

Response to “You Don’t Know That”

Luther Tychonievich

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I recently read, with great interest, an article written by Luther Tychonievich entitled “You Don’t Know That.” The basic premise of this article was that knowledge is a farce because of systemic failures in modeling. While I appreciate the effort to make this point, and agree that much of the sentiment is valuable and worth consideration, I think the author missed the mark by working off of a poor model of knowledge.

The principle failure of the article was in assuming some fundamental difference exists between information and modeling. That this difference is one of degrees and not of kind was demonstrated in the author’s own opening example. In it he noted that you cannot proceed with arithmetic until you have quantified the world—translated it, through a process Tychonievich chose to call “modeling,” into a set of numbers. He even points out a progression of more complicated models, starting with the childish distinction between apple and non-apple and moving up through counting, weighing, and then attaching more and more complicated variables to the picture. As the question you are asking becomes more involved, the models needed to address the question become more complex and, accordingly, less reliable.

This lack of crisp distinction between perception and modeling makes the claimed philosophic failure of modeling a fairly obvious and trivial point. More complicated models are harder to agree upon and trust. This comes as no surprise, though perhaps it was worth pointing out.

The so-called rigorous failure of modeling is more dubious, and is in most ways unrelated to the rest of the article. It is possible to have models so complex that we cannot deal with them reasonably or at all; most of us would agree that for most questions, the cut-off point where the math gets too hard to be worth it is considerably below the theoretic limits of computability and complexity theories. In practice, what we do in these cases is substitute other models in which we have less trust but with which

we can deal with more easily. It is generally laziness, not inability, that leads us away from the precise models.

By failing to notice this gradient between obvious and dubious models and the need to use more dubious models to answer more complicated questions Tychonievich missed completing his final observations. By putting these ideas together, I would offer the following distinctions in problems in place of his simplistic definition of a dilemma, always remembering that the boundaries between these are somewhat indistinct.

- On some questions we can easily agree on models that permit a solution. These are, to us, the easy questions—they have a correct answer.
- For other questions neither of us know of a trustworthy model that leads to an answer. These are the hard questions—we don't know their answer.
- Sometimes there is a model I trust but you find to be dubious, or vice versa. These are what I believe are colloquially called matters of faith; in the eyes of the believer, no different from the easy questions, in the eyes of the unbeliever, no different than hard questions.
- Sometimes we both have models we trust, but they disagree with one another. If we also believe the other person's model, we are guilty of irrationality. If not, we are said to disagree.

Of course, the matters of faith are also, by definition, points of disagreement, but I assert (without proof; it is merely an observation) that they do not in themselves lead to argument. Those arguments I have witnessed come almost exclusively not when one party is uncertain of what the other is certain of, but when both are certain the other is wrong.

I, for my part, am certain Tychonievich was wrong to separate perception and modeling, which is why I have written this response. The ideas were mostly sound, but the model he used was too simplistic to derive meaningful results.