

# CLARIFYING AND SUPPORTING ROOT CAUSES IN ORGANIZATION BEHAVIOUR: TOWARD A SCIENCE OF SOCIAL SYSTEMS

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## ABSTRACT

The aim of this paper is to identify root causes in human social system behaviour then discuss implications of these causes for understanding, designing, and managing large organizations. The need for clarifying root causes is clear. Science offers useful laws for how *things* behave, or the *hard* sciences, such as chemistry, physics, math and engineering. In contrast, science offers few and conflicting models for how *people* behave. Thus, there are the *soft* sciences, such as psychology, management, education, sociology, and economics. And there are the *soft* social systems such as schools and workplaces. Our current knowledge of soft social systems lies in many disciplines, and the knowledge within each discipline resides in silos, resulting in Tower-of-Babel communication across disciplines. Unintended, undesired, even harmful outcomes are frequent, especially in large organizations. The approach used in this investigation is narrative path analysis. Beginning with large social system outcomes as the unit of focus and dependent variable, a systems science explanatory lens is developed, and the path lands at the individual human system member as root cause, unit of focus and independent variable. The narrative path then proceeds back up to the large social system, with implications at multiple levels/sizes of system-- the pair, the room, small building, and then the multisite organization. The investigation gathers details via key concepts, literature, and evidence from relevant disciplines, including management, control systems engineering, psychology, adult learning theory, plus examples from large urban schools and workplaces. Metaphors and images are included to clarify the narrative with the goal of making sense to a wide diverse audience—including leaders, learners, workers, theorists, researchers, engineers, and policy-makers. Updated theory is that cause/agency of organization behaviour is not solely in the leader, nor the worker, but in both. Each system member, from janitor to CEO, from student to superintendent, learns and performs according to his/her own *willingness* and *ability*, resulting in almost infinite variability. A new *provide-pickup* relationship emerges. That is: The leader's role is to *provide* input, resources and tasks; the learner/worker role is *pickup* of input, each at his/her own rate. In spite of infinite variability, there is predictability. We can predict, with certainty, that each system member will pick up, learn and complete tasks, as he/she is *willing* and *able*. The *nature of pickup* described, a new issue emerges, *span of pickup*, at the level of the large social system-- adding an important new dimension to the concept of *span of control*. Namely, in large social systems, important input is beyond the pickup span of individuals. For example, it is easier for CEOs to care more about their children's college tuition than their employees' salaries. And, it is easier for front-line employees to care more about their weekly paycheck than the big picture goals of the organization, or for a cattle herder to care about the profit gained by adding a new animal to his herd than the big picture of overgrazing. *Ideal-based user-designed automated social control systems (IBUDASCS)* are proposed to allow organizations and system members to flourish. The cumulative meaning of *IBUDASCS* is constructed using the

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following examples: *Control Systems*-- When the temperature turns 65, the heater turns on; plus *Social*—When an employee is late, he/she makes up the time (Honor system, or supervisor controlled); plus *Automated* – When an employee is late, the information automatically goes to the time clock and payroll; plus *User-designed*-- People at each system level decide together their automated consequences (in alignment with suprasystem policy); plus *Ideal-based*-- The consequence is automated not to berate or punish, but to free up everyone’s time for more important matters.

Keywords: management, education, control systems engineering, general systems theory, social systems theory

### BACKGROUND

The aim of this paper is to identify root causes in human social system behavior then discuss implications of these causes for understanding, designing, and managing large organizations. The need for clarifying root causes is clear. Science offers useful laws for how *things* behave, or the *hard* sciences, such as math, physics, chemistry, and engineering. We know that  $19 + 1 = 20$ . We know about the laws of gravity. We know how to make water of two parts hydrogen and one part oxygen. We know how to design complex mechanical control systems, such as office thermostat systems and guided missiles. On the other hand, science offers few and conflicting models for how *people* behave. Thus, there are the *soft* sciences, such as psychology, management, education, sociology, and economics. And there are the *soft* social systems such as schools and workplaces.

A definition of science consists of three parts:

1. Science is the search for laws or principles that explain the world we live in. <sup>[1]</sup><sub>[SEP]</sub>
2. Laws and principles are explanations and facts that are repeatable and verifiable. <sup>[1]</sup><sub>[SEP]</sub>
3. These facts and explanations are those that a community of experts around the subject matter might agree on.

Thus, designs and change efforts to improve schools and workplaces that are scientific are to be based on principles, laws, explanations, and facts that are repeatable and verifiable and on which the experts agree.

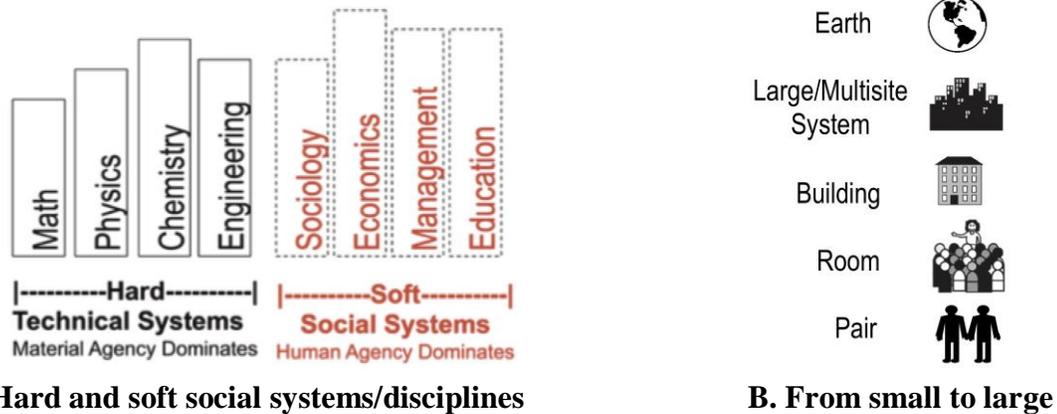
Our current knowledge of soft social systems lies in many disciplines, and the knowledge within each discipline resides in silos, (2016, Rousseau et al.) resulting in Tower-of-Babel communication across disciplines. Bolman and Deal (1990) find hope in systems theory, zooming in on the key need inspiring this investigation. They write

Systems theory ... comes closer than any other body of theory to becoming a general theory of systems.... however, ... because it aspires to encompass *all* systems, [it] has not developed concepts that are specific to *human* systems. (p. 232)

Figure 1A, inspired by Bolman and Deal’s insight, suggests a key difference between

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hard and soft systems, sciences, or disciplines, displayed horizontally. Left, in the hard disciplines, *material agency* dominates. Right, in the soft disciplines, *human agency* dominates.



**Figure 1. Two of Many Ways to Categorize Social Systems**

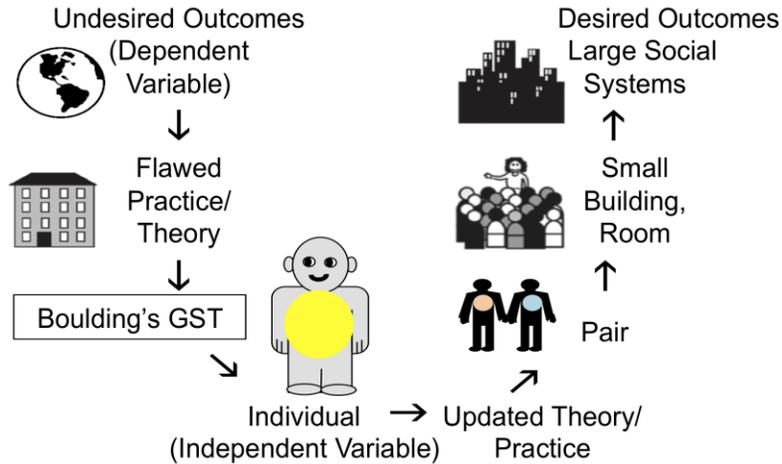
An initial simple way to frame and sort social systems is by their size, represented on a vertical continuum in Figure 1B. At the bottom is two people, the smallest social system—such as a CEO and employee; teacher and student; two friends; or husband and wife. At the top is the largest human social system—more than 7 billion people.

In a nutshell, this paper aims to glean out the hard facts, root causes or agency, of learning and behavior in organizations. Through lenses of general systems theory, root causes are found to be located within each human system member. Causes clarified and specified with evidence, knowledge, and details from relevant disciplines, updated insights and solutions are proposed for the understanding, predicting, designing, engineering, and managing of flourishing, evolving social systems, especially schools and workplaces.

## METHODOLOGY

The process used in this investigation is narrative path analysis. It begins with large social systems' outcomes as the unit of focus and *dependent variable* (top left in Figure 2). The path proceeds down to identify flawed or conflicting practices in common views of schools and workplaces. It then identifies the underlying theory and assumptions of these practices. Boulding's general system theory (GST) and systems science lenses are developed to explain and unify the conflicting perspectives, and the individual human system member is clarified as root cause, unit of focus and *independent variable*.

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**Figure 2. Narrative Path Methodology Illustrated in a U**

The narrative then path starts a return up the path toward the very large social system to update theory and practice, offering implications at multiple levels and sizes of social system--the pair, the room or small building, and the very large organization. The investigation is supplemented by key concepts, literature, and evidence from instruction and management. Other fields that enrich this discussion include control systems engineering, psychology, adult learning theory, economics, plus examples from large urban schools and workplaces. Graphics and images are offered to supplement and allow discussion of details or examples, along with the more grand-level principles, with the goals of making sense to a wide diverse audience. Figure 2 presents the path in a nutshell in a U. The following sections develop the path.

### DECLINING OUTCOMES IN LARGE SOCIAL SYSTEMS

In today's world, and especially over the last half century, revolutionary progress has been made in the technology within our large social systems, where material agency dominates. However, important dimensions have not kept up, those dimensions where human agency dominates, and our large social systems are in increasing social decline. This has frequently resulted in two outcomes captured in two images: the *Tower of Babel Effect* and the *19 + 1 = 18 Effect*. Examples are presented next from the two key social systems of interest in this paper—schools and workplaces.

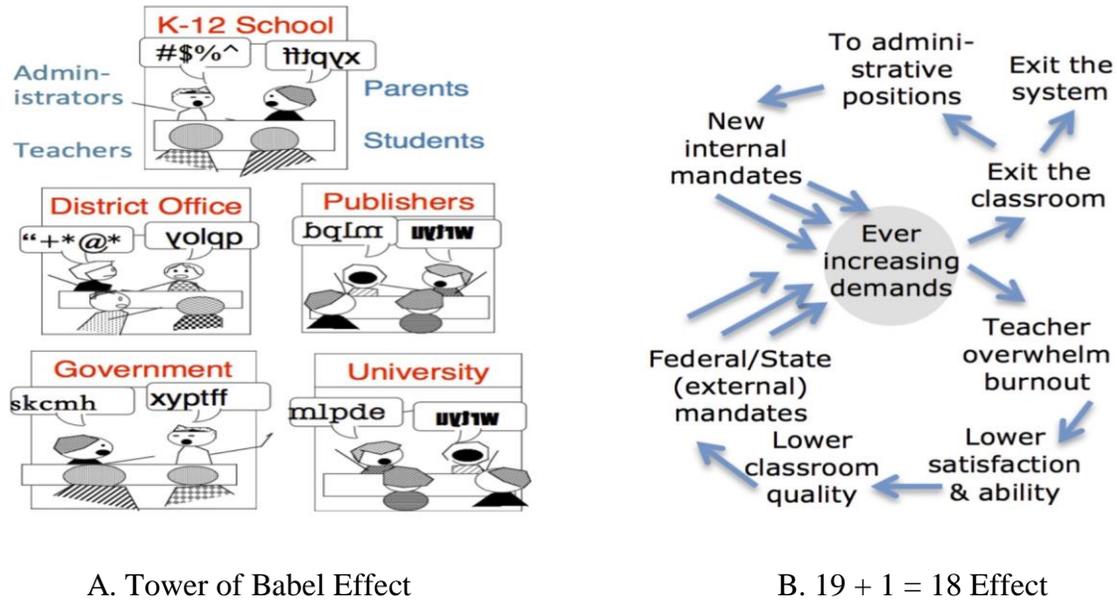
#### Schools

Public education is currently troubled by these two outcomes. Lack of collaboration time, plus differing viewpoints, especially at the various system levels (i.e., classroom, school, school district, state/federal departments of education) leave school decision makers unable to understand each other, resulting in the *Tower of Babel Effect* (Figure 3A).

Ever increasing demands (Figure 3B, shaded circle) leave teachers less able to address their students' needs, so school quality goes down, illustrated in the bottom clockwise

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cycle. The top counter clockwise cycle shows discouraged teachers leaving the classroom, perhaps leaving public education altogether, or to become administrators. In both cycles, desperate new policies are mandated too quickly for schools to keep up. The result is *the 19 + 1 = 18 Effect*: 19 (school quality) + 1 (new demand) = 18 (reduced school quality). Over three years, the process looks like 19 + 1 = 18 ... 17 ... 16. (Gabriele, 2014)



**Figure 3. Two Unintended Outcomes Illustrating Social System Decline**

Other educational scholars report similar findings. Sarason authored a book entitled *The Predictable Failure of Educational Reform* (1993). Silverman concluded that

... The reason the reform movement [in the 70's] failed was 'the fact that it's prime movers were distinguished university scholars'; ... what was assumed to be its greatest strength turned out to be its greatest weakness ... well-intentioned intelligent university authorities and 'experts' on education can be dead wrong. The reforms failed because of faulty and overly abstract theories not related or relatable to practice, limited or no contact with an understanding of the school. (Silverman in Fullan, 1991, p. 22)

### Workplaces

Many large workplaces have the same challenges. Bolman and Deal, researching workplace organizations, reported the following incident.

"We were once talking to a group of managers in a company with an extensive MBO [Management by Objective] program, and we asked them how MBO was working. The first answer was:

"We don't have MBO. We have MBT."

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“What is MBT?” we asked.

“Management by terror.” (1990, p. 80)

The Space Shuttle Challenger disaster is another example. According to the Rogers Commission, NASA's organizational culture and decision-making processes were key contributing factors to the accident, with the agency violating its own safety rules. NASA managers had failed to correct a potential design flaw, and engineers had failed to adequately report their concerns, (Wikipedia)

There is evidence of increasing decline in large social systems worldwide. In fact, human systems engineering is a field that came out of the crisis of the Swiss banking system. The findings were that "human risks" are a major problem in organizations (Wikipedia, 2015).

If these undesired outcomes, the  $19 + 1 = 18$  and Tower of Babel effects, are indeed reflective of large social systems of many types worldwide, then there is hope! It shows that there is predictability, that there are scientific laws at work in social systems. It's just that the underlying laws have not been fully specified.

Underneath these outcomes are flawed or inconsistent practices. Underneath these inconsistent practices are flawed, inconsistent and/or unconscious assumptions.

### Flawed Practice

Old paradigm, traditional or hard science thinking, illustrated as  $19 + 1 = 20$ , does not apply to social systems. A new paradigm is needed. However, efforts at detailing a new paradigm are muddled, resulting in two common conflicting paradigms and practices – one is often known as the *top-down directive* old paradigm, the other as the *bottom-up participatory* new paradigm. *Old paradigm* leaders might see the undesired outcomes. They try to improve their organizations by increasing their top-down efforts. *New paradigm* leaders realize that their staff or students all have different learning rates. They might overcorrect, in backlash, giving too much flexibility to employees or learners, resulting in the *laissez-faire* approach. The not-fully-specified new paradigm leader is unsure of his/her role.

### Flawed Theory

Hidden under the flawed, inconsistent practices are conflicting assumptions and theory. Old paradigm leadership assumes sole agency or cause of organization behavior is in the leader. Not fully specified new paradigm leadership assumes sole agency or cause of organization behavior is in the learner or employee. This is the either/or dilemma underlying much current conflicting, confused practice.

A first step in the path to the more fully specified new paradigm is this shift in agency-- from teacher to learner, from CEO to employee. But the shift in instruction/management theory is only a partial answer, resulting in the two conflicting camps: those who propose

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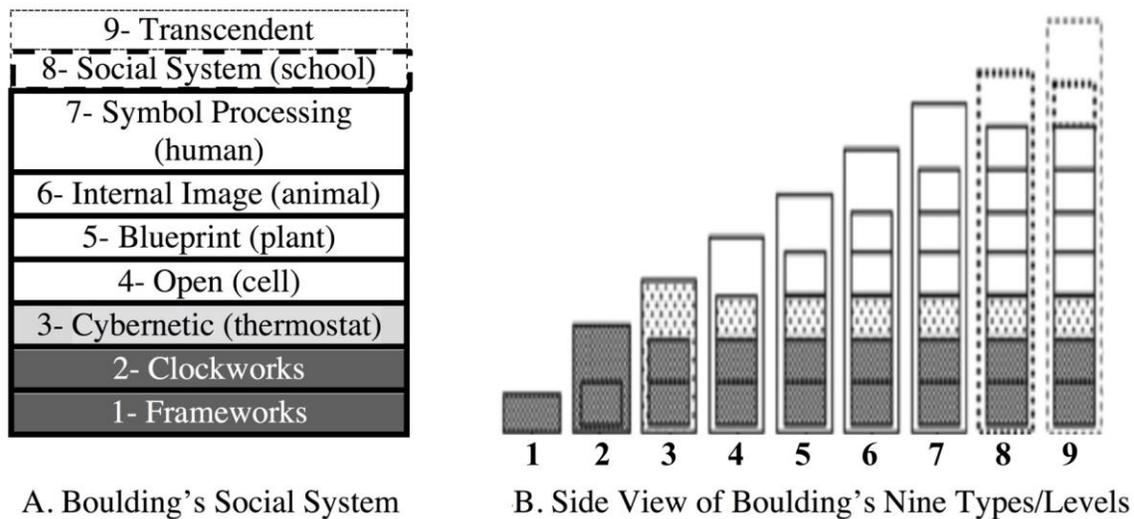
that the leader is sole agent and must control the supervised vs. those who argue that the supervised are agents of their own learning/performance and need total flexibility.

### SYSTEMS LENSES TO UPDATE THEORY

In this paper, satisfying resolution is proposed in an elaboration of Kenneth Boulding’s general systems theory (Boulding, 1956; Gabriele, 1997, 2014) supported by multiple system perspectives, especially the lenses of transdisciplinarity and hierarchy theory, and multiple knowledge bases/disciplines. Transdisciplinarity provides a wide view, development that will work across disciplines (e.g., earlier in Figure 1A). Hierarchy theory underpins a deep view, development that will work at multiple levels of a concrete organization (e.g., earlier in Figure 1B). Boulding’s skeleton of science is greatly appreciated. Scott called his nine levels “illuminating” (1986, p. 87). Checkland, called Boulding’s nine-level typology “convincing” (1981, p. 106) and that further elaboration of his levels would be of great value.

#### Boulding’s General System Theory

Kenneth Boulding’s nine-level social system is the foundation of this investigation. Boulding, a cofounder of general system theory, looked to nature to uncover the hard facts of soft social systems. He organizes the systems of the world into his nine-level typology of system complexity. In Figure 4A, from bottom to top, from most simple to most complex, each level adds a distinctive new property and is named by that property. Figure 4B illustrates how the levels are not only levels, but also systems, and that each system type is composed of all the levels, subsystems, below it.



**Figure 4. Boulding’s Nine-Level Typology and Social System**

Boulding’s nine-level social system unifies the conflicting camps. Top-down bureaucratic models assume all parts of a social system are designable. Laissez-faire models assume

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no parts are designable. Boulding's typology shows how both models have merit, clarifying also which parts of a social system are designable and which are not. Frameworks, clockworks, and control systems or "thermostats" (Levels 1-3 in Figure 4), are predictable, designable to *exteriorly prescribed criteria* (e.g., goals determined by a teacher, engineer, or CEO). Open, blueprint, image-aware, and symbol-processing parts (Levels 4-7) are not designable. These undesignable systems, organisms, act according to *interiorly prescribed criteria*—needs (Level 4: e.g., living cell), abilities (Level 5: e.g., plant), perceptions (Level 6: e.g., animal), and choices (Level 7: human)—of increasing variability. Level 7 system boundaries are mandatory; Level 8, optional (illustrated with dashed lines). Social and transcendent levels (levels 8-9) are even more variable. Level 7 systems (humans) can ignore the leader's input and even take opposite action. Thus, level 7 (individual) goals preempt level 8 (organization) goals. Individual humans can move from one level 8 system to another – changing their schools or workplaces. They cannot change their level 7 system – their physical body.

### **TPO Theory: Clustering Boulding's Nine System Levels into Three System Types**

In Figure 4B, note the two natural breaks that occur within the nine levels: [1] between levels/types 3 and 4 (gray vs. white, illustrating leader regulation vs. self-regulation), and [2] between levels 7 and 8 (solid vs. dashed lines, illustrating permanent vs. changeable boundaries). These breaks show that the nine level social system can be usefully reframed into three system types: Things (levels 1-3), People (levels 4-7), and Outcomes (levels 8-9). These are the elements of TPO Theory (i.e., Things/People/Outcomes).

TPO Theory has correspondence with other systems views. Cordell and Waters' categorize the three major facets of schools in a similar way (1993). Their three parts are also TPO--the *technical*, *personal*, and *organizational* domains. Sociotechnical theory recognizes the interaction between people and technology in workplaces. TPO divides the "socio" into two components: personal goals and organizational goals. Thus, the two dimensions of sociotechnical systems are divided into three dimensions: technical = (1) things/technology (T); and social = (2) personal needs, goals, and outcomes (P), and (3) organizational needs, goals, and outcomes (O).

An intention of TPO Theory is to identify, clarify, and focus attention on the different behavior laws underlying Things, People and Outcomes and the *technical*, *personal*, and *organizational domains*. TPO Theory offers the following hypotheses: the first, for description/analysis of social system behavior; and the second, for prescription/design of social systems.

#### *TPO Description/Analysis*

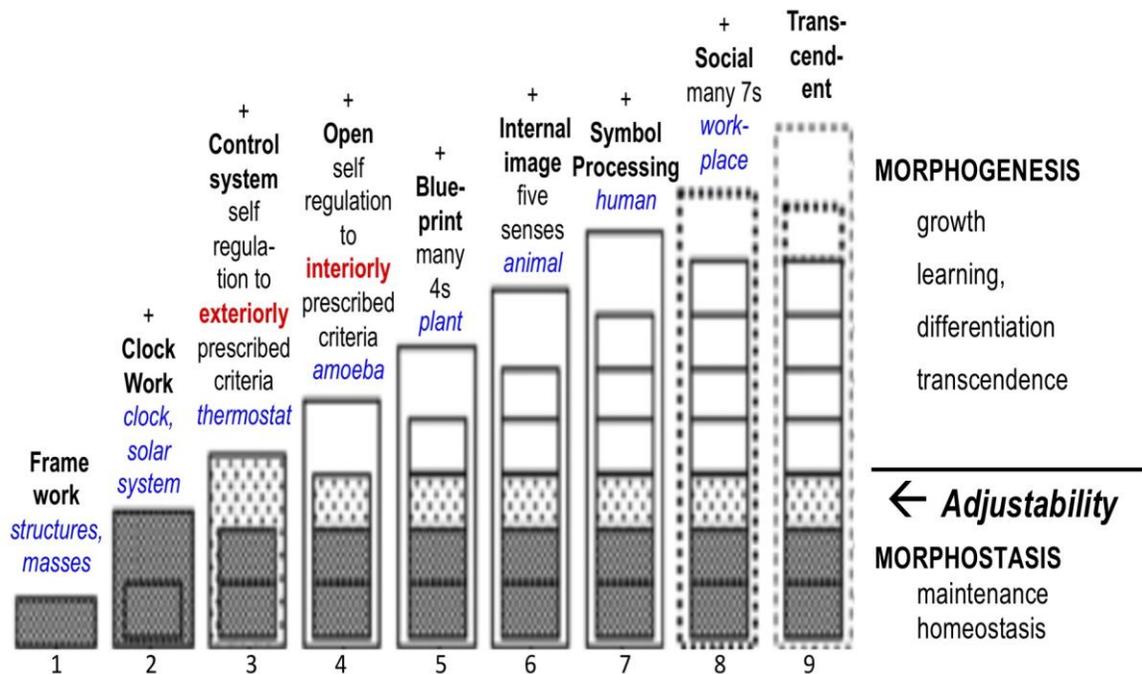
In a social system such as a school or organization, the leader's tasks, policies, and resources or *THINGS* (Boulding's levels 1-3) will be used by *PEOPLE* in the system, to meet their own self-determined needs and goals (levels 1 - 7), according to interiorly prescribed criteria (level 4), their own individual differences, whether inherent or learned (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

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ethics) that level 7 systems, *PEOPLE*, must adequately meet their basic individual needs (survival, safety, belonging) before the needs of the organization (levels 8-9), which determines *OUTCOMES*.

### *TPO Prescription/Design*

Implications for social system design are as follows: In a social system such as a school, workplace or other organization, *THINGS* (levels 1-3: resources, equipment, materials, schedules, policies) must be designed and arranged so that *PEOPLE*, each at his/her own pace, can easily meet both their self-determined individual goals (levels 4-7) and their organization's goals for best *OUTCOMES* (levels 8-9).



**Figure 5. Adding Concepts of Maintenance, Growth and Adjustability**

### **Maintenance, Growth and Adjustability**

Three other key properties and insights into the nature of complex systems are clarified with the help of Boulding's typology. Buckley categorized system functions into two types: morphostasis and morphogenesis (Buckley in Scott, 1986, p. 83). Morphostatic systems are characterized as clockwork and self-adjusting, like circulation and respiration. Complex systems (organisms and groups) rely on morphostatic systems to facilitate the higher-level functions of morphogenesis, such as growth, differentiation, learning, and transcendence (right in Figure 5). Finally, Level 3 is the only point where input can enter a complex system, where an interior sensor makes a decision about its response to an exterior input. Thus, it becomes clear that the one key quality of a healthy person or social system is its adjustment capacities, or, in other words, its responsivity, or response-ability (Figure 5, the arrow pointing to Level 3 in all systems).

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## THE INDIVIDUAL HUMAN BEING AS ROOT CAUSE OR AGENT

Boulding's typology reveals that each system member is agent of his/her own learning and behavior. It also reveals the key properties of human agency and root causes. Namely, cause is interiorly prescribed criteria (level 4), with individual differences, whether inherent or learned (level 5), depending on immediate perceptions from among conflicting stimuli (level 6) and short or long term individual choices (level 7). This is true of all people in the system, both the supervised and their leaders or supervisors. A first clarified assumption is a shift in terms and site of agency, from INPUT to PICKUP. In other words, the key process between leaders and those they supervise is not INPUT, but PICKUP. PICKUP is the initial process for all human beings-- learners, workers, teachers, or CEOs --as they take on learning, planning or tasks.

Note that the shift from input to pickup occurs as early as Boulding's Level 4, exemplified by any living cell, which picks up oxygen and nutrients from the external environment as needed. Therefore "input" is better described as "intake" or "pickup" (Neisser, 1976, p. 59). To foreshadow implications in a human social system, the worker, student, and teacher need to have at their fingertips what they need, and are most effective when they have flexibility to decide when and how to use it. Thus, resources, materials, information, and programs should be appealing and accessible, rather than mandated, required, inserted, or installed from the top down.

A closer look at the facts of individual agency, and especially pickup, is developed in this section. Two levels of analysis described next are: the surface of the individual; and within the individual, where agency lies.

### Surface of the Individual

Figure 6 captures two levels of analysis. Left and right in the figure shows the surface of the individual, just between the individual and the environment. On the left, entry points for pickup are the five senses, Note that graspers are used to illustrate pickup. The graspers illustrate the main pickup points-- eyes, ears, and hands (cf. Boulding's level 6).

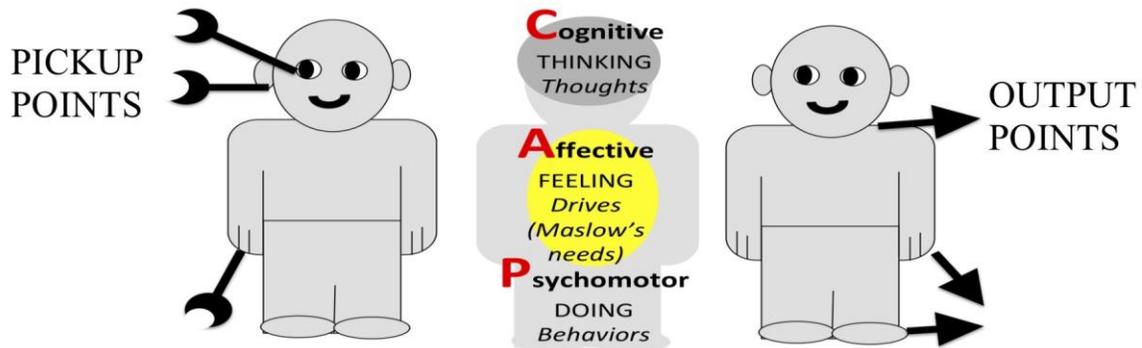


Figure 6. Individual Levels of Analysis

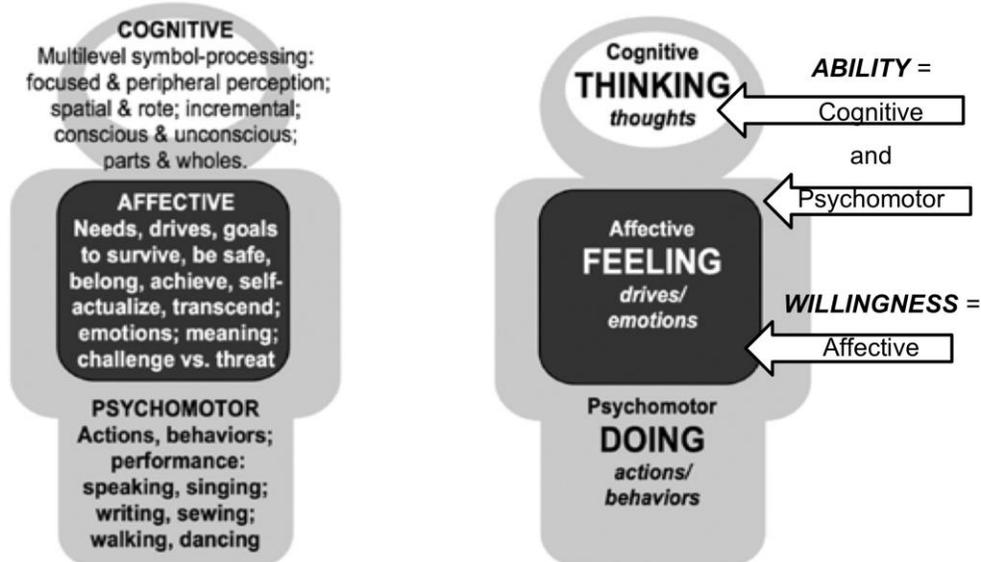
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On the right, main exit points for outputs, action and behavior are illustrated by arrows-- the mouth (e.g., talking), hands (e.g., writing, sewing), and feet/body (e.g. walking, dancing). Center in Figure 5, shows a final downshift in unit of analysis on this path and a look inside the individual. The yellow color illustrates the site of agency or root causes of individual learning and/or behavior.

Figure 6 also serves to illustrate the full process, from left to right-- from pickup, throughput to outputs. It also shows that pickup is just a first step in the task of the system member--learner, worker, engineer, CEO, superintendent, or janitor. The individual system member, in the process of learning and performance, will pick up, learn, and master the input to varying degrees and in varying ways. He/she then may act, perform or create a corresponding product.

### Inside the Individual

Figure 7A zooms in closer to provide more details inside the individual, illustrating some of sources of the infinite variability of system members, learners and leaders. Figure 7B shows how this infinite variability can be usefully clustered into three domains: cognitive, affective and psychomotor. In other words, the leader's task will be achieved by the worker/learner if there is an adequate match with the learner's cognitive, affective and psychomotor domains (Bott, 1995).



**Figure 7. Infinite Variability Clusters into Three or Two Domains**

#### *The Cognitive Domain.*

There is a cognitive match and pickup when the input/information from the leader or environment links to or builds on prior KNOWLEDGE in the individual. More recently, literature on *brain-based learning* has gained the attention of scholars and educators. Brain-based learning theory uses research from neuroscience to better understand the

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structure and function of the brain (Jensen, 2008). Prior knowledge of each individual is complex, invisible, and infinitely variable. Fortunately, leaders do not have to understand the infinitely variable processes of cognitive pickup in each individual. They only need to be able to watch for when the process breaks down, identify when there is a block in understanding.

### *The Psychomotor/Physical Domain*

There is psychomotor/physical pickup when the input/information from the leader or environment links to or builds on prior SKILLS of the individual. Additionally individual potential and abilities, cognitive and physical, may be inherent or learned or have both influences. Potential and skills in each individual is also complex, invisible, and infinitely variable. Again, leaders do not have to understand the infinitely variable processes of physical pickup in each individual. They only need to be able to notice if and when performance breaks down, to identify when there is a block in performance.

### *The Affective Domain*

Finally, there is an affective match and pickup when the input/information from the leader or environment links to or builds on and links to prior FEELINGS--also needs and goals--of the individual. The affective domain is the seat of agency, root cause and behavior. Maslow's hierarchy of human needs is a useful organizing framework here. His hierarchy of human needs, from most basic to highest human needs or goals, is: survival, safety, belonging, achievement, self-actualization and transcendence (Maslow in Valle, 1989). An individual must adequately meet basic survival and safety needs before giving attention to higher level needs and goals. Robbins (1998) reveals other insights, arguing that an individual behaves to "seek pleasure and avoid pain." Again, leaders do not have to understand the infinitely variable processes of affective pickup in each individual. They only need to be able to watch for when engagement breaks down, identify when there is a block in willingness.

### *Other Approaches Corresponding to the CAP Domains in Individual Agency*

Patterson and Covey (2002) state the CAP principle even more simply, in two domains: ability and willingness. That is: The worker will achieve a task if he/she *is able to* and *wants to*. *Ability* is mental or physical (cognitive and psychomotor--arrows right in Figure 7B). *Willingness* is the affective domain (arrows right in Figure 7B). Two other acronyms, PIE and HHH, capture and categorize the same domains as CAP. PIE stands for physical, intellectual and emotional. HHH stands for head, heart and hands.

## **Links to Boulding**

Links to Boulding in Figures 6 and 7 are as follows: Level 1 frameworks in the pickup through output processes are eyes, ears, hands, mouth, feet; and also, inside the individual, the cognitive, affective and psychomotor domains. Pickup, when automatic, is mainly a Level 2 clockwork process as are circulation, respiration, and digestion. Level 3 is a control system, an ON/OFF switch. When there is a CAP match, the process is ON and pickup occurs. When there is a block due to a mismatch with one or more CAP, the process turns OFF and pickup doesn't occur or is skewed. Levels 4 – 7 add non-

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clockwork processes determined by interiorly prescribed criteria. In other words, at Level 7, pickup is determined by each individual's image, his or her willingness (affective), and ability (cognitive and psychomotor). Throughputs and outputs are non-clockwork, even more variable.

### A Historical and Transdisciplinary Perspective

Note that this shift in agency in leader/learner or social system behavior is not new or easy. Plutarch, who died in 125 A.D., is attributed as saying "The mind is not a vessel to be filled, but a fire to be kindled." And in our century, Carl Rogers, who some say is the most influential psychologist in American history, took years to shift his understanding. At age 60, he writes:

One brief way to describe the change which has taken place in me is to say that in my early professional years I was asking the question: How can I treat, cure, or change this person? Now, I would phrase the question this way: How can I provide a relationship which this person may use for his own personal growth? ... I can state the overall hypothesis in one sentence, as follows. If I can provide a certain type of relationship, the other person will discover within himself the capacity to use that relationship for growth, and change and personal development will occur. (1961, pp. 32–33)

The scope and complexity of the shift and clarification of agency in social system learning and behavior, and the resulting more fully specified new human system paradigm, can be contrasted to the earth/sun rotation paradigm shift in astronomy. The two shifts are somewhat comparable because of their complexity, invisibility and scope, plus the years, even centuries, it has taken to illuminate and specify them. Note that whether behavioral laws and causes relate to gravity or human agency, both paradigm shifts here are proposed as hard science--a result of extensive empirical observation, rather than speculation. A shift at such a grand level and scope requires reconceptualization and recalculation at all levels of system, proposed in the next sections.

### Some Good News

The bad news for leaders is that root causes of behavior are [1] out of his/her control, within each worker/student, and [2] infinitely variable. The good news is that there is predictability! We can predict, with certainty, that each system member will pick up, learn and complete tasks, as he/she is *willing* and *able*.

## IMPLICATIONS FOR SOCIAL SYSTEMS

Having completed the first half of the narrative path--which began with undesirable outcomes in large social systems top left in the U (Figure 2), and arrived at the individual human system member as root cause at the bottom of the U-- the path now returns up the right side of the U to update descriptions and prescriptions for large organizations with

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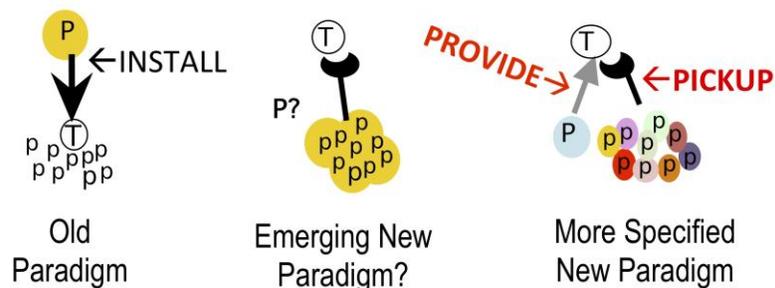
desirable outcomes, a  $19 + 1 = 20$ , 21, 22 *Effect*. In this section, implications are discussed at two stops up the U: [1] at the level of two people or the pair, the smallest social system; and then [2] at the size of a room, or small building. Implications for very large social systems will follow in a separate section.

### The Pair: The Provide-Pickup Cornerstone of Social System Behavior

It is important to reiterate that pickup will not occur if there is a block in any of the domains. For example, a student or employee may not understand the task (cognitive), or he or she may not see value in the task (affective), or he or she may feel overloaded with too many other tasks to do and does not notice or retain the new task (psychomotor).

### The Provide-Pickup Relationship

This elaboration of Boulding's GST informs a more fully-specified new unifying human systems paradigm. Figure 8 illustrates, contrasting three paradigms. Color indicates agency or cause. Yellow indicates the site of agency; multiple colors indicate the infinite variability. Left, the OLD top-down, directive paradigm assumes sole agency in the leader. Center, the emerging, unspecified, backlash, NEW paradigm assumes sole agency in the learners/workers. But the leader's role is unclear. Right, the more specified, unifying NEW illustrates that agency is in all humans, and that individual learning and behavior varies. Recall that Boulding's levels show the variability due to needs, abilities, perceptions, and choices; Bott: due to individual cognitive, affective and physical variability; and Patterson: depending on individual willingness and ability. The more specified new paradigm begins to respond to the need identified earlier by Bolman and Deal by providing some concepts that are specific to *human* systems. Cornerstone concepts introduced in the Figure 8 are PROVIDE and PICKUP. In other words, the leader's role is no longer old paradigm INSTALL, nor backlash new paradigm LET ALONE. Given the nature of PICKUP, the leader's role is to PROVIDE, elaborated in the next section.



**Figure 8. Three Paradigms of Agency in Social Systems**

Right, the more specified, unifying NEW illustrates that agency is in all humans, and that individual learning and behavior varies. Recall that Boulding's levels show the variability due to needs, abilities, perceptions, and choices; Bott: due to individual cognitive, affective and physical variability; and Patterson: depending on individual willingness and ability. The more specified new paradigm begins to respond to the need identified earlier by Bolman and Deal by providing some concepts that are specific to *human* systems. Cornerstone concepts introduced in the Figure 8 are PROVIDE and PICKUP. In other words, the leader's role is no longer old paradigm INSTALL, nor backlash new paradigm LET ALONE. Given the nature of PICKUP, the leader's role is to PROVIDE, elaborated in the next section.

The *Install* and *Laissez-faire* assumptions for leadership are thus updated to the *Provide-Pickup* relationship. The leader's role is not to install knowledge in employees or students, as if empty vessels to fill. The leader's role is to *provide* the input, information,

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policies, tasks, resources, and so forth (THINGS). Employees and students' roles (PEOPLE) are *pickup*, each at his/her own rate. Given that agency is within each individual system member, the complexity and resulting infinite variability clarify another shift in leaders' roles. A dual new role of the leader is to [1] PROVIDE THINGS and [2] MONITOR BLOCKS. In other words, since learning and behavior is infinitely variable among system members, the leader shifts from installing information clockwork style to noticing, as possible, when the process appears blocked. If and when there are blocks to pickup, (willingness? or ability?) the leader then tries to help the supervised get beyond them. Otherwise stated, a shift required in the leader's understanding is the clarified role of identifying blocks to learning and performance, rather than causing learning and performance in the supervised.

### Room Level: Adding TPO Thermostat Management

Upshifting to the room level, informed, experienced leaders (teachers, facilitators, managers) aim to create an environment with many opportunities for pickup. Leaders may usefully compare the systems that they supervise to a complex thermostat system (Figure 9) with three modes: design (c.f., OFF); deliver (c.f., ON: Manual); then monitor (c.f., ON: Auto). Instead of goals of optimal range of temperature, heat (65 to 75 degrees), their goals are optimal CAP, or input that is in a range with system members' cognitive, affective and physical/psychomotor domains.

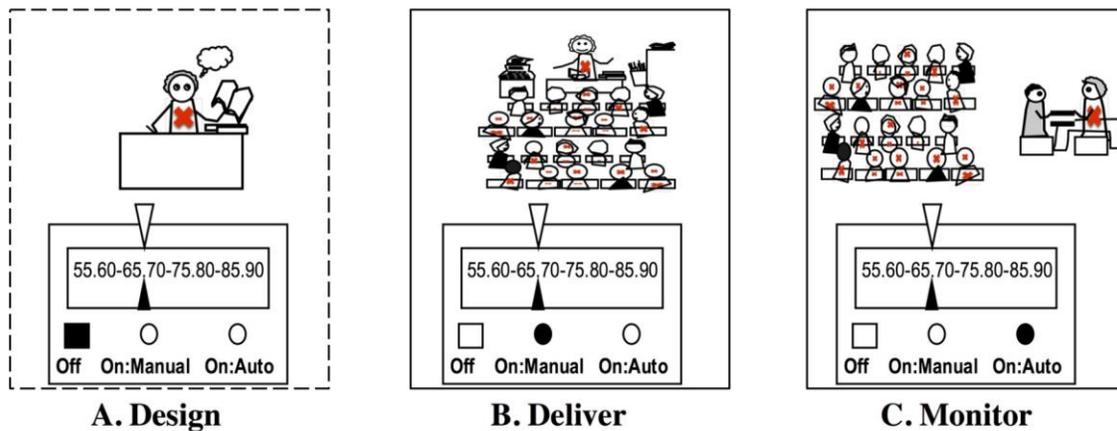


Figure 9. Room Level Thermostat Management

#### *The OFF or (Re)Design Mode*

When work or class is not in session, the leader or leadership team plans and designs the inputs, resources, and resource arrangement and delivery. Metaphorically, windows and doors can be wide open (dashed line around Figure 9A), as the “heater” is turned off so heat (resources) will not be wasted out the window.

#### *The ON: Manual or Deliver Mode*

At the beginning of a workplace or school project, when work or class is in session, the leader delivers the input, introducing the new input and carefully managing the delivery,

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keeping the room at a range that matches the CAP of the employees/learners (c.f., keeping the temperature range of 65-75 degrees). Metaphorically, the heat is turned on and being distributed throughout the room. Windows and doors are closed, so resources are not lost out the window. Nor are disruptions coming through open windows (Figure 9B).

### *The ON: Auto or Monitor and Adjust Mode*

When learners/workers have picked up and acquired the new input to a sufficient degree and everyone is on task, the leader shifts to ON: Auto (Figure 9C). Learners and workers continue with their tasks independently. Leaders are then freed up to do their own work. In ON: Auto, leaders occasionally monitor the room to adjust the providing, and to notice if someone is off-task, where pickup has not occurred, to determine or help the system member identify the block preventing pickup. A block might be cognitive: For example, the learner or worker doesn't understand the task. It might be affective: For example, he/she does not see the importance of the new task and has set it aside to continue other work. A block might be physical/psychomotor: For example, he/she needs glasses and cannot read the small font of the document. It might be a mixture: For example, the worker didn't eat breakfast, cannot concentrate, and also thinks the project is unimportant, not useful, or even flawed (Gabriele 2014). With regard to Buckley's two functions--morphogenesis and morphostasis--leaders, as well as everyone in the system, remain responsive to when there is a block in the pickup, throughput or outputs. In the process of doing their tasks-- learning, growing (ON: Auto and morphogenesis), they might have to downshift to revise the maintenance systems (ON: Manual or OFF and morphostasis)

### *Links to Management Practice*

This ON: Auto mode, where the leader puts his energy in his/her own work while remaining aware of the work environment, has an interesting parallel in a best practice in business called *management by exception*, which is:

a style of management that involves giving the people who work for you the authority to control their work or particular jobs, projects, etc., unless there is an exception (= an unusual situation) that causes a problem (Management by Exception, 2016).

In short, at the level of the room or small building, the provide-pickup assumptions are accompanied by the leader or leadership team's understanding of the three-mode "thermostat" [1] when and how to deliver resources (ON: Manual); [2] when and how to allow the supervised to manage their own work (ON: Auto) and when to stop and revise or redesign (OFF).

### *Links to Learning Communities of Practice*

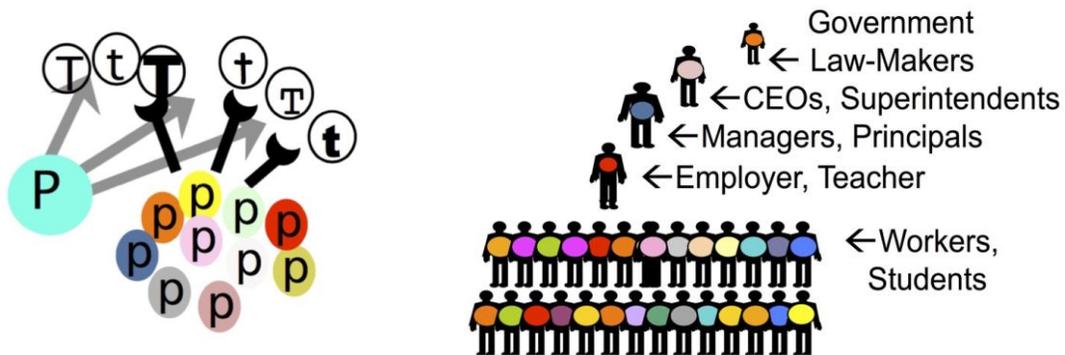
Lave and Wenger (1991), educational researchers taking systems views, studied a few highly successful learning communities outside of schools. Their findings resulted in what has come to be known as communities of practice. What they found in these communities was a learning curriculum, as opposed to a teaching curriculum. They described the learning environment that they saw as follows:

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A learning curriculum consists of situated opportunities (thus including exemplars of various sorts often thought of as “goals”) for the improvisational development of new practice. ... A learning curriculum is a field of learning resources in everyday practice *viewed from the perspective of learners*. A teaching curriculum, by contrast, is constructed for the instruction of newcomers. When a teaching curriculum supplies— and thereby limits—structuring resources for learning, the meaning of what is learned (and control of access to it, both in its peripheral forms and its subsequently more complex and intensified, though possibly more fragmented, forms) is mediated through an instructor’s participation, by an external view of what knowing is about. (1991, p. 97)

## IMPLICATIONS FOR LARGE SOCIAL SYSTEMS

The final step on the path is the upshift in the unit of analysis from the room --classroom or conference room--or small building, to the very large, multisite corporation, institution or other social system--public education, corporations, governments. Figure 10 offers a descriptive picture and illustration of assumptions of agency and the increased complexity of agency at this level: Left—Unifying new, each person in the system is agent, and the learning and behavior of each is unique and variable. Arrows show that the leader (P) provides. Graspers show learners/workers (ppp) pick up. Right—Variability is even greater due to the multiple levels and sites of a very large organization, as each level or site may have different functions and all system members are learners. The multiple colors show that everyone in the system picks up, learns, masters and behaves differently.



**Figure 10. Agency in Multilevel and Multisite Organizations**

At this level of the very large social system as unit of analysis, some new or clarified implications for description, prediction and prescription are proposed. They are underpinned by TPO Theory, that THINGS should be designed to optimize pickup by PEOPLE for best OUTCOMES. Recall that THINGS are designable, predictable and controllable, (Boulding’s levels 1 -3); PEOPLE are self-controlling.--each will do what

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he/she can and wants to do (Boulding's level 7, containing properties of levels 1-7); and OUTCOMES depend on people's behavior. The new or clarified implications for large social systems are captured in five terms or concepts: CAP Span of Pickup, TPO Thermostat Organization Design; IBUDASCS; rICE; and frames for Observing Social System Outcomes, explained in this section.

### **CAP Span of Pickup: Understanding P (People)**

This term, CAP Span of Pickup, aims to describe and explain people's behavior, in greater detail in large multisite social systems. The term *span of control* serves to introduce the important new issues that arise. Span of control is a term used commonly in business management, referring to the number of subordinates a supervisor has. It is most closely related to the old paradigm assumption of teaching and management: leader as sole agent. The term *span of control* can be usefully expanded or reconceptualized to include *span of pickup* or *span of CAP pickup* to fit the more fully-specified paradigm – learners as agents, everyone a learner, and the infinitely variable learning and behavior of individual members of social systems. This human systems paradigm--which understands agency in the individual, and that the first step in learning is pickup--undergirds this new term. At the room or small building level, CAP identifies the *nature* of pickup, or a block in pickup. The nature of pickup is the fact that the individual will pick up (learn and master) according to the match of the input with his/her unique cognitive, affective and psychomotor domains. *CAP span* refers to another dimension of pickup, its *range*. The range of pickup is a key new issue in large social systems, where input may not be in the range of the system member's [1] awareness and understanding (cognitive span), [2] concern and care (affective span), and [3] physical control (psychomotor span). For example, it is easier for front-line employees to care more about their weekly paycheck than the big picture goals of the organization. And it is easier for CEOs to care more about their children's college tuition than their employees' salaries.

#### *Hardin's "Tragedy of the Commons"*

Range of pickup, or CAP span, is a significant issue in large social systems. Garrett Hardin addresses this very issue in his seminal paper, *Tragedy of the Commons* (1968), Using the example of cattle herders and grazing lands, Hardin explains how individual herders will add an animal to their herds and unintentionally overuse common pool resources (CPRs) because they easily see the advantages for their own personal gains, but are too distant from the big picture, too distant from the toll it takes on all the others in the system. With regard to the terms introduced here, Hardin found the CAP span insurmountable, or in terms introduced in this paper, that pickup was outside the individual CAP range. Hardin further argued that there was no technical solution to such grand problems.

#### *Ostrum's Revisiting of the Commons*

On the other hand, Ostrum and colleagues found evidence that institutions can successfully govern common pool resources, especially when "individuals face a public good or CPR problem and are able to communicate, sanction one another, or make new rules (1998, p. 279)." In other words, Ostrum found the CAP span surmountable, that

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individual system member CAP pickup was possible, given certain conditions—such as common goals, mutual respect, and ability to communicate. Ostrum’s findings are clarified for large social systems by insights from James Martin, the leader of the INCOSE system science working group. Martin brought attention to the multiple levels of organization in a large social system and the fact that, at each level, specific expertise is different and resides within members of the specific level. He explained that a specific solution to a problem should be designed by members of the specific system level or type, and then approved by the level immediately above it (2015).

In short, at the level of the very large, multisite social system, the shift required in the leader or leadership team’s understanding is an awareness of system members’ CAP pickup span. There is value in designing and managing the systems’ policies, procedures and consequences to make it attractive and easy for people to do the right thing.

### **TPO Thermostat Organization Design or Leadership: Designing T to match P**

The term TPO Thermostat Leadership aims to clarify how the thermostat metaphor can assist in the design of large organizations in greater detail with the general goals of facilitating the design and monitoring of things (T) to optimize learning and behavior in people (P). The TPO thermostat metaphor was introduced at the room level, where the teacher or manager is in relatively close contact with those they supervise. At the room or small building level, it is easier to arrange and control the delivery of resources, and notice blocks in system members. Experienced teachers and managers come to achieve this over time: that is, to know the importance and variability of *willingness* and *ability* in their people. At the level of the very large social system, monitoring resource delivery and blocks is beyond the leader’s span of pickup.

TPO Thermostat Leadership proposes that leaders imagine the elements of a well-designed heating/air conditioning system in their very large, multi-floor building, or even multiple buildings. They need the skills of an experienced teacher/manager combined with the knowledge of a control systems engineer. In a mechanical control system such as a thermostat system, size of the building, size of the engine, number of vents, placement of vents, and so forth, and their relationship to each other (their ratios) are key to its effective functioning. Proportions and ratios are key for effective control systems and also for effective social control systems. In very large social systems, leaders, with the members of their systems, are to specify details of the Provide-Pickup Thermostat metaphor for their particular social system and system level. They are to identify and carefully their three modes: (re)design (OFF), deliver (ON: Manual), and monitor (On: Auto) of their things--their frameworks (policies and boundaries), clockworks (procedures) and control systems (e.g., error correction, adjustments, consequences). The aims are optimal social system function with increased opportunities for optimal system member pickup. If achieved, over three years, a new mathaphor will describe an effective, flourishing, evolving social system as  $19 + 1 = 20, 21, 22$ .

In some domains of some large social systems, optimal proportions and ratios are policy. For example, the California Education Code (California, 2015) states

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“41400. It is the intent and purpose of the Legislature to improve public education in California by maximizing the allocation of existing resources, to discourage the growth of bureaucracy in the public schools, and to emphasize the importance and significance of the classroom teacher.

“41402. The maximum ratios of administrative employees to each 100 teachers in the various types of school districts shall be as follows:

- a) In elementary school districts—9. <sup>[L]</sup><sub>[SEP]</sub>
- b) In unified school districts—8. <sup>[L]</sup><sub>[SEP]</sub>
- c) In high school districts—7. <sup>[L]</sup><sub>[SEP]</sub>

In other cases, optimal ratios are not policy. The ratio of a CEO’s salary to worker salaries might be an example. Corinne Wilson (2011) reported on the Institute for Policy Studies in Washington’s 18th annual survey of executive compensation. Her findings were that the “263-to-1 ratio between CEO pay and average worker pay in the U.S. grew to 325-to-1 last year” (2011, p. 1).

CEOs and leadership teams, each at their own system level, would do well to develop holistic, systemic perspectives of their organization, to understand their functioning and choose their optimal ratios for optimal outcomes, to achieve the  $19 + 1 = 20$ , 21, 22 effect.

### **Ideal-Based User-Designed Automated Social Control Systems**

This term, Ideal-Based User-Designed Automated Social Control Systems (IBUDASCS), is offered as a useful principle for the design and management of effective large social systems. Assuming optimal TPO thermostat design, users are to automate the desired ratios (i.e. the designables, Boulding’s Levels 1-3--structures, clockwork processes and on-off switches). The 8:100 ratio of administrator to teacher, and ideal ratio of CEO salary to employee salaries could be linked to payroll. Note that it has been fifty years since Hardin wrote that there was no technical solution to the tragedy of the commons. Today, we do have the technology, and technical solutions can be accomplished. In other words, when people are off policy, there can be automated consequences. However and moreover, technical solutions are to be accomplished by the users themselves, at their own level of system, within the policies of the larger system in which it is embedded. A word of caution: It is important to clarify an empowering rationale for *user-designed automated social control systems*. Linking user-determined optimal ratios (e.g., leader/employee ratios and salaries) to payroll is not to criticize, punish, or weaken current leaders or any system members (e.g., the cow herder). On the contrary, it is to free up system member energy. The empowering rationale is not a soft question of ethics, but a hard question of physics and physiology. Punishing consequences can trigger an affective block in people; empowering ones will engage them-- their affective domains. The value of automated policy consequences recalls the findings of Berliner (1986), who found an abundance of “scripted” review routines in his observations of expert teachers’ classrooms. He found routines

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“... Embedded in the classroom activities ... shared, scripted, virtually automated pieces of action [that] allow students and teachers to devote their attention to other, perhaps more important, matters inherent in the lesson.” (1986, p. 5)

Ideal-based user-designed automated social control systems are to allow leaders and system members at each level of system to design their own optimal “TPO thermostat” systems—including types and flows of resources. Automation is to bring the important big picture policy into system members’ pickup range, to free their attention for more important matters.

In a nutshell, the elements or cumulative meaning of *Ideal-Based User-Designed Automated Social Control Systems* is constructed using the following rough examples.

- Control Systems* → When the temperature turns 65, the heater turns on.
- + *Social* → When an employee is late, he/she makes up the time-- achieved by the honor system, or supervisor control.
- + *Automated* → When an employee is late he/she makes up the time. Information automatically goes to time clock and payroll.
- + *User-designed* → People at each system level decide together the automated consequences for themselves in alignment with suprasystem policy.
- + *Ideal-based* → The creation of automated consequences is not to berate or punish, but to free up everyone’s time for more important matters.

### **rICE: A Methodology for Design, Innovation, Intervention, and/or Evaluation**

A suggestion or methodology for design, innovation, intervention, and/or evaluation of large schools and workplaces is captured in the acronym rICE. This initial formula or representation of a new social system methodology informed by principles of the Provide-Pickup paradigm is illustrated in Figure 11. The argument is that to maximize the power of a high quality program, innovation or intervention (T) to effect systemic change in an implementation or study, three desirable, optimal (or necessary and sufficient) conditions are of value: the program must be inclusive, continuing, and emancipatory (ICE). In this way, it increases members’ opportunities for pickup, learning, and mastery.

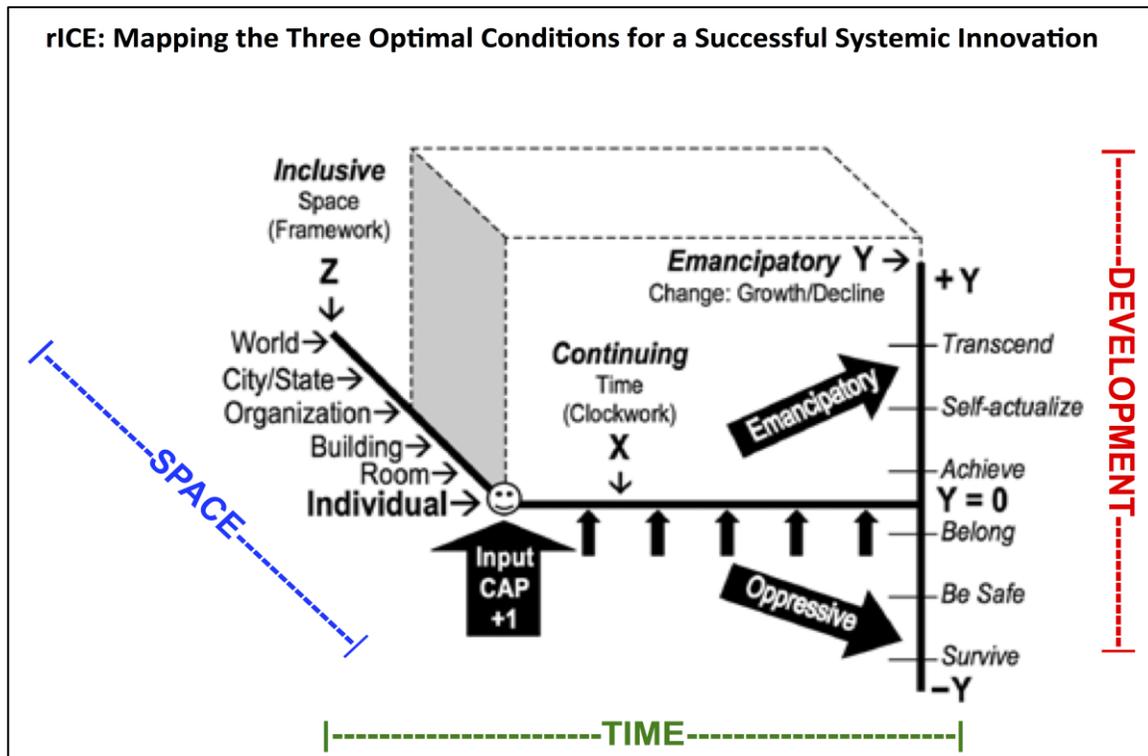
The three dimensions and axes of Figure 11 are labeled: from the left, Inclusive (axis Z), Continuing (axis X), and Emancipatory (axis Y). Note that the three conditions ICE in a specific example become rICE in the general premise (toward a general theory), adding an r (relativity) factor. *Relativity* is defined as depending on other factors that vary according to context. The four elements of ICE are elaborated next.

I= *Inclusive*: Designed to serve (1) the whole person (the face in Figure 4); (2) the whole group—each person in the room, class, or meeting; (3) the whole building or school; (4) the whole school district or organization, in (5) the whole city, state, or country, and (6) the whole world. Axis Z is a first dimension and a space view (also Boulding’s system level 1, a designable Thing). The measure of Inclusivity might be attained by these study

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questions: First, in what ways and to what degree is design of the input inclusive? Designed for everyone in the system? Second, to what degree and in what ways do the outcomes match, surpass, fall short of, or differ from the inclusivity traits in the design? Third, to what degree has everyone in each group, and all groups in the system, been included at the end of the study?

C = *Continuing*: Regularly revisited (e.g., in auditory review routines), daily, weekly, or monthly (small black arrows pointing up to the X-axis in Figure 4); and always accessible (e.g., wall charts or at the fingertips of users, (e.g. in user manuals, electronic or traditional). Axis X is a second dimension and a time view (also Boulding's system level 2, a designable Thing). Measures of Continuity might be achieved with these questions: First, Does the design of the input build in the continuity traits? Is the input designed to be reviewed weekly? monthly? Second, Is the outcome continuous? To what degree and in what ways do the outcomes match, surpass, fall short of, or differ from the continuity dimension in the design? Third, at the end of the study, did the users actually have review routines weekly, monthly?



**Figure 11.**The ICE or rICE Design and Evaluation Methodology

E = *Emancipatory*: Unshackling and accelerating positive development. Axis Y is a third dimension and an outcome view (also Boulding's system levels 7–9 functioning). Figure 4 illustrates this condition, and its opposite, in two arrows labeled *emancipatory* and *oppressive*. On the right in Figure 11 is Maslow's hierarchy as a loose guide (Maslow in

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Valle, 1989). In other words, if system members are able to use their energy to achieve, self-actualize, and/or transcend, this suggests the emancipatory condition. If system members have to use their energy to belong, feel safe, or survive, this suggests the oppressive condition. The condition of emancipatory is not designable; it is emergent. However, aspects of the emancipatory condition are designable because program quality or input (large black arrow pointing up in Figure 11) is designable.

### *Program Quality and System Level/Type*

There are two designable conditions (T) that are assumed before application of the ICE or rICE premise. First, the input (intervention or program) is high quality, which includes what I will now abbreviate as CAP and CAP +1. The CAP +1 abbreviation builds on Krashen's *input hypothesis* (1989). His formula,  $i + 1$  (comprehensible input plus one), explains that students make progress in learning a new language when the input contains language that is slightly more advanced than their current level of comprehension. In Figure 11, the thick black arrow bottom center pointing up, labeled *Input CAP + 1*, indicates a cognitive, affective, and psychomotor match of the input appropriate for system members, plus a right amount of advance and challenge with new information or skills (+1). Some examples are as follows.

*Cognitive.* Students have learned the geography of their country and hemisphere. Now they are learning world geography. The science department teachers have achieved the fine-tuning of their tenth-grade course of study. They are now working on eleventh-grade. In the workplace, new hires have gone through initial training. They know where to go to review policies and procedures relevant to their job description. They are now ready to work on their own.

*Affective.* It is the beginning of the year, and for three weeks now, the teacher has been consciously and carefully building trust with the new students (e.g., trust that the lessons are valuable, trust that he/she will treat the students fairly and with respect). The teacher now can be a little more relaxed, perhaps a little less formal or more affectionate, as a healthy learning environment and good connections with the students have been achieved.

*Psychomotor.* Primary school children have learned to hold and use a pencil and pen. They are now learning to write the letters of the alphabet, then sentences, and so on. A common example is the time and practice it takes to learn to drive a car. Workplace examples are the development of the fine motor skills of an auto mechanic, seamstress, or surgeon.

### **Three Frames for Observing Large Social System Outcomes**

Common measures of organization success are profit and employee turnover. Indeed, profit is known as the bottom line. The triple bottom line (3BL) is a term proposed by John Elkington (1998), a world authority on corporate responsibility and sustainable development. He proposes that organizations need three balance sheets-- financial, environmental, and social. 3BL is also known as the three P's--profit, people and planet. Hammer (2010) is committed in her work to defining, studying, and advancing 3BL

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measures, and especially the social bottom line. Meaningful measures for the social bottom line are the most complex and difficult to develop. This paper hopes to contribute to the investigation and development of the social bottom line.

Throughout this investigation a key finding is that people's behavior is infinitely variable. And the variability, already infinite, is even greater in large social systems. Maslow's hierarchy of human needs has been referred to several times, and most recently in the RICE method, as a potential way to observe and evaluate human behavior in social systems. In this section, three other frames are suggested as useful for observing outcomes in large social systems that correspond to the provide-pickup and other principles developed here. .

*The 19 + 1 = 20 ... 21 ... 22 Effect.*

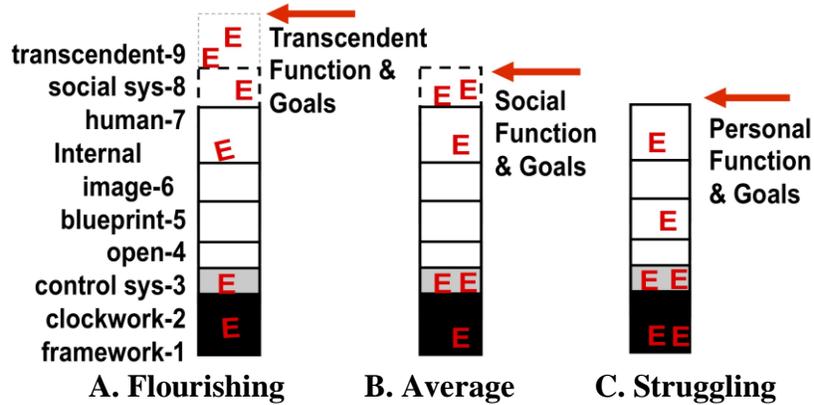
In Figure 2B, the  $19 + 1 = 18$  effect illustrated the declining outcomes in large organizations where ill-designed new programs are mandated every year, which over three years becomes  $19 + 1 = 18, 17, 16$ —a mathaphor for social system decline. In well-designed organizations, the mathaphor to look for is  $19 + 1 = 20, 21, 22$ —representing social system flourishing and goal transcendence. In other words, in healthy social systems, every year, people in the system achieve their goals and then develop new ones. Goal transcendence is a term inspired by and taken from both Boulding's and Maslow's highest levels in their hierarchies. A partial example of goal transcendence is found in the following true story.

My professor spoke about a business where he had been an invited external consultant. The company wanted to reorganize from the hierarchical model into work teams. In the new format, the reorganized work teams had become more aware of their customers' needs, which was anticipated. But then, they became interested in their customers' customers' needs, which was not anticipated. I was very excited and spoke to my professor to point out that this was an excellent example of goal transcendence. He agreed but was not enthusiastic. As I talked further with him, he told me that the goal transcendence would not last. Because the reorganization was not system-wide, it would not be sustained and would soon revert back to its bureaucratic form. (Gabriele, 2014, p. 174)

*Flourishing, Average and Struggling Social Systems*

In Figure 12, outcomes are illustrated linked to Boulding's Levels 7 - 9 system functioning. Transcendent social systems (Figure A) are flourishing, designed so people can meet their needs and goals easily, and they then have energy (E, E) for the new unanticipated goals that emerge. In average social systems (Figure B), people are meeting some of their needs and goals so that some social function is evident. In unhealthy, ill-designed social systems (Figure C), people are struggling, not meeting their needs. They must use their energy for survival. No or little social function is evident. People are not acting for social system gain (Level 8 goals). They are acting for personal gain (Level 7 goals)—e.g. a promotion, the weekly paycheck, and so forth.

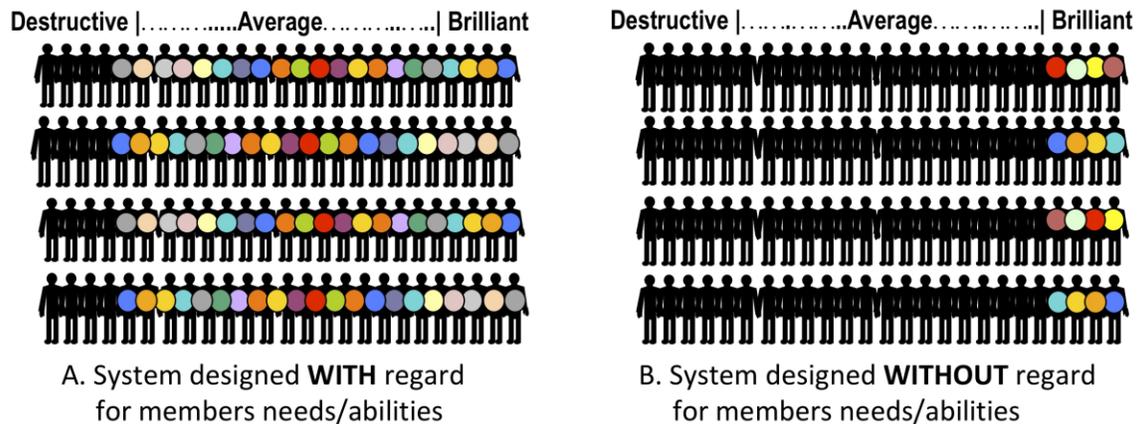
## ROOT CAUSES IN ORGANIZATION BEHAVIOUR



**Figure 12. Boulding and Outcomes in TPO Theory**

### *Behaviors of Destructive, Average and Brilliant Performers*

Figure 13 builds on insights of McPherson who explains that “neither the few destructive laggards nor the handful of brilliant performers” are the key to organization health. Instead, McPherson urges attention to the “care, feeding, and unshackling of the average man” (Peters & Waterman, 1982, p. xxii). Implications of this statement for large organization outcomes are illustrated in a mathaphor as follows: In Figure 13A and B, of the 100 employees, 16% are destructive laggards (left); 68% are average (center); and 16% are brilliant performers (right). The colors indicate employees that are engaged, working towards the goals of the organization. Lack of color indicates employees working at the survival level, for their own personal needs and goals.



**Figure 13. Behavior of Destructive, Average and Brilliant Performers**

Figure 13 shows the impact of the two scenarios. In Figure A, the organization is designed so that people can easily meet their needs. The result is 84% of the workforce (the average and brilliant performers) are working on organization goals. In Figure B, the organization is designed so that people cannot easily meet their needs. The result is 84% of the workforce are working on personal goals of survival and safety (the average and destructive laggards).

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## SUMMARY

This paper investigated the root causes of the behavior of social systems with a focus on schools and workplaces. Root causes or agency was pinpointed within each individual system member, resulting in great complexity, unpredictability, and infinite variability. However, the investigation also revealed that it can be predicted with certainty that each individual system member will do what he/she is able to do (cognitive and physical/psychomotor domains or CAP), and what he wants to do (affective domain). These facts clarified, significant shifts and updates are needed for description, understanding and analysis of social systems and are proposed in concepts such as the *Provide-Pickup* leader/learner relationship, *CAP*, *Things/People/Outcomes* and *TPO Theory*, and *Span of Pickup*. Updates in implications and tools for evaluation, design and management of social systems include *TPO Thermostat Leadership*, *Ideal-Based User-Designed Automated Social Control Systems (IBUDASCS)*, and program that are designed to be inclusive, continuous, and emancipatory (*rICE*). Three new frames for observing large social system outcomes are proposed:  $19 + 1 = 21, 22, 23$ ; outcomes of struggling, average, and transcendent social systems; and outcomes of destructive, average, and brilliant performance.

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