

Systems Changes

A Call for Participation

David Ing

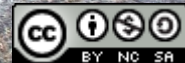
<http://coevolving.com>

Systems Thinking Ontario

Toronto, Ontario

January 2019

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



David Ing, 2019

Systems Change > Systems Thinking > Systems Sciences

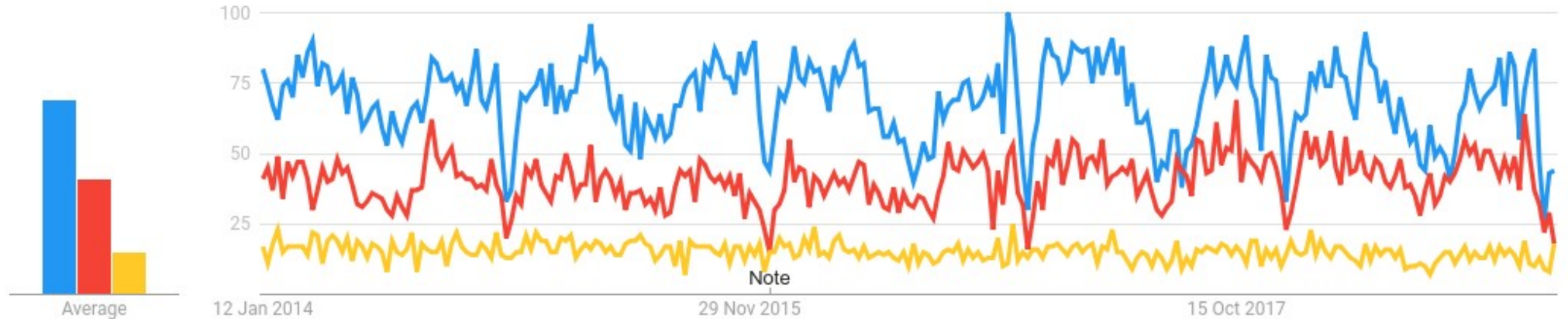
Google Trends

Compare



● systems change ● systems thinking ● systems sciences

Worldwide, Past 5 years



Systems Thinking?

systems thinking

Interest by region ?

Region ▼ ☰ ⬇ ⌂ 🔗



☐ Include low search volume regions

Related queries ?

Rising ▼ ⬇ ⌂ 🔗

1	systems thinking for social change	Breakout
2	thinking in systems by donella meadows	Breakout
3	ladder of inference	+3,950%
4	computational thinking	+450%
5	donella meadows	+350%
6	soft systems methodology	+300%
7	forward thinking	+200%
8	thinking in systems pdf	+200%
9	systems thinking pdf	+180%
10	what is systems thinking	+130%



Agenda

A. Charter (draft)

B. An Emerging Framework

C. First Steps

Systems Changes is a collaborative open research program

1. What?

- Reify methods + theories towards systems changes
 - Appreciating the world as more fluid than unchanging

2. Why?

- Evolve a deeper synthesis of methods, theory + philosophy

3. Who?

4. When + where?

5. How?

- Deriving from 1970s-1980s
 - Churchman systems approach
 - Rittel wicked problems
 - Alexander pattern language
 - Trist-Pava action learning
- Advances in 21st century
 - Holons and hierarchy theory
 - Resilience science
 - Ecological anthropology
 - Open sourcing

Systems Changes is a collaborative open research program

1. What?

- Extending wisdom from the systems movement
 - Acknowledge windows closing for intergenerational transfers
 - Regional (or local) cells (or hubs) for greater bandwidth

2. Why?

- Collaboration in a digital-first world
 - Most cited references today are from books of 1970s-1980s
 - Pre-Internet, pre-"world is flat", pre-remix thinking
 - Misinformation from unsourced materials
 - Does the World Wide Web miss Ted Nelson's vision?

3. Who?

4. When + where?

5. How?

Systems Changes is a collaborative open research program

1. What?

- Initiated from Toronto, federated to the world

2. Why?

- Creative Commons CC-BY-SA
- Systems Thinking Ontario
- OCADU Strategic Innovation Lab (sLab)

3. Who?

- Centre for Social Innovation, Climate Ventures

4. When + where?

- Both scholarly and practical

5. How?

- Open access
- Multiple perspectives, paradigm interplay
- Observers, application experiences welcomed

Systems Changes is a collaborative open research program

1. What?

- Horizon to 2024 and 2029
 - Starting seriously in 2019, PloP-PURPLSOC-PUARL from 2014
 - Steady accumulation of artifacts
 - Ongoing periodic public status reports

2. Why?

3. Who?

- Milestones with regional and international events
 - 2019 May 22-25: CANSEE Waterloo, Ontario
 - 2019 June 28 - July 2: ISSS Corvallis, Oregon
 - 2019 October: PURPSOC Krems, Austria
 - 2019 October 17-19: RSD Chicago, USA

4. When + where?

5. How?

Systems Changes is a collaborative open research program

1. What?

- Form initial core group from Systems Thinking Ontario

2. Why?

- Meeting frequency TBD
- Possibly alignment with OCADU SFI Major Research Projects?

3. Who?

- Open online collaboration

4. When + where?

- Federated Wiki? (Ward Cunningham)
- Grav CMS, Markdown, GitHub/GitLab? (Paul Hibbitts)

5. How?

- PubPub? (MIT)

Agenda

A. Charter (draft)

B. An Emerging Framework

C. First Steps

Pattern Manual (1967): systems, subsystems, patterns

The environmental **pattern language** will contain **hundreds of subsystems** and **tens of thousands of individual patterns**.

Every conceivable kind of building, every part of every kind of building, and every piece of the larger environment will be specified by one or more subsystems of the environmental pattern language.

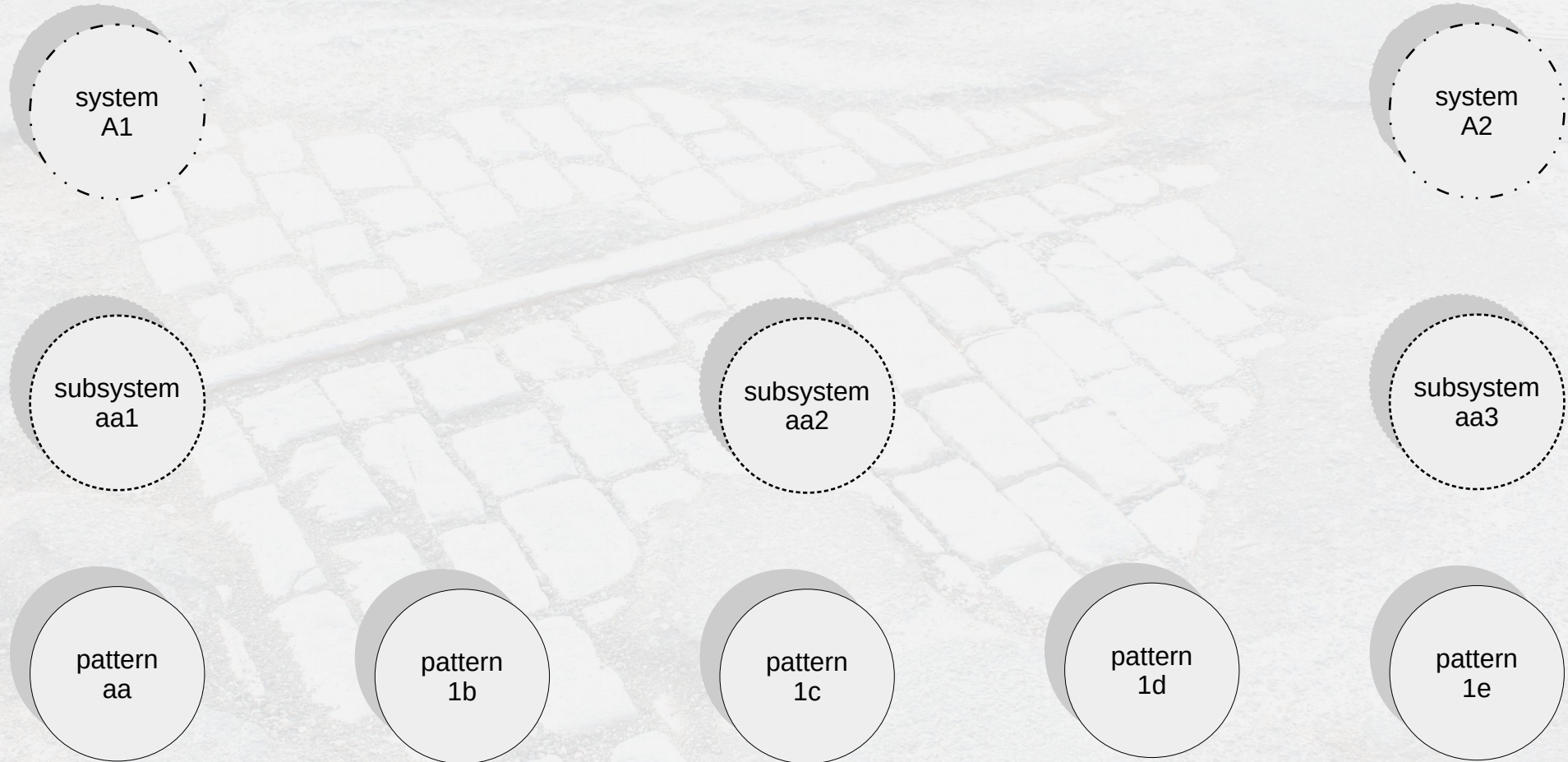
In summary:

An environmental pattern language is a coordinated body of **design solutions** capable of **generating** the complete **physical structure** of a city.

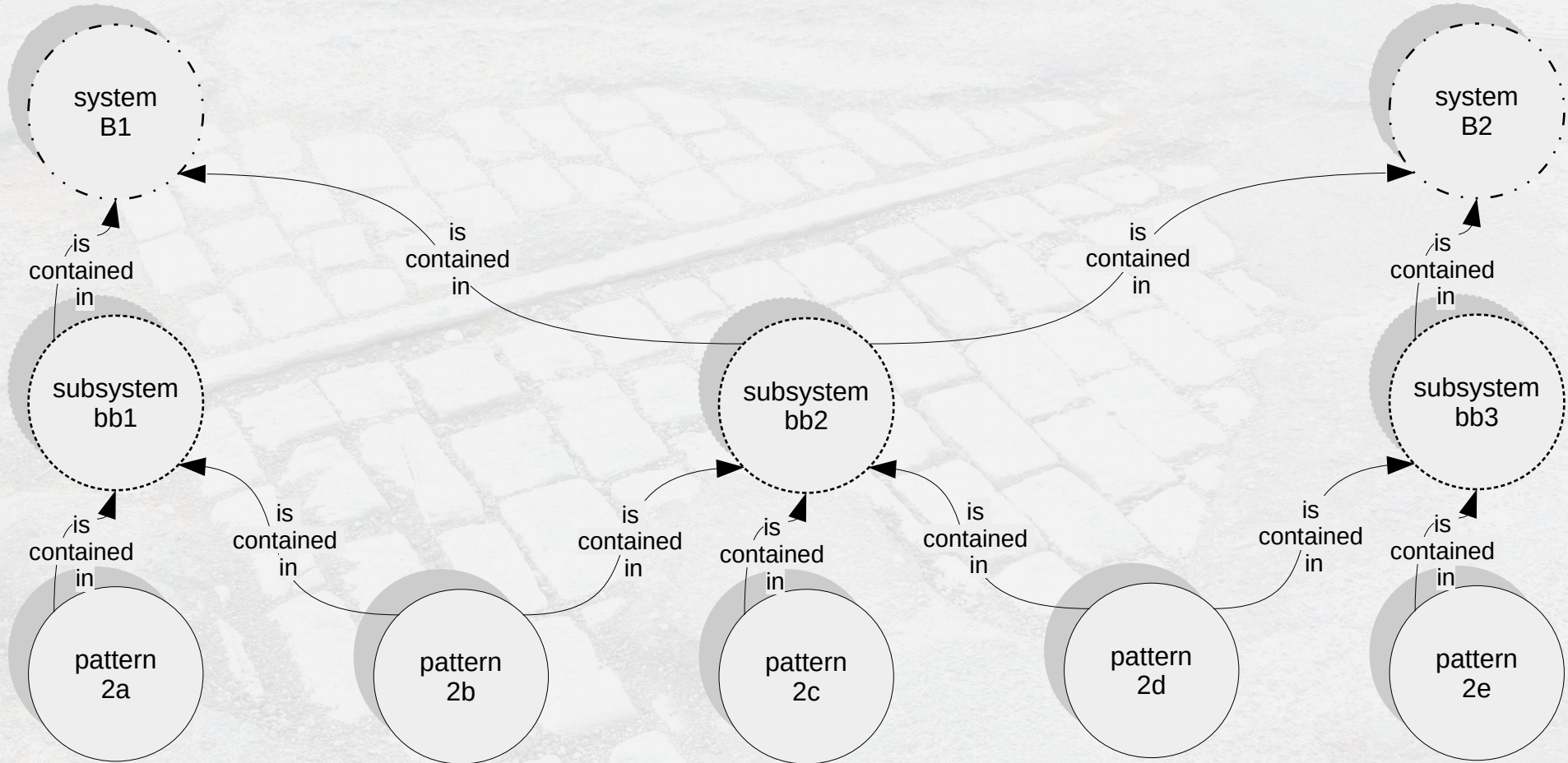
The language is designed to **grow and improve continuously** as a result of criticism and feedback from the field.

Alexander, Christopher, Sara Ishikawa, and Murray Silverstein. 1967. *Pattern Manual*. Berkeley, California: Center for Environmental Structure.

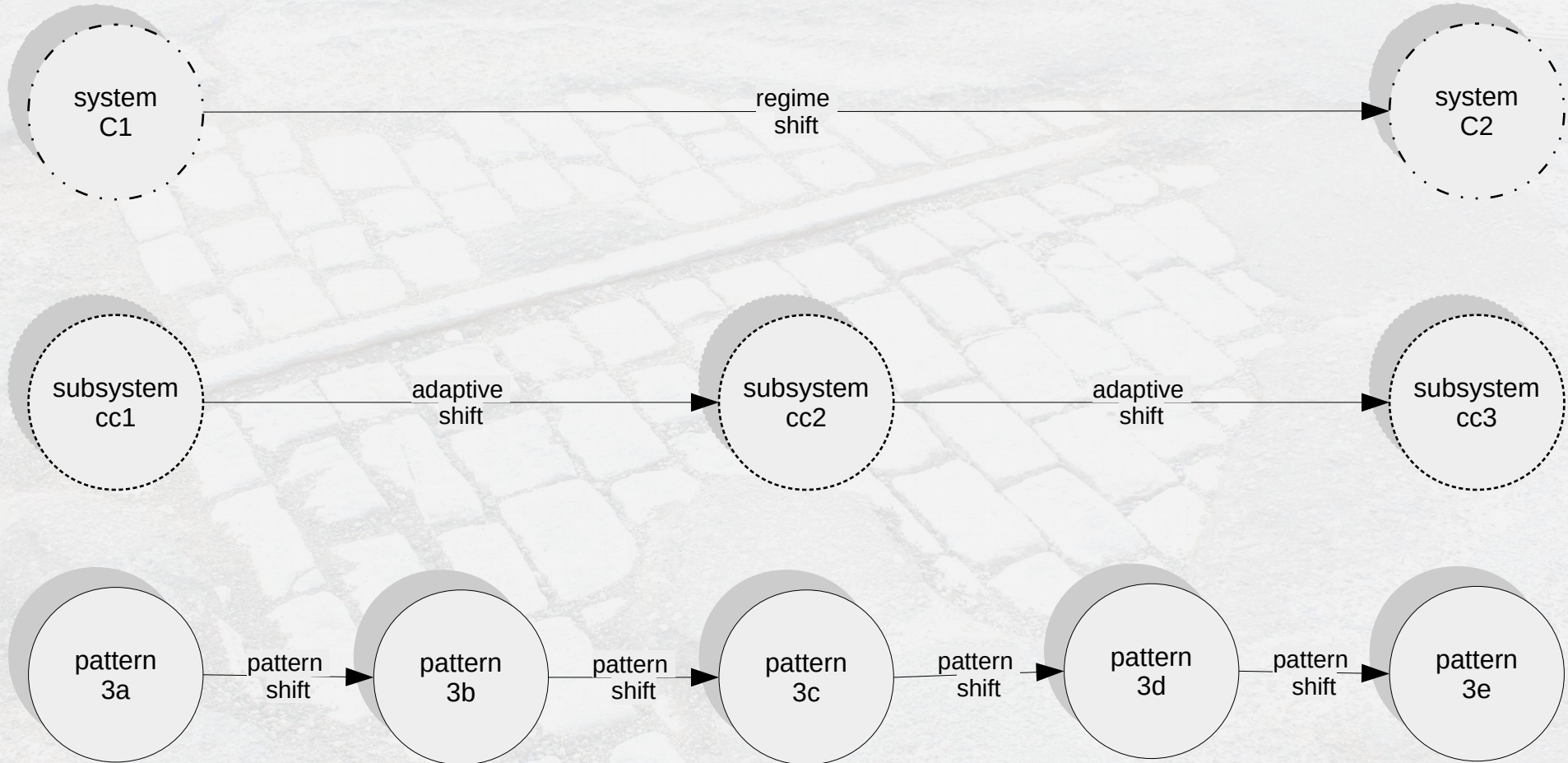
Systems, subsystems, patterns



Scales: systems, subsystems, patterns

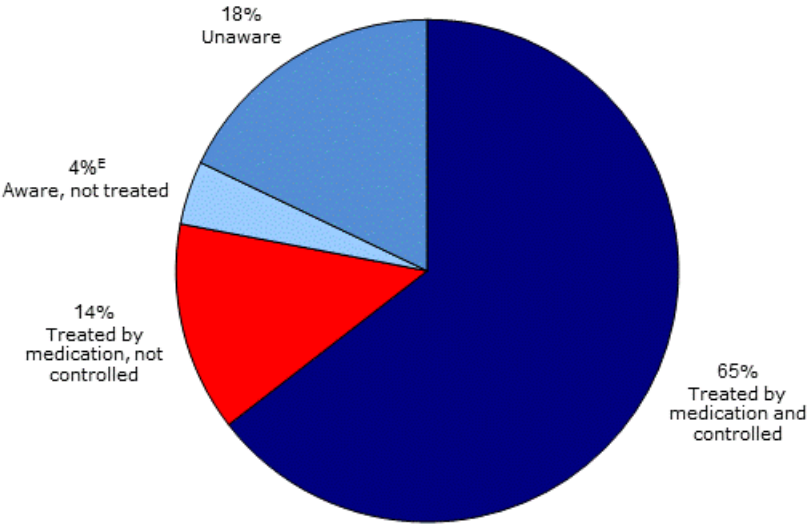


Sequences: systems, subsystems, patterns



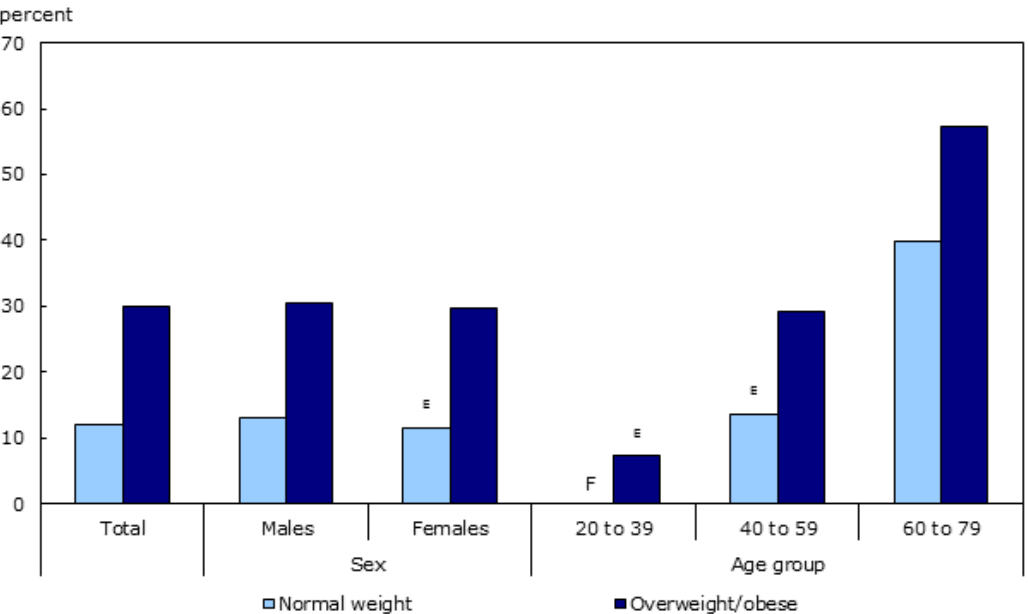
Blood pressure of adults, 2012 to 2015 (Statistics Canada)

Chart 2
Percentage of adults aged 20 to 79 with hypertension who are aware of their condition, whose hypertension is treated by medication, whose hypertension is controlled, or who are unaware of their condition, household population, Canada, 2012 to 2015



[‡] use with caution (data with a coefficient of variation (CV) from 16.6% to 33.3%)
Note: "Controlled" refers to a measured resting blood pressure < 140/90 mmHg.
Source: Canadian Health Measures Survey, Cycle 3 (2012 and 2013) and Cycle 4 (2014 and 2015).

Chart 3
Distribution of adults aged 20 to 79 with hypertension, by sex, age group and body mass index (BMI), household population, Canada, 2012 to 2015



[‡] use with caution (data with a coefficient of variation (CV) from 16.6% to 33.3%)
^F too unreliable to be published (data with a coefficient of variation (CV) greater than 33.3%; suppressed due to extreme sampling variability)
Note: The body mass index (BMI) classification is based on the *Canadian Guidelines for Body Weight Classification in Adults* (Health Canada, 2003).
Source: Canadian Health Measures Survey, Cycle 3 (2012 and 2013) and Cycle 4 (2014 and 2015).

Hypertension Prevention and Treatment Guidelines

I. Health Behaviour Management

Guidelines

- A. Physical exercise
- B. Weight reduction
- C. Alcohol consumption
- D. Diet
- E. Sodium intake
- F. Calcium and magnesium intake
- G. Potassium intake
- H. Stress management

III. Choice of therapy for adults with hypertension without compelling indications for specific agents

A. Indications for drug therapy for adults with diastolic and/or systolic hypertension

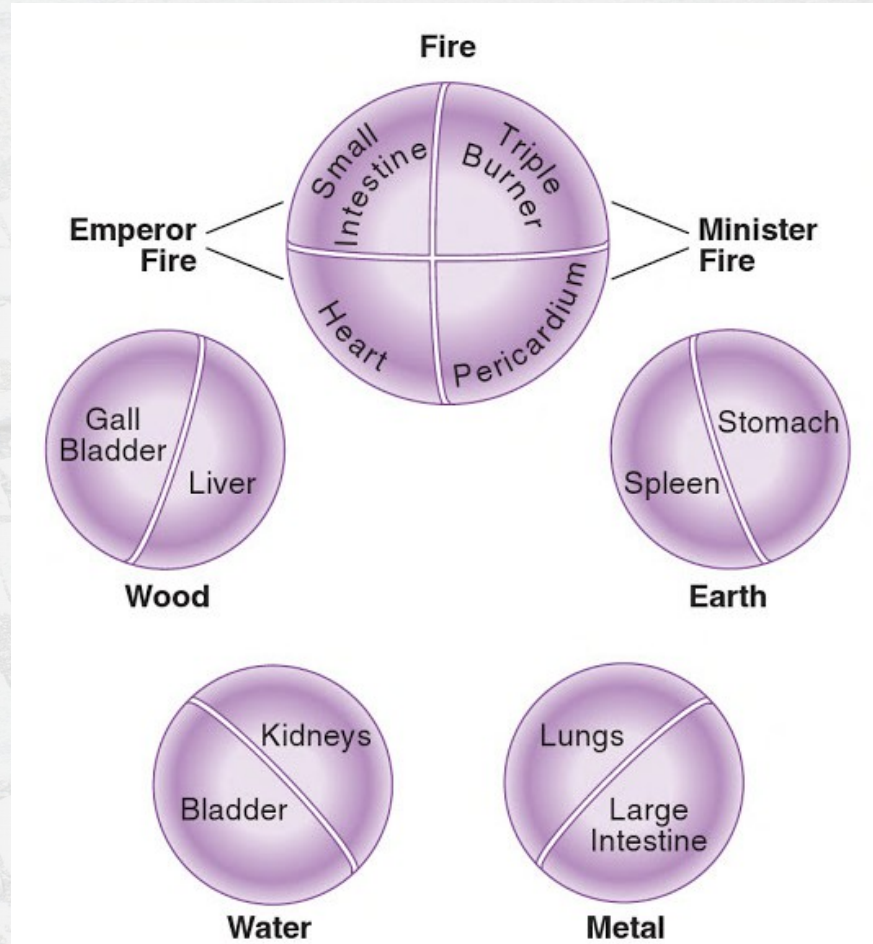
1. Initial therapy should be with either monotherapy or a single pill combination (SPC).
 - i. Recommended monotherapy choices are:
 - a. a thiazide/thiazide-like diuretic (Grade A), with longer-acting diuretics preferred (Grade B)
 - b. a β -blocker (in patients younger than 60 years; Grade B),
 - c. an angiotensin converting enzyme (ACE) inhibitor (in non-black patients; Grade B),
 - d. an angiotensin receptor blocker (ARB) (Grade B), or
 - e. a long-acting calcium channel blocker (CCB) (Grade B).
 - i. Recommended SPC choices are those in which an ACE inhibitor is combined with a CCB (Grade A), ARB with a CCB (Grade B), or ACE inhibitor or ARB with a diuretic (Grade B).
 - ii. Hypokalemia should be avoided in patients treated with thiazide/thiazide-like diuretic monotherapy (Grade C).

Recommended treatment program of hypertension by Chinese herbal formulas

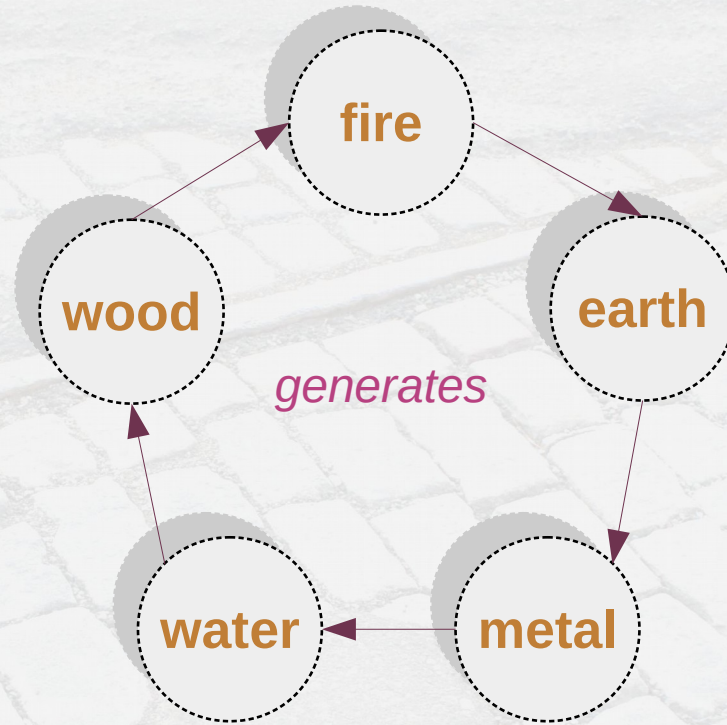
Syndrome	Clinical signs	Treatment principles	Classical formula
Fire syndrome			
Liver fire syndrome	Vertigo, headache, facial flushing with perspiration, conjunctival congestion, bitter taste in the mouth, thirst, irritability and restlessness, wiry-rapid-powerful pulse or powerful cunkou pulse alone, or wiry and long pulse even well beyond the cunkou pulse	Calming liver and suppressing liver yang hyperactivity	Tianma Gouteng decoction, Zhengan Xifeng decoction, Jianling decoction, and Longdan Xiegan decoction
Heart fire syndrome	Facial flushing with perspiration, bitter taste in the mouth, thirst, insomnia, red tip of the tongue, and rapid pulse	Clearing heart fire	Zhi-zi-chi decoction, Sanhuang Xiexin decoction, and Huanglian Jiedu decoction
Stomach fire syndrome and intestine fire syndrome	Dry mouth, thirst with desire for cold drinks, easy to starve, foul breath, abdominal distension and pain, smelly stool, constipation, red tongue, yellow dry fur, right guan pulse powerful alone, or strength and deep-hidden-powerful pulse	Clearing stomach-intestine fire, promoting digestion, relaxing bowels, and relieving constipation	Da Chai Hu decoction, Baohe pill, Baihu decoction, Houpu Dahuang decoction, Gegen Qinlian decoction, and Zeng Ye decoction
Phlegm-fluid retention syndrome			
Phlegm and dampness syndrome	Obesity, dizziness, sticky mouth, thirst without a desire to drink, chest distress, nausea, vomiting, anorexia, abdominal distension, loose stools, sleepiness, greasy tongue coating, and slippery pulse	Dispelling phlegm and eliminating dampness	Erchen decoction, Pingwei powder, Wendan decoction, Banxia Baizhu Tianma decoction, and Xiao Xianxiong decoction
Fluid retention syndrome	Dizziness aggravated by change in body position, thirst without a desire to drink or not being thirsty, chest distress, palpitation, gastric distension, abdominal distension, poor appetite, lumbar heaviness, weakness and heaviness in the lower extremities, edema, daytime sleepiness, abnormal leucorrhea, dysuria, greasy fur, swollen tongue, and deep pulse	Dissipating excessive fluid	Banxia baizhu tianma decoction, Wuling powder, Zhuling decoction, Zexie decoction, and Fuling Guizhi Baizhu Gancan decoction
Deficiency syndrome			
Spleen deficiency syndrome	Fatigue, shortness of breath, stomach pain, poor appetite, abdominal distension, and loose stools	Reinforcing spleen	Fuling Guizhi Baizhu Gancan decoction, Si jun Zi decoction, and Liu Jun Zi decoction
Kidney deficiency syndrome	Tiredness in the loins and legs, tinnitus and dizziness, sexual dysfunction, dysuria, weakness and fatigue, and weak chi pulse	Reinforcing kidney	Liuwei Dihuang pill and Shenqi pill

Wang, Jie, and Xingjiang Xiong. 2013. "Evidence-Based Chinese Medicine for Hypertension." *Evidence-Based Complementary and Alternative Medicine* <https://doi.org/10.1155/2013/978398>.

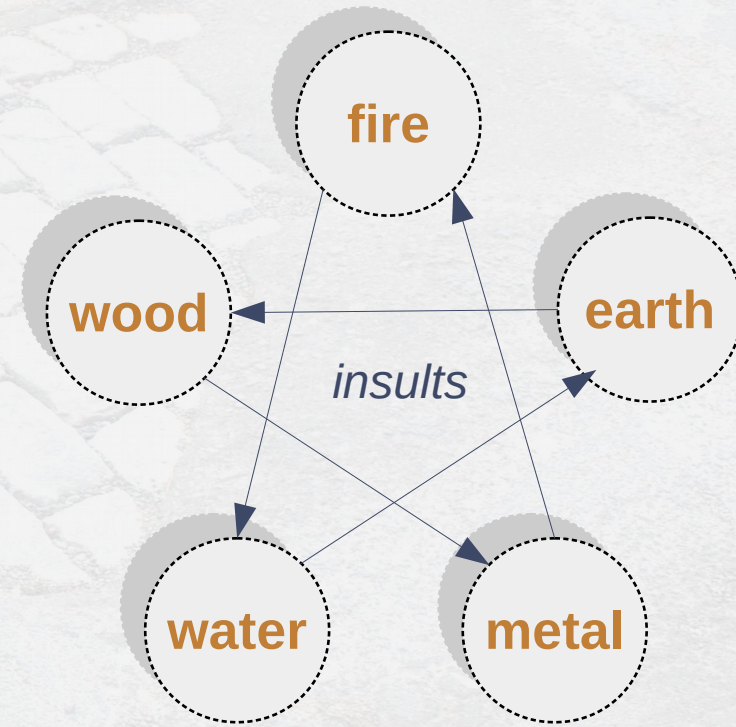
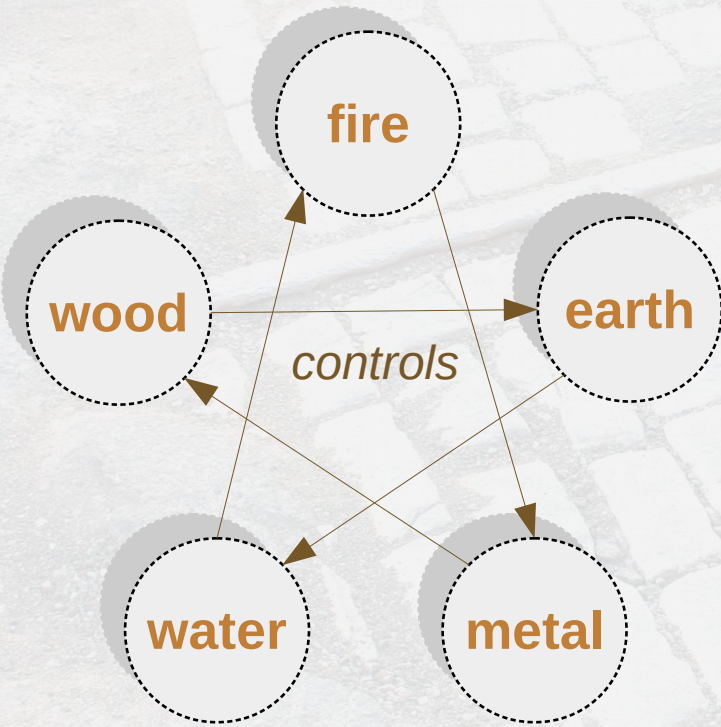
Chinese medicine: the internal organs and five elements



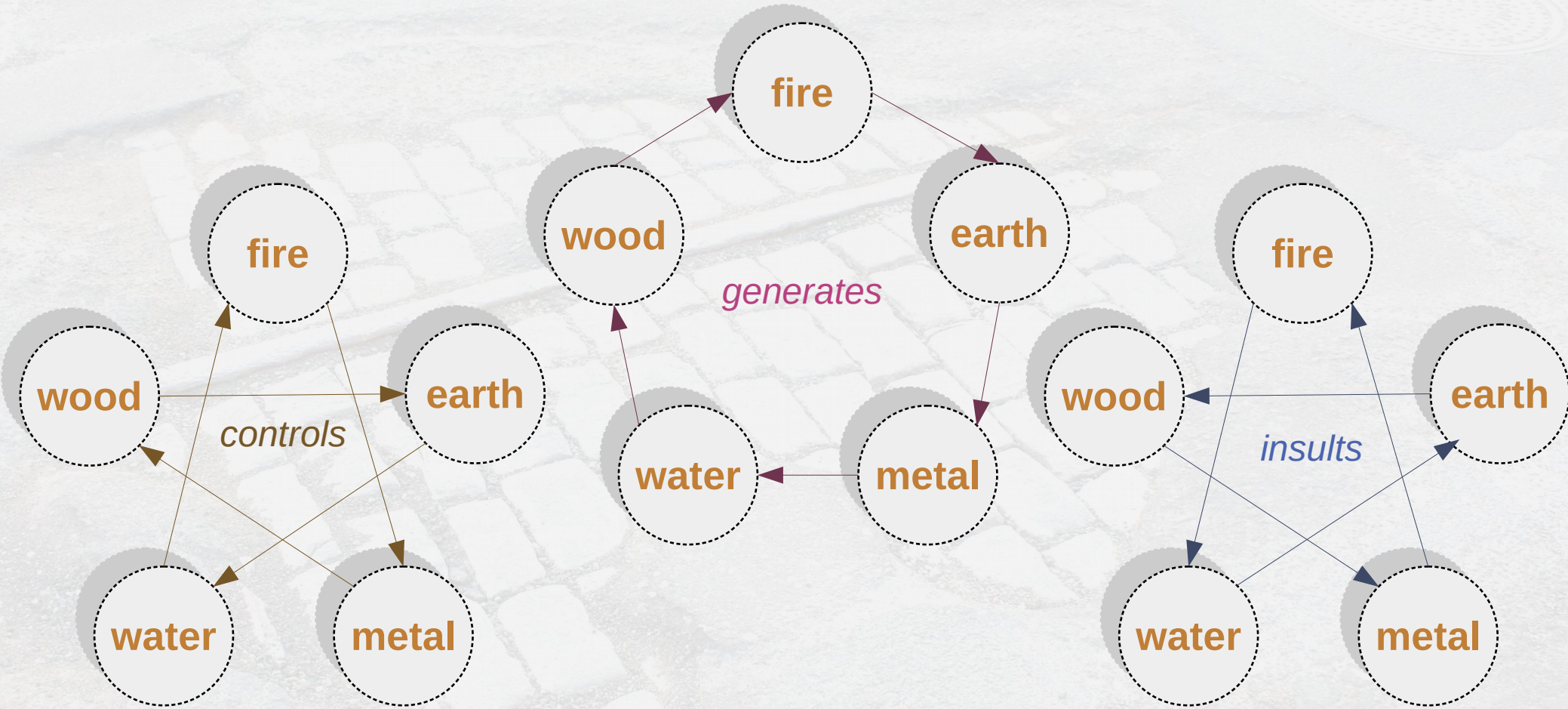
Five elements: the generating sequence



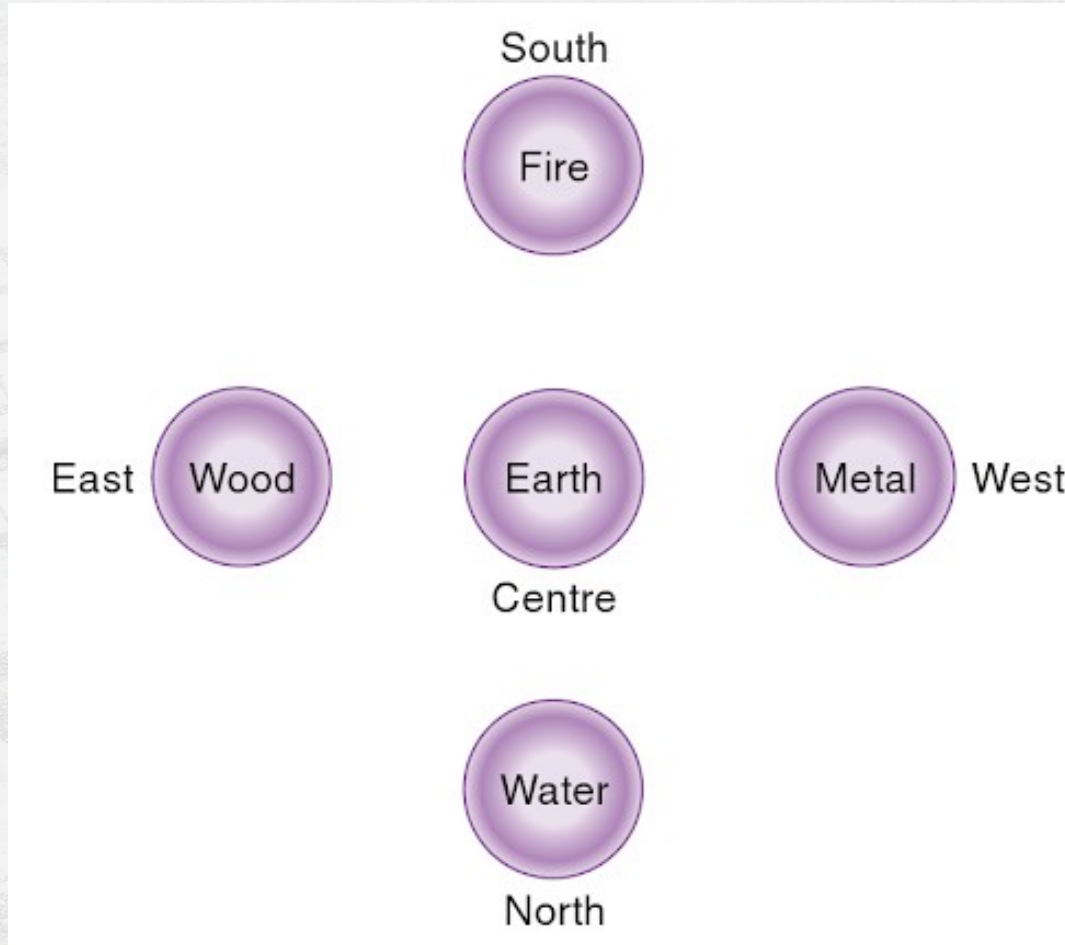
Five elements: controlling sequence; insulting sequence



Generating sequence; controlling sequence; insulting sequence



The five elements and cardinal directions



Maciocia, Giovanni. 2015. *The Foundations of Chinese Medicine: A Comprehensive Text*. Elsevier Health Sciences.

Agenda

A. Charter (draft)

B. An Emerging Framework

C. First Steps

THE PHILOSOPHICAL FOUNDATIONS OF CLASSICAL CHINESE MEDICINE

Philosophy, Methodology, Science

KEEKOK LEE

Contents

Acknowledgements	vii
Preface	ix
Chapter 1	Introduction 1
Chapter 2	Bibliographical Justification and Clarification of the Main Texts Selected 13
Chapter 3	Ontology: <i>Qi</i> and Its Role in the Lattice of Inter-weaving Key Concepts 37
Chapter 4	Metaphysics: The <i>Laozi</i> and the Lattice of Inter-weaving Key Concepts 55
Chapter 5	The <i>Zhouyi</i> / <i>Yi</i> : Meanings and Significance 103
Chapter 6	The <i>Yi</i> : <i>Yin Qi</i> , <i>Yang Qi</i> , <i>Yinyang</i> , and the <i>Yao-gua</i> Model 131
Chapter 7	<i>Yinyang</i> - <i>Wuxing</i> 153
Chapter 8	Process Philosophy / Ontology 185
Chapter 9	Modes of Thinking 217
Chapter 10	<i>Wholism</i> in Chinese Terms 273
Chapter 11	Implications of <i>Wholism</i> / <i>Wholism</i> for Science / Science, Methodology and Ontology 301
Chapter 12	Conclusion 333
References	341
Glossary	359
Chinese Historical Periods and Dynasties	363
Index	365
About the Author	379

Personal communications between David Ing and Harold Nelson (via LinkedIn Messaging, Dec. 30, 2018)



David Ing 1:08 PM

Maybe it's auspicious that you've pinged me today. I've been spending the past few weeks doing research on five elements theory, and the I Ching (which may be too mystical). Back when you were studying at Berkeley, did you encounter any serious research into this?



Harold Nelson 1:08 PM

Yes

Harold Nelson 1:10 PM

West, Russ and others like James Hillman all introduced me to the idea that the I Ching ought to be taken seriously at some level.



David Ing 1:21 PM

I'll take your experience with West, Russ and James Hillman to continue this path. I'm behind on getting the pattern language community together with the systems sciences community in Corvallis for 2019.



Harold Nelson 2:09 PM

My introduction to the I Ching by West et al was primarily verbal so not sure how much you will find in writing. Lots of questions I wished I could have asked them when they were still around for a conversation.



David Ing 2:11 PM

Harold, thanks. West's interest is good encouragement for me to continue researching this.



Harold Nelson 2:11 PM





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