

Systems Thinking

Integrated holistic approach to unity

Issues for Discourse with Youth

Bahá'í Discourse - Systems1

Complex Systems Science

Complex systems science can help us to understand justice and unity in a way that harmonises science and religion:

- many components with many types of interaction between them and with their environment
- non-linear relationships, emergent properties
- feedback loops and adaptations
- often represented as nodes and links
- collective or system-wide behaviours
- critical transitions or tipping points
- punctuated equilibria, stability followed by sudden transition
- nested systems at multiple levels

Complex Systems Science

In an efficient or just system:

- all the component elements are in a dynamic state of balance
- each component receives its optimal share of benefits
- performing its service or role efficiently
- no leadership or hierarchy
- increasing complexity
- potential for emergent properties
- higher levels of relationships

The coral reef ecosystem

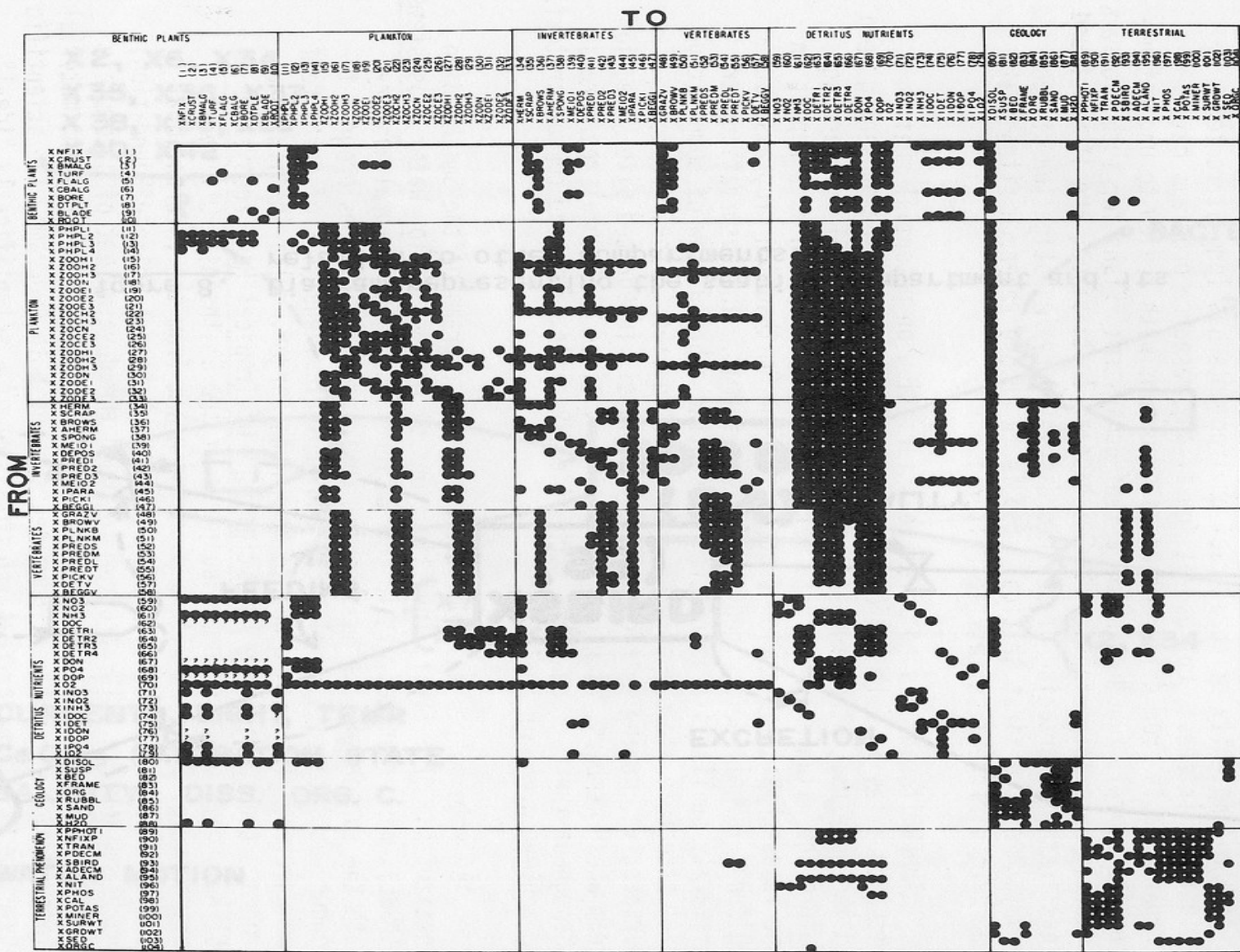
- Efficient capture of solar energy
- Efficient transfers within the system, symbioses
- Cooperation and reciprocity
- Few losses, efficient recycling
- High complexity and integration
- Maximizes total productivity

Coral reef systems model

carbon flow
between
compartments

104
compartments

(Dahl et al. 1974)



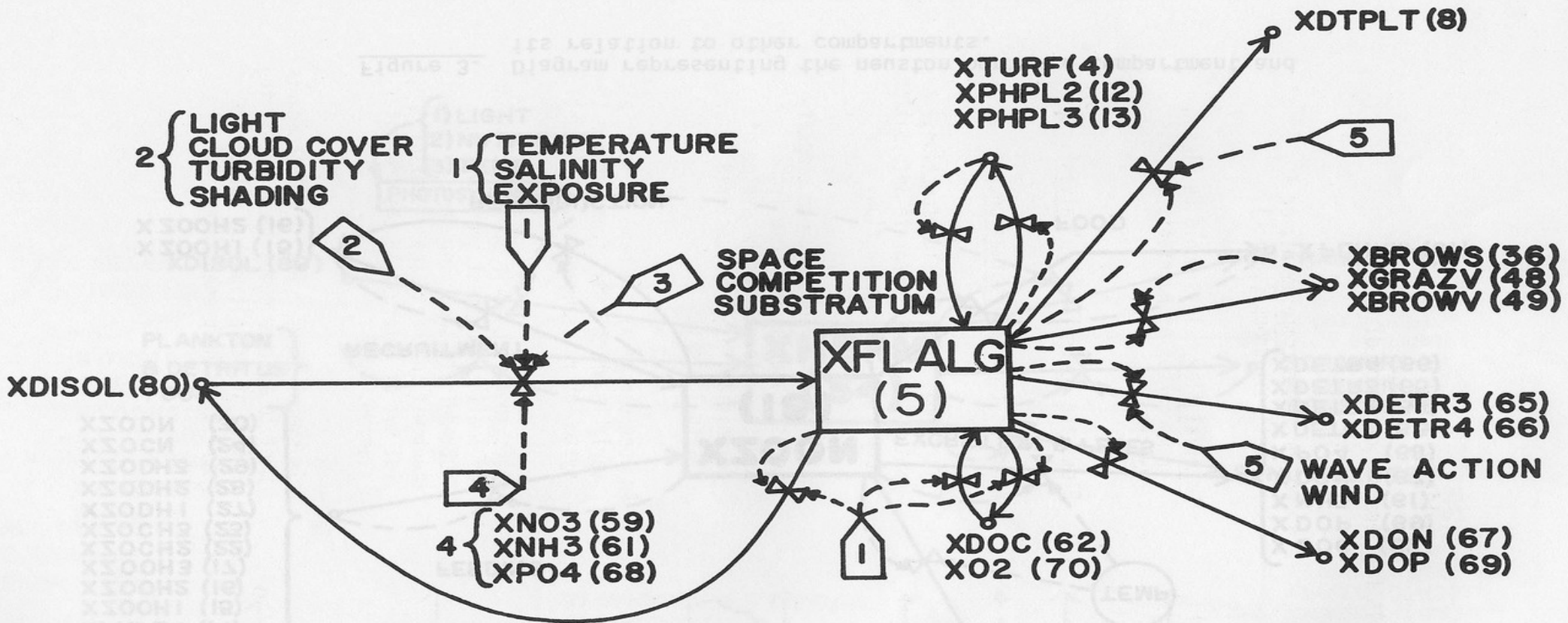


Figure 2. Diagram representing the fleshy macro-algal compartment and its relation to other compartments.

Importance of Diversity

Diversity is the dynamic driver for greater systems complexity, integration, efficiency and resilience.

Through long processes of evolution, and both individual and group selection, interactions are selected for that enhance the interrelationships beneficial for all concerned.

The greater the number of potential interactions among diverse entities, the greater the capacity of the system to evolve higher levels of complexity.

Elements of the systems approach

- A way of thinking
- Dynamic
- Processes
- Cause and effect
- Interactions
- Integration
- Emerging properties



Systems Code Information

- Chemical system: the atoms
- Biological system: DNA
- Mechanical system: engineering concept
- Institutional system: statutes, laws, regulations, practices and customs
- Human system: values, beliefs, cultures

Systems Transmit Information

- Communication systems
- Control systems
- Information feed-back
- Nested sub-systems
- Subsidiarity – responsibility at lowest level
- Indicators to signal and communicate

The systems approach: Example of a human as a system

- Physical, chemical, biological composition
- Life cycle, reproduction
- Behaviour, athletic performance
- Health, medical treatment
- Protection, dress, technological capacity
- Education, training, adaptation
- Psychology, consciousness, intelligence
- Spirituality, ethics, values, motivation
- Social organisation, culture

Systems perspective

Institute for the Study of Global Prosperity

Much like the human body, the interdependent body of humanity is composed of diverse elements whose well-being can only be achieved through integration and coordination. No cell or organ lives apart from the human body, and the well-being of each derives from the well-being of the whole. At the same time, it is the unity and interdependence of the body's diverse cells and organs that permits the full realization of the distinctive capacities inherent in each.

Systems perspective

The organic unity suggested by this analogy does not imply uniformity. On the contrary, the diversity of the component parts of an organic body permits the full realization of its collective capacity. Within human societies, diversity is a source of inspiration, creativity, productivity, resilience, innovation, and adaptation. Only when diverse segments of society are able to contribute appropriately to the governance of human affairs, within a framework characterized by unity and integration, will real prosperity and well-being be achieved.

Systems perspective

Such unity can only be achieved, however, as justice becomes the guiding principle of governance at all levels. An essential expression of justice is the desire to ensure that every individual and group has the opportunity to develop their full potential in order to contribute to the betterment of society.

Systems perspective

A concern for justice is thus an indispensable compass in collective decision making. In the design and implementation of plans, programs, and policies, justice is the sole means by which unity of thought and action can be achieved and sustained among diverse peoples.

Systems Thinking

Cycles

- From linear to circular thinking, closing loops, feed-back, response times, balance

Stakeholders

- Identify all relevant actors, listen to them, understand their worldview and their needs, establish confidence

Long-term

- Know where you want to go, keep your direction in spite of distractions; remember your principles and goals, but be flexible in finding local solutions

Sustainability is complex, and the complex is sustainable

Systems Thinking

- **Emergent properties**, more than the sum of the parts
- **Interdependence**, multiple causes and relationships
- **Resilience** in essential functions and structures after a shock
- **Paradigm**, our invisible worldview
- **Homeostasis** (feedbacks) maintaining system integrity
- **Context**: actions may be intelligent adaptations to a perceived situation

Tools for Working with Systems

- **Creative resistance** - remain true to one's values; avoid denial, combat, accepting business as usual
- **Iterative experimentation**, prototype and small steps, cultivate desire rather than force, don't waste energy fighting a powerful system
- **Shared vision** - necessary for collective action
- **Listening to the stakeholders** and their reality
- Find a common language and **co-construct a vision** of the desirable future

Tools for Working with Systems

- Look for fundamental solutions, find the source or strategic point to leverage a big effect
- Diagnose the present in the light of the future vision
- Create solutions that resolve the tension between the present and future
- Decide which actions to start today

Bahá'í Systems Science

Bahá'u'lláh's teachings provide

- a set of system rules and instructions for learning
- building a new level of complexity and well-being in the institutions of a global human society
- transforming each individual human from a self-centred individualist wanting immediate physical gratification to a humble, selfless servant building unity out of love
- enabling emergent properties of integration and cooperation
- just as in highly evolved ecosystems