



**ATTRACTORS  
INFO-LETTER OF THE  
HUMAN SYSTEMS DYNAMICS INSTITUTE  
VOLUME 1.1  
AUGUST, 2004**

*IN THIS MONTH'S EDITION, EXECUTIVE DIRECTOR GLENDA EOYANG, PH.D.,  
TALKS ABOUT HUMAN SYSTEMS DYNAMICS IN A GLOBAL SYSTEM.*

We speak casually of networks—professional networks, personal networks, communication networks, and more. We use the word as noun and verb and adjective, but the power of the word is magnified when you become conscious of the technical power of “network” as a model of human systems dynamics.

A network consists of nodes and connections. That's pretty simple. A node can be a person, and a connection can be a relationship. For example, imagine a team as a network: a collection of people (nodes) and their various relationships to each other (connections). Social network diagrams have been used to demonstrate such a network-quality of human systems for decades. So, what's new?

Recent research into the behavior of dynamical networks (Barabasi, 2002) leads to powerful insights about people work in teams and other human systems. Here are just a few of the lessons we've learned from dynamical networks at the HSD Institute.

- Diversity across the network is a good thing—not all members of a team need to have the same number or kinds of relationships with others. One should encourage a variety of connections between teammates and among subgroups of team members with similar interests.
- One team member's sense of closeness in the network will depend on the length of the connections to each of the other members, not just to the staff or the leader of the team. One should share information about team members with each other, so they feel connected to many individuals and, through them, to the whole.
- Power can be measured and experienced as “between-ness” in the network—the number of shortest paths that pass through one individual. This experience of “being on the critical path” translates into individual influence. One should consciously structure a network either to concentrate between-ness in one member or distribute it equally among many, depending on the purpose, function, and maturity of the group.
- The number of connections from one node to another is limited by the capacity of the node to “attend” to the various connections. Because energy is finite, the more connections there are the weaker the average connection will be. One should be realistic about expectations for the number and strength of connections among individual team members.

- Over time, the structure of a network changes: the ends connect to move from line to circle, one node moves to the center to become a hub with spokes, multiple cliques form remotely from the hub. Each stage of development transforms the reality as well as the felt sense of closeness and between-ness. Though network behavior cannot always be predicted, one should be ready to respond to such changes at both institutional and individual levels.

These are but a few of the insights to be gained from the notion of human systems as technical networks. In many ways these applications reinforce common assumptions about team building and in other ways they provide surprising possibilities for action. Like other tools and concepts of human systems dynamics (HSD), the dynamical network opens new options for understanding and action. You'll find HSD helpful for:

- Team building
- Marketing
- Management coaching
- Project management
- Training
- Strategic planning
- Organization redesign
- Process analysis