

What Constellation Is:
Modes of Tracking Dynamical Complexity

Conceiving constellating perspectives and methods

- ▲ The chaotic ordering of Nature’s complex systems emerges from networks of interdependent relationships
 - ▲ Their concurrently self-modifying sets of interactions self-organize to generate both order and adaptive change
 - ▲ Accurate understanding requires perceiving, thinking, and representing these metamorphic patterns of association
 - ▲ Linear, mechanical perspective provides essential knowledge but is incapable of modeling these interactive dynamics
- Regarding clusters of interactive elements as **dynamic constellations** provides the best model for imagining dynamically complex systems as de-centered, multi-directional processes of variable relationships

Perceiving Dynamic Complexity by Constellating Irreducible Network Interactivity

Human communication and understanding depend upon reduction—thinking through simplified concepts and descriptions. But we thereby often misunderstand how things actually happen. Reducing the world to linear sequences of ‘1, 2, 3’ or ‘X causes Y’ can be expedient. It helps us exert mechanical control—but it vastly reduces awareness of how dynamically complex systems function. To understand and ‘tell what happens’ means perceiving events *as sequential actions* **and** *as concurrent interactions*, together forming interactive constellations. That means constellating the interactivity of networks of simultaneous events whose relationships cannot simply be ‘lined out.’

Learning to See Both

**Linear
Sequential Simplicity**



> Ordinary Order of Hierarchy: *Reducible* <

AND



AND

**Non-Linear
Interactive Complexity**



< Extra-Ordinary Order of Inter-archy: *Irreducible* >

Telling How It Happens—Interactively and Unpredictably—by Constellating

'Telling' dynamic complexity means describing 'dynamically entangled clusters' of concurrently interacting, mutually modifying elements. The resulting relationships cause effects in ways that cannot be 'lined out' as a predictably sequential process. Portraying such contexts realistically means conveying the strange logic of chaotically self-organizing networks. Modeling this type of interactivity requires perceiving it as sets of elements whose interdependent relationships 'position' themselves relative to each other in a 3-dimensional 'field' or network. Systems from minds to economies actually operate through this type of 'dynamic structure.' The most apt image for these centerless 'networks of operation' is not a line but a constellation. Approaching the unpredictable interactivity of complex systems as active constellations enables us to imagine what we cannot sequentially 'tell.' The image of 'self-organizing constellations of interactions' allows one to 'see into' dynamically complex contexts in ways that reveal unexpected causes, consequences, interdependencies, meanings, and sources of order. In that way we can begin to think in 'dynamically holistic terms.' This 'not linearly reductive' approach to representing dynamic complexity constitutes a 'constellating perspective.' Complexity science confirms the essential role constellating perspective plays in realistic understanding of natural complexity. It can be termed a 'cognitive tactic' for maneuvering one's awareness into more inclusively realistic understanding by 'constellating one's consciousness'—that is, to think interactive relationships in ways that reflects the actual manner in which real world systems operate. That effort can take various forms, some explicitly scientific, some abstractly conceptual, some overtly imaginal, some primarily experiential.

Constellating Dynamic Complexity involves:

- > **Examining clusters of related elements to elaborate or 'expand' their interactive relationships as operational networks**
- > **Using contrasting perspectives to explore how order emerges from discontinuity, contrast, & diversity**
- > **Modeling events in ways that illustrate the interplay of sequential and concurrent activity**
- > **Employing both rationally analytical and symbolically metaphorical modes of representing interactivity**

Four Types of Relational Constellation:

- 1. Abstract Modeling of Interactive Network Configurations**
- 2. Empirical Description of Actual Interactive Systems in Nature**
- 3. Associative Plotting of Elements that Interdependently Constitute Words and Concepts**
- 4. Metaphorically Symbolic Representation of Conflicted Relationships**

*** However—Constellations of Dynamically Complex Contexts are not those Contexts ! ***

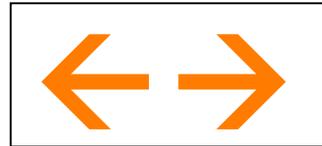
*Constellation provides insight into 'the workings' of dynamically complex relationships
but it cannot define their variably interactive, interdependently emergent totality.*

The Basic Challenge: *How to Know Parts as the Dynamically Variable, Centerless Wholes of 'Interactively Operational Networks?'*

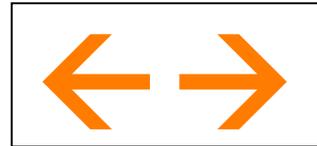
Dynamically holistic understanding requires correlating the fantastic interplays in and among variable wholes, that are, in turn, parts of variable wholes that are parts of yet other variable wholes



Individual Trees



Forest Ecosystems



Planetary Biosphere

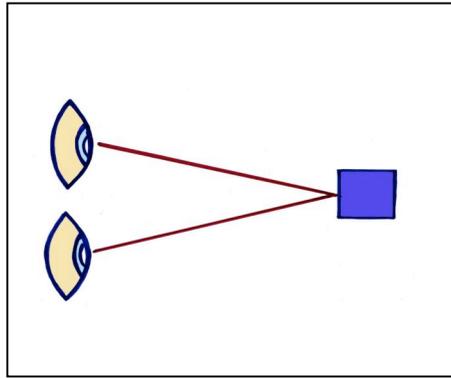
Not so simply put: Networks of dynamic relationships among atoms, molecules, chemicals, rain, sunlight, cells, and organisms constitute individual trees that are part of the variable interdependent interplay among diverse flora and fauna constituting forests, which are part of the interdependent interconnection of a dynamic network of global ecosystems whose interactivities generate the planetary biosphere.

*Just how is one to 'think,' much less 'tell' the workings of such interdependent, concurrently interactive relationships?
How can we grasp the way they constitute the actual 'operation' of dynamically complex networks?*

Seeing 'From the Sides': The directness of oblique perception

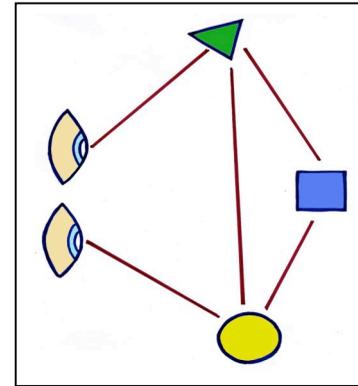
To perceive 'the forest of the trees' requires both the single focus of binocular sight and the obliquely connecting inclusion of peripheral vision. These must be 'taken in' concurrently so as to elaborate the full range of dynamic relationships between elements that are, in one sense, separate parts, yet in another, constitute a centerless and changing continuity. A conscious effort is required to 'know' the forest as this dynamic constellation of elements and relationships. That way of 'seeing' is sometimes called 'soft focus' because of its 'distributed' perspective.

Ordinary, exclusive single point focus



> Isolating 'Point Vision' <

The distributed perspective of oblique perceptions



< Correlating 'Field Vision' >

Knowing Dynamical Wholes by Re-Thinking Thinking—as Constellation

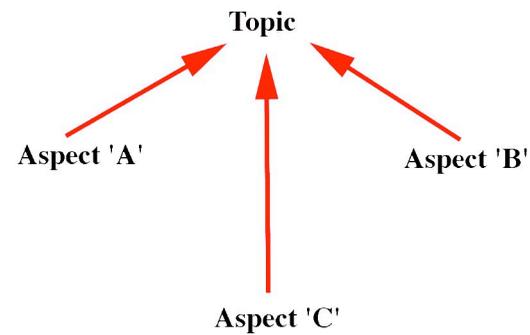
Tracking and appreciating the extra-ordinary dynamics of interactive wholes requires a shift in how we ordinarily think. We must consciously think about how to think networks of interdependent interactivity as constellations of factors and events. That effort can be abstracted in schematic diagrams that differentiate types of network relationships (abstract constellation). It also can be expressed in the empirical differentiations of the actual aspects of a specific process, local ecosystem, city, or context of human interactions (schematic constellation). In addition, constellation can focus upon words and concepts as manifestations of networks of other words and concepts that constitute a dynamical system of meanings (conceptual constellation). The most archaic means of representing constellations of interactivity is through the symbolic use of metaphorical and metamorphic expressions. These can include images or descriptions that involve 'out of the ordinary' associations and combinations of factors. They function as constellation by providing a compressed, emotionally potent 'figure' of the conflicted continuities of dynamically complex wholes (symbolic constellation). This last version is the mythical mode of thinking dynamical relationships.

Constellation as Abstract Modeling of Network Dynamics

Approaching Structure and Process as De-Centered 'Fields' of Relational Activity

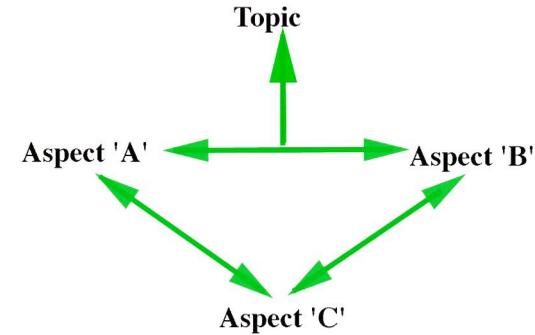
Constellating dynamic complexity requires differentiating types of network structures and the dynamic relationships these manifest. That effort is initially approached most effectively using abstract models of network formation to plot or map out how hierarchy becomes 'inter-archy.' In this view a dynamically complex event or entity is not simply composed by its parts but by their relationships with each other. Complex wholes are in effect those interactive relationships rather than the elements or factors involved in their interactivity.

Status of an object or topic as hierarchical construction



> Composite Structure <

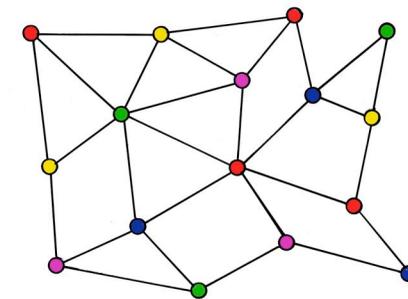
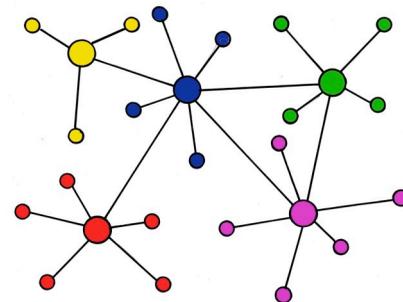
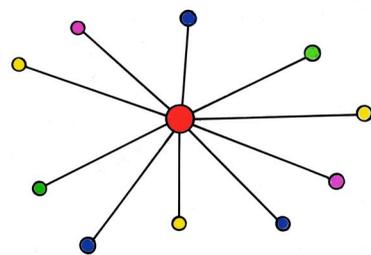
Status of object or topic as Inter-archic relationships



< Relational Structure >

Appreciating dynamically complex contexts requires differentiating types of network structures and how these enable the 'feedback' influences of interactivity. We tend to think in terms of hierarchically centered networks but most real world contexts operate through "distributed" network structures that have some centers of conjunction but whose overall configuration promotes de-centered dynamic associations.

That means thinking this way— and this way— as well as this way—



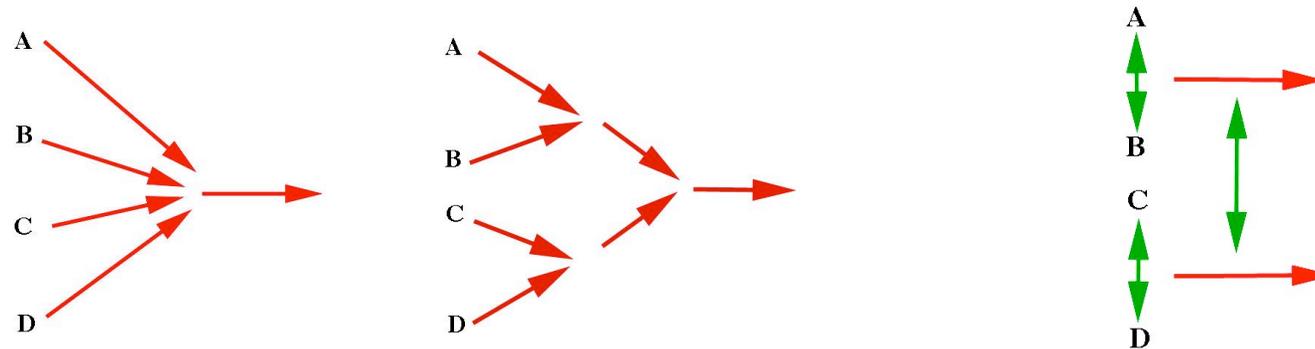
Placing the— hierarchies of "centered networks"— into the— inter-archy of "distributed networks"

These basic models of network structure suggest the types of activity or inter-activity that arrangements of factors and connections make possible. The de-centered connectivity of "distributed networks" obviously provides a basis for more concurrent interaction than do the arrangements of centered networks. System networks in Nature, from minds to ecosystems, tend to be configured in the 'distributed' manner.

Constellating the 'Lateral Breadth' of Concurrent Causation

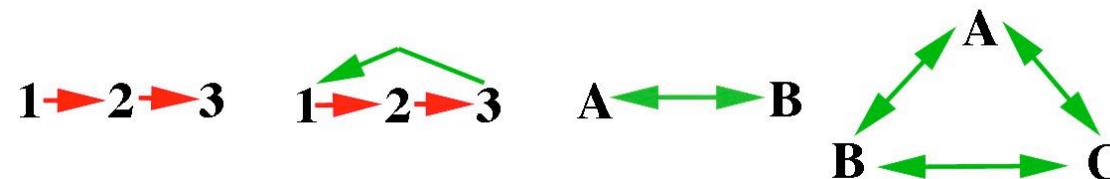
Regarded thusly, separate elements and hierarchical actions collectively interact (like people within a crowd or organs in the body) constellating sets of mutually modifying association that continually 'resonate' (think of differing words that together define the meaning of another word by defining each other). Those interdependent relationships configure 3-dimensional networks of interconnectivity 'across' which interactions occur concurrently. The order that emerges from such networks can arise as spontaneous and unpredictable self-organization. This arrangement suggests two directions of causation: linear or 'longitudinal' and concurrent or 'lateral.' Modeling such activity requires re-imagining sequence within concurrence to provide an image of how mutual modification produces multiple 'streams' of cause and effect that are simultaneously influencing each other.

Re-composing the longitudinal convergence of linear progression— within the lateral breadth of interactive progression—



Shifting one's focus from linearly sequential progressions toward the laterally concurrent progressions of mutually modifying interactions leads to perceiving 'how things happen' in terms of interactive sets or networks. The activity of concurrently interactive networks cannot be sequenced or 'lined out' but it can be constellated.

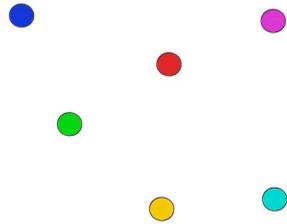
**Distinguishing sequential causation from concurrently interactive 'lateral causation':
A simple linear sequence, a basic 'feedback loop,' an interactive dyad, and an elemental interactive network**



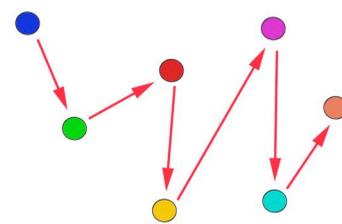
How Constellating Perspective Thinks Interactivity Interactively

Perceiving both sequential and concurrent relationships allows one to identify clusters of associated elements and then explore how the relationships between these create effects through linear sequences or concurrent interactions. Those distinctions can reveal 'circuits' of modifications that constitute self-regulating feedback loops. In real world networks the same set of factors might associated sequentially in one moment but interactively in the next.

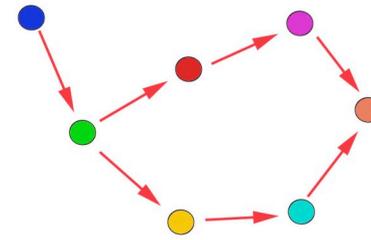
Associated factors—



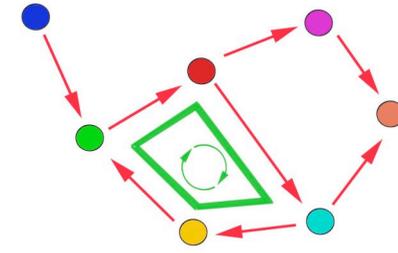
Linear actions—



Concurrent action—



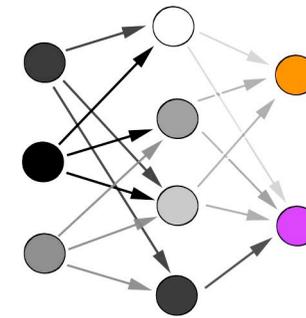
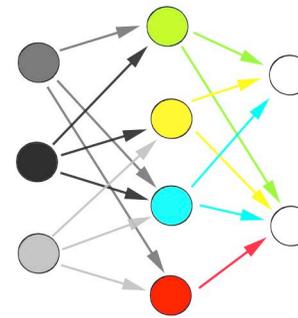
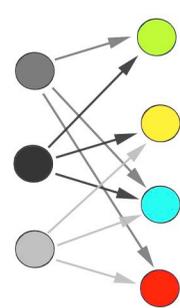
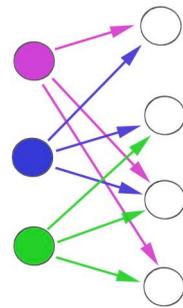
Interactivity with feedback—



Plotting the Progressive Constellation of Contexts and Concepts in 'Four Dimensions'

Understanding interactivity and its concurrent causation can be aided by progressive plotting of its effects 'over time,' showing 'how it came to be,' even though one cannot predict 'what it will do next.'

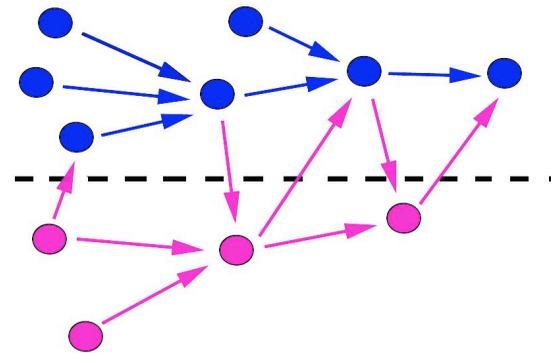
Plotting the development of concurrent interactions and the changing relationships these create over time



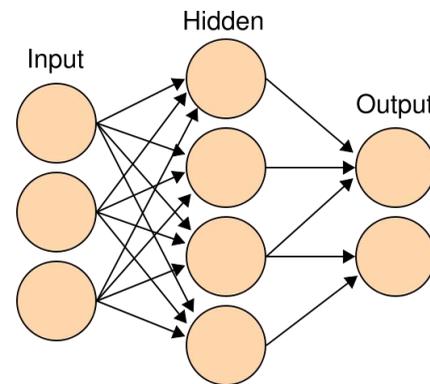
Constellating Relationships between both Overt and Covert Aspects of Networks

Tracking interactive relationships typically reveals more connections and feedback loops than are overtly obvious in dynamically complex contexts. Looking for the hidden or unacknowledged aspects of networks is particularly useful when investigating contexts already assumed to be well understood. Constellating perspective often reveals profound surprises when applied to the workings of social, economic, and political systems, because those who benefit from the status quo typically manage to obscure 'how things are actually working.' Processes that appear obvious and progressive often are revealed by constellation to be unexpectedly complex or subject to significant manipulation.

Overt factors and their interactions in blue with normally obscured or covert ones shown in pink



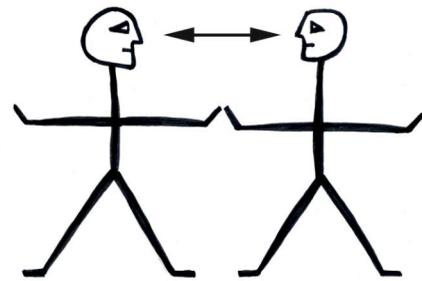
Constellating a 'hidden layer' of interactions that occur between overtly obvious 'inputs' and 'outputs' of a process or system



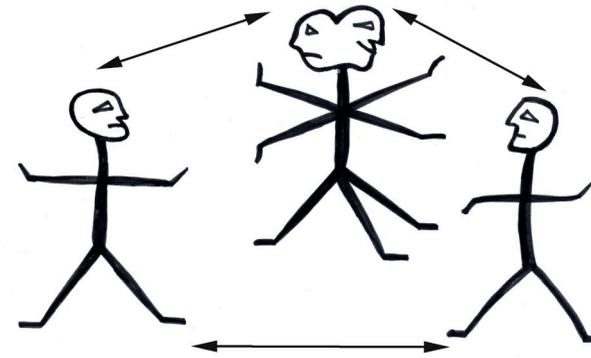
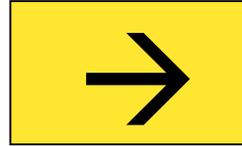
Con-figuring the Emergence of Autonomous Self-Organization in Real World Networks

Familiarity with abstract depictions of network dynamics assists in tracking the self-organizing behavior of interactivity in real world contexts. This can reveal how an 'additional factor' emerges from concurrent feedback within a set of interactions to become an autonomously self-organizing element that 'participates' in those interactions—'two constellates as the crowd of three.'

Actions between two persons can interact to generate an autonomous element that influences or participates in those interactions as an additional 'active partner'—the 'relationship' effectively becomes a 'third party'



'You and Me'



'You, Me, and the Relationship'

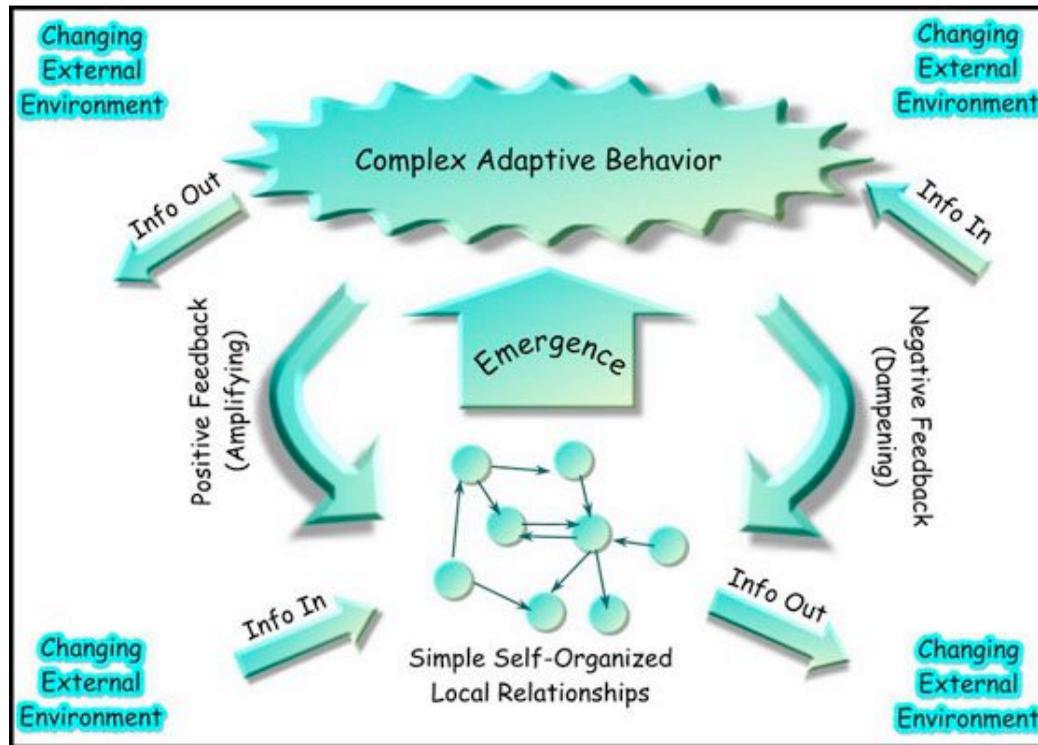
As this simple illustration suggests, relationships between network elements can become autonomous 'agents' in the interactivity of an overall network, indicating how difficult, if not impossible, it can be to track causal relationships in real life contexts. The interactivity of natural systems is effectively irreducible to full description. However, confronting this fact enhances our understanding by reminding us to 'watch for' obscured or unexpected factors and relationships in all complex networks. Of course, that is difficult because interactivity is often 'hidden' by our simplistic expectations and the reductive paradigms we rely upon for explaining 'how things happen.' Thus constellating concurrent interactions requires learning to 'suspend' ordinary perspectives by engaging 'constellating tactics of perception and interpretation.' The resulting expansion of awareness derives from 'looking sideways' or 'under and over,' employing 'oblique perception' and 'lateral perspective' to track the 'breadth and depth' of an interactive network 'across space and over time.' Once we become familiar with this abstract basis for reorienting our attention toward interactivity, it can be applied to more specific, real world contexts.

Constellation through Schematic Empirical Description

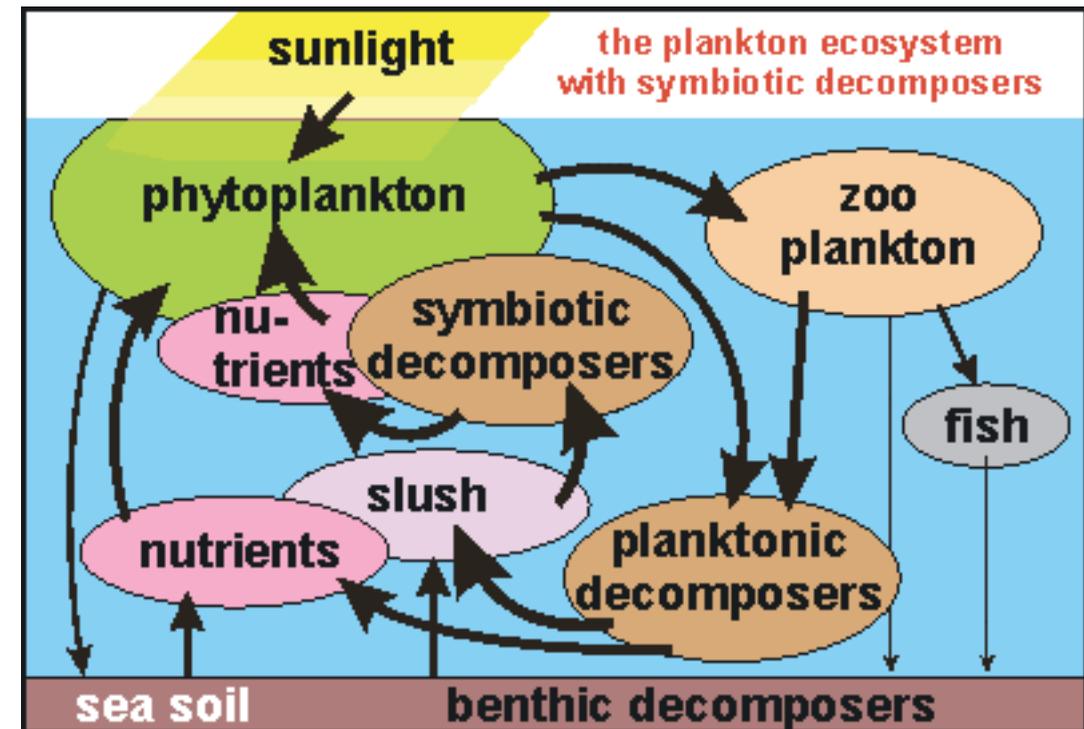
Tracking the Interplays of Evolving, Adaptive Systems in Nature

Schematic diagrams are useful in plotting the basic patterns of a complex system's interdependent interactions. These diagrams of interactivity and feedback can be generalized or specific to individual systems such as a localized ecology.

A generalized schematic plotting of how feedback in complex systems produces adaptive behavior in response to the external environment (McElroy)



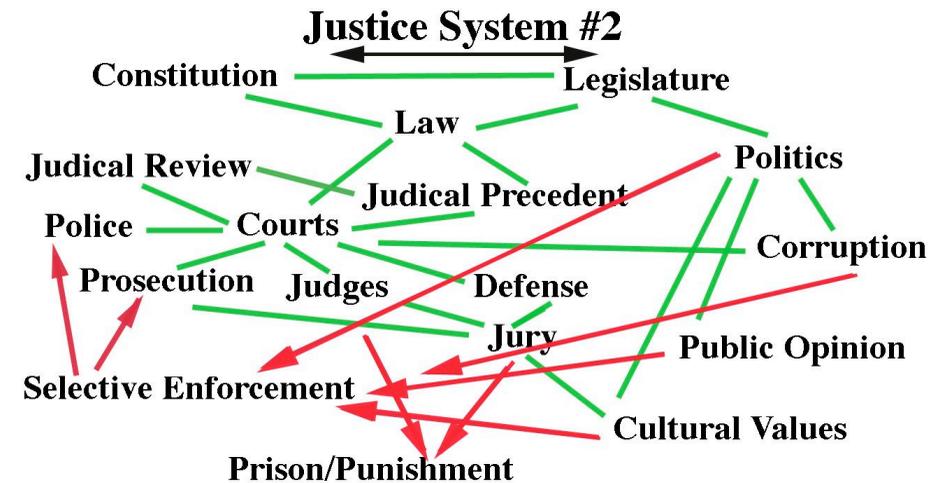
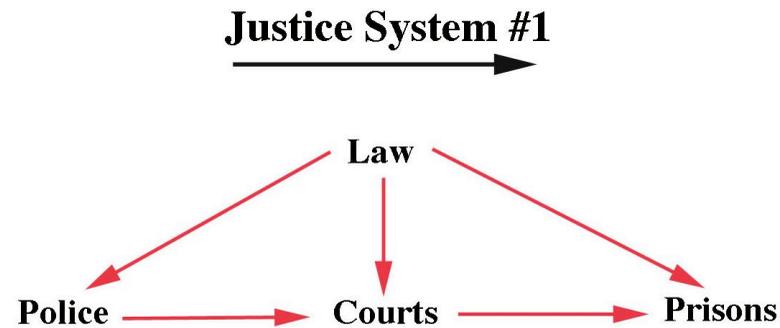
A specific schematic constellation of network relationships showing interactivity in an ocean ecosystem



It can be useful to compare schematic diagrams of familiar systems that portray simple hierarchical relationships between elements and those that differentiate mutually modifying interactions between particular aspects of a system.

A simple hierarchical diagram of a generalized justice system

A more detailed schematic of a generalized justice system that differentiates sequential cause and effect relationships (red) from mutually modifying interactive ones (green)

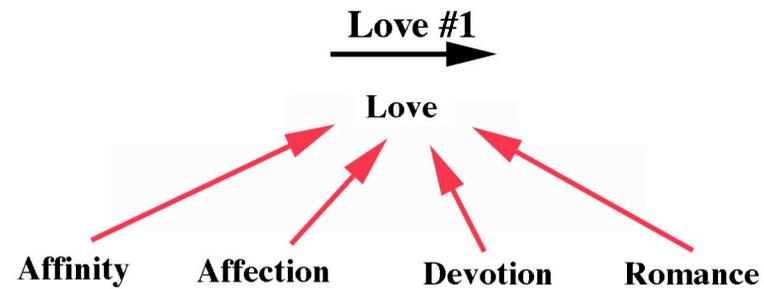


Constellation through Conceptual Association

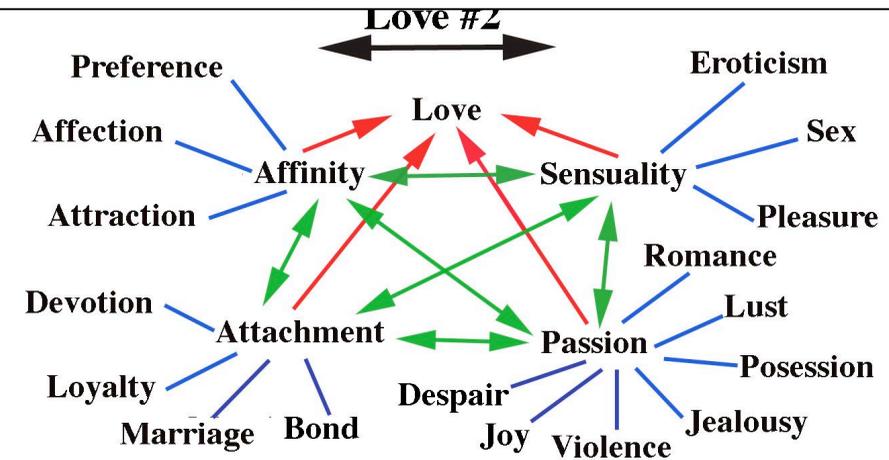
Plotting Interdependent Networks of Correspondent Contrast in Language and Ideas

Sets of interactive relationships that constitute the meanings and origins of words or concepts can also be diagrammed to reveal their variable interactivity. This effort typically reveals the ways conflict and discontinuity play fundamental roles in how our ideas and expressions actually 'make meaning.' Here again, contrasting simple convergent versions with more interactive ones can assist in developing constellating perspective.

A hierarchical composition of the concept Love



An interactive plotting of the concept Love based on four archetypal elements and their sub-sets



Constellating through Metaphorically Symbolic Representation

Expressing Dynamic Complexity through Dreams, Images, Stories, Music, & Performance

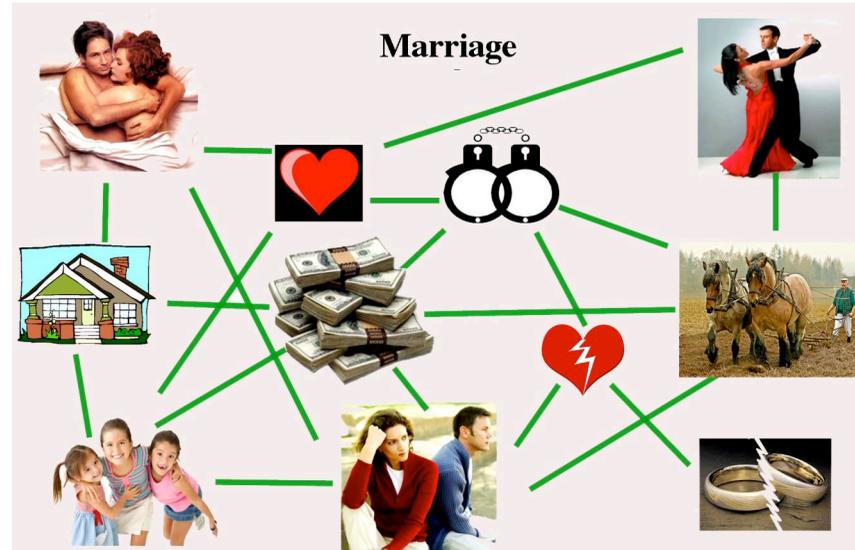
Abstract, schematic, and conceptual plotting of interactive constellation can greatly expand our awareness of dynamic complexity. However, these are ultimately inadequate for conveying a full appreciation of the actuality of life's profound interactivity. It is for this reason that human culture's primary modality for perceiving natural complexity involves the use of extra-ordinary symbols. Metaphoric images, language, and gestures, are essential for communicating the confounding conflicted interdependencies of both one's own internal consciousness and the dynamics of the 'outer world.'

Dreaming Reality: Psyche telling how things actually happen by distorting ordinary appearances

The most reflexive symbolic expression of dynamic complexity in human consciousness comes in our dreams. In counterpoint to the habitually practical and reductive attitudes of waking consciousness, the dreaming mind routinely distorts and reconfigures elements of ordinary reality. Dream images and scenarios 'compress' associations of motives, actions, and meaning into a 'metamorphically metaphorical psychic short hand,' which typically confounds the waking mind's reductive efforts at interpretation. In this manner, dreaming's strange representations confront the waking attitudes with the psyche's intuitive sense of 'how things actually work.' A similar mode of re-presenting complexity is posed to conscious states of mind through the symbolic representations of art, poetry, myth, and literature.

Iconic Plotting of Constellated Interactivity in Relational Fields

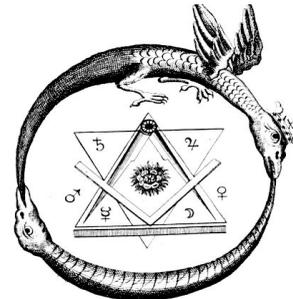
Images representing basic elements in human relationships, both literally and figuratively, can be associated to reveal their interactions. These constellations can be general or specific to a particular relationship. They can provide a novel way of thinking about 'what is actually happening.'



Iconic Representations of Elemental Principles of Nature's Metamorphic Interactivity

Relationships and processes that seem opposed or sequential can be revealed as ambiguous and interdependent by 'reversible' iconic representations. These arise cross-culturally, from ancient Chinese Taoists, Medieval alchemists, as well as modern science.

Con-figuring the interdependence of opposites, the cycle of creation which requires 'assimilation of the other', and the equivalence of energy as matter that remains energy



$$E=MC^2$$

Imaginal Constellation: The Art and Myth of plotting dynamic relationships

Perceiving and experiencing the interactivity of reality can be so difficult for our ordinary mind-sets that radical acts of imagination are required to access it. The experiential aspects of Art and Myth provide essential ways of re-seeing 'how things work.' In this way symbolic vision compensates us for how our simplistic reductions narrow awareness. By intuitively creating symbolic images of complex dynamic relationships we allow the unconscious complexity of our own minds to 'take form' and reflect itself back to our conscious awareness. By combining familiar elements in unfamiliar ways, symbols and metaphors 'make connections' to which everyday assumptions are necessarily blind.

Metaphorically 'Mapping' the concurrent moments of music, the multiplicity of states of mind in diversified cognition, and the autonomous consciousness of interactively self-organizing environments



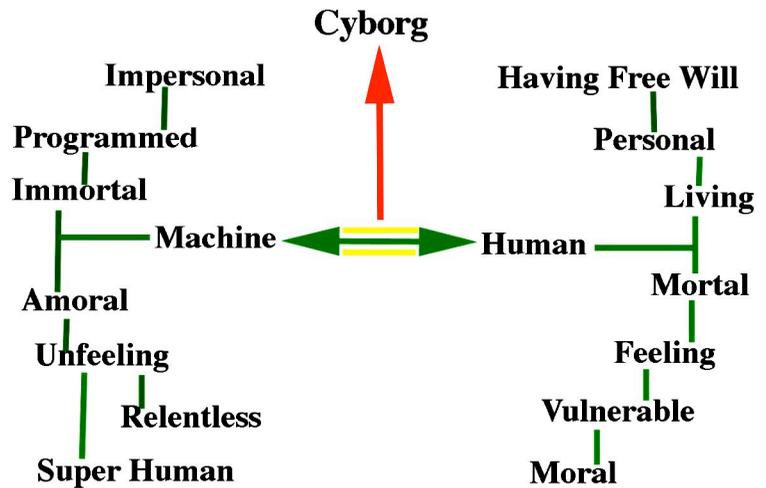
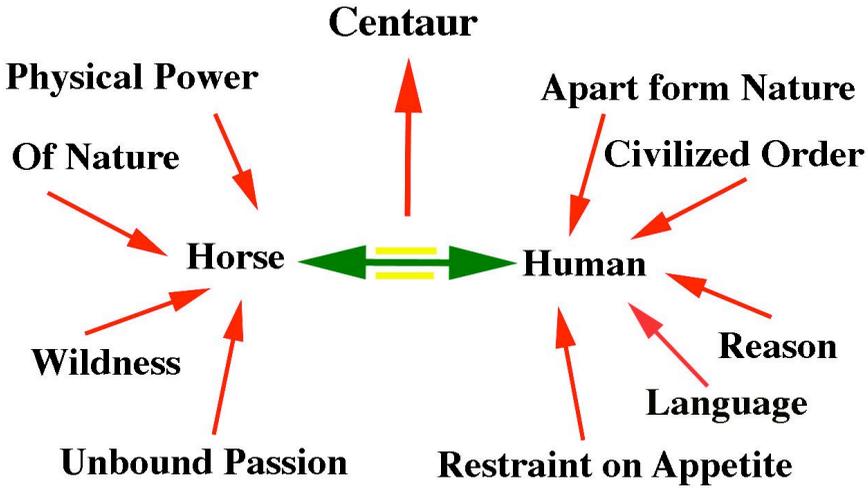
Figuring the Metamorphic Diversity of Identity: Seeing our selves as extra-ordinary

Human minds and character, with their diversified conscious and unconscious aspects, are exemplary manifestations of the non-linear, chaotically self-organizing systems of natural complexity. Appreciating these qualities of our own disorderly ordering can be facilitated with the unexpected associations of fantastic imagery. Art and myth have long specialized in these metaphorical and metamorphic 'imagoes' of our internal realities. Such imaginings prove essential to gaining some adequate sense of 'what actually happens' inside us—and how.

Giving a form to the conjunction of human reason and animal passion, a face to the paralyzing gaze of wronged femininity, the cyborg inside us, and the voracious appetite for life felt by the 'living dead'



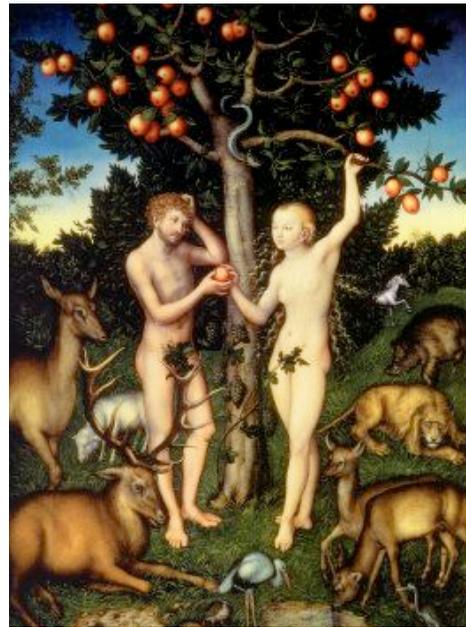
Imagistic constellations such as these can also be 'converted' into various types of diagrammatic plots. Together, image and diagrammatic constellation can help connect conceptual and experiential engagements with the interdependent contrasts of self and world.



Fantastic Tales of the Actual: Symbolic stories tell us more than we ordinarily realize

Cultural tales and spiritual traditions often configure more complexity than we typically assume. Like life itself, stories we tell about it that have a lasting appeal often symbolize the radically complicated, unpredictably self-organizing dynamics that create consciousness, identity, and society.

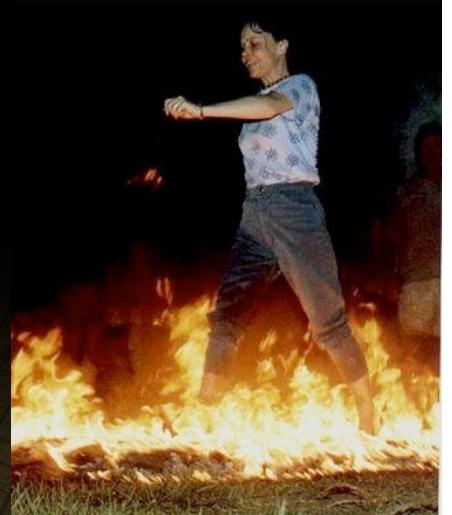
Telling the conflicted discovery of human knowledge, the confusing awakening of sexuality, the male appropriation of feminine power, and the adolescent individuation of the many-sided self.



Metamorphic Enactments: Embodying the Conflicted Interactivity of Human Complexity

Poetic speech and dramatic enactments can generate the most tangible constellations of interactive contexts by embodying an experience of them. Enactments of dynamically complex experience can express the metamorphic quality of one's being 'a variable state of concurrently conflicted wholeness.' Such enactment can expand sense of both self and dynamical reality's interactivity by making one 'extra-ordinarily other to' ordinary identity or status. Manifesting such experiences can take form in the actions of spiritual or initiatory rituals, dancing, singing, meditative contemplation, and dramatic performance.

Becoming extra-ordinarily 'other' in dance, music, contemplation, performance, and ritual



Constellation as Subversive Social Practice

Revealing Denial and Deception in Collective Assumptions about 'How Society Works'

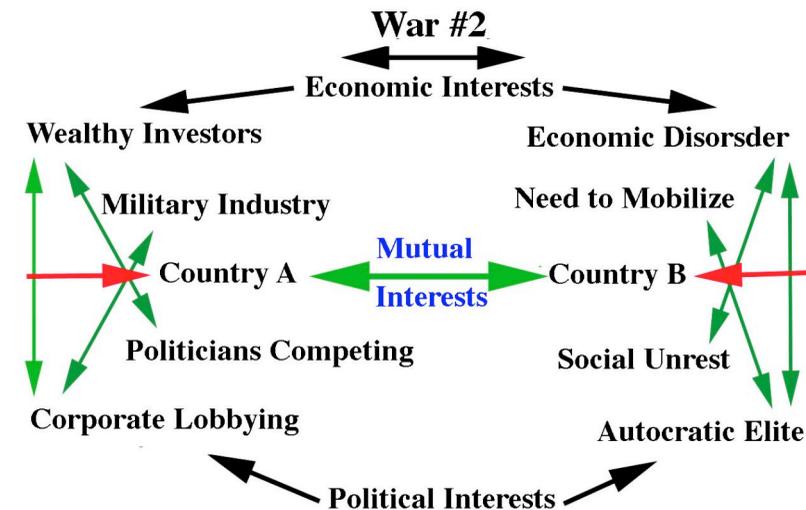
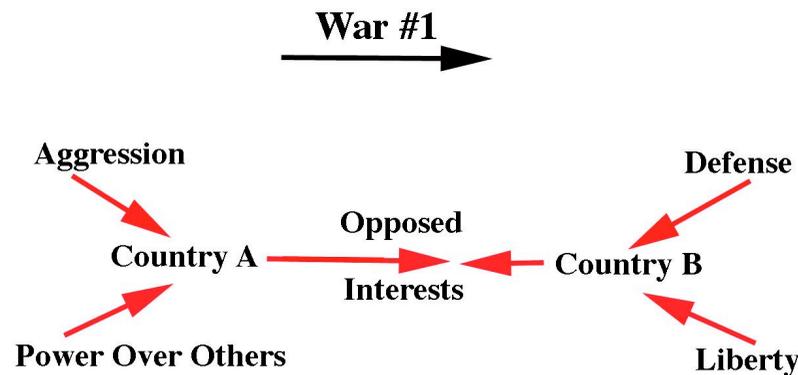
Tracking Interactivities that Reveal Hidden Aspects of Social, Political, & Economic Networks

Tracking the actual interactivities and feedback loops of real world systems typically means contradicting accepted versions of how things work and why. Common explanations for existing social, political, and economic conditions tend to be reductively manipulative. As systems, human societies are particularly susceptible to hierarchical manipulation 'from within.' Individuals and groups who benefit disproportionately from the status quo operations of social networks are prone to protect and expand their influence while obscuring this fact. Thus there is always motive to misrepresent how privilege, money, and power are actually distributed. It is a commonplace assumption that politicians seldom, if ever, say what they mean or mean what they say. Constellating perspective and methods often reveal just how different the actual dynamics of operational social networks are in comparison to 'how they are supposed to be.'

Wars are typically attributed to the aggression of 'the other side.' 'We' fight to defend ourselves. But when the actual dynamical interactions of political and economic interests are plotted out, armed conflict between groups or nations can appear more as a socio-economic agreement engaged in by the combatants for the sake of maintaining or expanding the power of the elites within their respective societies rather than each other.

War as a simple conflict between aggressor and defender

War as a cooperative engagement between systems that supports the mutual interests of power structures in both



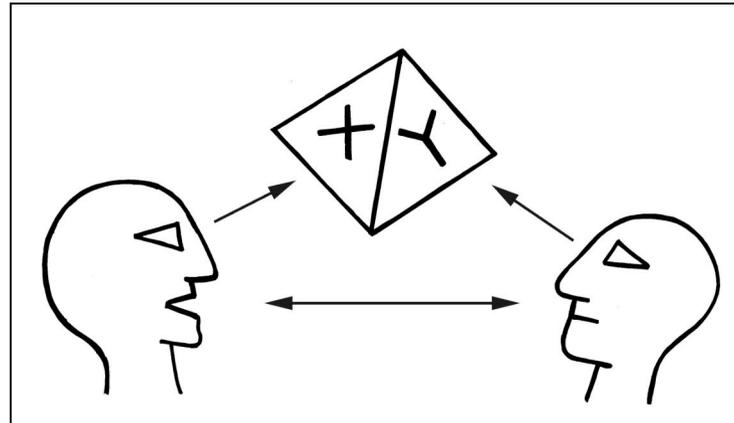
Constellation as a Collective Practice

Diversifying Awareness by Cooperating to 'Triangulate' Multiple Perspectives and Paradigms

Correlating Concurrent Perceptions from Various 'Vantage Points'

Awareness of interactivity and interdependence is promoted by correlating of differing perspectives through 'associative triangulation.' This effort involves gathering, comparing, and contrasting differing 'views' of a context or subject. Triangulation of contrasting perspectives enables a concurrently diversified and thus more holistic conception of what constitutes a context and its dynamic behavior. This collaborative process of 'knowing variously' can be imagined as two or more people examining an object from different sides, then discussing their contrasting observations. This image also models how a subject or issue can be considered 'from the perspectives' of different disciplines of knowledge. Thus a scientific, a philosophic, and a psychological assessment of a context's interactive dynamics can all be associated to generate a more complex and thus complete awareness. Perspectives upon a topic or event can also be correlated by 'triangulating' the different experiences individuals have of it. In all these instances of collective constellation, the emphasis is upon inter-relating perspectives rather than having these 'compete against each other.'

Cooperatively Triangulating Perspectives to Diversify Observation and Interpretation

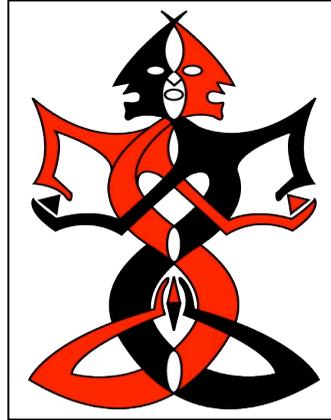


Knowing dynamic complexity requires using both sides of your brain to generate dynamically complex consciousness

Think More Realistically—Constellate Your Consciousness

For further detail on *Dynamic Constellation* see the [more info page](#)

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