

I believe that the success of a system depends on the point of view from which you are looking at it. Systems cannot have morality, but the moral beliefs of the individual who approaches the system affect their view of it. As every system affects other systems, as stocks flow differently into other stocks, as reinforcing and balancing feedback loops occur, and as a system has inevitable externalities, it can never be perfect or “successful” for everyone.

It can be as simple as having two connected stocks, when one goes down the other goes up. Depending on which stock you care more about, or which perspective you take, your idea of success of the system will be different. In the case of the tomatoes, these two stocks could be the amount of tomatoes grown and the amount of cans available. If you are looking simply at the stock of tomatoes to gauge the success of the system, the more tomatoes the better. However, since the factories could not keep up, the amount of cans became a balancing feedback for the growth of tomatoes. If you cared about not only about the sheer amount of tomatoes, but rather about the tomatoes that could actually be preserved and eaten, you would care more about the stock of cans, and more of the system's energy would go towards raising that number. In the specific instance of the tomato problem, it is more likely that someone would care more about actually feeding people than setting some sort of world record for largest amount of tomatoes grown. Most people would agree that this particular system should be devoted to increasing the number of cans that it can produce if it is to succeed. Still, this is not always the case. (And even in this case, someone could be worried about how engineering tomatoes to grow better could affect other native species in the area, as well as a multitude of other things). In a system like the potato farm that also has two stocks, potatoes and groundwater, forced by the constraints of time into a reinforcing feedback loop, it depends whether you care more about the success of the potato farm in growing and selling the most potatoes, or if you care about preserving the stock of valuable groundwater for the surrounding environment and the myriad of species living there that may depend on it. You may be thinking, but how can using water to grow potatoes possibly be bad? You cannot grow potatoes without water and it is a completely natural process. After all, water is renewable. Even though water is a renewable resource, in this case, since it takes thousands of years for groundwater to be naturally replenished by the water cycle, and the potato farm will be an endeavor that likely lasts only a few decades, and may very well use up all of the available resource in the span of that time. It is scary to think that even seemingly simple, harmless systems such as these could have disastrous effects depending on how you look at it.

As I mentioned before, time delays can have a huge influence on a system and very much affect someone's idea regarding the success of that system. If, in the case of the tomato problem, the tomatoes would not have gone bad so fast, no one would have had to worry about the cans. Yes, it is very likely that there would have been something else to worry about, systems are never perfect, but this huge obstacle would have been averted. Perhaps Molly's system would then have been considered a success by her and her colleagues. Time can be a boundary, it can be a burden, and how you think about it can change your view.

Although different people certainly have no trouble seeing systems differently, it sometimes takes a paradigm shift to change the perspective of the majority. Molly's team had been so focused on producing the best tomato that they could, they did not even think about the need for cans. It was not until it was too late for their idea of “success” that they got their paradigm shift, and had the realization that their system was more complex than they imagined.

It often takes someone coming in with a fresh perspective, or some new information coming to light to cause a paradigm shift. Perhaps the shift comes not only in the view of the system, but also within the system itself. Perhaps the boundaries change, this in turn, changes the flows and the interactions between not only the stocks, but the system with other systems. Really, anything is possible. How can you possibly prepare for all conceivable outcomes? Because of this, or maybe despite it, I think that paradigm shifts are necessary for the success of a system. It is impossible to completely "succeed" from *everyone's* perspective. However, taking different perspectives into account and perhaps altering the system so that your primary objective is not adversely affected but other aspects "succeed" a little bit more is beneficial for everyone. After all, if success is arbitrary or subjective, does it even matter?