Assumptions of Current Science

- Determinism
- Control
- Reductionism
- Replicability
- Objectivism
- Positivism/materialism
- Linear development

Assumptions of Complexity Science

- Real world phenomena are messy, lumpy and irregular
- Real world processes are dynamical systems – evolve and change in time where each successive state is a function of the proceeding one
- Wholeness is implied
- Unpredictable

- Sensitive to initial conditions and small inputs
- Nonlinear – whole is greater than sum of the parts
- Highly complex “information” from movement as a function of how things interact
Chaos Theory
- New order emerging out of highly complex movement and interactions
- Entropic chaos vs deterministic chaos
- Order out of chaos – bifurcations
- 1-f spectrum time change – "the golden section"

Attractors
- Attractors are forces that organize the chaotic movement – the pattern to which the system is drawn
- Fixed point attractor
- Limit cycle attractor

Attractors
- Torus attractor
- Strange attractor
Cymatics as an Example of Chaotic Movement

- Hans Jenny videotape

Complexity in Living Systems

- Self-organization
- Complex adaptation/autopoiesis
- Recursive organization
- Edge-of-chaos dynamics

Music as a Complex, Dynamical System

- Prevalence of movement
- Nonlinear nature
- Sensitivity to initial conditions
- Use of iterative feedback
- Action of attractors
- Emergent properties
- Importance of wholeness
- 1-f spectrum time changes and regular irregularity

Music and Soulmaking: Complexity Science and Music Therapy

- Interaction of two complex systems – music and human functioning – creates an even more complex dynamical system
- Results of this interaction – health – is an emergent property emerging from the edge of chaos

Health

- A process requiring continuous input of new information
- Optimal complexity
- System pushed to the edge of chaos by increased complexity (input) but stabilized by right relationship of four aspects of human functioning

Music and Four Aspects of Human Functioning

- Brain and mind
- Physical body – human energetic system
  - dense energy
  - subtle energy

Notes from BC’s copyrighted materials for IHTP
- Emotion and feeling
- Spirit

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