Messy Systems

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A **SYSTEM is an intentionally designed, systematically organized, whole entity (e.g., an automobile, computer, smart building, etc.).**

It has one or more essential functions so that an individual and/or group of people are thereby able to realize a set of important purposes.

The functions, not the parts, are critical in defining the system.

A critical distinction is that the system's parts have *functions* while only humans as purposive individuals have *purposes*.

Humans create means and ends.

A **system also consists of at least two or more essential parts that satisfy three conditions.**

If something only has one part, then it is not a system.

The first condition is that a system cannot accomplish its defining function(s) without its *essential* parts.

The second condition is that by itself an essential part cannot affect a system independently of at least one other essential part.

The third condition is that no group of a system's essential parts—that is, no subsystem—has an independent effect on the whole system.

Improvement in the parts taken separately does not improve a system overall as a whole. Indeed, it often leads to its failure and complete destruction.

Lastly, a system has defining properties that none of its parts have.

Problems are part of systems. They do not exist completely on their own disconnected from a larger context, i.e., a system.

Stronger still, problems are abstractions from messes, which are even more complex systems.

Problems can be either absolved, dissolved, resolved, or solved.

Absolve = Do Nothing

Dissolve = Redesign System

Resolve = Accept Less than Optimal

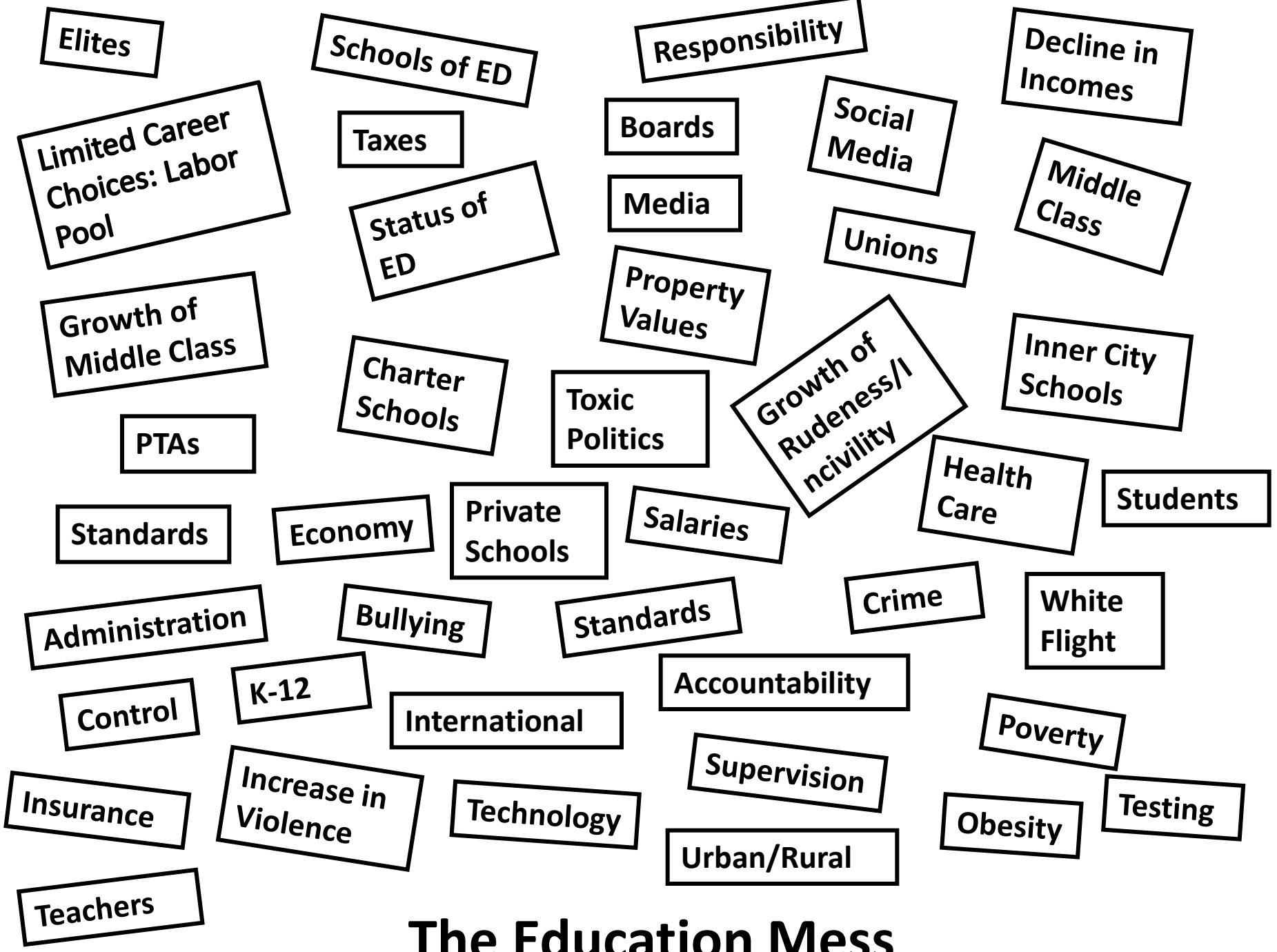
Solve = Optimal

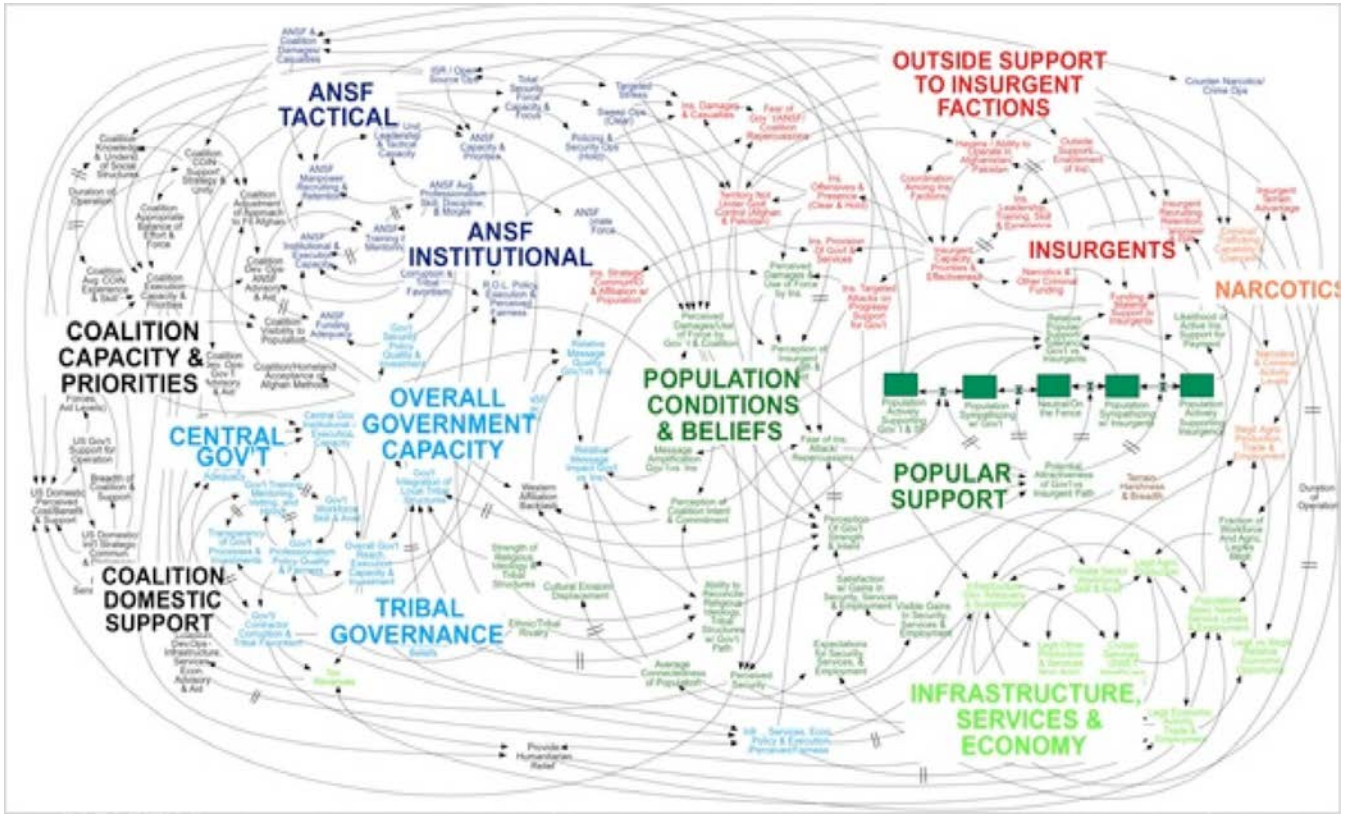
[People] are not confronted with problems that are independent of each other, but with dynamic situations that consist of complex systems of changing problems that interact with each other. I call such situations messes. Problems are abstractions extracted from messes by analysis.

Therefore, when a mess, which is a system of problems, is taken apart, [i.e., analyzed] it loses its essential properties and so does each of its parts. The behavior of a mess depends more on how the treatment of its parts interact than how they act independently of each other. A partial solution to a whole system of problems is better than whole solutions of each of its parts taken separately [emphasis added].

Russell L. Ackoff

A *mess* is a system of problems that is poorly organized, even disorganized. In fact, some of the disorganization is both intentional and *un*intentional.


Elites
Schools of ED
Responsibility
Decline in Incomes
Limited Career Choices: Labor Pool
Taxes
Boards
Social Media
Middle Class
Status of ED
Media
Unions
Property Values
Growth of Middle Class
Charter Schools
Toxic Politics
Growth of Rudeness/Incivility
Inner City Schools
PTAs
Health Care
Students
Standards
Economy
Private Schools
Salaries
Crime
White Flight
Administration
Bullying
Standards
Accountability
Control
K-12
International
Poverty
Supervision
Insurance
Increase in Violence
Technology
Obesity
Testing
Urban/Rural
Teachers
The Education Mess



New York Times, Tuesday, April 27, 2010, p. 1.

None of the problems that constitute a mess exist, and hence cannot be defined, independently of all of the other problems that constitute it.

A mess also contains the various parties—stakeholders in general—that play a major hand in defining the mess and who are affected by it.

Since a mess contains stakeholders, it automatically contains all of their underlying anxieties, dreams, emotions, fears, hopes, and accompanying assumptions, beliefs, and myths, both conscious and unconscious.

Furthermore, it contains as well the previous history associated with the mess, and potentially all other messes as well.

As part of its history, it contains both strong conscious and unconscious memories of previous attempts, successful and otherwise, to manage the mess.

In short, messes *potentially* contain everything pertaining to the human condition. This is precisely why they are messy.

At least one of the problems in every mess is one of the problems from at least one other mess. The same holds true of assumptions, beliefs, myths, and stakeholders, etc.

Every mess thus contains at least one assumption, belief, etc. from at least one other mess. In addition, every mess contains at least one powerful underlying emotion from at least one other mess. In this way, every mess is in principle related to and a part of every other mess.

A mess is also similar to a system in that no subset has an independent effect on the whole mess. Finally, a mess as a whole has properties that none of the “individual elements” have.

Finally, messes are like fractals. The deeper and the further one digs down, one still encounters messes. In other words, it is messes all the way down and all the way up.

Messes do not begin and end at any particular level or part. Messiness is an inherent property of all messes.

Key Heuristics for Coping with Messes

Give special attention to the most improbable interactions, whether they are important, i.e., consequential, or not. These are the ones most likely to cause major crises.

In fact, every major crisis has been shown to be the result of two or more assumptions, factors, interactions, etc. that were assumed to be unlikely, etc.

Look at what seem to be least important interactions. These deserve special attention for these are the ones that come back to haunt us.

Look at the most damaging interactions. Never ever trust a single formulation of a mess. Get very different stakeholders from very different professions to formulate a mess.

Using the field of psychoanalysis, examine the deep assumptions that are made about different stakeholders. It is not that stakeholders are thereby “irrational.” They are not “perfectly rational.”

Keep timelines of different messes over time and how the different messes interact and are “parts” of one another.

Go after the most difficult interactions and by making headway on them show that it is possible to achieve change with and/or without revolution or major (mega) crises.

Go after the easiest to manage interactions and by making headway on them build hope and show that it is possible to achieve change with and/or without revolution or major (mega) crises.

Ask “Smart-Dumb” Questions. Never accept conventional, traditional constraints or boundaries.

- 5 Basic Types of Information/Knowledge Systems
- 1. Expert Consensus
- 2. Scientific Modeling
- 3. Multiple Models/Assumptions
- 4. Conflict
- 5. Systemic

The General Structure of Inquiry Systems