

**DOGS AND PIGS –
METAPHORS WILL LIVE BY
David Berube**

Mr. John Smith was a rich old man was dying from a rare disease. On his deathbed, he called for his insurance agent, doctor and preacher:

"I trusted each you my entire life. Now I want to give each of you \$30,000 cash in an envelope to put in my grave. I want to take it with me."

Mr. Smith died and at the funeral, each one placed the envelope on top of the man, then he was laid to rest.

On the way from the funeral, in the limo, the doctor confessed "I must tell you gentlemen, I only put \$20,000 on top of Mr. Smith, I wanted buy this new machine that would enable me to diagnose his rare disease and save others. It's what he would have wanted"

Then the preacher said: "I have to confess, I only put \$10,000 on top of Mr. Smith. We needed that money to help more homeless, and it's what Mr. Smith would've wanted"

The insurance agent was angry at both the man, and said: "I can't believe both of you, stealing from a dead man. I wrote Mr. Smith a check for the full \$30,000!"

I want to thank Renn Ortwin for publicizing my book - Nanohype - when he discussed hype and I want to let you know my editor was responsible for the subtitle – The Truth Behind the Nanotechnology Buzz – which I felt was a little ambitious.

This is a wonderful opportunity to publicly thank Mike Roco for writing the foreword which involved a lot of negotiation. When putting the book together, without exception, everyone I interviewed told me Mike was instrumental in the National Nanotechnology Initiative and the direction of the USA research agenda. So, Mike, in front of all these people, I want you to know you are greatly appreciated.

I work in the USC NanoCenter (I have an office there). We have a spintronics at one end of the hall and catalysis folks next door, a TEM across the hall and OMETRICS, our first major spinoff down the next wing.

I am a member of the social science part of USC NanoCenter. I am not a philosopher, except as anyone with a Ph.D. can claim to the contrary. Instead I come degreed in psychology, biology, and communication studies. In addition, I have completed post-grad work in law, esp. patents and IP, and am taking coursework in toxicology and advanced mathematics.

My department chair would be proud of me today because I am talking about tropes, figures of speech.

For example, METAPHORS

On metaphors, after a comprehensive review of the literature, this is how they rank

In 1st place, we have GMOs policy discussion in popular media and in 3rd place we have a new one involving cascades – For example, Rejeski & Maynard – claim the whole industry at risk from a single event (cascades).

Loud noise spikes are not causal to cascades. Having studies currency collapse, war, market bubbles, riots, bank runs, electoral landslides, and government collapse as models. These are complexity cascades and for a complexity cascade to be produced by an insignificant event demands a very large noise spike.

The engine of history is a self-organized criticality. We learned that a decade ago. Triggers for causal events are often very mundane and get a threshold of mundane events and something momentous may happen. Studying the past gets you history not predictability.

THERE ARE ALSO QUITE A FEW SIMILES

Here, we heard NGOs are dogs, guard dogs and UK citizens are pigs, guinea pigs.

In terms of similes then, in 2nd place - CNTs are like asbestos (lot of good reasons that's not the case, read the book) and 4th place - Microglia and mitochondria oxidative stress is like Alzheimer's and Parkinson's

But my book was about **HYPERBOLE**

Hyperbole, like a metaphor, is composed of tenor and vehicles and tensions. The subject is tenure, the extrapolated implication in the vehicle, and the degree of likeness in tension.

- Civil war is hell – low tension trope (metaphor)
- Civil war is democracy (Bush trope) – high tension metaphor

Same applies for nano

- Lane & Roco – a means for physical science to compete with medical and health sciences and growth drivers – **HIGH UTILITY LOW TENSION** hyperbole.
- Bond & Sargent – national esteem and economic hegemony; cheerleaders of NNI; rhetorical troublesome - a revolutionary science with evolutionary implications when it comes to environmental risks – **LOW UTILITY HIGH TENSION** hyperbole.

Tropes are important because they evidence reduction bias. The assumption that you can communicate with example is different from analogic reasoning.

Reduction bias involved simple models when simple models will not do.

If the only tool you have is a hammer, you tend to see every problem as a nail. - Abraham Maslow.

WARNING – Future counterfactuals are troublesome.

Once I decide President Hillary Clinton as Commander in Chief lost the war in Indonesia in 2010 I begin to find evidence to support this conclusion.

Scenarios are attractive and seductive.

They are called PROLEPSIS and they are another trope.

ENGINES OF CREATION by Drexler was a work with a lot of prolepsis.

He used a metaphor over grey goo. Insults he sustained were painful.

THAT happens in both future counterfactual construction and prolepsis.

Are the problems real? Or are the problems the phantom knowledge generated by the algorithms we use?

That is the challenge. There are some painful problems confronting humankind and nano can find new and creative ways to -

- cure deadly and painful diseases,**
- make water safe for drinking, and**
- make energy independent more than political rhetoric.**

For that to happen, the public must -

- support public funding of nanoscience,**
- engage in debates over externalities and make the stronger arguments appear stronger while debunking the foolish and comparatively inconsequential, and**
- must purchase the services and products nanoscience ushers in.**

That's the communication challenge.

Let's not let the models we design control what we think. And this applies as well to algorithms and frameworks on governance and risk.

There is so much promise to nanotechnology and if you do your job well I may never have to evaluate the rhetoric of nanotechnology again and that would please me to no end.

Thank you for listening.