

Sermon
You Can Change the World
Roger Howe

YOU Can Change the World

And I mean you, each of you, as an individual member of our society, can change the world. In fact, you are partly responsible for how the world is today.

You don't have to join a movement, though that might help. Ultimately, our society is made up of individual human beings; how each of us behaves drives the nature of our society, the behavior of the world we see around us today.

Well, you are saying to yourself, Roger's really lost his beans on this one! Everyone knows it's only the rich and powerful, etc.... You fill in the gaps. But I come from a background of science and skepticism: I always start with science – and when I sound most like a mystic is when I'm most confident of my scientific roots.

So I'm going to change out of my ministerial garb into my professorial demeanor and tell you a bit about the science of networks and complex systems. We'll be skimming along the surface of this topic like a boat hydroplaning across a lake.

As we humans became more numerous and better connected, it became clear that we were forming networks. It soon became clear that it was not the nodes (the individual people involved) that were so important – it was the nature and density of the connections between the involved individuals – what is called “agents” in the lingo.

On the cover of your Order of Service are three circles of twelve numbered nodes - three networks which function quite differently. Consider that Jill, at 5, wants to send a message to Sally at 11; messages can travel only on lines connecting the twelve circles. Your homework is to study the three networks, which are identical except for the connections between the nodes, and think about how differently they would function. For now, please turn your order of service face down and listen to me.

Not only is density of connections important, the nature of those connections, which is to say the nature of the interactions between the individuals in the network also drives the nature of the network. Compare, for instance, the network of people involved in the propagation of a rumor or a piece of gossip, with the nature of the interaction of people involved in an epidemic of venereal disease.

Interested scientists expanded their view and a new discipline arose. Let's pause a moment to define terms. **A complex system arises when a sufficient number of diverse, interdependent, adaptive agents come into relationship.** These words appear in your Order of Service, so you can remember them. We need large numbers of agents, not exactly identical, interdependent and adapting in relationship to other agents.

So what are we talking about? Molecules in a cell? Cells making up a liver or a stomach or a brain? Organs making up a person? People making up a family, a community, or a world? Organisms, geology and climate interacting to make an ecosystem? Or a flock of birds or a school of fish? Yes to all of these.

I became interested in complex systems when I began to become interested in healthcare reform, back in 2001. If you want to have any hope of changing a complex system, you have to understand the nature of the system and what things might change it.

Simple examples first. A school of fish can be simulated by creating a set of nearly identical agents that operate with three rules, which are also under the word “Sermon.”:

1. Stay close to the center;

2. Maintain distance; and

3. Swim.

Flocks of birds function under similar, simple rules; during the offertory, you watched a video of what birds can do. Those birds had no leader, no commander, no drill sergeant. Their flight can be simulated with three rules very similar to the rules for a school of fish.

Two things about complex systems are crucial for our understanding and a third is of importance.

First, the important one. Complex systems often produce results that are totally unpredictable based on a study of the individual agents – these are called emergent phenomena. A single molecule of water is not wet, but a billion of them are. A single fish gives no hint of what a school of fish might be like; a single bird gives you no idea of what the behavior of a flock might look like. Interestingly, the study of individual brain cells gives us no idea of how thoughts are formed. While this is important, it isn’t central to today’s discussion.

Second, and crucial, is that the structure of complex systems emerges as the individual agents interact – it is not pre-recorded somewhere, nor is it dictated by some leader. Every agent contributes its behavior to the whole, and the whole that emerges is influenced by the behavior, by the interactions participated in by every agent.

Third, and also crucial, is how complex systems adapt to changing external and internal conditions. Interestingly, most are very resistant to being changed by external conditions – they continue to function in much the same way as they always did, resisting being changed from the outside while molding themselves to look as though they have changed. Think of a school of fish suddenly confronting a new rock in its environment – it will swim around the rock rather than collide with it, but aside from the modification of course, the school remains intact and essentially unaltered. On the other hand, when the nature of the interactions between the agents changes, the fundamental structure of the system changes. For instance, if we alter the mandatory minimum spacing interval of the fish, they don’t like to be so close together, and at some point they become more like moray eels that don’t form schools at all. If we increase the variability of swimming speed, the group may break up into several smaller schools, each swimming at a different speed.

And all of this sounds a lot like human society, doesn’t it? One would think that a looming environmental disaster would move human society to change – but we are very slow to change and even those of us who are changing are often not changing nearly enough. We persist

in doing things that we have always done in spite of the fact that what we have been doing has never helped the problem – look at the war on drugs, as an example of that; or look at how our escalating efforts to assure peace in our time always seem to involve more armaments, more expenditures on the military and a more aggressive posture toward those we don't like or don't understand.

I recur to a quote ascribed by some to Albert Einstein: “The definition of insanity is doing the same thing over and over expecting a different result.”

Before we lapse into the depths of depression, declaring that nothing can possibly be done because not only human nature but the characteristics of complex systems are working against us, we need to recall that there is an opposite side to the coin of resistance to change from outside forces in complex systems. Complex systems are relatively sensitive to internal changes, changes in the way the agents interact with one another.

So, let's look at that in a bit more detail. This is not about making internal changes within the agent, although that is clearly one way to change the way that one agent interacts with other agents. In complex systems work, researchers are constantly creating models in which agents are held to be behaving “as if they were using” such and such a rule to guide their behavior. For example, we say that a school of fish behaves as if it were following the three rules printed in your Order of Service. In complex systems composed of agents who are themselves complex systems – which, by the way, characterizes most complex systems we might be interested in – we don't have the luxury to know exactly what the internal reasons of the agent are; we can only characterize behaviors. We don't know what the fish or the birds are thinking – all we know is that they are behaving as if they were following certain rules to guide their behaviors.

Simple example: You are having an argument with someone you care about. Suddenly, it comes over you that two things are true: first, you are absolutely and incontrovertibly in the right, and second, it's not really all that important – like, no one will die or be maimed or anything like that. You have two choices: Stand your ground, allow things to come to an impasse and accept the resulting threat to your relationship; or apologize, indicate that you must have lost your mind to be arguing about this when what is really important to you is your relationship and maybe it really doesn't matter so much who's right and let's do it your way. Do you have any sense about what the difference in the outcome might be? Notice that I did not ask you to lie and say you were wrong, nor did I ask you to feel contrite; all I asked is that you say the words: “Gee, honey, I'm sorry. I don't know why we're arguing about this – what's really important to me is that I love you. Let's do it your way.” This is a behavior change, a change in the interaction between the two agents in your relationship.

If you don't think such a change in response makes a change in the relationship, I suggest that you seek psychotherapy or maybe just give it a try once.

Well, that example is simple enough to be trivial – especially since a two-person system is hardly the same as a million-person complex system. But the message about changing the interaction between the agents applies at any scale.

Let me be clear: this is not about “fake it 'til you make it.” Frankly, I don't know if “fake it 'til you make it” works or not, but it's all about INTERNAL change, and the message I am

trying to convey to you is that changing the way agents in a system relate to one another doesn't necessarily have anything to do with making changes inside of the individual agents. It's only about making changes to the actions of the agents. It's not about what you feel, it's about what you do.

Consider Mother Teresa's admonition to be kind, honest and do good. The roots spread under the surface, invisibly, but they have an effect.

One of the greatest ethical teachers in the western tradition taught that you should love your neighbor. Well, my neighbors are both a little like jackasses. They are harboring a grudge from 15 years ago and won't talk to one another, and if the topic of the other comes up, each has only bad things to say. In some ways, each is very nice to me, and in some ways, each treats me as if I am an ally of the other. I don't love either of them – but please don't tell them that. Still, I can choose how I relate to them. I could decide to frown at both of them – and we could have three consecutive households on our street where we don't get along. Or I could treat both neighbors as if I did love them. I could offer them corn when my corn comes ripe and I can't possibly eat it all. Or an occasional dozen eggs from our chickens. Or I could offer to help with stuff they are clearly struggling with. And smile and talk over the fence, ask after the health of the wife and the kids, stuff like that. I don't have to love them to do that, but it amounts to behaving in about the same way I would behave if I did love them.

Which pathway do you think leads to a better world?

Am I lying? Being untrue to my own values? I don't think so. I believe in the inherent worth and dignity of every person – which means every person deserves that I treat them in a way that is respectful of their worth and dignity – which is exactly what I believe I am doing. If I ask myself every day, if I really believed and wished to live the seven principles, how would I behave? And then strive to behave in that way, I am actually living into my deepest values, even if I am behaving as if I felt emotions different from the ones I actually feel.

But the magic of complex systems is: as I behave that way, I change the system. I give other people the idea that they actually **do** have inherent worth and dignity and that empowers them to follow my example. It's catching. Maybe not as catching as influenza, but certainly with much happier results.

How do you change the world? You decide how to behave based on your most deeply held values and then you behave that way even when your emotions make you wonder whether you aren't being just a little crazy to do that. You treat people well. You deal honestly, openly and forthrightly with others. You do your best to live your respect for the interdependent web (which is a complex system, by the way) of all existence. If you do that, you provide a small nudge to everyone you come into contact with that pushes them in the same direction. If we all, in this room, do that consistently in our community, we start a minor epidemic of people treating one another well. And the system changes.

And remember. You don't have to change how you feel. You can be angry or hurt or bemused or disgusted or you can be amused, warmed and loving. How you feel doesn't matter. What matters is how you behave. Not to say this is easy, unless, of course, you have all the right emotions at all the right times. Changing how we behave is hard work. But changing how we feel – well, that feels insurmountable, so this is, at least, an easier pathway.

Look around. Smile at the people around you. I know: you don't want to smile right now, but do it anyway! This is your first practical exercise in acting as if you respect the inherent worth and dignity of those around you – smile at them.

And while you're at it, please rise in body or in spirit and help me sing.