

# Shifting the paradigm in chronic disease prevention from attribution to adaptation: What data do we need?'

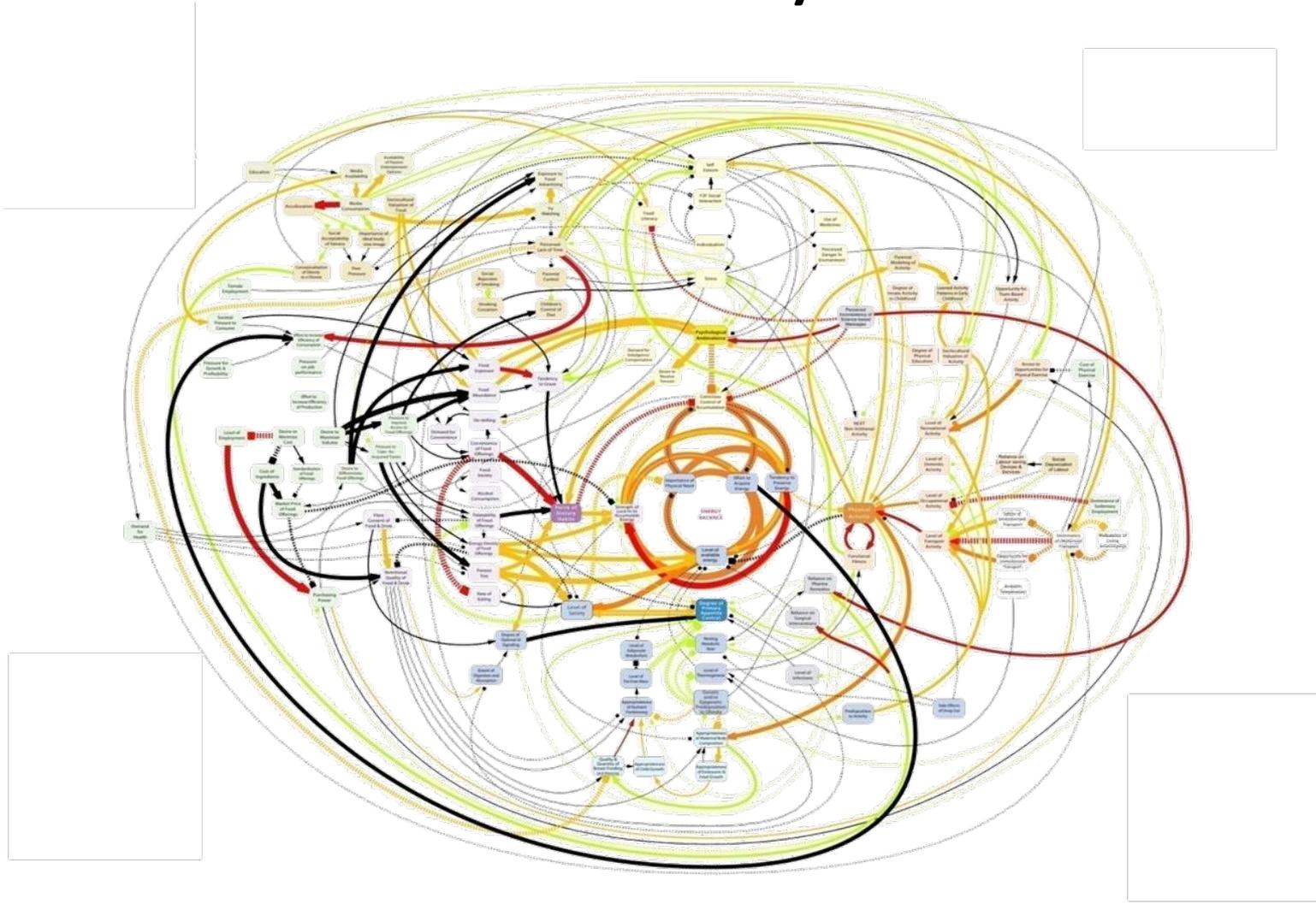
Diane T. Finegood, PhD  
President and CEO

Michael Smith Foundation for Health Research  
@DTFinegood

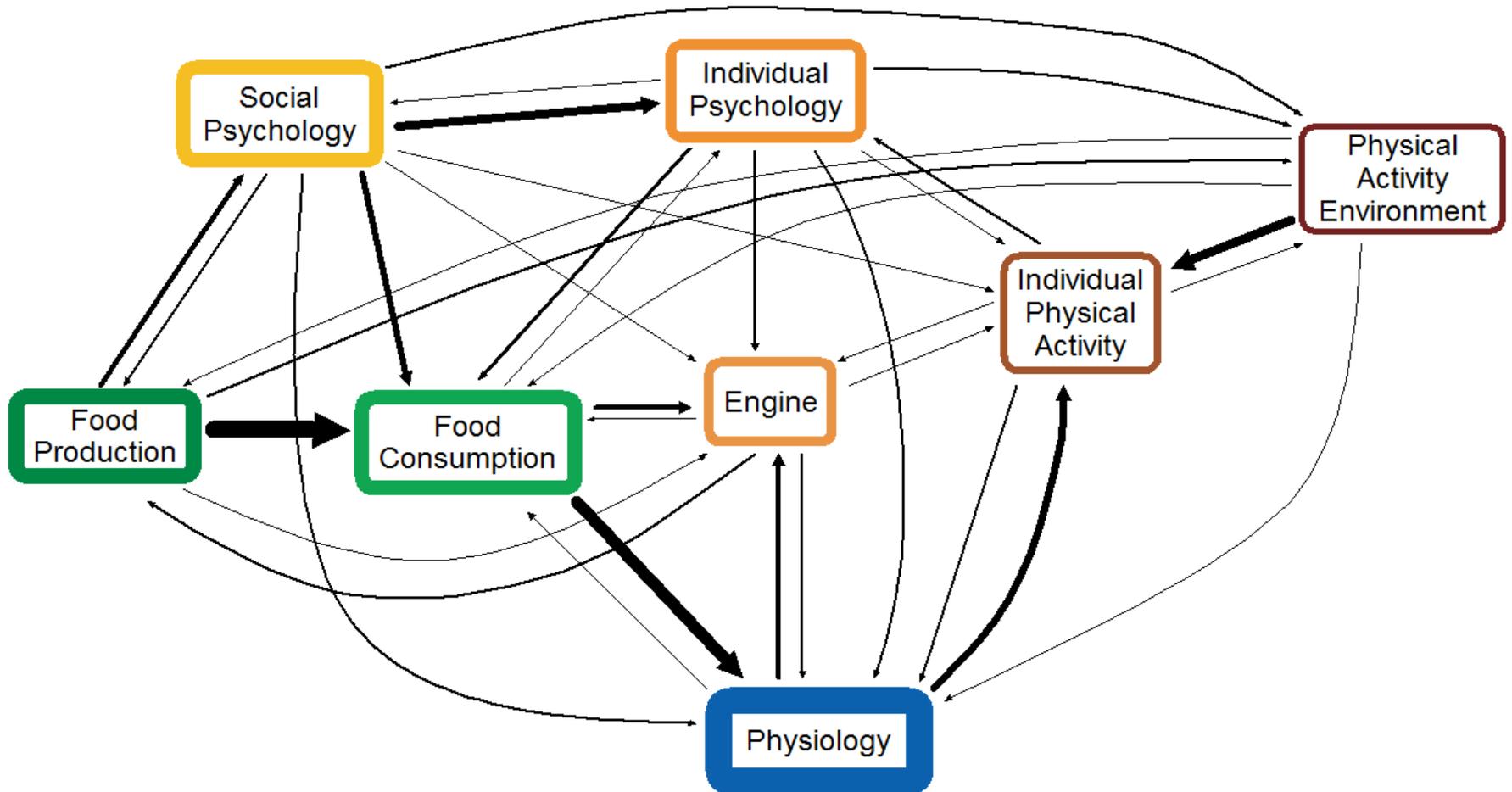


Discover. Connect. Engage.

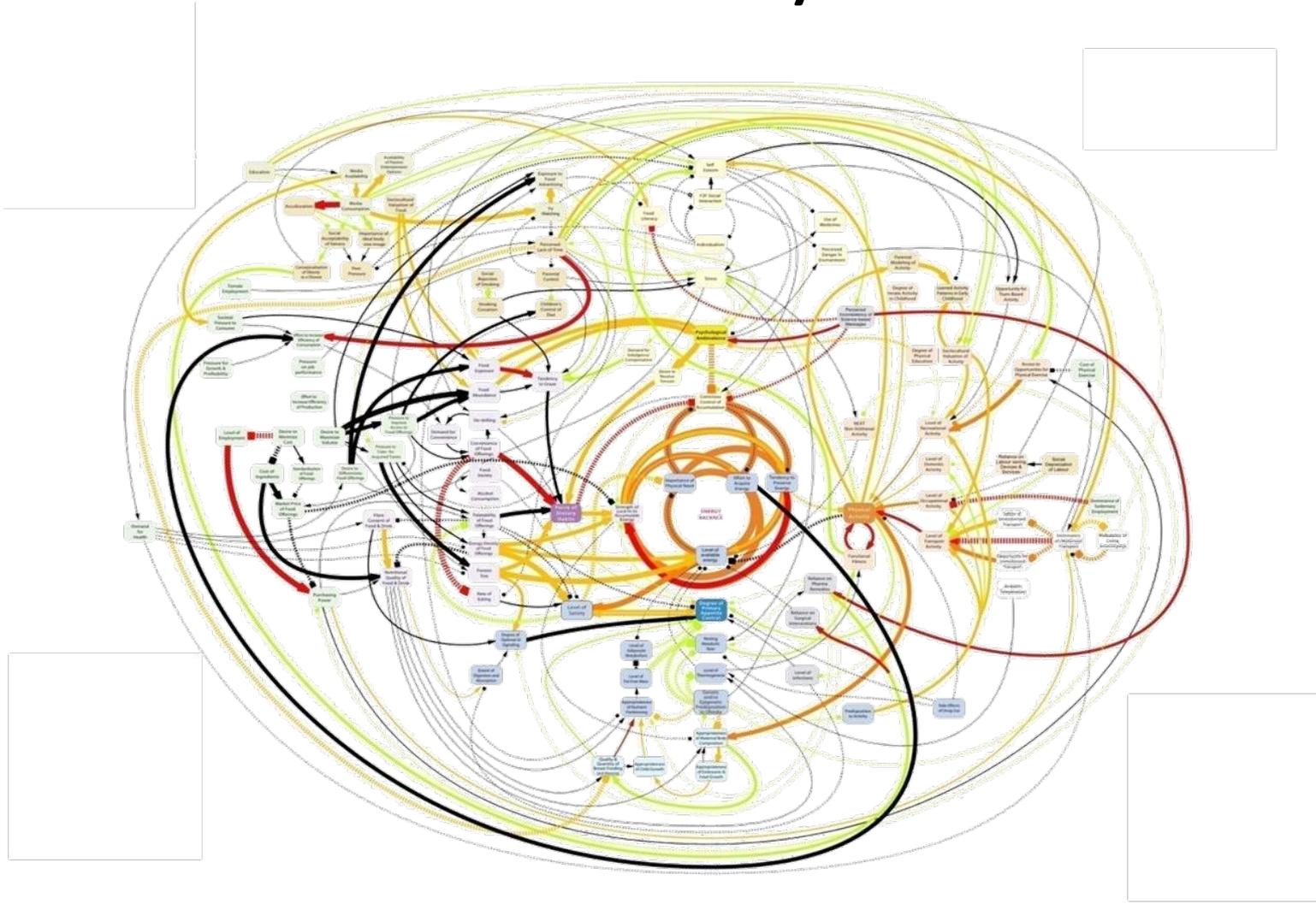
# Prevention System



# Subsystems Map



# Prevention System

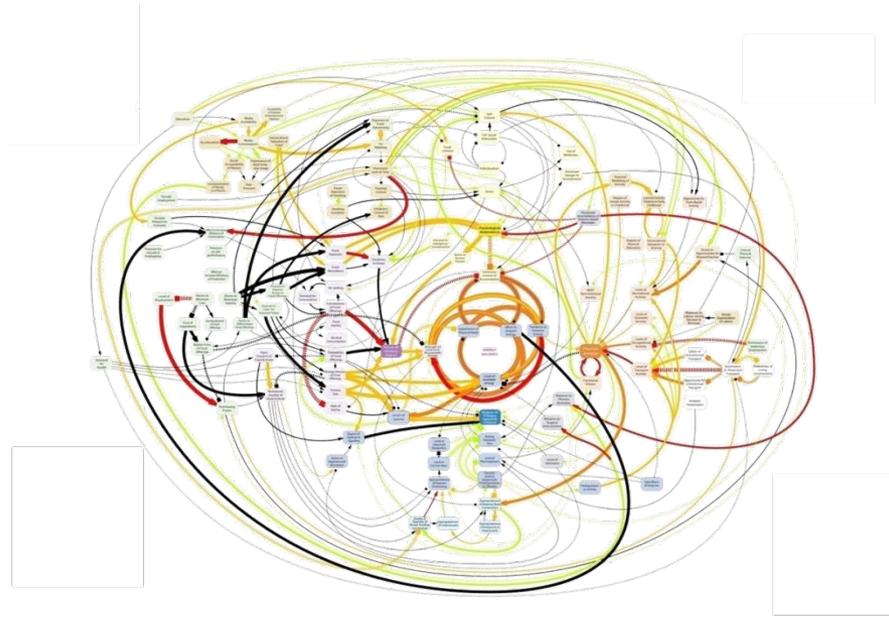
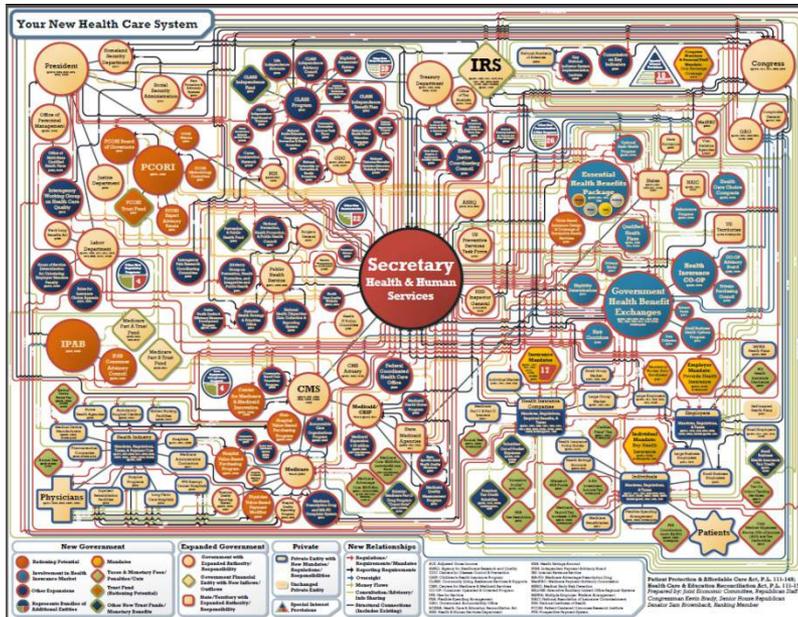




# Heuristics Matter

Complicated

Complex



# Characteristics of Systems

| <b>Simple or Complicated Systems</b>       | <b>Complex Systems</b>       |
|--|------------------------------|
| Homogeneous                                | Heterogeneous                |
| Linear                                     | Nonlinear                    |
| Deterministic                              | Stochastic                   |
| Static                                     | Dynamic                      |
| Independent                                | Interdependent               |
| No feedback                                | Feedback                     |
| Not adaptive or self-organizing            | Adaptive and self organizing |
| No connection between levels or subsystems | Emergence                    |

# Common Responses to Complex Problems

- Retreat
- Despair
- Believe the problem is beyond hope
- Assign blame, figure out who is responsible
- Simple solutions
- Galvanize our collective efforts and invest significant resources

# Solutions for Complex Problems

- A reductionist paradigm is not that helpful
- Move from attribution to adaptation
- Support individuals / individuals matter
- Match capacity to complexity
- Set functional goals
- Assess effectiveness
- Build shared measurement platforms
- Distribute decision, action, & authority
- Establish networks and teams
- Build authentic trust
- Utilize the relationship between cooperation and competition
- Act locally, connect regionally and learn globally
- “Help it” happen rather than “make it” or “let it” happen

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# Attribution is a cornerstone of evidence-based medicine



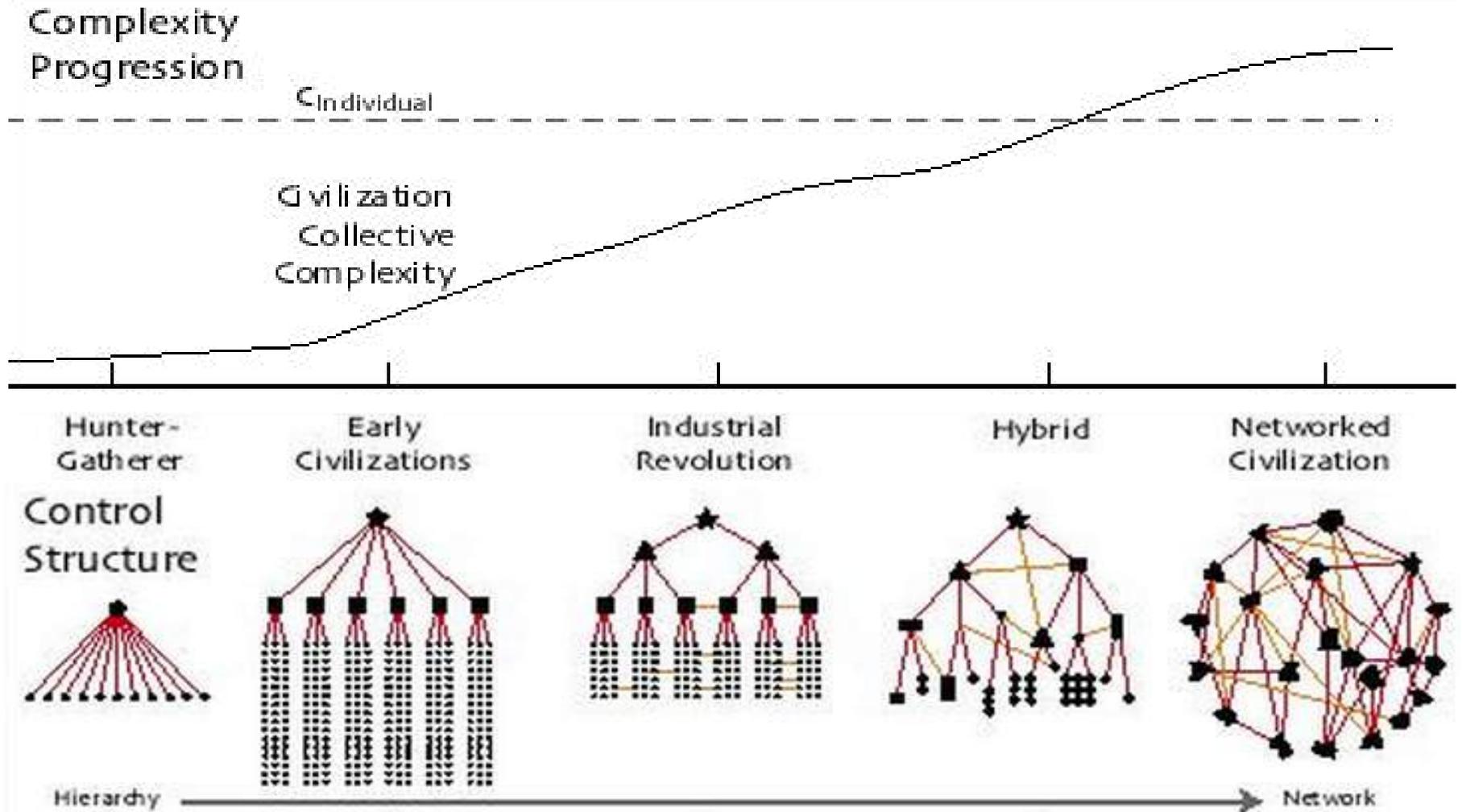
# Are paradigms of evaluation or QI more helpful?

|                 | Research   | Quality Improvement   | Program Evaluation   |
|-----------------|--|---|--|
| Purpose         | Generalizable new knowledge incl facts, theories, principles.  | Inform decisions, identify improvements in internal processes and practices, determine program success                  |  |
| Benefits        | May not be any to participants; results can be generalized to future populations with same characteristics | For decision-makers who use findings to make improvements; results not usually generalized outside of existing practice |  |
| Extra variables | Try to control or measure them   | Acknowledge them, but do not try to interfere   | Use multiple lines of evidence to answer eval questions and minimize confounding results |
| Length          | It will take considerable time   | Done quickly through rapid cycles   | Depends on size and scope of program   |



**NEW  
PARADIGMS  
AHEAD**

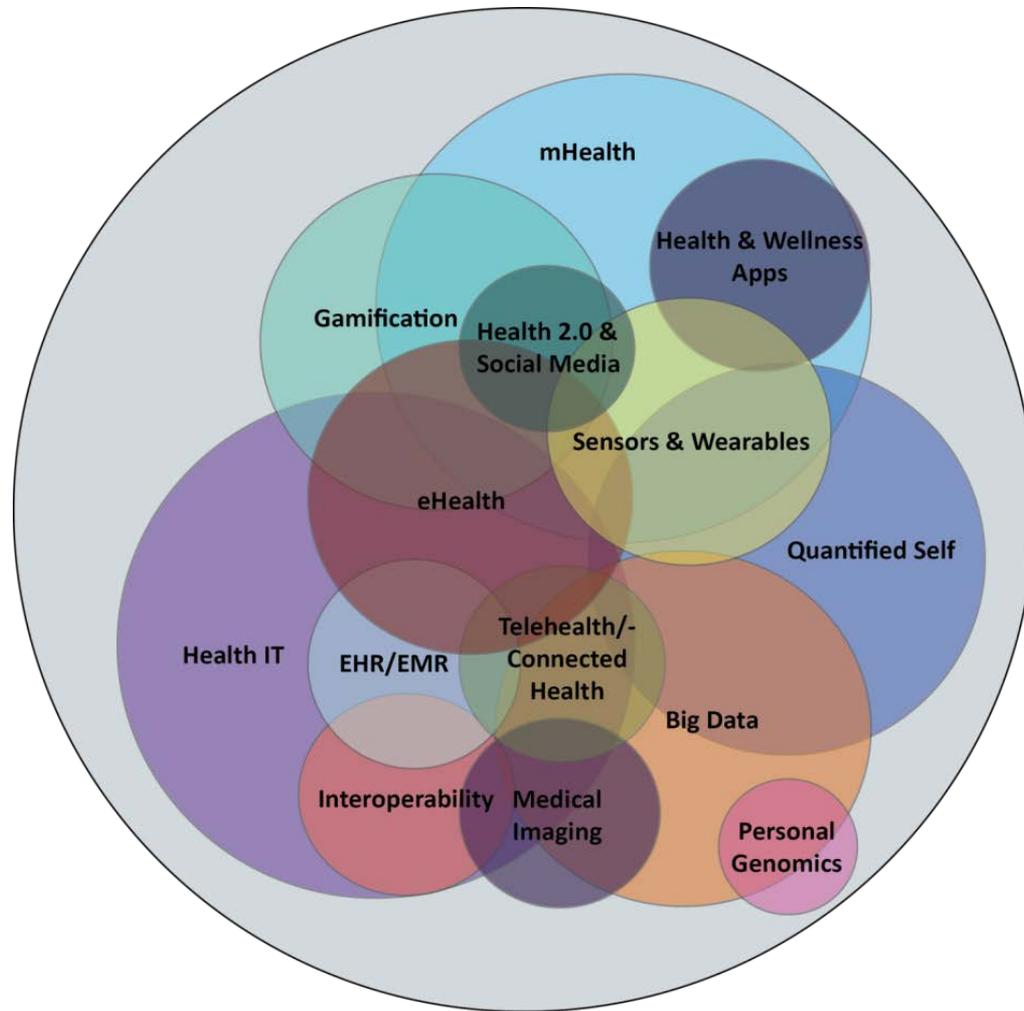
# Complexity is growing



# Patient-Centred / Personalised Healthcare



# Digital Health Landscape



Adapted from Nuviun

Change is coming whether  
we like it or not!

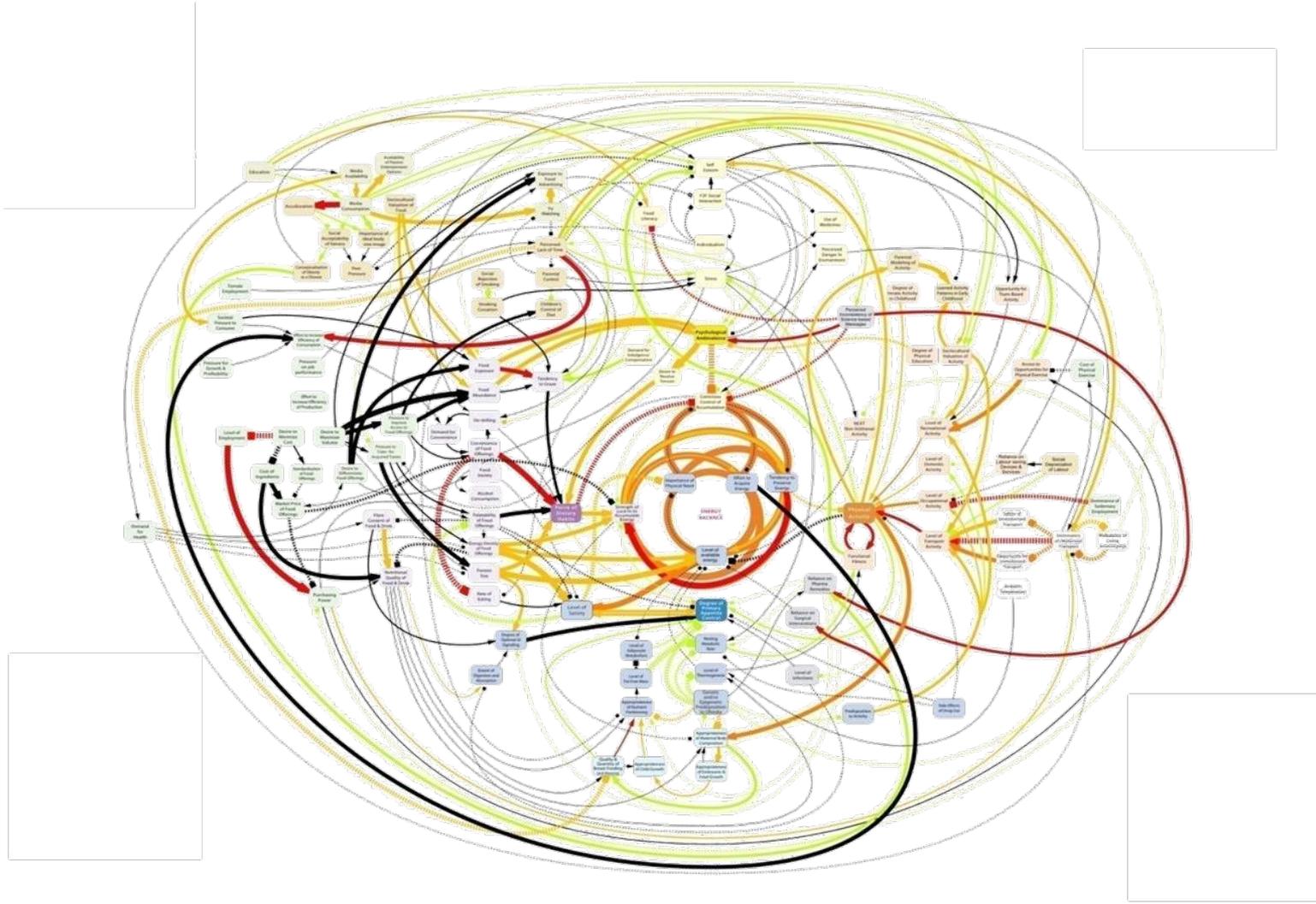


[dreamstime.com](http://dreamstime.com)

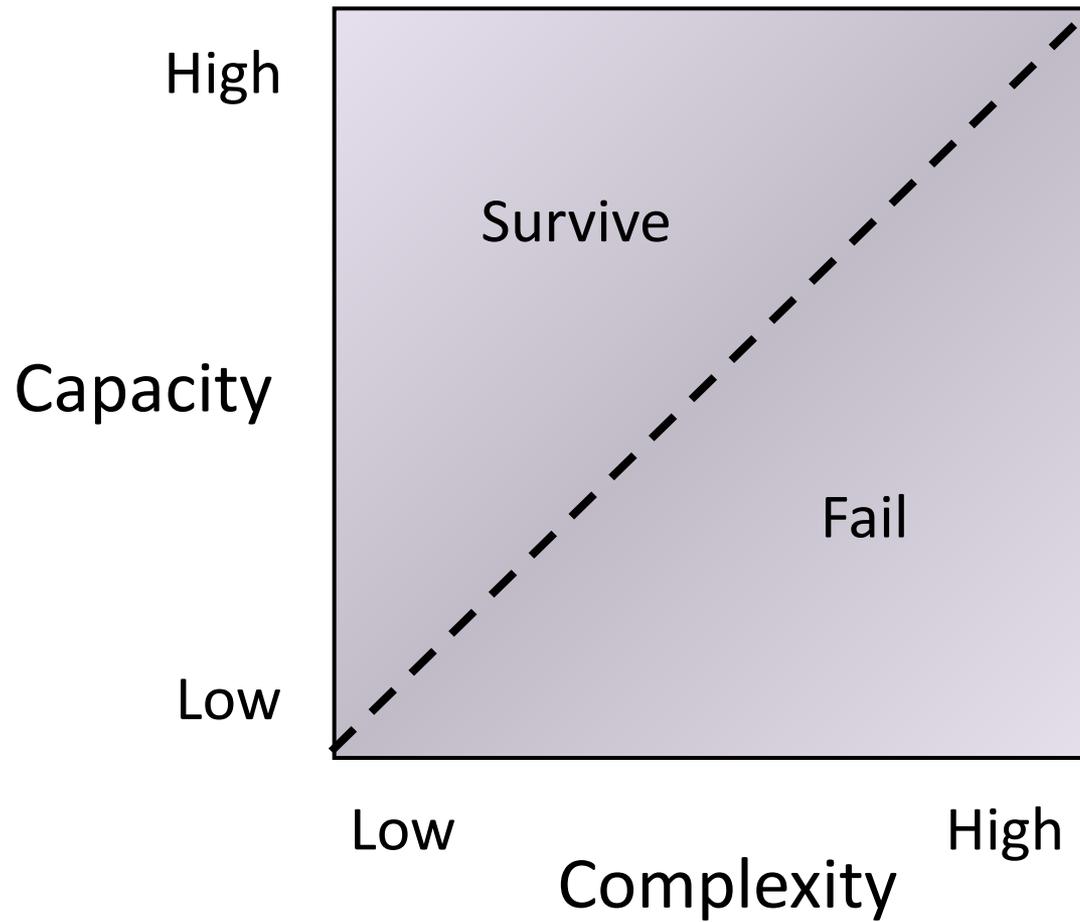
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# Individuals Matter



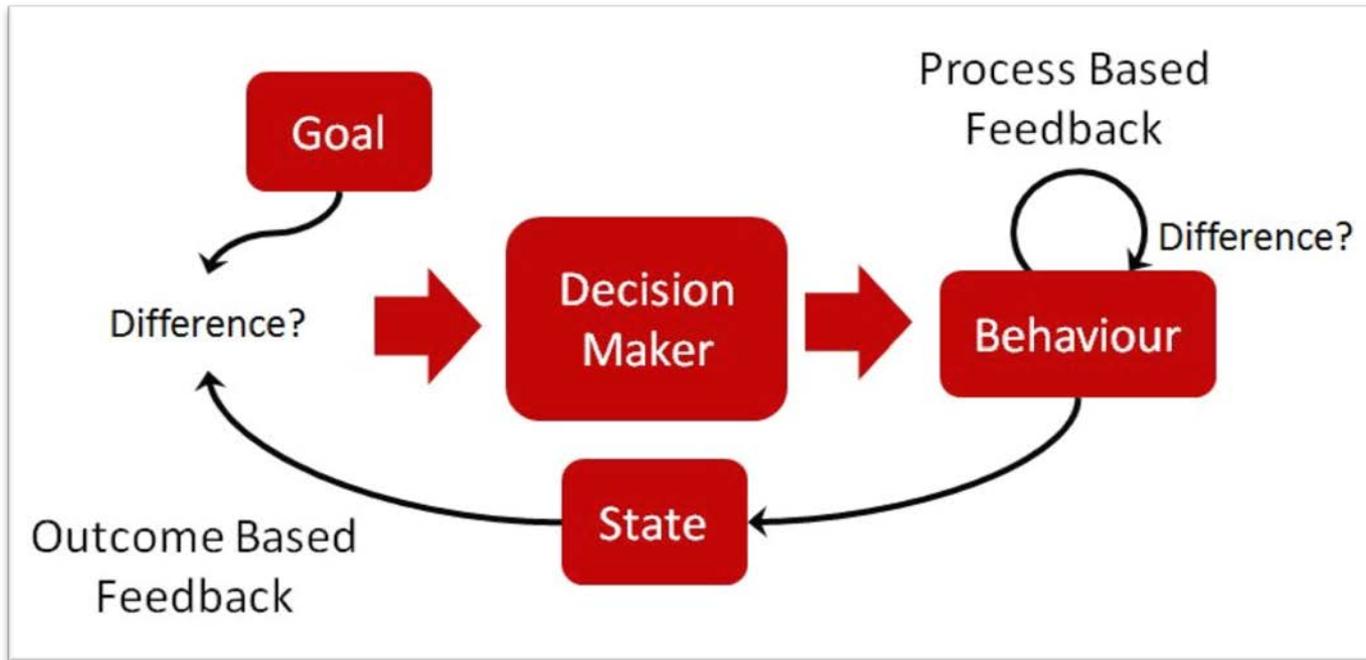
# Match individual capacity to complexity



# Solutions for Complex Problems

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# Targets vs Functional Goals



## Outcome Goals/Targets

- End result
- Longer timeline; risk oscillation
- Indirect information

## Process / Functional Goals

- Information about action
- Shorter timeline; reduces risk of oscillation
- Direct information for action

# Examples of Function Over Form

| Principle of Intervention         | By Form   | By Function   |
|-----------------------------------|---|---|
| To educate patients about obesity | All sites distribute the same written information | All sites devise ways to distribute information tailored to local literacy, language, culture and learning styles |

# Types of shared measurement

- **Shared measurement**
  - A common online platform for data capture and analysis, including field-specific performance or outcome indicators
- **Comparative Performance**
  - A common online platform for data capture and analysis in which all participants within a field use the same measures, uniformly defined and collected
- **Adaptive Learning**
  - An ongoing participatory process that enables all participants to collectively measure, learn, coordinate, and improve performance

# Benefits of shared measurement

|   | Shared measurement | Comparative performance | Adaptive learning |
|---|--------------------|-------------------------|-------------------|
| Primary benefit                               | ↑efficiency        | ↑knowledge              | ↑impact           |
| Cost savings                                  | √                  | √                       | √                 |
| Improved data quality                         | √                  | √                       | √                 |
| Reduced need for grantee evaluation expertise | √                  | √                       | √                 |
| Greater credibility                           | √                  | √                       | √                 |
| More knowledgeable funding decisions          |                    | √                       | √                 |
| Ability to benchmark against peers            |                    | √                       | √                 |
| Improved funder coordination                  |                    | √                       | √                 |
| Improved coordination & strategic alignment   |                    |                         | √                 |
| Shared learning & continuous improvement      |                    |                         | √                 |

# Solutions for Complex Problems

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- **Distribute decision, action, & authority**
- **Establish networks and teams**
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# Establish networks and teams

| Sponsorships         | Alliances                 | Partnerships          |
|----------------------|---------------------------|-----------------------|
| independent          | interdependent            | interconnected        |
| transactional        | collaborative             | co-ownership          |
| information exchange | resource exchange         | resource optimization |
| low cost, low risk   | limited costs, staff time | leverage leadership   |
| equity valued        | equity needed             | equity is core        |

# Build Authentic Trust

- **Simple Trust**
  - Devoid of suspicion, demands no reflection, no conscious choice
  - Can't be recovered if it is lost
- **Authentic Trust**
  - Mature, articulated, carefully considered
  - Recognizes possibility of betrayal and disappointment
  - Must be continuously cultivated
- **Cordial Hypocrisy**
  - Façade of goodwill and congeniality that hides distrust and cynicism
  - Destructive to teamwork
  - Makes honest communication impossible

# Trust Reduces Complexity

- Trust is a way of dealing with complexity.
- High trust societies are able to form wide-reaching and successful cooperative partnerships.
- Low trust societies tend to be economic disaster areas and terrible places to live.

# Solutions for Complex Problems

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# Utilize the relationship between cooperation and competition

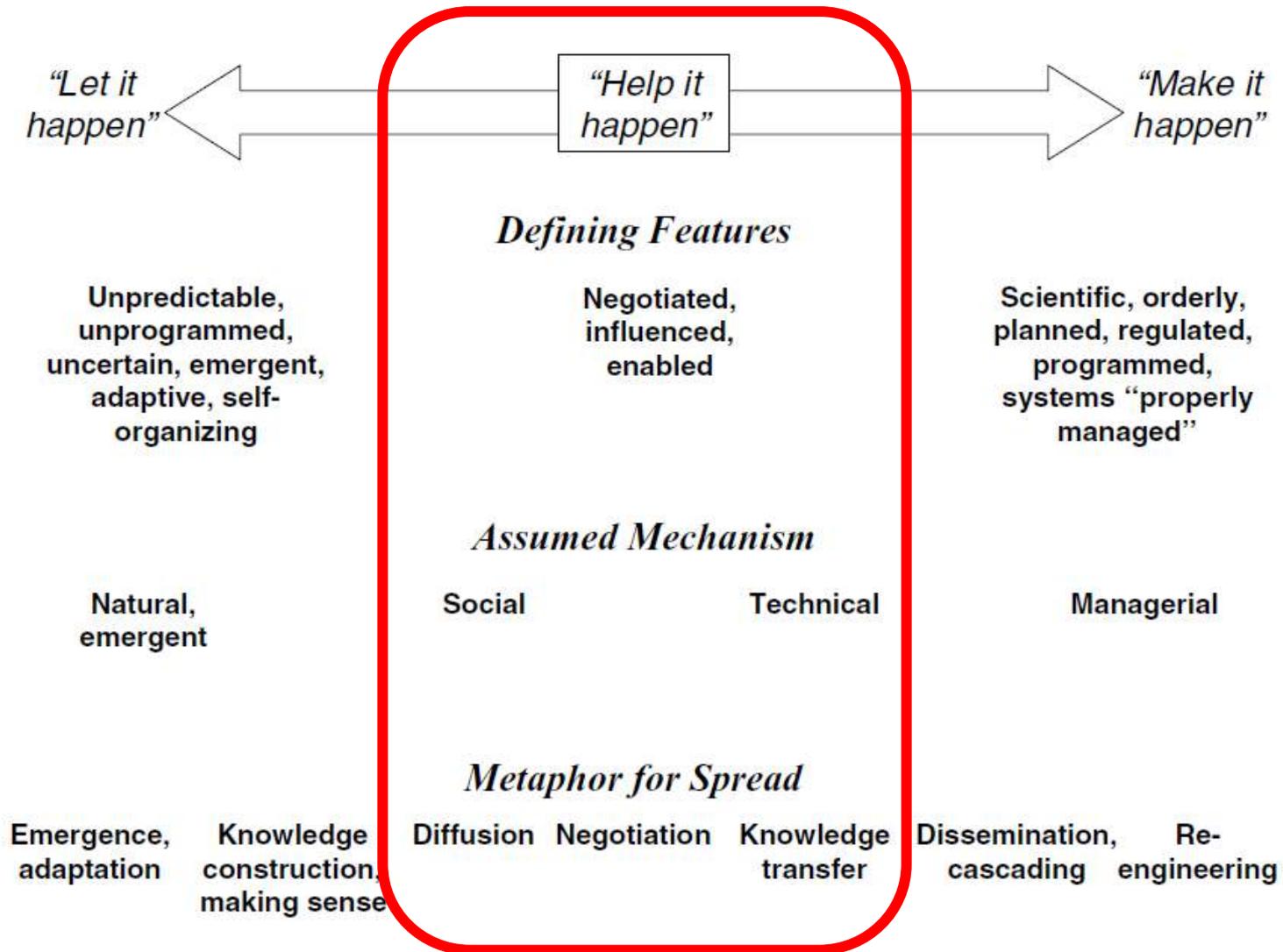


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# Act locally, connect regionally, learn globally

- **Stage 1 – Networks:**
  - self-organized, based on self interest
  - have fluid membership
- **Stage 2 – Communities of Practice:**
  - also self-organized, but people commit to be there for each other
  - used to share knowledge and to intentionally create new knowledge
  - good ideas move rapidly amongst members
- **Stage 3 – Systems of Influence:**
  - can't be predicted; sudden appearance
  - pioneering efforts at the periphery suddenly become the norm
  - policy/funding debates include perspectives/experiences of pioneers
  - critics suddenly become chief supporters

# Diffusion of Innovation



# Solutions for Complex Problems

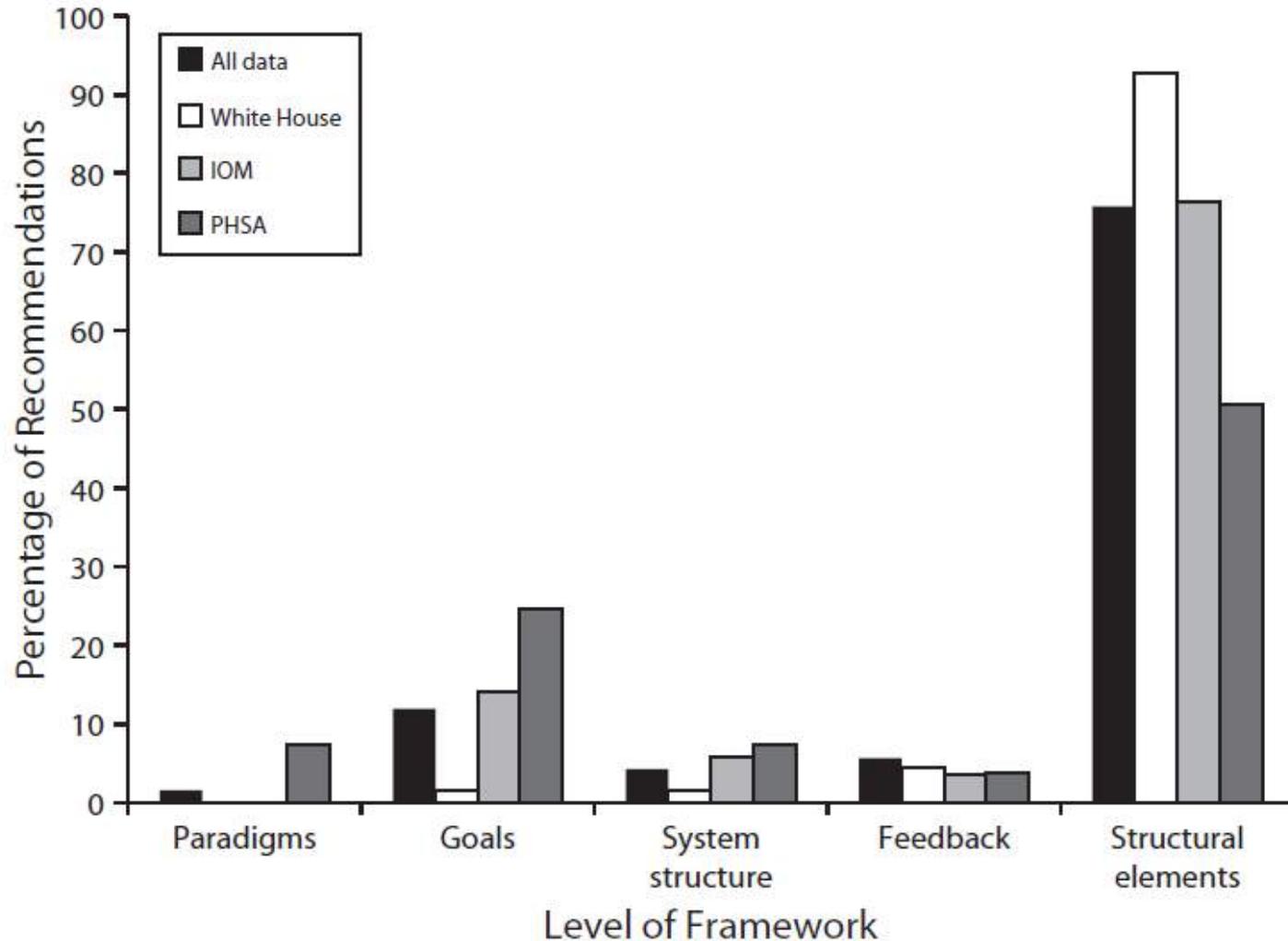
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# Intervention Level Framework



| Level               | Definition                                  |
|---------------------|---|
| Paradigm            | Deepest held beliefs                        |
| Goals               | What trying to achieve                      |
| Structure           | Information flows, connectivity, trust      |
| Feedback & delays   | Self-regulation, reinforcement & adaptation |
| Structural elements | Subsystems, actors, operating parameters    |

# Where do we act and have evidence?





| Level               | Definition   |
|---------------------|--|
| Paradigm            | <ul style="list-style-type: none"><li>• Accept complexity</li><li>• Move from attribution to adaptation</li><li>• Move from reductionist to integrative</li><li>• “Help it” not “let it” or “make it” happen</li></ul> |
| Goals               | <ul style="list-style-type: none"><li>• Support individuals; match capacity &amp; complexity</li><li>• Set functional goals</li></ul>  |
| Structure           | <ul style="list-style-type: none"><li>• Establish networks and teams</li><li>• Distribute decision, action, authority</li><li>• Build authentic trust</li></ul>  |
| Feedback & delays   | <ul style="list-style-type: none"><li>• Assess effectiveness</li><li>• Build shared measurement platforms</li><li>• Utilize relationship between cooperation &amp; competition</li></ul>                               |
| Structural elements | <ul style="list-style-type: none"><li>• Act locally</li></ul>  |