Musing on the impact of small things.

Cynthia Cudaback, October 3, 2011

Wouldn't it be great if we could make the world a better place by doing just one simple thing? Tell two friends to do the thing, and they tell two friends and so on? Then we all hold hands and sing? Well, sorry folks, but protecting the environment is not that simple.

A few years ago, I ran across an article in a women's magazine titled "the power of ONE", about the way various small savings add up. My first thought was "Right on! Environmentalism goes mainstream!" Then I realized that the article was really two pages of statements to the effect of…

"did you know that if every single person in America ate one less piece of chocolate, we would save 300 MILLION pieces of chocolate?!"

I'm fond of quoting this to scientists and educators. I give them my best big-eyed, disingenuous look, and say "really! It's true!"

Well, ***so what?***

Key principle # 1: No number, large or small, has meaning without valid units.

Let's look at the chocolate statistic – it's got units of "chocolate", but the size of the piece is not specified. And are we talking about sacrificing one piece of chocolate per day, per year or per lifetime?

For the sake of argument, pretend that all Americans live on Hershey Kisses. A "piece of chocolate" is then defined as one 9^{th} of a 40 gram, 200 calorie serving.* Let's further assume that the recommended sacrifice is one piece of chocolate per day.

"did you know that if every single person in America ate one less Hershey Kiss each day, we would save 300 MILLION Hershey Kisses per day?!"

Now do we have a meaningful statement? **NO.**

Key principle #2: Big numbers by themselves are meaningless. They only take on meaning by comparison with other big numbers.

300 million Kisses is a big number, but what matters is – ***is it a significant fraction of our present consumption?*** For my thought experiment, I specified that Americans live on Kisses. That means one piece of chocolate is actually only $1/90^{th}$ of our daily, 2000 calorie diet. Now our statement reads as follows:

"did you know that if every single person in America ate one less Hershey Kiss each day, we would save 1.1% of our Hershey Kisses per day?!"

Now we have a meaningful statement, but it's a bit of a downer.

Compare the chocolate saving scheme with the popular Earth Hour. Oh it's a lovely idea, illustrated by a lot of faces glowing in candlelight. The video is quite touching, really. But the only part that might actually impact our global energy use is the final question "how will you go beyond the hour?"

The lightbulb is such a popular symbol of energy use that it tends to be used as the measure of all things. A 2010 study found that people tend to under-estimate the amount of energy used by large appliances as compared to the energy used by lightbulbs.

Turning off all the lights in the house for an hour is a dramatic gesture, but we could save more by washing one load of laundry in warm water instead of hot. This kind of information is hard to find in popular literature.

When it comes to solving the climate crisis, "there are no silver bullets, only silver buckshot". Bill McKibben said that in 2006, and I haven't found any older references. It's a great way to approach the complexity of the problem. We simply have to throw everything we've got at it.

Here's the thing – one lightbulb makes a trivial difference; Rich Muller even says one SUV makes a trivial difference. But that doesn't mean we shouldn't save energy every way we can. Each little thing we do, and each infrastructure and technological change we promote, is part of a stabilization wedge. All hope is not lost; we may yet be able to save ourselves from ourselves.