The Evolutionary Activist

A Series

It's All Connected:
Seeing and Acting Systemically

DRAFT

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About the Series

The opportunity for inclusive, conscious participation in the evolution of our culture and society is still fairly new to humanity. Beginning about a century and a half ago, a growing wave has been visible, taking the form of individuals thinking in new ways, people challenging status quos, and progressive movements of many kinds. However, few people have recognized the deeper wave: a new stage of evolution on our planet. Even fewer have considered how we can learn to get ahead of the wave, to ride it, and even to help steer it in a direction more supportive of human development and a sustainable relationship with the environment.

The Evolutionary Activist is a series of booklets intended to help open a bit more widely the door to this opportunity for conscious evolution at the personal and community level. Each booklet in the series focuses on something we need to know, or be able to do, in order to actively and constructively participate in this process.

We don't know whether it is inevitable that we will make the shift from unconscious to conscious evolution, or whether it is something that depends entirely on some combination of effort and "luck." In either case, we do appear to have a choice.

Introduction

It is increasingly obvious that our personal lives, our communities and societies, and the natural systems of our planet are all connected. In spite of this, our culturestill views and approaches things as if they were not connected. Most attempts made by our leaders, governments, non-profit organizations, activist groups, and industry to understand and address social, economic, environmental issues focus on parts, not on wholes. This has led to many of the problems we face, and we stilldon't recognize it.

We are born with a simple and unfragmented view of the world. We then learn most of the distinctions that we make, putting things in their various boxes. The culture that we grow up into will either teach us to keep things in separate boxesor it will help us pay attention to inter-connectedness. Few cultures today do thelatter very well.
Fostering a *systems perspective* means helping people and groups and institutions learn to focus more on relationships and wholes. This will be necessary if we are toeffectively move our societies toward forms more supportive of human development and a sustainable relationship with the environment.

Things and Wholes, Relationships and Systems: It's All About Context

In ordinary life—walking down the street, eating a meal, talking with other people—we don't see systems. We see *things*. The ordinary world of things works fine until we need to understand something deeply or to solve a complex problem.Then we need to look at *context*.

The Inner Context

If we open something up in order to understand it by looking at the parts, we willbe disappointed. It's the relationships that make the thing—the *whole* thing—whatit *is*. This is how "the whole is greater than the sum of its parts". In other words, the whole has qualities that you can't predict from the parts alone, because the relationships change everything. Looking at these relationships in order to understand the whole is one example of the systems perspective.

The Outer Context

Let's go back out to the everyday level of *things.* Things don't exist in isolation. They interact with other things, through relationships. Again, we aren't often aware of these relationships, and often don't need to be. But when we need to dealwith a complex problem, or are designing something, we need to look at the whole and the relationships. That's another example of the systems perspective.

You may have gleaned that we can think of wholes as being inside of other wholes, which are inside of still other wholes. In other words, wholes are "nested". Sometimes we need to dive inside and focus on one thing that is affecting the whole, but we shouldn't forget the relationships and the total contextthat emerges from those.

Systems

The word *system* might bring to mind a big institution, as in "our health care system" or "the system is rigged." It might also bring up a method of doing something, as in "I've got a system." It's also a word used in technical contexts, like a computer's "operating system" and a car's "ignition system". At the heart ofall of these uses of the word is the idea that there is something made up of parts that act together as a whole. The real essence of a system is not the parts, but the relationships among them. In fact, a good definition for "system" is *a family ofrelationships acting as a whole.*

You could say that every *thing* is also a *system*, but you can't see it in both ways atthe same time. When we focus on a whole, we're looking at a thing. When we focus on the relationships, we're looking at a system.

All Systems in the Real World are Open Systems

When we recognize a thing as a thing (and not as a family of relationships), we've perceiving a boundary around it. But just because we perceive a boundary arounda thing/system doesn't mean it is isolated or "closed". A *closed system*, in theory, has nothing (i.e., no energy or information) flowing in or out of it. Most things/systems—ecosystems, societies, cultures, institutions, families, human beings, minds, organisms—are *open systems.*

Living Things Have Special Qualities

The systems perspective helps us recognize important difference between things like rocks and machines, on the one hand, and living things (and organizations ofliving things like societies). If a car's engine isn't working well, we can usually pretty quickly diagnose it as a problem with a part. We just replace that part and,in most cases, everything is fine. The relatively low level of complexity within rocks and machines doesn't allow for new qualities to emerge within them.

With living things, however, there are system-wide dynamics in play—flows of energy and information that are sensitive and balanced across the entire system. Living things have the ability to self-create and to maintain their wholeness. Somehave the ability to

learn. Some (like human societies) even have the potential to consciously evolve.

The Systems View, in a Nutshell

We don't need to know everything about all the "new sciences" and popular spin-offs to grasp the basic essence of the systems perspective. The following list covers the key principles:

- Everything is made up of relationships.
- Everything is defined by its relationships with other things, in a totalcontext.
- A system is a family of relationships acting as a whole.
- Real world systems are open systems, not closed, and nothing exists inisolation.
- Doing something in, or changing one part or aspect of, a system affects theentire system.
- The qualities of a whole can't be predicted from the qualities of its parts; thewhole is greater (or at least other) than the sum of its parts.
- Using individual parts or aspects of a system to understand the whole leadsto incomplete understanding and less effective or negative consequences.
- The boundaries of a system are fluid and can be re-drawn depending on the relationships and contexts that we recognize.
- The observer is involved with what they're observing.

<u>The Concept of *Emergence*</u>

The unpredictable (and "irreducible") appearance of new qualities or phenomena out of interactions between things is called *emergence*. It's worth focusing a bit more. The reason we can't understand wholes by looking at the parts is because the relationships can completely change things, and in ways even science has a hard time explaining. Take water, for example. A primary quality of water is that it is usually *wet*. But we can't point to water's basic molecules (2 hydrogens and 1 oxygen) and figure out where *wetness* came from. And we couldn't start with hydrogen and oxygen and predict that combining them would produce something*watery*. Wetness is an example of *emergent property*.

Another example in terms of chemistry is that the elements sodium (Na) and chlorine (Cl) are both poisonous to humans, but if you chemically combine them,they become NaCl: simple table salt, something essential to life.

Life itself is another example of emergence and emergent properties. No one knows

exactly what made the difference between merely complex chains of proteins with fatty boundaries around them and the first *living organisms*. But it certainly had something to do with relationships giving rise to truly a truly newphenomenon.

Emergence can be seen beyond the systems studied in chemistry and biology. It can be seen in teams of people where a diversity of backgrounds, knowledge, and skills brought together in the right way create new strengths in the group. Anotherexample is in conflict resolution and negotiation, where people can find "win- win" solutions that didn't exist before the interaction. But that can only happen if people enter the room with an open mind, ready to go beyond mere "compromise."

Unsystemic vs. Systemic Approaches

A better understanding of the systems perspective can be gained by comparing systemic (or holistic) approaches with unsystemic ones in specific situations. Let'stake a look at a few examples.

Situation: A Problem with Island Pests	
Less Systemic Approach	**More Systemic Approach**
• Introduce a predator to control the pests without considering the long-term consequences.	• Consider "native" approaches tothe situation. • Identify the roots of the issue and seeing if it can be prevented with better practices (e.g., keeping weeds down, preventing seed spread). • Try to anticipate what imbalances might be created with various approaches.

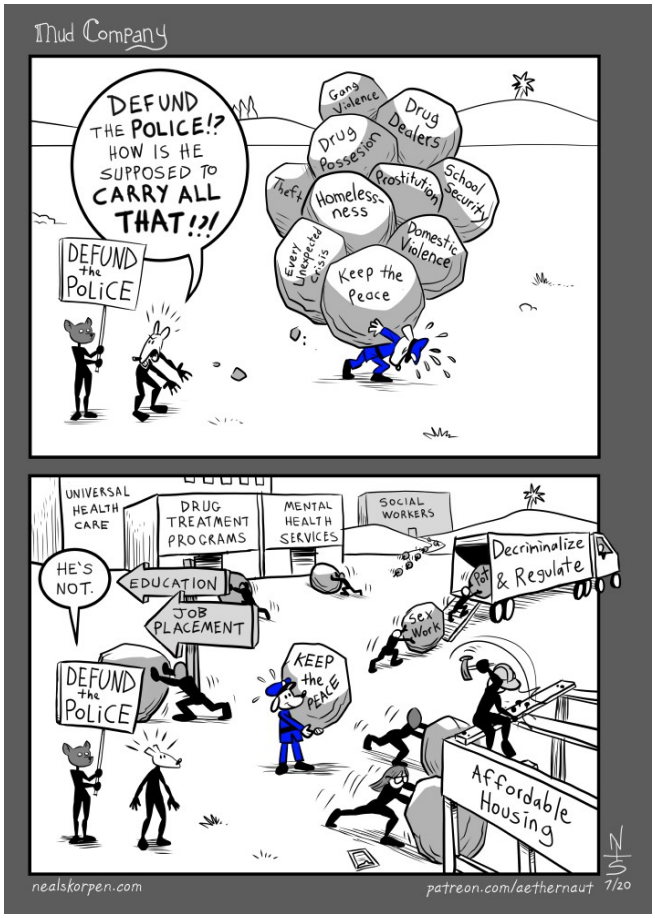
Examples of this situation:

- Seal hunters in the 1800's and early 1900's inadvertently introduced house mice to remote Marion Island, between South Africa and Antarctica. These mice became a problem for island-based researchers after World War II, who introduced cats to address the problem. Within a few decades, the catswere killing off many native birds. Scientists killed off the cats by infecting them with cat-flu virus and then hunting the rest. The cats are gone but themice remain, and they are harming local vegetation and birds.

- In 1880's Hawaii, sugar cane growers had a problem with rats. They introduced mongooses from India, who didn't go after the rats but insteaddecimated native bird populations.
- Another story of systemic consequences comes from the island of Borneo, but the animals introduced (cats) were only one link in a chain of consequences that included malaria, the chemical DDT, wasps, caterpillars,thatch roofs, geckos, and rats.

Situation: Cars Speeding through Neighborhood Streets	
Less Systemic Approach	**More Systemic Approach**
• More enforcement / tickets • Install speed bumps and stop signs	• Occupy streets with human activity • Provide protected bike lanes and enhance public transportation to reduce dependency on the automobile

Situation: Police-Involved Violence	
Less Systemic Approach • Body cameras • More police training • Citizens' police academies	**More Systemic Approach** • Address poverty, racism, andmental health issues • Criminal justice reform • De-criminalize drugs • "Defund" police (in the sense that it was intended, see below)



This cartoon by Neal Skopen about the concept of defunding the police illustrates the intent toward a more *systemic* approach to dealing with problems associated with community-level crime and potentially deadly interactions with the police.

In this approach, a broad range of proactive and preventive services and strategies are engaged to help address the factors that commonly are connected with a potentially dangerous situation. Such circumstances include homelessness, drug addiction, mental illness, poverty, and domestic violence. The intention is to both prevent and de-escalate situations andmake it easier for the police to manage emergencies non-violently.

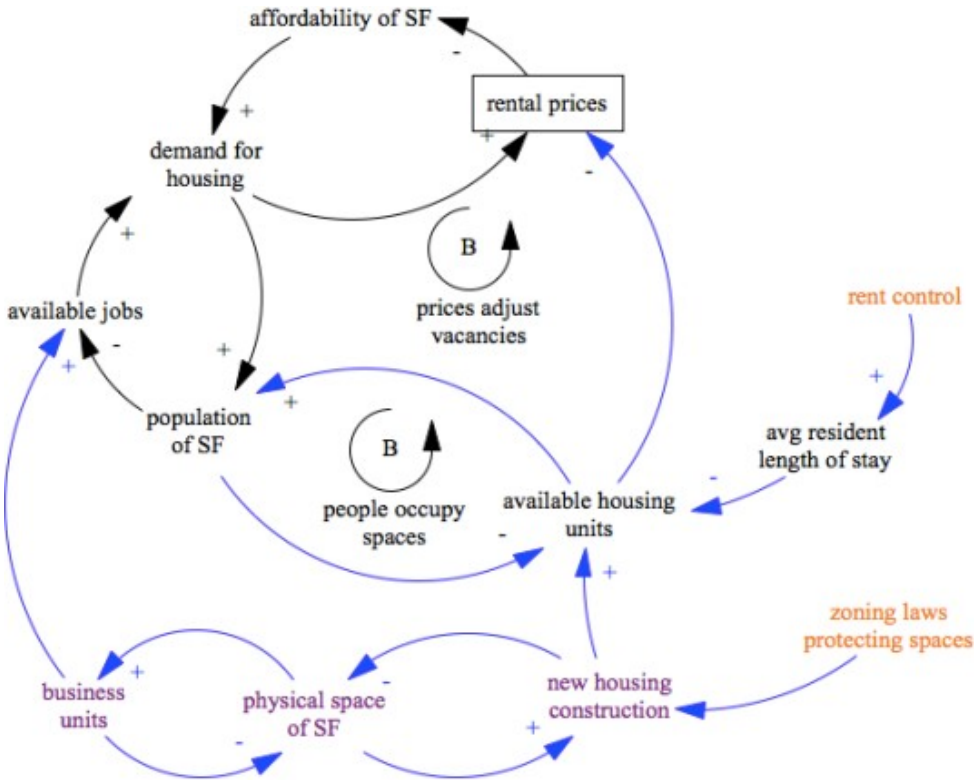
Situation: Rising Cases of Emotional Depression	
Less Systemic Approach • Prescribe more medication to more people	**More Systemic Approach** • De-stigmatize counseling • Work with employers to provide support for employees • Whole family therapy • Holistic therapies, including exercise, meditation, diet, using medication only as a complementary strategy • Address social issues, improve educational and employment opportunities • Strengthen local communities' sense of inter-dependence and responsibility

Situation: Student Test Scores Falling, Dropout Rates Rising	
Less Systemic Approaches • More "rigor" • More homework • More testing • Teaching to the test • More teacher training • Changing the curriculum or materials	**More Systemic Approaches** • Reduce poverty & addressing discrimination • Use schools as community centers • Involve parents as partners • Coordinate & integrate social services & education • Recognize individual differences in learners & their goals & design programs accordingly • Involve learners in designing the educational experience

Situation: A Lack of Affordable Housing	
Less Systemic Approaches • Build more houses • Build low-income housing complexes • Introduce rent control	**More Systemic Approach** • Expand the context beyond just housing supply. Look at *housing affordability*, which also factors in: o wages o distance to work, shopping, etc. o the availability of transportation o zoning laws that affect what can be built where o who's moving in and how that affects the kind of residences needed • Pursue a multifaceted (holistic) solution that might have more benefits in more ways • Look at what's going on elsewhere that might cause a rise in local population; try to address it on a regional basis.

On the subject of affordable housing and the systems perspective, let's considerwhat a group in San Francisco did in 2013. They got some people together to explore the problem of the rising price of rental housing in San Francisco, taking the following steps:

1. They started with three factors—the population of San Francisco, the supply of housing units, and rental prices—and then started listing factors that affect each of these first three.
2. They started looking at what affected demand for housing and the supplyof housing, and mapping out the influence loops.
3. Eventually they ended up with the "causal loop" diagram below.



In this diagram, the "+" symbol means having the effect of increasing something and the "-" symbol means having the effect of decreasing something.

This exercise and the resulting diagrams illustrate one way that "systems thinking" is put to use: to explore the interaction of all of the forces that influence a situation.

Working Systemically Means Having to Deal with Complexity

Looking at things through a systems lens means looking at relationships. Once we start doing that, things get more complex. Why?

- It requires us to consider the whole web of interactions. For example: We thought we only had to deal with "B". But A causes B, which influences C, which affects A and D, etc.
- The relationships themselves represent even more "things" to consider.
- It all becomes a moving target because as one thing changes, it may trigger small or big changes in other factors or in the entire system.

Just to give you an example of how complexity is revealed when we start to see things systemically, let's consider the issue of climate change. Most scientists agreethat the leading cause, or at least accelerator, of climate change today is the large amount of

"greenhouse gases" like carbon dioxide and methane that are being released into the atmosphere. Simple, right? But if we really want the big picture, and if we want to do something about it, we have to ask "what are the factors affecting the amount of greenhouse gases being emitted?" Our list might start with:

- cars, trucks, and airplanes
- home heating
- power plants

But there are other sources that might not have come to mind at first, like:

- livestock (cattle in particular)
- natural gas wells
- cement manufacturing

A growing list, but still not that long. Now, if we start to dig deeper and look atmore relationships, the list really starts to grow:

- lifestyles
- dietary habits
- demand for grains to feed livestock
- clearing of forests for land to grow grain
- consumers' ignorance about the effect of their choices
- efficiency standards for new homes
- city planning that influences automobile use
- funding for mass transportation
- technology facilitating or holding back electric vehicles
- the lack of a method to recycle spent lithium from batteries
- political influence of oil and natural gas producers
- economies dependent on fossil fuel production
- nations jockeying for influence and economic advantage
- political lobbying by automobile manufacturers
- marketing by agricultural producers
- measures of economic health based on increasing consumption rather thanon efficiency and sustainability
- nationalism vs. global perspectives
- politicians wanting domestic support
- the level of science education

- the time delay between actions and the visible effects of those actions
- short-term thinking

As we reflect on lists of factors and continue to dig deeper, we would identify even more factors. All of the things on the list have influences on each other, so itbecomes clear that we need to focus on factors at the "center" (or the foundation)of the problem.

Recall the earlier "loop" diagram related to housing affordability. That is a fairlysimple example! And these diagrams don't really help us get our heads around a situation very well, or give us a sense of direction for strategy. But there arestrategies for helping us deal with complexity.

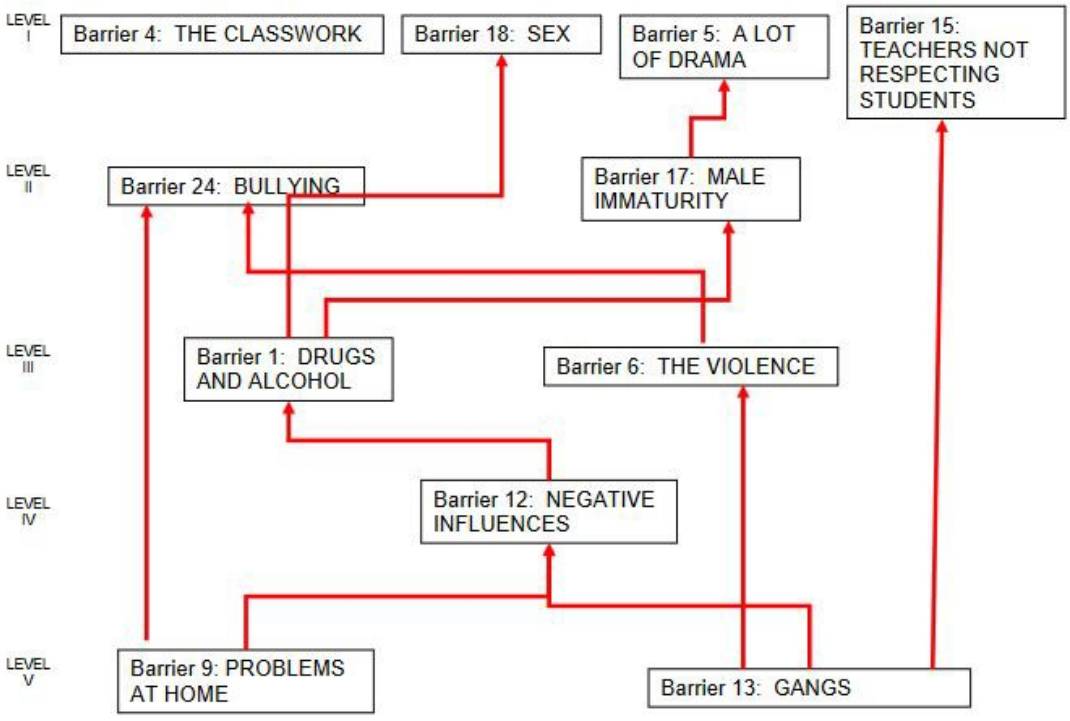
Dealing with Complexity

Complexity can become overwhelming because our brains can only handle so many items at once. One observation (by George Miller) is that we can only keep between 5 and 9 things in our short-term memory at once. If you're not just remembering a shopping list and are actually having to deal with the *relationships* between things, too, then the actual number of things we can focus on at once maybe just *three*! The issues facing our lives and society today each have a lot more than three elements to them. So, are we helpless in the face of all that complexity? Not if we use methods designed for it.

Back in the 1970's, John Warfield and Alexander Christakis used insights from psychology and systems science to develop a process that groups could use to better deal with very complex issues. What it comes down to is that if we can (a) focus our attention on *what influences what*, (b) do this in small bites, and then (c) build a map of those relationships (or in the case of Warfield and Christakis, design software that can help you do that), we can get a better handle on problemsand on where to put our attention for solving them.

The figure below is a simple influence map, or "root cause map," that was createdusing the group process created by Warfield and Christakis. This one is about barriers that were keeping students at a particular high school from doing well.

Figure 2: Root Cause Map of Barriers that keep students from doing well at Everett High School



Generated by the Everett High School Student participants at the March 27, 2009 CogniScope™ session.

The creation of this influence map revealed that *problems at home* and *gangs* werethe ultimately most powerful drivers of the problems being experienced every day. In fact, it is often the case that when people use this particular process, theyfind that what they initially identify as the most important problems are mainly *effects*, and that they need to dig deeper to figure out what the real priorities should be in order to help alleviate those effects.

It is important to note that the factors in this map were identified by the people atthe school themselves, not by outsiders. Those people directly involved also werethe ones who figured out the influence relationships. Direct participation by the full range of people involved in the situation or system is central to this process.

The influence map is an example of the systems perspective put to use forempowering people to solve problems.

Fostering a Systems Perspective in Our Culture

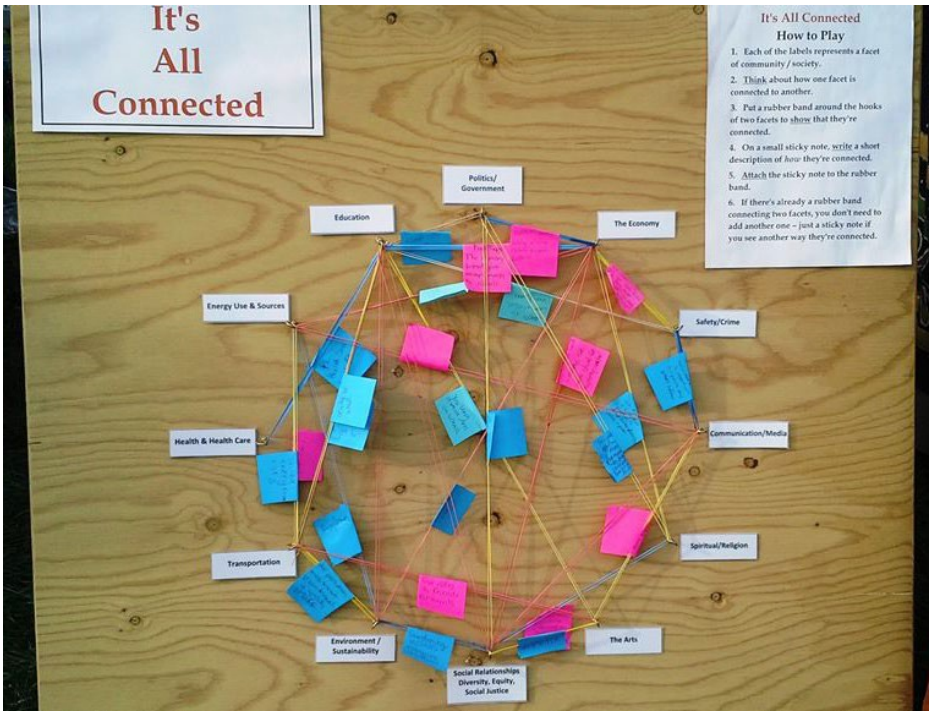
Since fragmented and reductionistic thinking is found throughout our culture, there is a need to foster a systems perspective throughout our culture. But there is a kind of "chicken-and-egg" problem. We can get individual people thinking about the

problems with unsystemic thinking and acting, and the benefits of and necessity for a systemic perspective. However, unsystemic ways of seeing and acting are deeply woven into our institutions. Just consider how our education, health care, and justice systems work. We thus need to intervene at every level wecan. Below are a few thoughts about how this has been done or can be done.

Fostering a Systems Perspective in and through Schools

There is little visible effort given to teaching the systems perspective directly in our public education systems. And perhaps doing so would have limited benefit unless it is done in a contextual way. The late systems educator Bela H. Banathy once told me that the idea of teaching the systems perspective in schools was fine but wouldbe "like pouring new wine in an old wineskin." A lot would depend on how it is approached.

The image below shows a simple tool that I developed to help introduce a systems perspective. The intent was for it to be used in schools. This particular prototype was field-tested at a community fair. Passers-by, including children, were invited to use rubber bands to connect two aspects of society and to write the connection they saw on the sticky notes, which they wrapped around the rubber band. As more connections were made, the interconnected nature of the whole began to emerge. An administrator in the local school district saw possibilities for this to beadapted to explore interconnections in other contexts, such as elements of stories the kids might be reading in class.



Another angle on bringing the systems perspective into schools is to restructure curriculum and learning experiences so that they cross the silos of knowledge that we know as different subjects and disciplines. For example, "interdisciplinary" approaches combine different subject areas—for example, studying economics andenvironmental issues together. This doesn't challenge the separation between the disciplines, but at least it recognizes places where they can and should touch.

There can be cultural and territorial walls that inhibit interdisciplinary studies,and these need to be called out and broken down as warranted.

At the other end of the spectrum would be the total integration of curriculum. One notable attempt at this was an early 2000's reform effort in the Australian state of Tasmania. *Essential Learnings* was to have pretty much eliminated the traditional separate subject areas altogether, and instead organize the curriculum around major learner capacities:

- Thinking
- Communicating
- Personal Futures
- Social Responsibility
- World Futures

Within each of these areas were a variety of sub-categories. In fact, "Understanding Systems" was one category within World Futures. The *Essential Learnings* framework might have fostered the systems perspective fromthree directions: the learning, the teaching, and the curriculum (what is taught). However, the initiative was shot down before it could be implemented.

The failure of the *Essential Learnings* initiative (as well as many other reform efforts) brings us to another way that education represents an opportunity for the systems perspective to take root. This involves how change in education is done. 60 years ago, the anthropologist Margaret Mead noted that attempts to introduce "progressive" educational ideas into the traditional system in piecemeal fashion would be likely to fail. Systems need to be changed holistically, and in the case of education, this includes sweeping in the context that includes parents, business, and politicians; funding formulas; relationships between education and other systems, etc.

One opportunity for the systems perspective to put to practice in and around education is in the relationship between education and other services that affect the lives of learners and their families (social work, health care, daycare, pre- school, college and adult

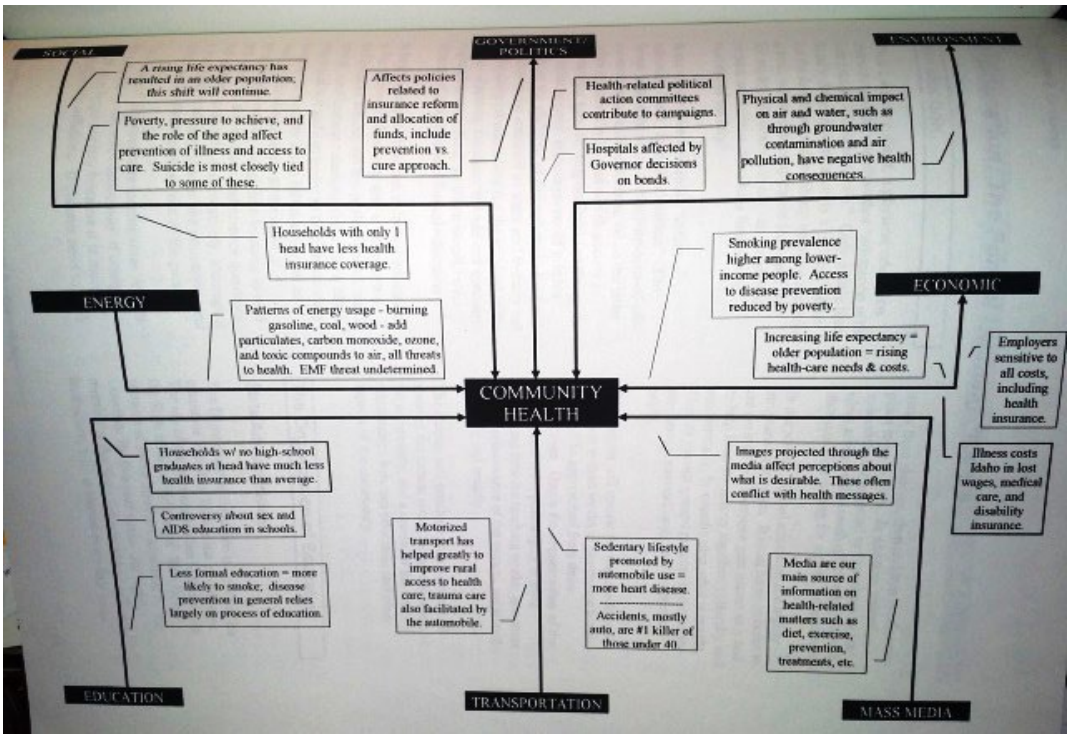
education, etc.) Often that relationship is limited to information exchange, at best. Should it extend to cooperation? Could it be taken further, toward coordination or even integration?

Fostering a Systems Perspective Through Community Education

I use the term "community education" here to mean taking it out to the adults. We can call out unsystemic thinking and approaches around us through personal conversations, social media, "letters to the editor", and public testimony. At the same time, we can highlight what more systemic and holistic thinking and acting might look like.

Literature about the systems perspective can be created or found, reproduced, andshared with teachers, corporate managers, and community leaders. Another possible approach would be to organize reading or study circles around the systems perspective and related ideas. There are a number of fairly accessible books and articles that could be used for this. A fun variation would be to organize watch parties for movies like *Mindwalk*—probably the only drama everproduced around systems themes.

An early "evolutionary cell" based in Boise—Coevolution Southern Idaho—wroteand published a book called *The Southwest Idaho System*. This unique work was a profile of one region of Idaho, with chapters focusing on physical setting, history, politics, economy, education, the arts, and more. Each chapter concluded with a chart highlighting the systemic connections between that chapter's focus and all ofthe other dimensions of the region. An example is shown below.



Copies of this book were given to every public and high school library in theregion.

Fostering a Systems Perspective in Local Government

Local government is often more accessible than state and national government. While people in local government are bound up in wider systemic webs that can limit the adoption of new approaches, they can at least offer a foothold. You couldadvocate for systemic approaches when long-term visions for your community are being reviewed or created, and when issues like affordable housing,transportation, and crime are being addressed.

Depending on the level of organization of advocates of the systems perspectives, and on opportunity, receptiveness on the part of the audience, and funding, demonstrations of processes that use systemic and holistic approaches could be organized. We did this in Boise with the complexity-grappling process I describedearlier. Local government didn't host the experience, but people who worked for local government participated and elected officials expressed interest.

Fostering a Systems Perspective among Advocacy and Activist Groups

Most larger communities have advocacy and activist groups who've organized themselves around specific concerns: environmental protection, housing and homelessness, alternative transportation, human rights, etc. Some of them are undoubtedly already are aware of the need for systemic & holistic approaches, and embrace those. For others, there may be opportunity to explore this with them. As noted earlier, ideas like "defunding the police" represent opportunitiesfor discussions about unsystemic vs. systemic approaches.

Fostering a Systems Perspective in Business

Business in our society is generally oriented around "the bottom line"—i.e., making money. However, some businesses—particularly larger ones like major corporations—have been increasingly recognizing the importance of social and environmental considerations. Nike is known, for example, for its Reuse-a-Shoe program, and many oil companies say that they are preparing for a post-fossil future.

Making social and environmental considerations complement the profit consideration is the idea behind "triple bottom line" accounting. This is a sign of the systems perspective reaching corporate board rooms. However, it is meaningless unless it really becomes part of the accounting system, becomes partof the corporate culture and is done comprehensively and with integrity, for the long term.

Bringing it down to the inner context, businesses large and small act systemicallyand holistically when they care for their employees and help their communities. For example, good maternal and paternal leave, preventive health care programs,

and paying living wages all show a recognition that employees and their families matter to the success of the whole enterprise. Businesses who sponsor communityprojects and programs also show that they recognize their survival and success depends on the health of their communities.

Clearly, there is great deal of room for improvement in getting businesses at alllevels to think and act systemically—both internally and in their wider community, social, and environmental contexts.

Summary

Fragmented, reductionistic, unsystemic ways of thinking pervade our society andtouch every aspect of our lives. There is a lot of need and room for highlighting the problem with that, and for fostering a systems perspective.

Key Ideas of the Systems Perspective

- Everything is made up of relationships.
- Everything is defined by its relationships with other things, in a totalcontext.
- A system is a family of relationships acting as a whole.
- Real world systems are open systems, not closed, and nothing exists inisolation.
- Doing something in, or changing one part or aspect of, a system affects theentire system.
- The qualities of a whole can't be predicted from the qualities of its parts; thewhole is greater than, or at least *other than*, the sum of its parts.
- Using individual parts or aspects of a system to understand the whole leadsto incomplete understanding and less effective or negative consequences.
- The boundaries of a system are fluid and can be re-drawn depending on the relationships and contexts that we recognize.
- The observer is involved in what they're observing.

How a Systems Perspective Helps

- Developing a systems/holistic perspective, as opposed to a fragmented
  - perspective, helps us to better understand things, to be more effective in

- addressing issues, and to be more effective at bringing goals, visions, anddesigns to reality.
- It helps us view problems and crises in the most empowering context, andto grow from them.
- It pulls us toward looking at the roots of issues, as well as the branches.
- It helps us see and create feedback loops so that we can see the effects ofour actions more clearly.
- It helps us avoid creating new problems.
- As our communities and society learn to design or re-design social systems,the systems perspective will help us ensure that our designs are more responsive, effective, efficient, responsible, and sustainable.

Other Key Ideas

- Viewing things with a systems perspective often means having to deal with complexity, and special consideration should be given to the pitfalls of dealing with complexity in simplistic ways, and using methods better suited to it.
- Opportunities to advance the systems perspective can be found and created everywhere, including public education systems (from the classroom all theway out to the entire system and beyond), through community outreach, in and through local government, and in private business.