

Information Phenomena at the various systems levels:

**1. Information at the quantum level**

Information processing subsystems: input transducer; internal transducer; channel and net; decoder; associator; memory; decider; encoder; output transducer

**2. Information at the cellular level**

Information processing subsystems: input transducer; internal transducer; channel & net; decoder; associator; memory; decider; encoder; output transducer

**3. Information at the organ level**

Information processing subsystems: input transducer; internal transducer; channel & net; decoder; associator; memory; decider; encoder; output transducer

**4. Information at the organism level**

Information processing subsystems: input transducer; internal transducer; channel & net; decoder; associator; memory; decider; encoder; output transducer

**5. Information at the group level**

Information processing subsystems: input transducer; internal transducer; channel & net; decoder; associator; memory; decider; encoder; output transducer

**6. Information at the organization level**

Information processing subsystems: input transducer; internal transducer; channel & net; decoder; associator; memory; decider; encoder; output transducer

**7. Information at the society level**

Information processing subsystems: input transducer; internal transducer; channel & net; decoder; associator; memory; decider; encoder; output transducer

**8. Information at the supra-national level**

Information processing subsystems: input transducer; internal transducer; channel & net; decoder; associator; memory; decider; encoder; output transducer

**9. Information at the cosmological level**

Information processing subsystems: input transducer; internal transducer; channel & net; decoder; associator; memory; decider; encoder; output transducer

*“Rationale and structure. The general systems levels and components stated above are adapted from J. G. Miller’s brilliant synthesis of general systems theory (1995), but with the addition of a quantum level and a cosmological level. Each level has an associated subsystem level that processes information (other complementary subsystems at the different levels process matter and energy). The information processing subsystems for each level are these: input transducer; internal transducer; channel and net; decoder; associator; memory; decider; encoder; output transducer.*

*Quantum level . Information at the quantum level relates to the properties of very small, sub-atomic particles that function not according to most prevailing notions of classical physics (which are based on classical or Newtonian models of three dimensions of space and one of time), but according to n-dimensional models of space-time. Quantum models generally portray very small particles as having the capability of moving backward or forward through linear time, being in two positions simultaneously, and possibly traveling or communicating at super-luminous speed (faster than the speed of light). When quanta collectively form patterns, quantum coherence can occur and can stimulate such things as neural microtubule receptors, and thus neural functioning and cognition (See Penrose, 1994)”. [14] (Glynn Harmon)*