

Great work Windell! As someone with some real-world and university learnin' (supply boat deck hand, decades of surf fishing, 13+ years of environmental construction engineering, post-graduate coursework towards a coastal engineering PHD, 12+ years of HPC/High Resolution coastal hydrodynamic modeling) I totally agree! Here's another way to put it:

A *model* is nothing more than a construct meant to provide 1) an analogy for the way something has worked in the past and 2) a guide to how it will work in the future. Human beings create all kinds of models to represent important patterns—for the physical world and our personal lives too. Models include:

- The plastic airplane replicas we built as kids.
- The new River model at LSU.
- A metaphor—such as “layer cake” geology.
- A story told to us by an old-timer.
- A news article or subsequent report with explanations for events.
- A book—think *Rising Tide* (or *Men Are From Mars, Women Are from Venus*)
- An organized system with defined components and processes—such as the one used by the illiterate but highly intelligent shrimp boat captain to navigate Louisiana's coastal waters and earn his living, as well as the one geologists use to explain the evolution and dynamics of the Delta.
- Simple mathematical equations—if I drive at speed S it will take me H hours to reach my destination M miles away.
- Complex hurricane surge models run on supercomputers for estimating flooding.

Some of these models are “Qualitative” and some are “Quantitative.” Any “truths” contained in any model—Qualitative or Quantitative—can be important. What you refer to as “wisdom” is simply appreciating 1) the limitations of any one model (assumptions, representativeness, biases, uncertainties, etc.) and 2) how to integrate information from all the models which are relevant to a task at hand. Robust, accurate, and precise Quantitative Models are extremely valuable tools and increasingly sought after. But as you note we can invest too much faith (and sometimes money) in our ability to construct good Quantitative Models. **The “truths” in a Qualitative Model often can and should override the “scientific guesstimates” of an elaborate Quantitative Model that is really fundamentally “squishy.”** (A Quantitative Model that is squishy is more useful for assessing the sensitivity of outputs to varying inputs.)

PS—please don't ask my wife if I have attained any wisdom with regard to the task of being a good husband! All my Qualitative Models in that regard are extremely squishy!

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