Systems Intelligence

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Systems intelligence is human action that connects sensitivity about a systemic environment with systems thinking, thus spurring a person's problem solving capabilities and invoking performance and productivity in everyday situations. Systems intelligence, abbreviated SI, is intelligent behavior in complex systems, that are often human in nature. Key concepts a person uses when acting systems intelligently are perception of systemic occurrencies, feedback from the system's structure and interaction with the system's agents and subsystems.

Origins of Systems Intelligence

The concept was formulated in the Laboratory of Systems Analysis at the Helsinki University of Technology, Finland, fall 2002. The author-editors of the first publications on SI were professors Raimo P. Hämäläinen and Esa Saarinen. In spring 2006, numerous publications and three books have been written from this field, which by the influence of Hämäläinen and Saarinen, applies an open source spirit, or Socratic accessible-to-all-philosophy, to further the field of SI research. The original authors allow students and scholars contribute to the field in various seminars and interdisciplinary research groups to bring intuition and experience from various aspects of life.

Although systems intelligence has received wide academic research interest in its part, the original authors do not intend to confine systems intelligence research into academic circles only, but allow a rather non-canonical attitude towards development of the field. A central idea in development of the SI concept is attracting ideas and insights from different aspects of professional and private human lives.

Key ideas

Systems intelligence is an innate trait in all humans. It is a capacity that anyone can reveal, if one

accepts that the world consists of a complex web of interacting relationships, to which everyone contributes
engages the holistic feedback mechanism of the environment, and in this way, accepts the presence of systems by systems thinking
sees the environment as feedback intensive, and manages to act intelligently, or rationally, in it
interacts with the environment in a way that makes minor corrections in the systems, generating huge effects due to the nonlinear dynamics of the system

Thus, two main themes in systems intelligence are producing great positive outcomes, and avoiding negatives. The negative outcomes usually emerge accidentally from the dynamics of the systems; in other words, if action were more systems intelligent, the negative outcomes wouldn't have occurred at all. These outcomes ordinarily occur because human actors are inflected to approve their existence in the first place, thus being blind for betterment. Being systems intelligent

is as easy as driving an automobile in a curve, but being blind for the dynamics of the system (that is, not knowing that you must turn the wheel to control the system) may lead the driver into the roadside. The paradox with humans acting in natural systems, such as relationships and organizations, is that they are more prone to drive out from the road than be clever enough to turn the wheel for safety.

One must also recognize the inverse opportunity: an impetus given, however petite, may entail giant positive outcomes, stemming from the invisible dynamics of the environment and people engaged into it. This phenomenon, entitled super-productivity, again requires awareness of the systemic environment.

Systems intelligence is not a tool one can acquire for some specific task, but rather a behavioral axiom that one uses without knowledge about it. The symptom that systems intelligence is not usually present in different situations (see Examples) is to be blamed of the systemic environment itself. Systems intelligence is also a form of intelligence in a human, that is measurable and comparable; if one knows how to engage in super-productivity, they are more systems intelligent than those who are trapped in producing only negative outcomes and ordinary performance.

Examples

Mathematics of marriage
Systems intelligence in everyday life
Super productivity

Systems intelligence vs. systems thinking

One often encountered criticism of systems intelligence is its vocabular similarity to systems thinking. Systems intelligence has its foundations on systems thinking, especially in the research conducted by Peter Senge, but while systems thinking is a mental model that one can use as a tool, systems intelligence is an intrinsic type of intelligence in a human being.

Hämäläinen and Saarinen highlight the difference between systems thinking and systems intelligence via a hierarchical five-level model of systems intelligence. The levels for the amount of systems intelligence in a person are

Seeing oneself in a system, or being aware of the systemic environment with systems thinking.
Thinking about systems intelligence, or being aware that possibilities for productivity stem from the interaction with oneself and the system.
Managing systems intelligence, or exercising productive ways of behaviour in the system.
Sustaining systems intelligence, or exercising productivity in the long run.
Leadership with systems intelligence, or initiating and leading organizations that are systems intelligent.

The more levels a person is able to handle, the more systems intelligent he or she is. A person equipped only with the mental model of systems thinking is left at level 1, while systems intelligence is needed in every level after that.

Influential work

Systems intelligence follows from the revolutionary research conducted by Peter Senge in the field of systems thinking. Other works strongly referred to in the SI research are authors ranging from Howard Gardner to Herbert Simon to Marcial Losada. The following research areas have influenced and been referred to in the SI research:

systems theory and systems thinking
neuroanatomy of human mind
positive psychology and cognitive psychology
operations research and applied mathematics
creative problem solving and heuristics
bounded rationality

One notable influence comes from action research, which basically means research done inside the research objective, on a continuous basis, learning from one's action.

Application areas

A lot of the tacit knowledge gathered up to SI research comes from real world applications, such as management consulting and pedagogics. Since systems intelligence is application intensive in nature, one of its main missions is to connect the best practices of various, seemingly nonrelated fields, into one scientifically solid theory. The following fields can benefit from SI research:

planning organizational reward and incentive systems
leadership of organizations and business teams
cultural aspects of organizational behaviour and super-productivity
rationality in social sciences
philosophy of life