THE HARD FACTS OF SOFT SOCIAL SYSTEMS:
A GENERAL SYSTEMS EXPLANATORY MODEL FOR

SCHOOLS AND WORKPLACES

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Science offers useful laws and principles for how things behave: the hard sciences.

Science offers conflicting models for how people behave: the soft sciences

This paper identifies the hard facts of soft social systems: the laws and behaviors in a school, workplace, or social system in three key parts: TPO (to be revealed)
Cycle of Increasing Negative Outcomes

- never ending and ongoing new pressures on teachers
- increased internal reform efforts, from non-teaching credentialed personnel
- educator burnout, survival behavior
- lowered ability in the classroom
- exit from the classroom
- exit from the system
- poor classroom quality
- new school quality mandate quality

TRADITIONAL HARD SYSTEMS

19 + 1 = 20

SCHOOLS

19 + 1 = 18
Paradigms: **Scientific (hard)**,**Prescientific (soft)**

**Old Paradigms**
- The world is flat
- The sun revolves around the earth
- Some races are superior to others
- Men are superior to women
- Children should be seen and not heard (home)
- Children are empty vessels to fill (school)

**New Paradigms**
- The world is round
- The earth revolves around the sun
- No race is superior; diversity is valuable
- No gender is superior; diversity is valuable
- Children are active participants in the family
- Children are active participants in their learning
The Old and New Paradigms in Education and Management

**LEGEND:**
- **T** = teacher, principal, CEO
- **K** = knowledge, subject matter, agenda
- **SS** = students, staff, workers

Old Paradigm

Principal, CEO installs agenda in teachers, workers.

New Paradigm?

SS directs their own work. Principal or CEO role is unclear.

T installs K in SS.

Old Paradigm
Top Down and Bottom Up as Opposite Paradigms in Management and Reading Theory

<table>
<thead>
<tr>
<th>PARADIGM</th>
<th>MANAGEMENT THEORY</th>
<th>INSTRUCTION THEORY: READING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Old Paradigm</strong> (out of favor)</td>
<td><strong>top down</strong> - the CEO (T) makes key decisions</td>
<td></td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td><strong>New Paradigm?</strong> (in favor)</td>
<td><strong>bottom up</strong> - the front line workers (SS) are involved in key decisions</td>
<td></td>
</tr>
</tbody>
</table>
Public Education Illustrated as The Tower of Babel
My Initial Findings as a Teacher Turned Detective

The Need:
A repeatable, verifiable, scientific paradigm to explain behavior in social systems in order to better understand and improve classrooms and meetings in schools, workplaces, communities, and so forth.

The Audience:
All school and social system decision makers: teachers, principals, superintendents, parents, students, theoreticians, researchers, lawmakers; CEOs, managers, employees; presidents, kings, citizens, and so forth.
Boulding’s 9 System Levels To Explain School Behavior

AHA! This is why 19 + 1 = 18 with mandated school reforms!
Boulding’s 9 System Levels Linked to Organization Theory

Most theoretical models

Few theoretical models

Not even the rudiments of theoretical models exist past level 4.

This might be a top view of a theoretical representation
The Properties of Boulding’s 9 System Types

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>frame work</td>
<td>clock work</td>
<td>thermostat</td>
<td>open cell</td>
<td>blueprint</td>
<td>image-aware</td>
<td>symbol-processing</td>
<td>social school</td>
<td>transcendental</td>
</tr>
</tbody>
</table>

+ a measure of info
self-regulates to external criteria

+ time

+ more internal criteria (genetic info)
+ self-regulates to internal criteria

+ five senses
+ read, math, thumb

+ changeable or no boundaries

This might be a side view of a theoretical representation
Theoretical vs. Physical Representations

(p. 9, 10)

(Individual level)
(student, teacher or other school stakeholder)

(Pair level)
(student & student; student & teacher; student & parent, etc.)

(Room level)
(classroom or staff meeting room)

(Building level)
(school building or district office)

(Organization or institution level)
(school & environment)

(World level)
(schools and education in the modern world)

(level 7 human)

(---<level 8------------------------ social systems------> )
The Power and Agency Within a Social System

HARD FACTS OF SOFT SYSTEMS

- Changeable boundaries
- Capacity for choice, valuation, reflection
- Fixed boundaries
- Biological behavior depends on each individual's needs, abilities, perceptions, choices

Individual Goals
- Transcendence
- Self-actualization
- Achievement
- Belonging
- Safety, survival

Organizational Goals
- Transcendental
- Symbol-processing
- Image-aware
- Blue-print

Open Self-regulates to internal information
- Pick-up, intake

Self-regulates to external information

Thermostat
- Self-regulates to external information

Clockwork framework

5 senses
- Perception
- Complex genes
- Instinct

Time
- Space

Input
A Social System Theory for all School Decision-Makers

<table>
<thead>
<tr>
<th>Things</th>
<th>People</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>THINGS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>framework</td>
<td>clockwork</td>
<td>thermostat</td>
</tr>
<tr>
<td>open (cell)</td>
<td>image aware (animal)</td>
<td>symbol processing (human)</td>
</tr>
<tr>
<td>blue print (plant)</td>
<td>social (school)</td>
<td>transcedent</td>
</tr>
<tr>
<td>externally regulated and/or designed</td>
<td>self-regulates to external criteria</td>
<td>self-regulates to internal criteria</td>
</tr>
<tr>
<td>fixed boundaries</td>
<td>intangible changeable boundaries</td>
<td>fixed boundaries</td>
</tr>
</tbody>
</table>

Things, People and Outcomes are terms suitable for ALL school participants!
TPO Social System Theory for Everyone

Things P People O Outcomes
In transcendent social systems, people are easily meeting their personal needs / goals (level 7): New unanticipated social goals (level 8) emerge.

In average social systems, people are meeting some of their needs & goals: Some social function is evident.

In failing social systems, almost no social function is evident. People are working towards level 7 goals: at the top, for personal wealth & promotions; at the bottom, for survival & safety.
NEW SCIENTIFIC LAWS

SOCIAL SYSTEM BEHAVIOR

In a social system such as a school or organization, the available resources or *THINGS* (levels 1-3) will be used by *PEOPLE* in the system to meet their own self-determined needs and goals (levels 4-7), according to their own individual interests and differences, whether inherent or developed (level 5), their own immediate perceptions from among conflicting stimuli (level 6) and their short or long term choices (level 7). It is a natural hard scientific fact (physics, not ethics) that *PEOPLE* must meet their individual needs (level 1-level 7) before the needs of the organization (levels 8-9) which determines *OUTCOMES*.

SOCIAL SYSTEM DESIGN

In a social system such as a school or other organization, *THINGS* (levels 1-3: resources, books, charts, buildings, schedules) must be designed and arranged so that *PEOPLE*, each at his/her own pace, can easily meet their self-determined *individual goals first* (levels 4-7) and then their organization’s goals for best *OUTCOMES* (levels 8-9).
How People Might Use their Energy (E) in Four Paradigms of Social Systems

Bureaucratic Paradigm
Laissez-Faire Paradigm
Unspecified New Paradigm
Boulding-Specified New Paradigm

intangibility
flexibility
adjustability
stability
TPO’s Fit with Other Theory

School System Theory. McREL (McREL.org)
TPO = Technical, Personal and Organizational Domains, (from Cordell and Waters, 1993).

Socio-Technical Theory recognizes the interaction between people and technology in workplaces.
Socio (Personal and Organizational) -Technical (Technical)

Critical Systems Theory clarifies that decision-makers’ viewpoints may not be simply plural, but coercive/conflicting. However, focusing on the imbalance in power may increase polarity. The TPO model avoids this issue by showing how to distribute resources, without illuminating the unequal distribution of resources.
5 Models of Activities for Large/Whole-Group Learning

**LEGEND:**
- **L** = Leader (teacher, meeting facilitator, employer);
- **ll** = learners (students, employees);
- **K** = knowledge, subject matter, opportunities for learning, classroom/work projects.

- ➡️ = old paradigm instruction or new paradigm display,
- New paradigm: 🔄 = learning, pickup;
- 📚 = ll; 🔴 = L

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[A] L “installs” K in ll. **Old Paradigm**

[B] ll direct their own learning. L’s role is unclear. **New Paradigm?**

[C] L displays K. ll pick up K as ready. **Boulding’s social system**

[D] L designs, displays, arranges, creates K in multiple ways. ll pick up K as ready. **Boulding elaborated**

[E] L is learner too; ll take on L roles. **The RoundTable**