









# Integrative Propositional Analysis: The missing Link for Creating More Effective Laws



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Challenges for Law-Making

- War
- Crime
- Poverty
- Injustice
- Hunger
- Immigration
- Commerce
- Health
- Safety



### Typical Processes for Creating Laws

- Muddling through
- Political wrangling
- Special interest groups
- Low expertise of law-makers

### Typical Results = Poor Laws

Maladaptive results

e.g. laws for hands free cell phone use

# Decreasing Relevance of Political Science

[Journals] have never settled "once and for all, any major analytical, conceptual, empirical, or normative dispute" (Isaac, 2015, p. 279).

# One Simple Assumption

If we live in a world of systems, that world would be better engaged by laws that are more systemic

# Which Works Best for Navigation?

#### **Disconnected = Data**

- San Diego
- Roads, Highways
- Rivers, Hills, Mountains
- Universities, Zoo

#### **Connected = Information**



So... Yes: Reality is Systemic: James, W. (1909). *A Pluralistic Universe*. Manchester, UK. Theories that are more systemic are more useful (Dubin, 1978; Friedman, 1978; Wallis, 2010). Integrative Complexity stream of research shows benefits of systemic understanding.

### To be Meaningful, Data Requires Connections

Scraps of data may be reassembled in a way that seem to make sense...









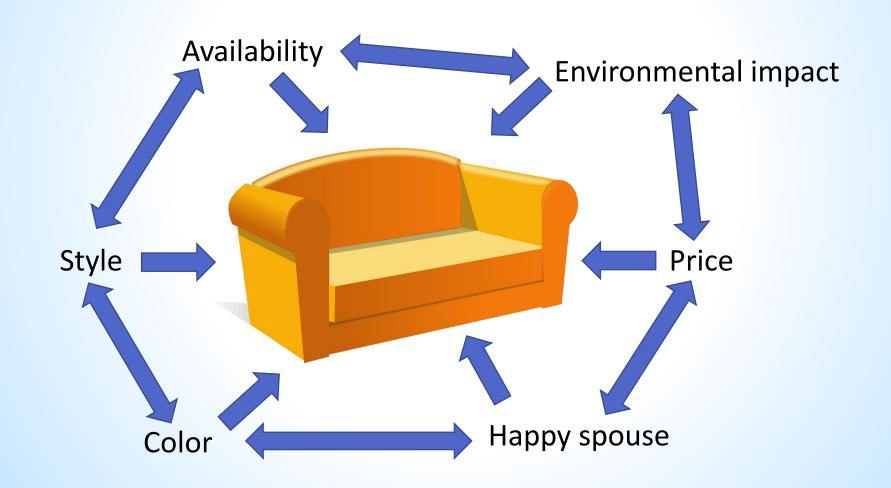
KEY: Data is not enough. We need data AND logics We need rules for evaluating the structure of laws Without structure, we lose reasoning ability

# Correspondence? Coherence?

(Müller, 2012; Umpleby, 2010)

Science One

• Science Two – includes both!



#### Explanatory capacity is based on

- Systemic Structure
- Complexity

Measuring those, we may predict the potential efficacy of a proposed law.

Improving those (in the creation of a law) we may improve the explanatory capacity which equates to provide greater odds of success.



#### **DEFINITION:**

A law contains a set of interrelated propositions. (representing how the world works and how it may be changed)

...much the same as a **Theory** (Metcalfe, 2004), **Policy** (Shackelford, 2014), set of **Assumptions** (Dent & Umpleby, 1998), or **Concept Map** (Eppler, 2006)

#### Analyze propositions within proposed laws using IPA

#### **Integrative Propositional Analysis (IPA):**

- 1. Identify propositions within the text of the bill
- 2. **Diagram** the propositions with one box for each concept and arrows indicating directions of *causal* effects
- 3. Find linkages between causal concepts and resultant concepts between all propositions
- 4. Identify the **total number** of concepts
- 5. Identify **transformative** concepts
- 6. Divide the number of transformative concepts by the total number of concepts in the model

# Using IPA – Step #1 – Identify Propositions

From HR4286

 The United States Court of Appeals for the Fifth Circuit, shall have exclusive jurisdiction over challenges to offshore energy projects and permits to drill carried out in the Gulf of Mexico

 The restrictions on crude oil exports from the 1970s are no longer necessary due to the technological advances that have increased the domestic supply of crude oil

Repealing restrictions on crude oil exports will contribute to job growth

HOW
(Atomistic
Statement)

Negative statements are not very useful

Seek clear causal relationships

#### Using IPA – Step #2 – Diagram Propositions

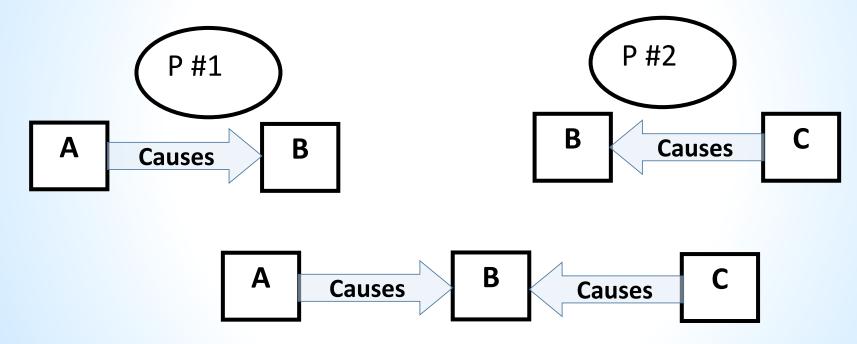
Example from: HR 4286

Restrictions on cru oil exports

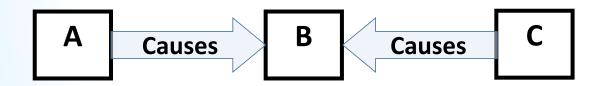
Seek clear causal relationships

o growth

Find overlaps between causal concepts and resultant concepts

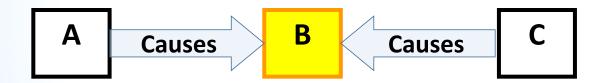


Identify the total number of concepts



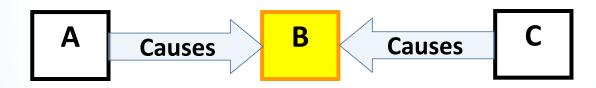
Total Number of Concepts = 3

#### Identify transformative concepts



Number of transformative concepts = 1

Divide the number of transformative concepts by the total number of concepts



Number of transformative concepts = 1

Total Number of Concepts = 3

= Systemicity = 0.33

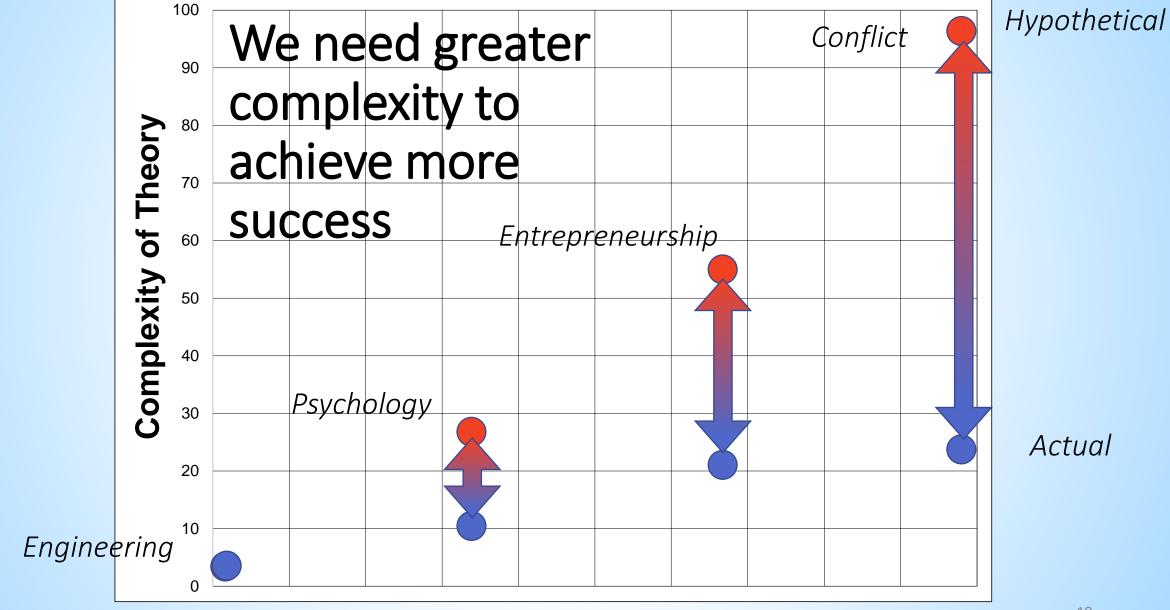
(result of one divided by three)

# Integrative Propositional Analysis (IPA)



- More Concepts = GOOD!
- More Connections = VERY GOOD!

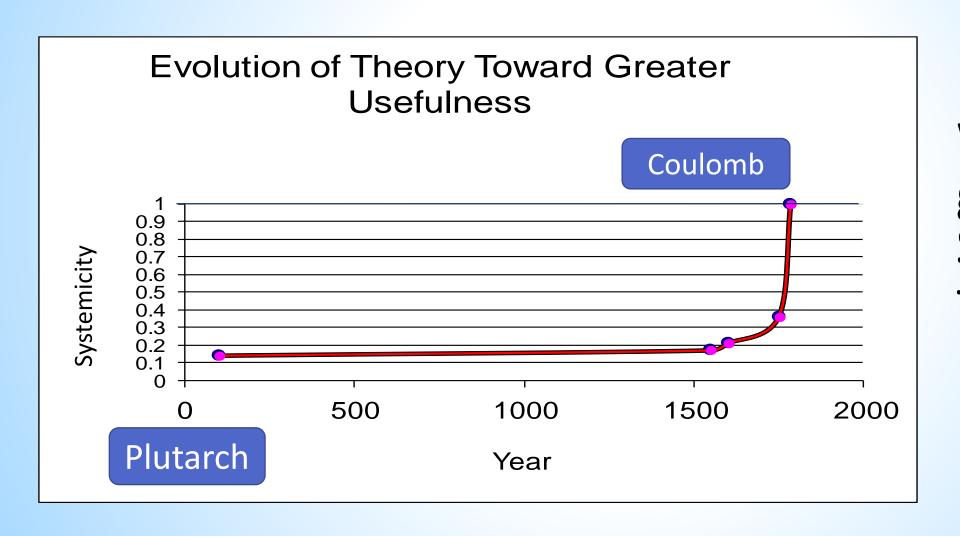
# Conceptual Structures are Limited by Complexity



Low

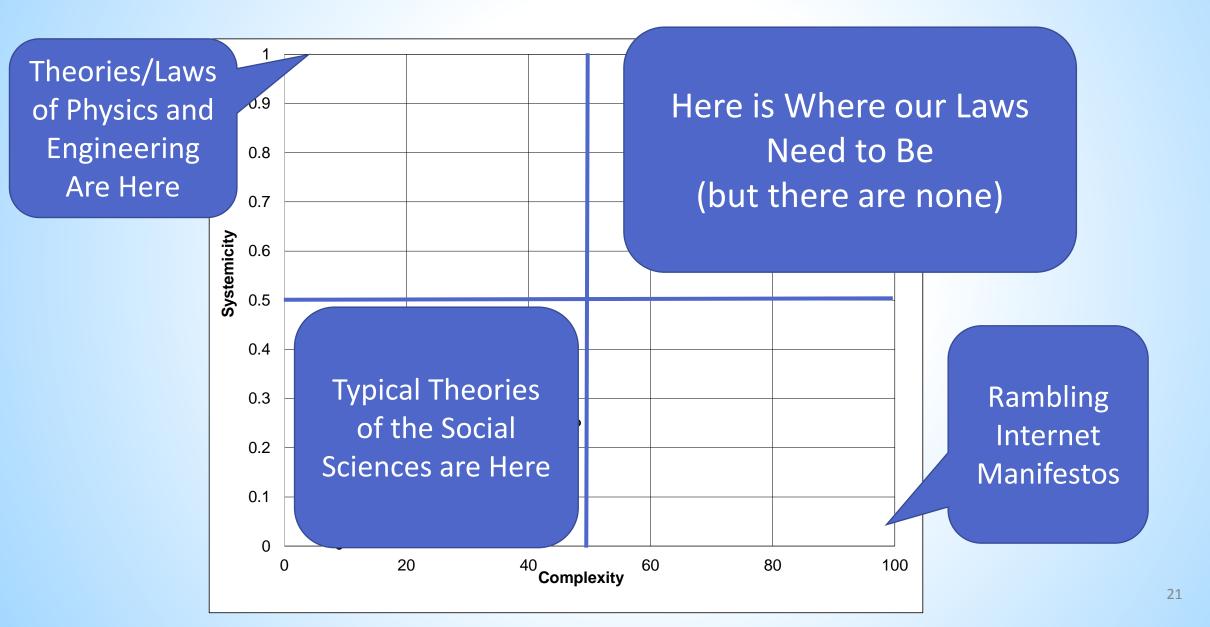
#### **Evolution of Theory Toward Greater Usefulness**

Theories of electrostatic attraction (Wallis, 2010)



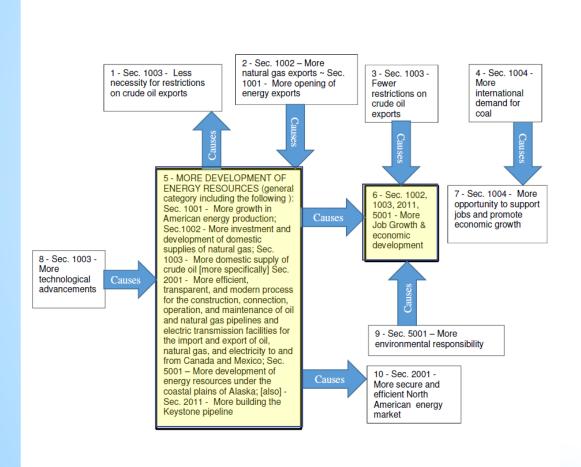
We need greater
Systemicity to achieve more success

# Structural Meta-Map



#### HR 4286 - American Energy Renaissance Act of 2014

Complexity = 27 Systemicity = 0.07



11 - Sec. 3001 -The United States has enormous potential for offshore energy development 12 - Sec. 2011 – The people of the United States should have access to the jobs and economic benefits from developing those resources 13 - Sec. 1004 -Exports of coal should not be unreasonably restricted or delayed

14 - Sec. 4001 – current policy has filed to take full advantage of the natural resources on Federal land 15 - Sec. 4001 – the States should be given the option to lead energy development on all available Federal land in a 16 - Sec. 4001 – the Federal Government should not inhibit energy development on Federal land

17 - Sec. 4051 – the National Petroleum Reserve in Alaska remains explicitly designated, both in name and legal status, for purposes of providing oil and natural gas so they should be developed

18 - Sec. 5021 – Indian tribes should have the opportunity to gain the benefits of the jobs, investment and economic development to be gained from energy development.

19 - Sec. 5021 – the Federal Government has unreasonably interfered with the efforts of Indian tribes to develop resources on tribal land

20 - Sec. 5031 – the States are best placed to regulate the process of hydraulic fracturing occurring on any land within the boundaries of the individual state 21 - Sec. 6001 – the domestic refining industry is an important source of jobs and economic growth and whose growth should not be limited by an excessively drawn out permitting and approval process

22 - Sec. 6011 – the Clean Air Act imposes significant costs on American citizens and the American economy without offering any benefits and it should be repealed

23 - Sec. 7001 – the Environmental Protection Agency has exceeded its statutory authority by promulgating regulations that were not contemplated by Congress in the authorizing language of the states enacted by Congress

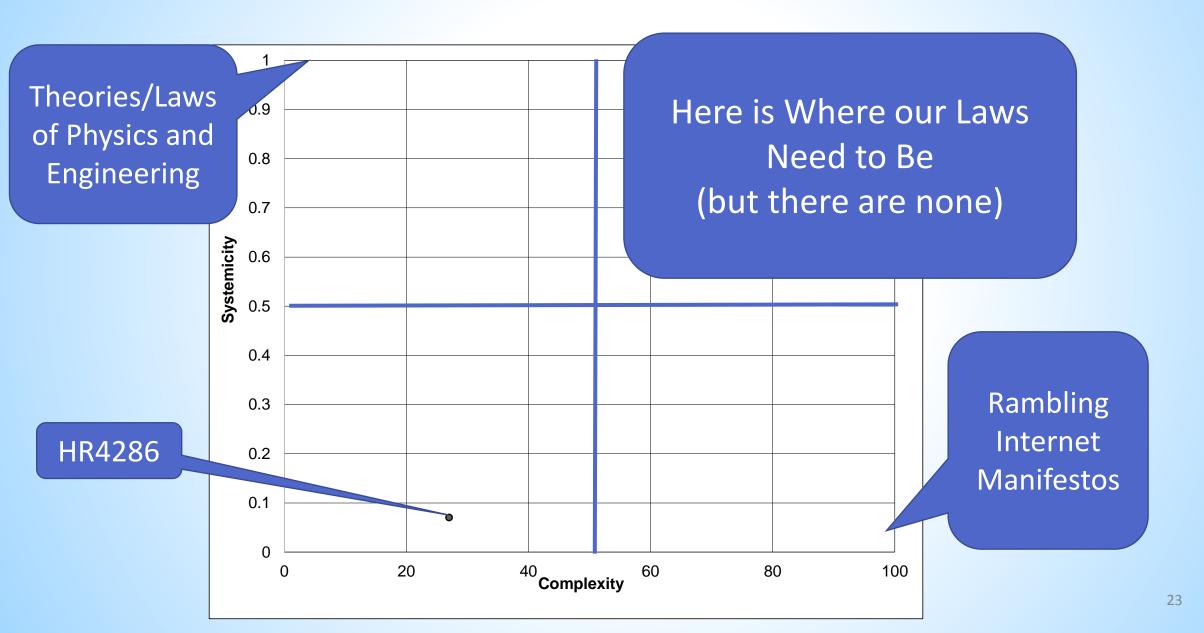
24 - Sec. 7001 - no Federal agency has the authority to regulate greenhouse gasses under current law

25 - Sec. 7001 – no attempt to regulate greenhouse gasses should be undertaken without further Congressional action

27 - Sec. 8001 – revenue generated from the development of the natural resources in the United States should be used to reduce the national debt

26 - Sec. 8001 - the national debt being over 11 \$17,000,000,000,000 in 2014— threatens the current and future prosperity of the United States; undermines the national security interests of the United States; and imposes a burden on future generations of United States citizens;

# Placing HR 4286 into Perspective



#### Objective Measures of Related Issues (anon. reviewer)

- 1. the problem that the law addresses
- 2. the size and nature of the problem
- 3. the priority of the problem for solution vis-a-vis other problems
- 4. the design method used to create the law
- 5. the purpose of the law in terms of a measurable outcome
- 6. the costs of the law (R&D, enforcement, courts, drain from treasury, etc.)
- 7. the negative side effects of the law (environmental impact, economic risk to citizenry, violation of the constitution...)
- 8. citation of all references / methods / data bases
- 9. IPA The internal structure of the text of the law

#### Conclusion & Recommendation

 IPA provides the only objective method for evaluating the internal structure of proposed laws

 Good structure, which can be measured with IPA, should be adopted as an ISO standard (in conjunction with other data-based approaches)



FOUNDATION FOR THE ADVANCEMENT OF SOCIAL THEORY





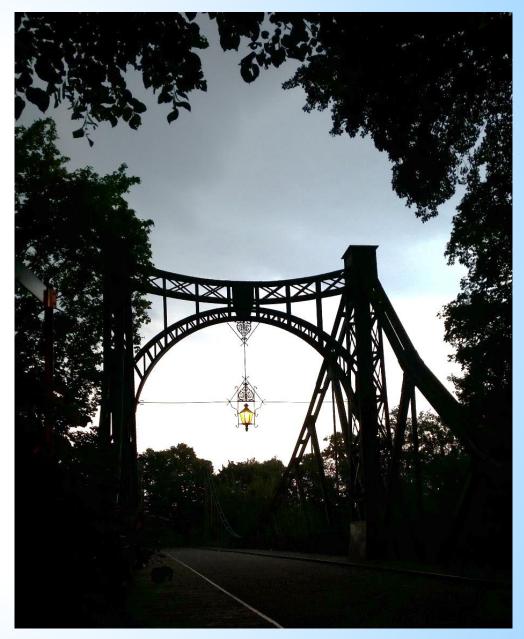


#### Thank You

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#### General McChrystal

Complexity = 101 Systemicity = 0.71

