Living, Becoming, Process Philosophy: Systems Thinking in Time

David Ing

http://systemschanges.com

Systems Thinking Ontario
January 2022

Agenda

A. Some Systems Thinking Basics

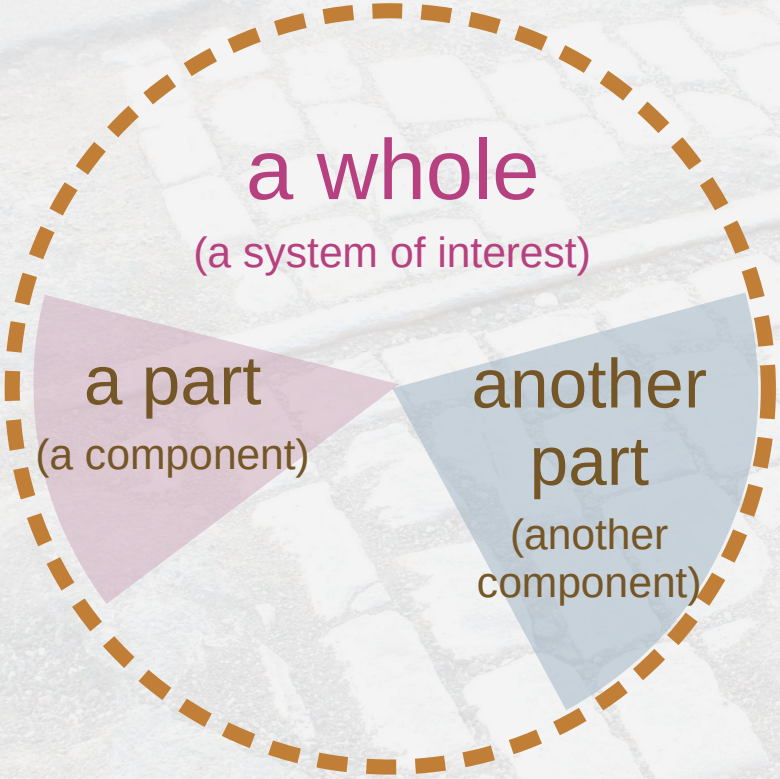
B. Hawk (1999): Change of state vs. State of change

C. Ingold (2000): Temporality of the Landscape

D. Nayak & Chia (2011): Process Philosophy

E. Discussion

A system is a whole that cannot be divided into independent parts

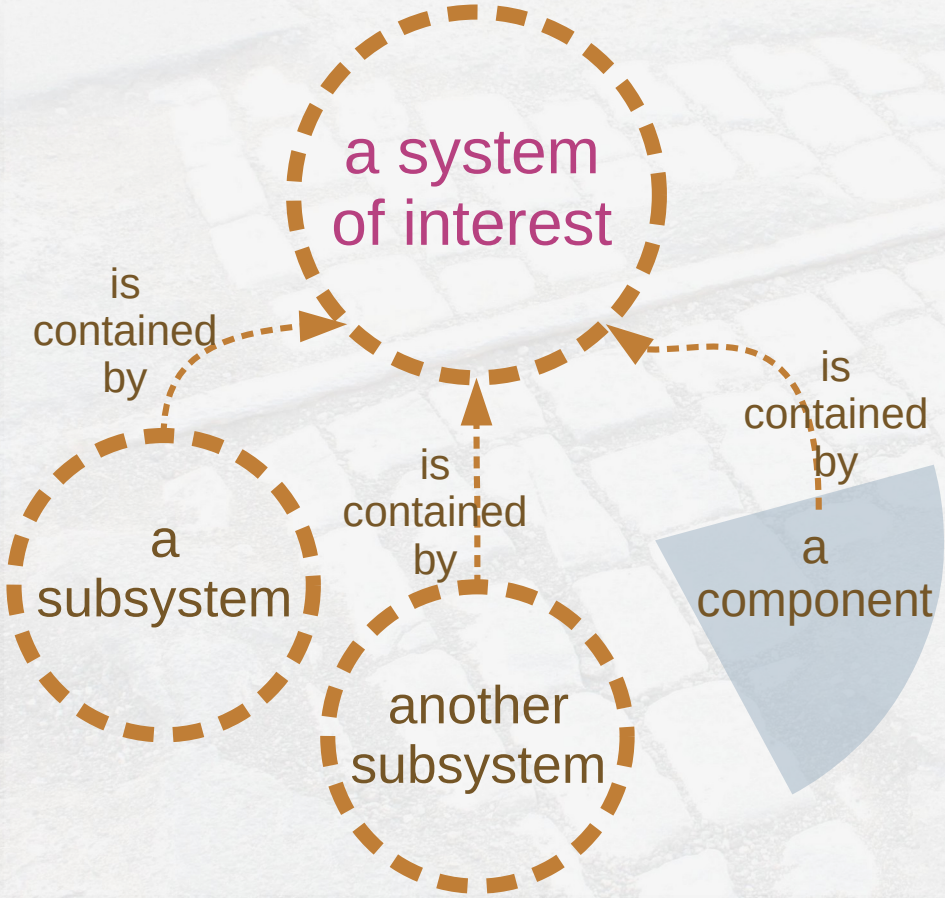


(1) Every part of a system has properties that it loses when separated from the system.

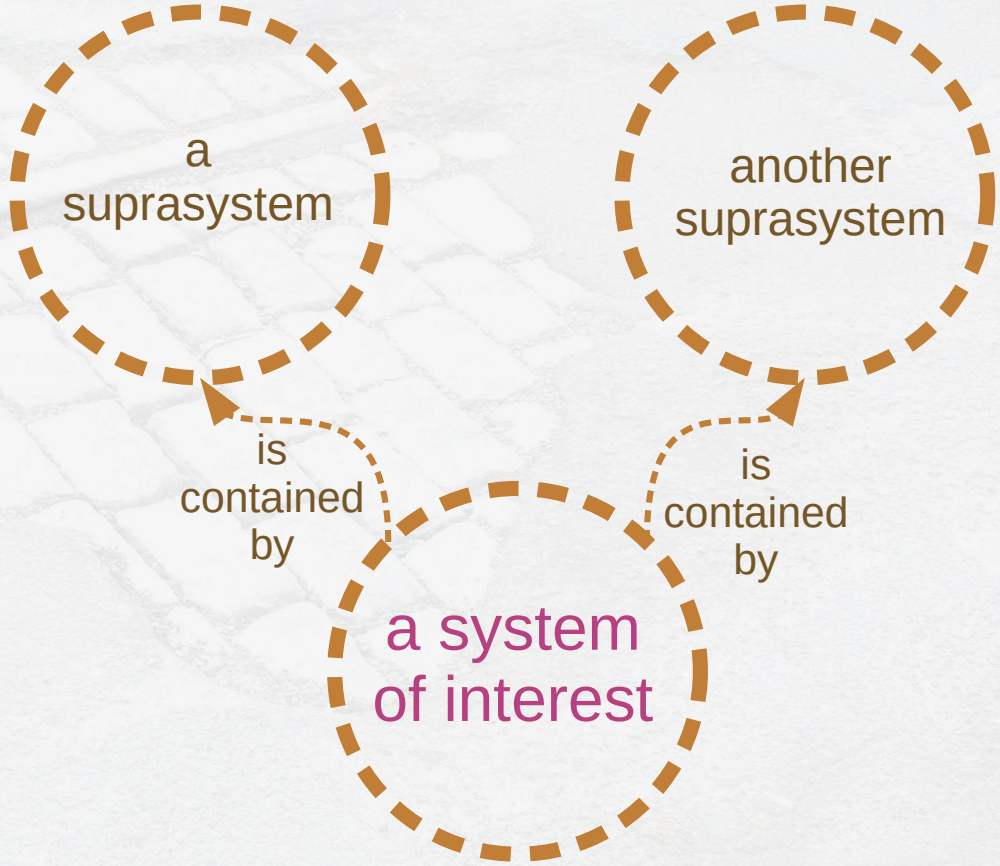
(2) Every system has some properties – its essential ones – that none of its parts do.

Ackoff, Russell L. 1981. *Creating the Corporate Future: Plan or Be Planned For*. New York: John Wiley and Sons, p. 15

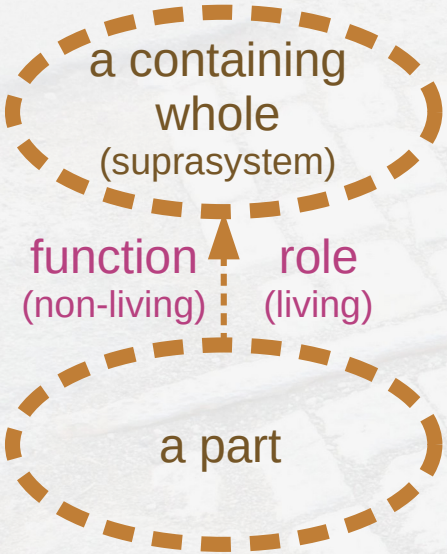
A system can contain subsystems or components



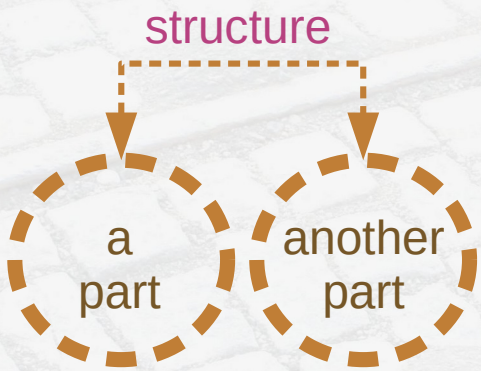
A system can be contained by multiple suprasystems



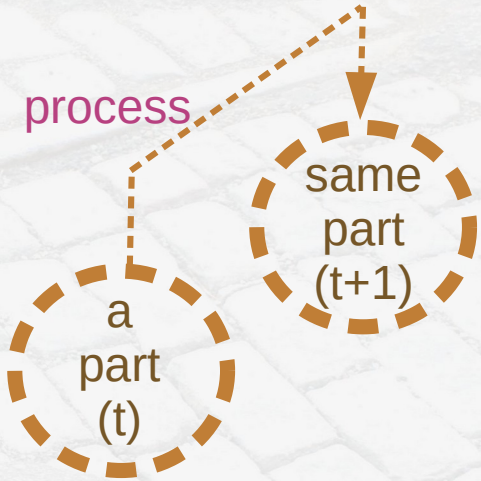
Systems thinking is a perspective on parts, wholes, and their relations



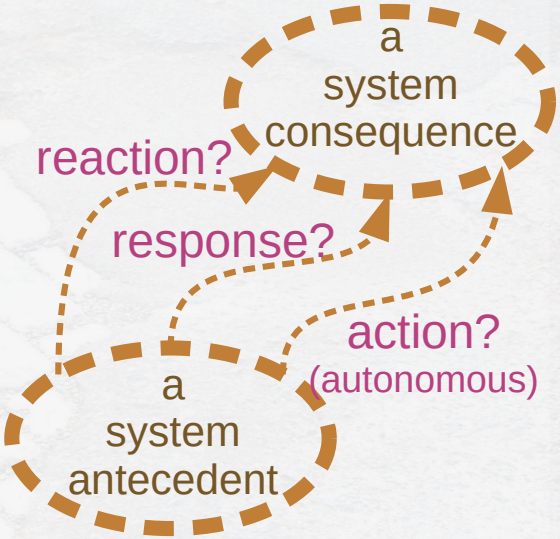
Function is a "contribution of the part to the whole"



Structure is an "arrangement in space"



Process is an "arrangement in time"



Behaviour is a "system change which initiates other events"

Ing, David. 2013. "Rethinking Systems Thinking: Learning and Coevolving with the World." *Systems Research and Behavioral Science* 30 (5): 527–47.

Gharajedaghi, Jamshid. 1999. *Systems Thinking: Managing Chaos and Complexity : A Platform for Designing Business Architecture*. Elsevier

Ackoff, Russell L. 1971. "Towards a System of Systems Concepts." *Management Science* 17 (11): 661–671.

Pacing layers emphasize coevolution and learning

SITE

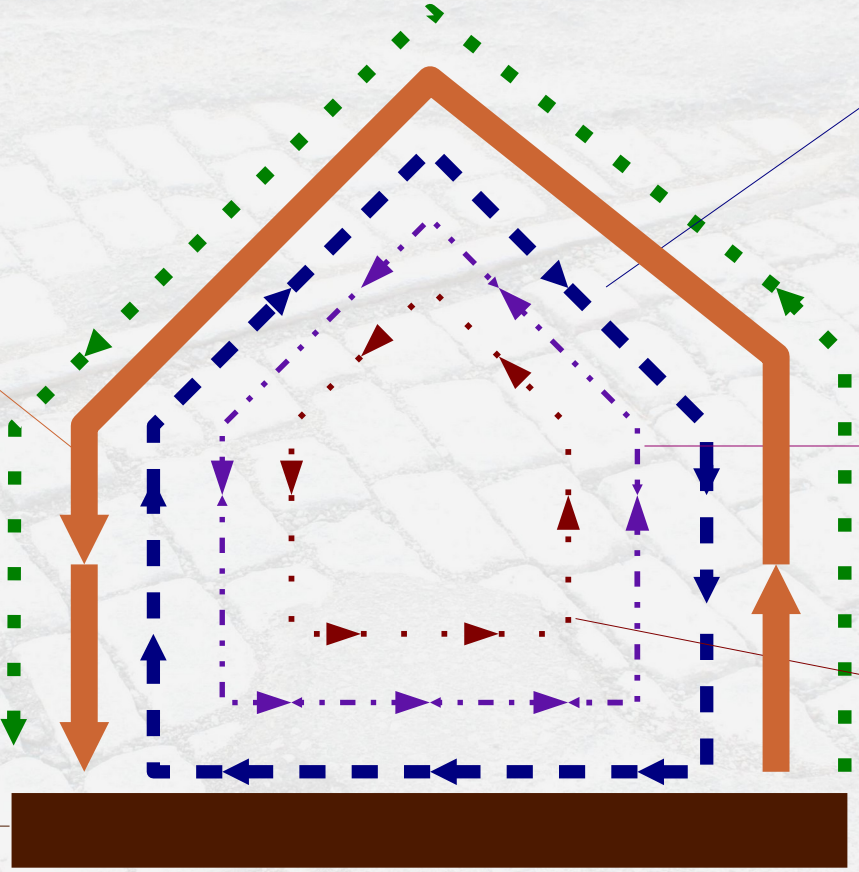
This is the geographical setting, the urban location, and the legally defined lot, whose boundaries outlast generations of ephemeral buildings. "Site is eternal", Duffy agrees.

STRUCTURE

The foundation and load-bearing elements are perilous and expensive to change, so people don't. These are the building. Structural life ranges from 30 to 300 years (but few buildings make it past 60, for other reasons).

SKIN

Exterior surfaces now change every 20 years or so, to keep up with fashion or technology, or for wholesale repair. Recent focus on energy costs has led to re-engineered Skins that are air-tight and better-insulated.



SERVICES

These are the working guts of a building: communications wiring, electrical wiring, plumbing, sprinkler system, HVAC (heating, ventilation, and air conditioning), and moving parts like elevators and escalators. They wear out or obsolesce every 7 to 15 years. Many buildings are demolished early if their outdated systems are too deeply embedded to replace easily.

SPACE PLAN

The interior layout, where walls, ceilings, floors, and doors go. Turbulent commercial space can change every 3 years; exceptionally quiet homes might wait 30 years.

STUFF

Chairs, desks, phones, pictures; kitchen appliances, lamps, hair brushes; all the things that twitch around daily to monthly. Furniture is called mobilia in Italian for good reason.

Source: Stewart Brand. 1994. *How Buildings Learn: What Happens after They're Built*. New York: Viking.

General Systems Theory organizes a hierarchy of complexity

Non-living systems

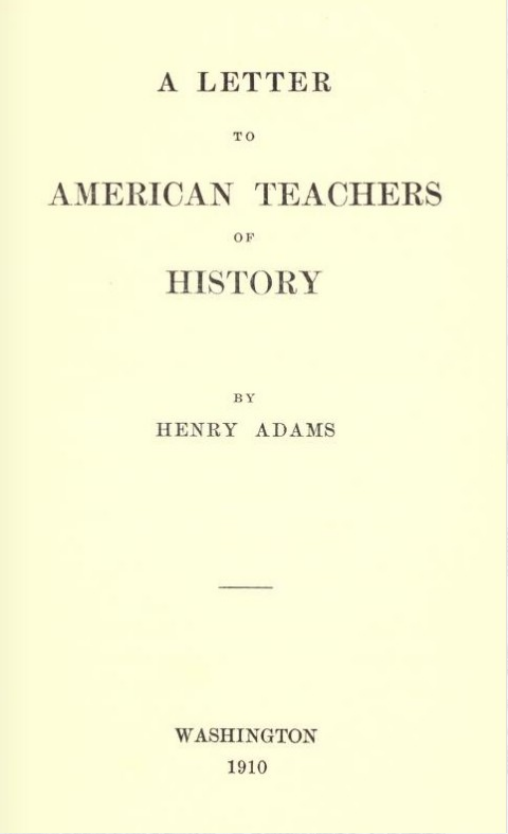
1	Frameworks	• Static structure • Electrons, atoms
2	Clockworks	• Simple dynamic systems • Machines, tendency to equilibrium
3	Thermostat	• Control mechanism, cybernetic • Equilibrium with information

Living systems

4	Open system	• Self-maintaining structure, self-reproduction • Cell, throughput of material and energy
5	Plant	• Genetic-societal • Differentiated and mutually dependent parts • Differentiation between genotype and phenotype
6	Animal	• Mobility, teleological behavior, self-awareness • Response beyond stimulus to image of environment
7	Human	• Self-consciousness, know that he knows • Speech, symbols, time and relationships
8	Social organization	• Value systems, meaning of messages • Art, music, poetry, human emotion
9	Transcendental	• Ultimates, absolutes, unknowables • Questions without human answers

Source: Boulding, Kenneth E. 1956. “General Systems Theory -- The Skeleton of Science.” *Management Science* 2 (3): 197–208. https://doi.org/10.1287/mnsc.2.3.197.

“Stable equilibrium is death”


A LETTER

TO

AMERICAN TEACHERS

OF

HISTORY

BY

HENRY ADAMS

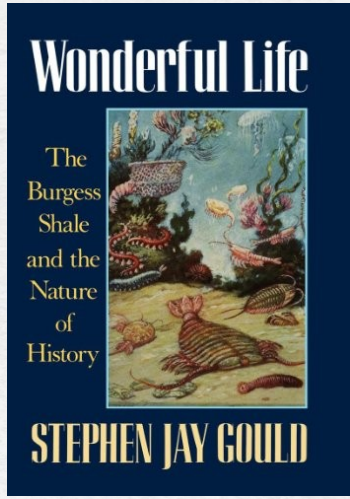
WASHINGTON

1910

… if one physical law exists more absolute than another, it is the law that **stable equilibrium is death**.

A society in stable equilibrium is — by definition, — one that has history, and wants not historians. [Adams, p. 186]

… Gould has shown that evolution has been by catastrophes, like the one that caused the demise of the dinosaurs and more serious ones that extinguished up to percent of all species nearly six hundred million.
Gould has concluded that such catastrophes have been more instrumental in shaping the course of evolution than competition and natural selection.
If so, then no necessary direction can be imputed to evolution, and **the current state of nature may not be inevitable and predictable**. [Burich p. 645]



Adams, Henry. 1910. A Letter to American Teachers of History. Washington [Press of J.H. Furst]. http://archive.org/details/alettertoamerica00adamuoft.

Burich, Keith R. 1992. “‘Stable Equilibrium Is Death’: Henry Adams, Sir Charles Lyell, and the Paradox of Progress.” The New England Quarterly 65 (4): 631–47. doi:10.2307/365825.

“Stable equilibrium is death” at https://stream.syscoi.com/2017/09/24/stable-equilibrium-is-death/

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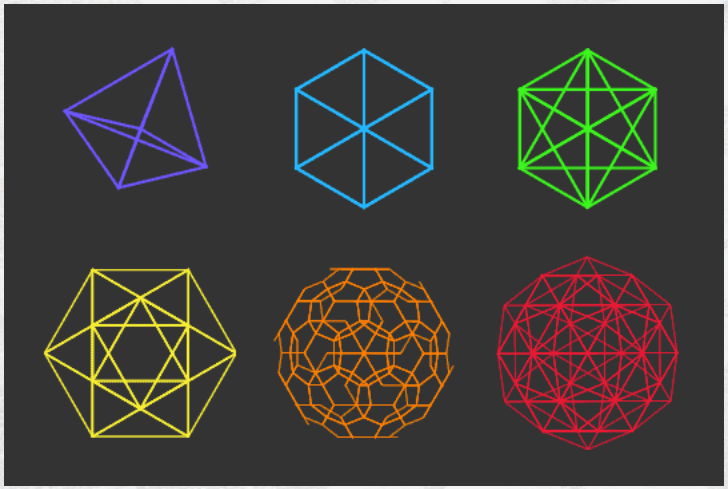
Two ways of seeing nature, since ~500 BCE, have set how humans beings negotiate with themselves and in their world(s)

Reality as a **changelessness state**

- Parmenides of Elea, Confucius
- Shift → stability → sustainable
- Analytic paradigm

Reality as a **state of change, not a change of state**

- Heraclitus of Ephesus, Laotse
- Beauty of dynamic (c.f. protection of static)
- Contextual appreciation



Hyper Platonic, by Nathan P. Seddig (natpbs.tumblr)

Walking, by Dominique Taswell (strawberrylicorice.tumblr)

Hawk, David L. 1999. “Changelessness, and Other Impediments to Systems Performance.” In *Proceedings of the Conference to Celebrate Russell L. Ackoff, and the Advent of Systems Thinking*, edited by Matthew J. Liberatore and David N. Nawrocki. Villanova University. http://davidhawk.com/wp-content/uploads/2018/09/Ackoff-Birthday-Conference.pdf#page=59 .

A *dwelling* perspective is beyond a naturalistic view of landscape as neutral backdrop, and culturalistic view as cognitive or symbolic ordering of space

Landscape

... the landscape is the world as it is **known** to those who **dwell** therein, who **inhabit** its places and **journey** along the paths connecting them.

Temporality

It is to the entire ensemble of tasks, in their mutual interlocking, that I refer by the concept of ***taskscape***. [….] – the taskscape is **an array of related activities**.

Temporalizing the Landscape

… landscape seems to be what we *see* around us, whereas the **taskscape** is what we ***hear***. [….] In short, what I hear is ***activity***, even when its source cannot be seen.

Ingold, Tim. 2000. “The Temporality of the Landscape.” In *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*, 189–208. Routledge. Images from Tenor: JoseFilm walk-forest; dirtriderofc pov-motocross; JoseFilm walk-forest

Organization studies in management contrast *being* with *becoming*

Being	Becoming
End states	Process
Micro-practices: everyday practical coping, ongoing sensemaking	Organizational life: contingency, emergency, creativity, complexity
Individual person in an environment	Nexus of historically shaped relationships
Substances of social entities locatable in finite region of space, finite duration of time	Process, flux and transformation as primary stuff of reality
Organizational change as unfreeze-change-refreeze (Lewin)	Stability, order and organization as exceptional states
Formal knowledge, linguistic representations	Tacit knowledge, creative flow of reality
Identity, excluding contradictions	Difference, result of opposite tensions

Nayak, Ajit, and Robert Chia. 2011. “Thinking Becoming and Emergence: Process Philosophy and Organization Studies.” In *Philosophy and Organization Theory*, edited by Haridimos Tsoukas and Robert Chia, 32:281–309. Bingley: Emerald Group Publishing Limited. https://doi.org/10.1108/S0733-558X(2011)0000032012.

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Contrasting modes of thinking may be grounded in philosophy

Dualistic (Modern Western formal logic)		Contextual-dyadic (Classical Chinese implicit logic)
Abstract and permanent, is independent of context • Can extrapolate from propositions	**Truth - Falsity**	Application and meaning is relative to a particular context • Evaluate assertion as embedded
Oppositions Superior ↔ Inferior Superordinate ↔ Subordinate Intrinsic value ↔ Non-intrinsic value Human ↔ Nonhuman	**Pairings**	*Characteristics under context* A term presupposes it opposite • e.g. *cat* implies *non-cat*, not universe Context-dependence • e.g. men or women superior when/where?
Hierarchical Reductionist Entity- (thing-) ontology	**Frames**	Yin-Yang Harmonious whole Mutually engendering or constraining

Lee, Keekok. 2017. *The Philosophical Foundations of Classical Chinese Medicine: Philosophy, Methodology, Science*. Lexington Books. https://rowman.com/ISBN/9781498538886/The-Philosophical-Foundations-of-Classical-Chinese-Medicine-Philosophy-Methodology-Science.

Image CC-BY Mike Cassano (2009) *Most Interesting Pothole*