

What is a system? | Summary of complex systems

Just in summary of what is a complex system, it is a matter of perspective, depending on the perceiver who is part of the system. It's fundamentally about relationships and what happens between the elements of the relationships that is really revealing. It can't be controlled, although it can be discerned and appreciated.

In the book, *Getting to Maybe*, that we wrote about social innovation, the very first chapter was about the notion of standing still, that one of the things system entrepreneurs and social innovators need to be able to do is, right in the middle of all the complexity in which they're acting, to be able to stand still and not just be involved in action, but in a deep contemplation of the system itself and their relationship to that system. This is partly because that discernment, that appreciation, is really the building blocks for some kind of intervention.

Just this one last summary note: we can say that we learned those lessons that I've been giving you, including the Eric Bellows thing, drawing a lot from physical and biological systems.

Social systems are a higher degree of complexity. The number of variables is larger. The rules of the game itself can change. It can be a different game because there is a game changer that jolts and makes everything reorganize very suddenly. You need to consider technical, financial, ethical, cultural dimensions and subsystems in any one problem; and they also are changing over time.

Observing behaviour can change things. So, the fact of your involvement in trying to understand it will have an impact on the system you're observing. Even trying to predict what's going on can change it. Human beings, they anticipate. They have intentionality. They are active in the systems that they're trying to change.

Another concept which we'll be talking about more later, that comes from complexity, is the notion of fitness landscapes. Fitness landscapes suggest that quite different from either the beach or the ocean that we saw on those initial starting photographs, as we move walk across the beach, every step will create part of the beach to rise up and part of it to sink. As we then take another step to avoid the hill that has

suddenly grown up, that step causes another change in what's happening.

It's a constantly moving landscape affected by our capacity or our movement through it. Because of that, even more than a boat in a rocky ocean, we truly are part of that connected system where everything we do affects what's happening with everybody else and everything that everybody else does is affecting what's happening to us. The notion that you can control it or direct it truly is an obsolete notion and trying to work that way will end in frustration and some failure.