1E) to photovoltaic generators (qualifier to 1E).

C.80 Solar radiation concentrator for uniform irradiation of flat energy receivers and converters.

(Application Solar Energy. 14;1978;23-9)

Use of solar radiation concentrator for uniform irradiation of flat energy receivers and converters.

Problems identified: Qualifier to (P) and (E). Heterogeneity in the formation of (E).

Principles used: Principles 4, 11 and 18.
Solar Energy Studies (EF), Solar energy (1P1) - Radiation (qualifier to 1P1) = Concentrator (qualifier to qualifier of 1P1): Application (1E) - to uniform irradiation (qualifier to 1E) = Flat energy receiver and converter (qualifier to the qualifier of 1E).

C.81 Solar simulation with tungsten-halogen quartz lamps and optical filters.
(Solar energy. 22;1979; 467-9)

Use of optical filters and tungsten halogen lamps for simulation of solar radiation.

Problems identified: Qualifier to (P) and (E). Multiconnotation of 'Simulation' is it (M) or (E). Heterogeneity of (E).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (EF), Solar energy (1P1) - Radiation (qualifier to 1P1): Simulation (1E) - Tungsten Halogen quartz lamps and optical fibers (qualifiers to E).

C.82 Solar thermal electric power system: Manufacturing cost estimation and systems optimization.
(Energy conversion. 18;1978;81-93)

Cost-analysis and systems optimization of conversion of solar radiation to Thermal energy.

Problems identified: Qualifier to (P) and (E). Multiconnotation of 'Thermal Energy' is it qualifier to (P) or to (E). Multiconnotation of 'Optimization' is it (M) or (E). Heterogeneity of (E).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (EF), Solar energy (1P1) - Radiation (qualifier to 1P1): Conversion (1E) - Thermal energy (qualifier to 1E): Systems optimization and cost analysis (qualifier to 1E).

C.83 Some aspects of the role of solid state chemistry in the performance of organic solar cells.
(Molecular crystals quarterly. 50;1979;127-37)

Study of the influence of solid state chemistry on performance of organic solar cells.

Problems identified: Qualifier to (P) and (M). Heterogeneity in the formation of (E).

Principles used: Principles 4, 11, 18, 20 and 21.
Solar Energy Studies (BF), Solar energy (1P1) - Organic (qualifier to 1P1); Performance (ISP): Influenced by (E); Solid state chemistry (qualifier to 1E).

C.84 Spectral characteristics of photoconverters with non-uniform defect distribution in the base.
(Applied solar energy. 14;1977;9-12)

Identification of the spectral characteristics of photoconverters with non-uniform defect distribution in the base.

Problems identified: Qualifier to (P) and (M). Heterogeneity of (M).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BF), Solar energy (1P1) - Photoconverters (qualifier to 1P1); Non-uniform defect distribution (1MP1) at base (qualifier to 1MP1); Spectral characteristics (1MP2).

C.85 Statistical study of solar radiation information in an equatorial region (Singapore)
(Solar energy. 22;1979;105-11)

Study of the solar radiation. Statistical analysis of the information on it in an equatorial region (Singapore).

Problems identified: Qualifier to (P) and (E).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BF), Solar energy (1P1) - Equatorial region (Singapore) (qualifier to 1P1); Data (1MP1): Analysis (IE) - Statistical Analysis (qualifier to 1E).

C.86 Study of photocell characteristics dependence on solar ray incidence angle and intensity.
(Applied Solar Energy. 14;1978;1-3)

Influence of photocell characteristics on the incidence angle and intensity of radiation.

Problems identified: Multiconnotation of incidence, is it (M) or (E). Heterogeneity in the formation of (M). Qualifier to (P), (M) and (E).

Principles used: Principles 4, 11, 18, 20 and 21.
Solar Energy Studies (BF), Solar energy (1P1) - Radiation (qualifier to 1P1): Incidence (IE); Angle and Intensity (1MP1): Influenced on Photocell characteristics (qualifier to MP).

C.87 Study of the solid gas suspensions used for direct absorption of concentrated solar radiation.
(Solar Energy. 22;1979;45-8)

Analysis of the direct absorption of concentrated solar energy through solid gas suspensions.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 4 and 18.

Solar Energy Studies (BF), Solar energy (1P1) - Concentrated (qualifier to 1P1); Absorption (1E) - Direct (qualifier to 1E) - through Solid gas suspensions (qualifier to 1E). Analysis (2E).

C.88 Study of the metalised reflecting surface ageing.
(Applied Solar Energy. 14;1978;45-7)

Analysis of the ageing on metalized reflecting surfaces of solar concentrators.

Problems identified: Qualifier to (P). Influence of AULP on the facet structure. Multiconnotation of ageing, is it (M) or (E).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BF), Solar energy (1P1) - Concentrators (qualifier to 1P1), Reflecting surfaces (1P2) - Metalized (qualifier to 1P2); Ageing (MP): Analysis (1E).

C.89 Temperature dependence of photovoltaic solar energy conversion for Ga As homofunction solar cells.
(Solid State Electronics. 22;1979;111-2)

Problems identified: Qualifier to (P) and (MP).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BF), Solar Energy (1P1) - Photovoltaic (qualifier to 1P1): Conversion (1E); Dependence (2MP1) - Temperature (qualifier to 2MP1) - due to Ga and As Solar cells (qualifier to 2MP1)
C.90 Thermal analysis of some flat-plate solar collector designs for improving performance.
(Journal of Energy, 3;1979;8-15)

Analysis of the designs of flat-plate solar collectors. Thermal analysis done for the purpose of improving the performance.

Problems identified: Qualifiers to (P) and (E). Multiconnotation of 'Designs'. Is it (M) or (E).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BP), Solar Energy (1P1) - Collectors (qualifier to 1P1) = Flat plate (qualifier to qualifier of 1P1); Designs (1MP1)
Analysis (1E) - Thermal (qualifier to 1E) - for Improving performance (qualifier to 1E).

C.91 Thermal properties of the Florida current as related to ocean thermal energy conversion (OTEC)
(Solar energy, 22;1979;527-33)

Influence of thermal properties of oceans on ocean thermal solar energy.

Problems identified: Qualifier to (P) and (E). Heterogeneity in the formation of (P). Multiconnotation of 'Influence' is it (M) or (E).

Principles used: Principles 4, 11, 18, 20 and 21.

Solar Energy Studies (BP), Solar energy (1P1) - Ocean thermal (qualifier to 1P1): Influenced by (E) - Heat transfer properties (qualifier to E) = of ocean waters (qualifier to qualifier of 1E).

C.92 Thermal radiative properties of glass from 0.33 to 206 cm.
(Solar energy, 22;1979;141-8)

Study of the thermal radiative properties of glass frame collector for solar energy.

Problems identified: Qualifiers to (P).

Principles used: Principles used 4 and 11.

Solar Energy Studies (BP), Solar energy (1P1) - Collector (qualifier to 1P1) = Glass frame (qualifier to qualifier to 1P1); Radiative properties (1MP1) - Thermal (qualifier to 1MP1)
C.93 Theoretical upper limit to the conversion efficiency of solar energy  
(Solar energy. 3;1978;227-9)

Studies on the conversion of solar radiation. Efficiency of the conversion and determination of a theoretical upper limit for the same.

Problems identified: Qualifiers to (P), (M). Multiconnotation of conversion it is (M) or (E).

Principles used: Principles 4, 11 and 18.

Solar Energy Studies (BP), Solar energy (1P1) - Radiation (qualifier to 1P1); Conversion (1E); Efficiency (1MP1), Upper limit (1MP2) - Theoretical (qualifier to 1MP2).

C.94 Vacuum flow principle: A unique approach to cost-effective solar energy utilization.  
(Policy and International Science. 2;1978;275-91)

Study of the application of vacuum flow principle to the utilization of solar energy.

Problems identified: Qualifier to (E).

Principles used: Principles 4 and 18.

D INTERNATIONAL RELATIONS: FACET ANALYSIS

D.1 Apartheid and United Nations.
(Annuals of American Academy of Political and Social Science. 354;1964;335-44)

Study of the apartheid policy and the sanctions by the United Nations on the same.

Problems identified: Qualifiers to (E).

Principles used: Principles 5 and 19.

International Relations (BF), Apartheid policy (1P1): Sanction (1E) - by United Nations (qualifier to 1E).

D.2 Arab banking finance: Protection of OPEC/OPAC surplus.
(Economic times. 11.3.81)

Study of the investment of surplus amount from OPEC/OPAC cartel.
Study of Arab banking at the international level.

Problems identified: Qualifiers to (P).

Principles used: Principle 5.

International Relations (BF), Financial relations (1P1) - OPEC/OPAC Countries (qualifiers to 1P1).

D.3 Arab boycott of Israel.
(Foreign affairs. 55;1977;472)

Study of the foreign trade policy of Arabs, Boycott of Israel.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 5 and 19.

International Relations (BF), Foreign trade policy (1P1) - Arabs (qualifier to 1P1): Boycott (E) - Israel (qualifier to 1E).

D.4 Are there any chances for detente in Asia.
(Review of International Affairs. 32;1981;2,5; 15-17)

Investigation for the chances of detente in Asia.

Problems identified: Qualifier to (P).

Principles used: Principle 5, 19 and 20.
International Relations (BF), Detente (P), In Asia (qualifier to P); Chances (1MP1), Investigation (IE).

D.5 The arms race and its consequences in the US and USSR. (International Affairs, 1980; Oct.; 38-45)

Study of the arms race in USA.

Problems identified: Qualifier to (P).

Principles used: Principle 5.

International Relations (BF), Arms race (1P1) - between USA and USSR (qualifier to 1P1).

D.6 At the Madrid meeting. (International Affairs, 1981, February; 38-48)

Study of the security and cooperation among European countries during 1981.

Problems identified: Qualifier to (P).

Principles used: Principle 5.

International Relations (BF), Security and co-operation (1P1) - in Europe (qualifier to 1P1) - during 1981 (qualifier to 1P1).

D.7 Brezhnev wants a divided Detente. (Amrit Bazar Patrika, 1981, March P5)

Study of the policy of divided detente of USSR during 1981.

Problems identified: Qualifier to (P).

Principles used: Principle 5.

International Relations (BF), Detente (P) - Divided (qualifier to 1P1) - of Russia (qualifier to 1P1).


Discusses the similarities between fiscal and foreign policies of Great Britain and United States.

Problems identified: Qualifier to (P).
Principles used: Principle 5.

International Relations (BP), Economic relation (1P1) - USA and Great Britain (qualifier to 1P1).

D.9 Caribbean between Carter and Reagan.  
(Review of International Affairs. 32;739;20-81;21-23)

Examines the prospects of the foreign policy under Reagan administration.

Problems identified: Qualifier to (P).

Principles used: Principle 5.

International Relations (BP), Political Relation (1P1), between Caribbeans and USA (qualifier to 1P1).

D.10 China seeks trade loans to save contracts.  
(Tribune, 1981 March 11)

Comments on China's decision to cancel contracts with Japanese firms and the implications thereof.

Problems identified: Qualifier to (P) and (E). Multieuenotation of 'Influence' is it (M) or (E).

Principles used: Principles 5, 12 and 18.

International Relations (BP), Trade loans (1P1) by China (qualifier to 1P1): Influenced by (IE), Japanese firms (qualifier to (E)).

D.11 China's Middle East Policy.  
(International Affairs. 1980 October 46-54).

Study of the peace treaty between China and Middle East.

Problems identified: Qualifier to (P).

Principles used: Principle 5.

International Relations (BP), Peace treaty (1P1) - between China and Middle East (qualifier to 1P1).

D.12 Close look: Relevance of non-alignment.  
(Statesman, 1981 March 12).
Analysis of the position of non-aligned movement after the conclusion of the Delhi conference of the non-aligned foreign ministers as reflected in its declarations.

Problems identified: Heterogeneity of (M).

Principles used: Principles 5 and 12.

International Relations (IF), Non-alignment policy (IPI): Retrospects and prospects (MP).


Study of the international commodity negotiations. Analysis of the conflicts.

Problems identified: Heterogeneity of (P). Multiconnotation of 'Conflict' is it (M) or (E). Qualifier to (P).

Principles used: Principles 5, 12, 19 20 and 21.

International Relations (IF), International Commodity Negotiations (IPI) in Europe (qualifier to IPI); Conflict (MP).

D.14 The coordinated strategy of cooperation for the 1980's.
(International Affairs. 1980, Sept; 23-30)

Study of the cooperation and coordinated strategy among the European nations during 1980's.

Problems identified: Qualifier to (P).

Principles used: Principle 5.

International Relations (IF), Coordinated Strategy (IPI) - for Europe (qualifier to IPI) - for cooperation (qualifier to P) - 1980 (qualifier to IPI).

D.15 Crisis in international relations.
(Review of International Affairs. 32;740;1981, February 5;21-22)

Discusses the present day conflict and crisis in international relations in Asia.

Problems identified: Qualifier to (P). Heterogeneity of (P).
Principles used: Principle 5.

International Relations (BF), Conflicts and crisis (1P1) - in Asia (qualifier to 1P1).

D.16 Dangerous vacuum in offing.
(Patriot. 1981, 3, 2)

Analysis of the prospects of dangerous developments of the contradictions between Indian and the US, Chinese axis in context of the prospective summit between US, China and Pakistan and the marked increase in the U.S. Naval presence in the Indian Ocean.

Problems identified: Qualifier to (P) and (M). Heterogeneity of (M).

Principles used: Principles 5 and 19.

International Relations (BF), Contradictions (1P1) - between US and India (qualifier to 1P1) - in the context of the summit between USA, China and Pakistan - in relation to the presence of US Naval base in the Indian Ocean (qualifier to 1P1).

D.17 Detente: The battle of ideas.
(International Relations. 1981, Feb; 13-21)

Study of the peaceful coexistence among the third world countries.

Problems identified: Qualifier to (1P1).

Principles used: Principle 5.

International Relations (BF), Peaceful co-existence (1P1) - among third world countries (qualifier to 1P1).

D.18 Domestic sources of India's policy of non-alignment.
(India quarterly. 36, 3 & 4; 1980, July-Dec; 348-62)

Study of the domestic sources of India's policy of non-alignment.

Problems identified: Qualifier to (P).

Principles used: Principles 5 and 19.

International Relations (BF), Non-alignment (1P1)-Indian (qualifier to 1P1); Domestic sources (1MP1).
D.19 East Africa is Wooing Asians.  
(Tribune 1981, March 11)

Reviews the prospective economic cooperation between India and Kenya after recent visit of President Daniel Arap Moi of Kenya to India.

**Problems identified:** Heterogeneity of (P), Qualifiers to (P) and (E).

**Principles used:** Principles 5, 12 and 19.

International Relations (BF), Economic cooperation (1P1), Between India and Kenya (qualifier to 1P1): Influenced by (IE) - Visit of Kenya President to India (qualifier to E).

D.20 Economic cooperation: Need to expand trade in developing World.  
(Economic times. 1979, May 23)

Study of possibilities of expanding the trade between developing countries.

**Problems identified:** Qualifier to (E). Influence of AULP.

**Principles used:** Principles 5.

International Relations (BF), Economic cooperation (1P1) - Trade (qualifier to 1P1): Expansion (IE) - Developing World (qualifier to E).

D.21 For a peaceful Indian Ocean.  
(International Affairs. 1981, February, 85-91)

Study of the plea for Indian Ocean for peace zone.

**Problems identified:** Qualifier to (P). Multiconnotation of 'Plea for' is it (M) or (E).

**Principles used:** Principles 5 and 12.

International Relations (BF), Peace (1P1) - Indian Ocean (qualifier to 1P1); Plea for (1P1).

D.22 Foreign aid 1975-80.  
(Eastern economist. 76, 4; 1981, 3-1. Annual No. 1C81; 23D~i2).

Study of the India's policy towards foreign aid.
Problems identified: Qualifier (P).

Principles used: Principle 5.

International Relations (BF), Foreign aid (1P1) - India (qualifier 1 to 1P1) - during 1975-80s. (qualifier 2 to 1P1).


Analysis of the impact of foreign aid on the economic conditions in Sri Lanka.

Problems identified: Heterogeneity of (E). Multiconnotation of 'Influence' is it (M) or (E). Qualifiers to (E).

International Relations (BF), Foreign aid (1P1): Influence on (IE), Economic conditions (qualifier 1 to IE) of Sri Lanka (qualifier 2 to IE).

D.24 Foreign exports under fire in Sri Lanka. (Mail. 1981, March 9)

Comments on the criticism against foreign exports involved in public and private sectors in Sri Lanka.

Problems identified: Qualifiers to (P).

Principles used: Principles 5 and 19.

International Relations (BF), Foreign exports (1P1) - Sri Lanka (qualifier to 1P1): Criticism (1E).

D.25 The growing economic might of the USSR and effectiveness of its foreign policy. (International Affairs. 1981, Jan; 68-78)

Study of USSR economy influenced on its foreign policy.

Problems identified: Qualifier to (P) and (E). Heterogeneity of (P).

Principles used: Principles 5 and 19.

International Relations (BF), Foreign policy (1P1) - USSR (qualifier to 1P1): Influenced by (1E) - USSR Economy (qualifier to 1E).
D.26 Impediment to Soviet-Japanese relations.
(International Affairs. 1981, Feb; 51-5)

Analysis of the mutual co-operation of Soviet Union and Japan.

Problem identified: Qualifiers to (P).

Principles used: Principle 5.

International Relations (BF), Mutual co-operation (1P1) - Soviet Union and Japan (qualifier to 1P1).

D.27 Independence, peace and development.
(Review of International Affairs. 32, 740; 1981, Feb. 5; 1-3)

Reviews the historical perspectives of the major results and effects of the policy and movement of non-alignment in the past two decades.

Problems identified: Multiconnotation of 'impact' is it (M) or (E).

Principles used: Principle 12.

International Relations (BF), Non-alignment (1P1): Impact (IM1): Assessment (IE).

D.28 Indian Ocean Oil diplomacy.
(Tribune. 1981 March 10)

Examines the causes of confrontation between United States and Russian mainly in a bid to control global resources of oil in the Indian ocean besides other scarce resources.

Problems identified: Effect of AUPD on the subject and qualifier to (E).

Principles used: Principle 10.

International Relations (BF), Global oil resources (1P1), Gaming control (BP): Confrontation (E) between USA and Russia (qualifier to 1E).

D.29 Indo-FRG economic relations.
(Indian and foreign review. 16; 1981 March 15; 10-11)

Examines the economic relations between India and Federal Republic of Germany specially in respect of joint ventures in Third World Countries.

Problems identified: Qualifier to (P).
Principles used: Principle D.

International Relations (1P1), Economic relations (1P1) - Indo-FBR (qualifier to 1P1).

D.30 International legal safeguards for the marine environment. (International Affairs. 1980 Oct; 86-93)

Study of the International Marine environment. Safeguards for the same.

Problems identified: Qualifier to (P) and (M).

Principles used: Principles 5 and 12.

International Relations (BP), Marine Environment (1P1) - International (qualifier to 1P1): Safeguards (MP) - Legal (qualifier to MP).

D.31 International Solidarity with the Chilean People's struggle. (International affairs. 1980, Oct; 29-37)

Analysis of the impact of International Solidarity on Chilean people's struggle.

Problems identified: Multiconnotation of 'Impact' is it (M) or (E). Qualifier to (M).

Principles used: Principles 5, 12, 19, 20 and 21.

International Relations (BP), International Solidarity (1P1); Impact (MP) - on chilean struggle (qualifier to MP): Analysis (1E).

D.32 Iran and Iraq at War: The Effect on development. (Round table. 381, 81 Jan; 61-6)

Study of the impact of war between Iran and Iraq on the development.

Problems identified: Qualifier to (P) and (MP). Heterogeneity of the formation of (P). Multiconnotation of impact is it (M) or (E).

Principles used: Principles 5, 12 and 19.

International Relations (BP), War (1P1) - between Iran and Iraq (qualifier to 1P1); Impact (MP) - development (qualifier to MP) = National (qualifier to qualifier).
D.33 Irrationality of the growing economic might of the USSR and effectiveness of its foreign policy.
(International Affairs. 1;1981, Jan; 68-78).

Highlights the foreign policy of the USSR underpinned by the irrationality of the rapid growth of country's economy, science and technology.

Problems identified: Influence of AULP on the facet structure. Multiconnotation of the term 'Influence'.

Principles used: Principles 5, 12, 19, 20 and 21.

International Relations (BF), Foreign policy (IP1) - USSR (qualifier to IP1): Influenced by (E) Economic might (qualifier to IE) = of USSR (qualifier to qualifier of IE) = Rapid growth (qualifier to qualifier of IE); Irrationality (2MP1).

D.34 The law of the sea: Before the final stage.
(International Affairs. 1981, Jan; 93-9).

Political and Military Analysis of the legal aspects of the international sea limits.

Problems identified: Qualifier to (P). Impact of AULP on (M) and (E).

Principles used: Principles 5, 12, 19.

International Relations (BF), Sea limits (IP1) - International (qualifier to IP1); legal aspects (MP); Analysis (IE) - Military and political (qualifier to IE).

D.35 Law of the sea treaty: Is west sabotaging the accord.
(Indian express. 1981, March 9).

Study of the sabotage of law of sea limits treaty.

Problems identified: Multiconnotation of the term 'Law' is # (P) or (M). Qualifiers to (E). Impact of AULP in the facet structure.

Principles used: Principles 5, 12, 19.

International Relations (BF), Sea limits (IP1); Law (IMPI): Treaty (IE); Sabotage (2E) by West (qualifier to 2E).

D.36 Lenin's banner of peace and co-operation among nations.
(International Affairs. 1980, Oct; 1-12)
Analysis of the impact of Lenin's ideology over the peace policy of the Soviet Union.

Problems identified: Qualifiers to (P) and (E). Multiconnotation of 'Influence' is it (M) or (E).

Principles used: Principles 5, 12, 20 and 21.

International Relations (BF), Peace policy (1P1) - Soviet Union (qualifier to 1P1): Influenced by (1E), Lenin's ideology (qualifier to IE): Analysis (1E).

D.37 Letter from America:
(Statesman. 1979 November 30).

Study of the impact of USA and Iran's confrontation on the peace and security of Middle East.

Problems identified: Qualifier to (P) and (E).

Principles used: Principles 5 and 19.

International Relations (BF), Peace and Security (1P1) - in Middle East (qualifier to 1P1): Threatened by (1E) - Confrontation (qualifier to 1E) - between USA and Iran (qualifier to qualifier of 1E): Analysis (2E).

D.38 Major power alignment and serious interstate disputes 1880-1914.
(Dissertation abstracts International. 39; 1979;6956 - A)

Study of the influence of major power alignments on the serious interstate disputes: Case study with Arab-Israeli-Syria problems.

Problems identified: Qualifiers to (P) and (E). Multiconnotation of 'Influence' is it (M) or (E).

Principles used: Principles 5, 12 and 19.

International Relations (BF), Interstate disputes (1P1) - between Egypt, Israel and Syria (qualifier to 1P1): Influenced by (1E) - Major power alignments (qualifier to 1E): Analysis (2E).

D.39 Military use of silk road:
(National Herald. 1981, March 13)

Examines the road link between China and Pakistan in the occupied Kashmir and its military implications.
Problems identified: Qualifiers to (P) and (MP).

Principles used: Principles 5, 12 and 19.

International Relations (BF), Defence policy (1P1) - Road links (qualifier 1 to 1P1) - China and Pakistan (qualifier 2 to 1P1) - in occupied Kashmir (qualifier 3 to 1P1); Implications (1MPI) to - Military (qualifier 1 to 1MPI) to India (qualifier 2 to 1MPI); Analysis (1E).

D.40 Moves to put Arab Eggs in many baskets.
(Business standard. 1981 March 4)

Reviews the future prospects and present moves in respect of the investment of Arab surplus funds for the development purposes in different countries.

Problems identified: Qualifiers to (P), Heterogeneity of (P).

Principles used: Principles 5, 12, 19.

International Relations (BF). Funds Investment policy (1P1) - From Arab surplus (qualifier 1 to 1P1) - for development (qualifier 2 to 1P1) - In different countries (qualifier 3 to 1P1); Implications (1MPI): Review (1E).

D.41 Nations in arms; the theory and practice of territorial defence.
(London, Chatto and WIsdons for the International Institute for Strategic studies 1976)

Study of war policies of nations for territorial defence; Its political and economic implications.

Problems identified: Qualifier to (P) and (II). Heterogeneity of (II).

Principles used: Principles 5, 12 and 19.

International Relations (BF), War policy (1P1) - of Nations (qualifier to 1P1) - for territorial defence (qualifier to 1P1); Implications (1MPI) - Political and Economic (qualifier to 1MPI): Analysis (1E)

D.42 NATO's aggressive plans and standardisation of weapons.
(International affairs. 1980 Oct. 80-6)

Study of the problems in aggressive armament policies of NATO group of countries and the impact of standardisation of weapons on the same.
Problems identified: Qualifiers to (P) and (E). Influence of AULP on the facet structure.

Principles used: Principles 5, 12 and 10.

International Relations (BF), Armament policy (1P1) - Aggressive (qualifier 1 to 1P1) - NATO Countries (qualifier 2 to 1P1): Influenced by (1E) - Standardisation of Weapons (qualifier to 1E).

D.43 Need for regional co-operation.
(Deccan Chronicle. 1981 March 27)
Emphasizes the need for mutual aid and regional co-operation of India with Asian neighbours to check inflation.

Problems identified: Qualifiers to (P) and (MP).

Principles used: Principles 5, 12 and 19.

International Relations (BF), Neighbourhood relations (1P1) - between India and other Asian countries (qualifiers to 1P1); Implications (1MP1) on inflation control (qualifier to 1MP1).

(Beverly Hills, Sage. 416 pp)
Study of the social psychological aspects of the negotiations between countries.

Problems identified: Qualifiers to (P) and (E). Influence of AULP on the formation of (E) facet.

Principles used: Principles 5 and 19.

International Relations (BF), Negotiations (1P1) between Nations (qualifier to 1P1); Analysis (1E) - Sociopsychological perspectives (qualifier to 1E).

D.45 Pakistan's public and private faces.
(Deccan Herald. 1981 March 79)
Analysis of the views of President Zia-ul-Haq of Pakistan and other officials in Pakistan about Pakistan's security in the context of Afghanistan crisis, United States and Pakistan relationships and Indo-Pak relations.
Problem identified: Qualifiers to (P) and (E). Heterogeneity of (E). Influence AULP on the facet structure.

Principles used: Principles 5, 12 and 19.

International Relations (BF), Defence policy (1P1) - of Pakistan (qualifier to 1P1): Influenced by (IE) Afghan crisis (qualifier to IE); In the context of Pak-VS and Pak-India relationships (2MP1).

D.46 Peking: Hegemonism in action.
(International Affairs. 1981, Jan; 34-42)

Analysis of influence of China on South East Asia.

Problem identified: Qualifier to (P).

Principles used: Principles 5 and 19.

International Relations (BF), Hegemony (1P1) - by China (qualifier to 1P1) - on South East Asia (qualifier to 1P1): Analysis (1E).

D.47 Pretoria's undeclared war.
(Patriot. 1981 March 5)

Analysis of the confrontation between the racist regime of South Africa and the frontline states of Africa particularly Angola, Zambia, and Mozambique.

Problem identified: Qualifier to (P).

Principles used: Principle 5.

International Relations (BF), War policy (1P1) - Undeclared (qualifier 1 to 1P1) - South Africa (qualifier 2 to 1P1) - with Angola (qualifier 3 to 1P1).

D.48 Questions Mr Carter must answer.
(Times of India. 1980 Jan. 19)

Study of the arms aid to Pakistan by USA being influenced by the Soviet Union interception in Afghanistan.

Problem identified: Qualifier to (P) and (E). Heterogeneity of (E).

Principles used: Principles 5 and 10.

International Relations (BF), Arms aid (1P1) - from USA to Pakistan (qualifier to 1P1). Influenced by (IE) - Soviet interception (qualifier to IE) - in Afghanistan (qualifier to qualifier of IE).

Study of the legal and political aspects of recognition of governments during 1815-1974.

Problems identified: Qualifier to (P). Influence of AULP on the formation of (M).

Principles used: Principles 5 and 12.

International Relations (IR), Recognition policies (1P1) - of government of a nation (qualifier to 1P1); Legal and political aspects (1MP1).

D.50 The role of small group in foreign policy decision-making: A potential pathology in crisis decisions. 1979, University of Cincinnati. 341 pp.

Analysis of pathology in crisis situations in Decision-making in foreign policy by a small group of persons.

Problems identified: Multiconnotation of pathology is it (M) or (E). Multiconnotation of 'Decision-making' is it (M) or (E). Qualifiers to (MP) and (E).

International Relations (IR), Foreign policy (1P1): Decision-making (1E) - by small group (qualifiers to 1E); pathology (2MP1) - crisis situations (qualifier to 2MP1): Analysis (2E) - Objective (qualifier to 2E).

D.51 Sadat dozes Europe with political showbiz.
(Amrit Bazar Patrika. 1981 February 27)

Analysis of the prospective impact on international policies of the forthcoming meeting in Washington between President Ronald Reagan and Egyptian President Anwar Sadat.

Problems identified: Qualifiers to (P) and (E). Influence of AULP in the formation of (E).

Principles used: Principles 5 and 12.

International Relations (IR), Political relations (1P1) - among European nations (qualifier to 1P1): Influenced by (E) - USA - Egypt relations (qualifier to 1P1).
D.52 Scramble for Iranian Trade Pie.
(Commerce. 142, 3636; 1981 Feb. 21; 421)

Deals with US-Iran relationships after the release of American Hostages.


Principle used: Principle 5.

International Relations (BP), Trade benefits (1P1) - between Iran and USA (qualifier to 1P1).

D.53 Security through Detente.
(World Focus. 2, 2; 1981; Feb; 3-6)

Reviews the perspective and operational programmes of the two superpowers in relation to European Security and stresses the accord to follow the principle of detente for security and peace in the world.

Problems identified: Qualifiers to (P) and (E). Heterogeneity in facet structure.

Principles used: Principles 5 and 15.

International relations (BF), Security and Detente (1P1) - Europe (qualifier to 1P1): Influenced by (E), Super Powers (qualifier to 1E).

D.54 South Africa - Manifest of racism and apartheid.
(International Affairs. 1281, Jan; 59-67)

Study of the international impact of racism and apartheid policies of South Africa.

Problems identified: Qualifiers to (P) and (M).

Principles used: Principles 5, 12 and 19.

International Relations (BF), Racism and apartheid (1P1) - by South Africa (qualifier to 1P1); Impact (1MPI) - International (qualifier to 1MPI).

D.55 South East Asia needs lasting peace.
(International Affairs. 1281, Feb; 27-37)

Analysis of the tendencies of South east Asian nations for a policy of peaceful co-existence.
Problems identified: Qualifiers to (1P1)

Principles used: Principles 5, 12, 19.

International Relations (BP), Policy of Peaceful co-existence (1P1) - among South East Asian Nations (qualifiers to 1P1); Tendencies (1MP1): Analysis (1E).


Interpretation of the Soviet peace policy programme for 1981.

Problems identified: Qualifier to (P) and (M).

Principles used: Principles 5, 12 and 19.

International Relations (BP), Peace policy (1P1) - Soviet Union (qualifier to 1P1); Programme (1MP1) - for 1981 (qualifier to 1MP1): Interpretations (1E).

D.57 A specific measure for limiting the arms race. (International Affairs. 1981, Feb.; 101 - 6)

A discussion on the specific measures for limiting international arms race.

Problems identified: Qualifiers to (P) and (E).

Principles used: Principles 5 and 19.

International Relations (BP), Arms race (1P1) - International (qualifier to 1P1); Limiting (1E) - Specific measures (qualifier to 1E): Discussion (2E).

D.58 The strategy of nuclear adventurism. (International Affairs. 1981, Jan; 28-33)

A study of the nuclear adventurism in International Relations.

Problems identified: Multiconnotation 'Nuclear Adventurism' is it (P) or (M).

Principles used: Principles 5, 12 and 19.

International Relations (BP), Nuclear adventurism (1P1); Strategy (1MP1): Study (1E).
D.59 Struggle for disarmament: Achievements, difficulties and prospects. (International Affairs. 1981, Feb; 92-100)

Prospects for international disarmament.

Problems identified: Qualifier to (P). Multiconnotation of 'Prospects for' is it (H) or (E).

Principles used: Principles 5, 12 and 19.

International Relations (BF), Disarmament (P) - International (qualifiers to P); Prospects for (1P1).

D.60 Tension which is causing anxiety. (Review of International Affairs. 32, 840; 1981 Feb. 3; 12-14)

Study of tension caused by anxiety in international affairs.

Problems identified: Heterogeneity of (E). Qualifier to (E).

Principles used: Principles 5, 13 and 19.

International Relations (BF), Tension (1P1): Influenced by (1E) - Anxiety (qualifier to 1E).


Analysis of the policy of United States towards third world countries in the light of the statement made by the U.S. Secretary of State Alexander N Haig in the Senate.

Problems identified: Qualifier to (P).

Principles used: Principles 5, 13 and 19.

International Relations (BF), Political Relations (1P1) - Between Third World and USA (qualifier to 1P1).

D.62 The trilateral coordination centre for imperialist policy. (International Affairs. 12;1978;December; 106-110)

Economic and political crisis in capitalistic countries caused by national liberation and socialist movement.

Problems identified: Qualifier to (P) and (E). Multiconnotation of 'caused by', is it (H) or (E). Heterogeneity of (E).

Principles used: Principles 5, 12 and 19.

International Relations (BF), Imperialist policy (1P1) - capitalistic countries (qualifier to 1P1): Caused by (E) - National liberation and socialist movement (qualifier to 1E).
D.63 Trust and cooperation among peoples - a guarantee of peace and security. (International Affairs. 1960, Sept. 3-11)

Study of the trust and cooperation among peoples of South East Asian countries.

**Problems identified:** Heterogeneity (P) and Qualifier to (P).

**Principles used:** Principles 5, 12, 19.

International Relations (BF), Peace and Security (1P1) - SouthEast Asian countries (qualifier to 1P1) 1980.

D.64 Under the cover of a 'Soviet Threat'. (International Affairs. 1981, February, 64-72)

Critical study of Soviet threat to rupture in international detente.

**Problems identified:** Qualifier to (E).

**Principles used:** Principles 5, 12 and 19.

International Relations (BF), Detente (1P1) - International (qualifier 1P1): Rupture (1E) - Soviet threat (qualifier to 1E): Critical study (2E).

D.65 The United Nations and decolonization. (U N Monthly chronicle. 7; 1970; 39-45)

Study of the influences of United Nations of the decolonization of portuguese empire.

**Problems identified:** Heterogeneity (P).

**Principles used:** Principles 5 and 19.

International Relations (BF), Decolonization (1P1): Influenced by (1E) the United Nations (qualifiers to 1E)

D.66 The USA - the mainstay of Neocolonism in Africa. (International Affairs. 1980, Oct; 23 - 28)

Influence of USA on the neo-colonism in Africa.

**Problems identified:** Qualifiers to (P).

**Principles used:** Principles 5.
International Relations (BF), Neo-colonism (1P1) - in Africa (qualifier 1 to 1P1) - of USA (qualifier to 1P1).

D.67 US aid over the years.
(National Herald. 1981 - March - 11)

Analyses of the purpose and significance of US aid to the developing countries.

Problems identified: Qualifier to (P), Heterogeneity of (P).

Principles used: Principles 5 and 10.

International Relations (BF), Economic aid (1P1) - to developing countries by USA (qualifier to 1P1): Analysis (IE).

D.68 US an arsenal for autocracies.
(Times of India. 1981, March 13)

Analyses of the impact of United States policies on the political developments in countries like Pakistan and El Salvador.

Problems identified: Qualifiers to (P), Qualifiers to (E) and Heterogeneity of (E).

Principles used: Principles 5 and 10.

International Relations (BF), Armament supply (1P1) - USA (Qualifier to 1P1): Influencing (E) - Political development (qualifier to IE).

D.69 US and the third world: Abrasive thrust of Reagon policies.
(Times of India. 1981 March 13)

Highlights the impact of president Ronald Reagan's policies on the relations between United States and the third world.

Problems identified: Qualifier to (P).

Principles used: Principle 5.

International Relations (BF), Abrasive thrust (1P1) - USA Reagan's (qualifier 1 to 1P1) - towards third world (qualifier 2 to 1P1).

D.70 US opts for more militancy.
(Deccan Herald. 1981 March 30)

Increase of militancy of USA and its impact on the third world.

Problems identified: Qualifiers to (P) and (E).
Principles used: Principles 5 and 19.

International Relations (BF), Militancy (1P1) - USA (qualifier to 1P1): Increase (IE).

D.71 US Policy projects global perils. 
(Democratic world. 10, 13; 1981 March 23; 11-22)

Critically analyses the USA foreign policy in the light of aid to Pakistan.

Problems identified: Multiconnotation of 'Projection' is it (M) or (P). Qualifiers to (M).

Principles used: Principle 5.

International Relations (BF), Global crisis (1P1): Projection (IE) - Through USA foreign policy (qualifier to IE)

D.72 US war games to split the non-aligned. 
(Blitz. 1981 Feb. 14; 3 & 23)

Study of the war policies of USA and its impact in splitting the third world.

Problems identified: Qualifiers to (P) and (M). Multiconnotation of 'Impact' is it (M) or (E).

Principles used: Principles 5, 12 and 19.

International Relations (BF), Pro-war policy (1P1) - of USA (qualifier to 1P1); Impact (MP).

D.73 USSR and Finland - Good neighbours. 
(International Affairs. 1981, Feb; 80-4)

Study of the neighbourhood relations between Finland and USSR.

Problems identified: Qualifier to (P). Heterogeneity of (P).

Principles used: Principle 5.

International Relations (BF), Neighbourhood relations (1P1) - Soviet Union and Finland (qualifiers to 1P1).

D.74 Washington's Middle East impasse. 
(International Affairs. 1981, Feb; 73-9)
Study of the international tension at Middle East influenced by USA.

Problems identified: Qualifiers to (P) and (E). Multiconnotation of 'Influence' is it (M) or (E).

Principles used: Principles 5 and 13.

International Relations (BP), Tension (1P1) - International (qualifiers 1 to 1P1) - at Middle East (qualifier 2 to 1P1): Influenced by (IE) USA (Qualifiers to IE).

D.75 Zone of peace in the Caribbean: The road of easing tension. (Review of international affairs. 32;740;1981, Feb. 5; 3-5)

Emphasises the need to transform the Caribbean into a Zone of peace which is vital for peace in the world.

Problems identified: Qualifiers to (P) and (M). Multiconnotation of 'Impact' is it (M) or (E).

Principles used: Principles 5 and 13.

International Relations (BP), zone of peace (1P1) - Caribbean (qualifier to 1P1); Impact (MP) - for Easing tension (qualifier to MP).
INDEX TO PROBLEMS IDENTIFIED

NOTE: This is an index to the problems identified in 360 examples facet analyzed in the earlier sections of this chapter. The index number is the serial number of the example. The index is presented in four different sets namely, General (Correlated to Modes of formation in general, see sections 7.3 and 7.7), Personality (see Sec. 7.3), Matter (see Sec. 7.4) and Energy (see Sec. 7.5). In each of those sets, the problems are presented according to the causal problems, AULP, Heterogeneity, Multiconnotation and Qualifiers.

GENERAL


Heterogeneity:

Multiconnotation:

Qualifiers:
PERSONALITY

AULP A.77, B.5, B.12, B.19, B.58, B.76, B.77, B.81, C.15, D.20.

Heterogeneity:

Multiconnotation:

Qualifiers:
MATTER

**AULP**  B.6, B.62, B.74, B.75, B.79, D.34, D.49,

**Heterogeneity:**

**Multiconnotation:**

**Qualifier:**

ENERGY


**Heterogeneity:**

**Multiconnotation:**

**Qualifiers:**
A. 62, A. 83, A. 90, A. 95, A. 97, A. 99, A. 100, A. 101, A. 103, B. 4,
B. 9, B. 22, B. 26, B. 27, B. 28, B. 39, B. 50, B. 59, B. 40, B. 63,
B. 45, B. 59, B. 60, B. 61, B. 63, B. 65, B. 66, B. 67, B. 68, B. 83, B. 87,
C. 70, C. 71, C. 73, C. 76, C. 80, C. 81, C. 82, C. 85, C. 86, C. 87,