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WHAT I LEARNED ABOUT TEACHING SYSTEMS THINKING FROM AL GORE

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Let's say you wanted to communicate the complexity of a system on the scale of the Earth to an audience with an 8th-grade education, perhaps even less. How would you do it?

That's the challenge Al Gore has faced each of the more than 1,200 times he has personally delivered his presentation on global warming depicted in the film, *An Inconvenient Truth*. As an educator, I am fascinated by how elegantly he communicates complex systems thinking concepts—without ever actually mentioning systems thinking. By any measure, he has been successful: He has been nominated for the Nobel Peace Prize, the film has won an Academy Award, and many believe that Gore's work has caused a sea change in U.S. attitudes toward climate change. How did he do this?

What follows is an analysis of how Gore met this challenge, as well as ideas for how the rest of us might apply these techniques in our own work. Some of these observations have come from my participation in a training session with Gore in Nashville in support of his non-profit organization, The Climate Project, which is funded by proceeds from the film. While these ideas may not work for all speakers and all audiences, I think there is wisdom here for all of us.

Tips for Presenting Complex Concepts

Use Everyday Analogies to Reduce Complexity.

- Gore makes the case for why we should be concerned about the bleaching of coral reefs from higher ocean temperatures by calling them "the rainforests of the oceans." "Rainforest" instantly evokes a rich, colorful, and complex habitat that serves as a linchpin of the environment. Coral reefs are equally full of life—and equally threatened.
- In describing *moulins*, streams that tunnel down through the middle of glaciers, Gore describes them as behaving "like termites." This analogy elegantly communicates the idea that such melting will eventually cause ice sheets to break apart, just as termite damage can cause a house to collapse.

Avoid Technical Jargon Like the Plague, and if You Do Use It, Make Fun of It.

- After explaining the greenhouse effect in terms of solar radiation, Gore introduces a cartoon version by saying, "That's the traditional explanation. Here's what I think is a better explanation."
- At another part in the film, he says, "Scientists tell us that the earth is a 'non-linear system.' That's just a fancy way they have of saying that the changes are not all just gradual. Some of them come in big jumps."

In this way, Gore connects with the audience. He's implicitly saying, "I'm just like you. If I can understand this, so can you."

Explain Reinforcing and Balancing Loops in Plain Language.

- Gore never uses the word "exponential" to describe population growth. Standing next to a graph showing the level of population growth in just the last generation, he simply says, "In one human lifetime, something profoundly different is going on."
- In describing why melting of the polar ice cap is accelerating, Gore explains, "As the surrounding water gets warmer, it speeds up the melting of the ice."
- In describing how warmer ocean temperatures make hurricanes stronger, he states, "If you add energy to a system, it becomes more energetic."
- Gore describes the Earth's atmosphere as "a big engine for redistributing heat" from the warmer equator to other latitudes—one big balancing loop.

Don't Take Yourself Too Seriously.

- Use self-deprecating humor. When Gore uses a worker's lift in the film, he says, ". . . if I don't kill myself here."
- Risk using a few constructions that would get points off from your English teacher, such as "Communicate this real clearly."
- And yes, even use a folksy accent if it comes naturally to you: New "Orlens" instead of New "Orleens." I am certainly not saying that we should all talk with a Southern accent; I just noted that Gore doesn't hide his.

As the actor Peter Ustinov once said, "It is our responsibilities, not ourselves, that we should take seriously."

TEAM TIP

The more technical aspects of systems thinking can be challenging for some team members. Use the tips in this article to introduce the overarching *principles* of systems; you can always introduce the tools—such as the iceberg model and causal loop diagrams—at a later date to individuals who are interested in going further.

Tie Your Message to Personal Stories. Throughout the film, Gore traces his personal learning journey about the Earth from growing up on a farm, to college, to traveling around the world in support of continually learning.

- The death of his only sister to lung cancer forced Gore and his family to confront the mental models of tobacco use. His father finally stopped being a life-long tobacco farmer as a result of her death.
- Gore's son almost died in an automobile accident. Gore learned from this experience that it is possible to lose what is most precious to you. He reports that this realization changed "my way of being in the world," a shift that enabled him to confront the reality that we could also lose the Earth. This personal experience is the source of the passion that has sustained him in telling the story of global warming for *30 years*.

When I first heard how long Gore had been advocating on this issue, I reflected on the fact that I've been trying to tell the story of organizational learning for two years and feel as though nobody's listening. If Al Gore can tell his story for three decades, then maybe I can keep at it a little longer, too.

Don't Vilify Your Opponents (but Some Good-Natured Poking Fun Might Be O.K.)

- Regarding some in the petroleum industry, Gore quotes Upton Sinclair as saying, "It is difficult to get a man to understand something when his salary depends upon his not understanding it."
- Regarding skeptics, he cites a lyric from the band Dire Straits: "Denial ain't just a river in Egypt."
- Gore implores us to rise above party lines in order to respond to this challenge: "We must remove global warming from the partisan framework."

Sometimes, through their anger, activists end up recruiting the half of the audience who already agrees with them at the expense of alienating the other half who does not. We cannot afford such an outcome with an issue like global warming. This problem will require all of us.

Confronting Mental Models

"It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so."

— Mark Twain

In designing his presentation, Gore invested the most time trying to understand the mental models of skeptics: "I guess the thing I've spent more time on than anything else in this slide show is trying to identify all those things in people's minds that serve as obstacles to them understanding this. And whenever I feel like I've identified an obstacle, I try to take it apart, roll it away, move it, demolish it, blow it up."

- One technique he uses to try to win converts is to draw parallels with history. Gore relates denial of global warming to the rise of Hitler in the 1930s: "How do we react when we hear warnings from scientists" about something awful but that has never happened before?
- In one section of the film, he explores old habits that are hard to change through technology, such as nuclear technology: "New technology brings a responsibility to think about its consequences." This is an unassuming way of addressing the systems thinking adage of asking, "And then what?"
- To prompt the audience to examine the inertia of the status quo, he invokes the story of the frog in the pot of boiling water—that is, if you place a frog in a pot of boiling water, it will jump right out, but if you put it in a pot of lukewarm water and slowly raise the temperature, it will stay in and boil to death.
- In an aside during training, he offered this additional thought on why elected officials can be slow to change: "If an issue is not on the tips of their constituents' tongues, it's very easy for them to ignore it."

Rhetoric As a System

Gore crafts his presentations by managing three stocks or, as he calls them, "budgets":

A Time Budget: How long will the audience stay interested? Gore operates under the premise that if he periodically throws in an interesting aside or an arresting image, he "buys" more time from the crowd.

A Complexity Budget: Is the information too complex? By simplifying concepts, he buys more capacity to learn from the audience.

A Hope Budget: Is the graphic depiction of what will happen if we don't act soon balanced by concrete actions people can take? Fear leads to paralysis. If we replace fear with concern, we motivate action, and in action there is hope.

The main thing that surprised me about Mr. Gore in person was how funny he is. I laughed throughout the training with him. As one of his asides, he then shared this fourth budget:

- ***A Humor Budget:*** Show a cartoon or share a funny quotation, and you make deposits in pretty much all three "accounts" above simultaneously.

Sharing a Vision via Affect

Gore also connects through emotion. Here are a few examples that relate to the genesis of his personal vision and his efforts to inspire that vision in others.

- Gore conceives of collective will as a stock: "We have everything we need—with the possible exception of political will. But in America, political will is a renewable resource."
- "I set myself a goal: Communicate this real clearly. The only way I know how to do it is city by city, person by person, family by family."
- "Are we capable of doing great things even if they are difficult? The historical record says that we can. . . . It is our time to rise again to secure our future."
- "There's nothing that unusual about what I'm doing with this. What is unusual is that I had the privilege to be shown it as a young man. It's almost as if a window was opened through which the future was very clearly visible. 'See that?' he said. 'See that? That's the future in which you are going to live your life.'" ◘

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