

Multiple Modeling Practices

OR
Making a Mess with Models



This is the world we've made for the Bay
HOW CAN WE MAKE IT DIFFERENTLY?

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Nitrogen
and
Phosphorous



The World is Messy!

Nitrogen
and
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The World is Messy!

"In the virtual Columbia electronic fish swim past electronic dams on video terminals. Change the electronic river and the fate of the electronic fish is graphically displayed... The virtual river influences events in the actual Columbia. How electronic fish behave will lead to decisions on how fish in the actual Columbia - the organic machine - will be managed. That the various virtual Columbias depend on the actual Columbia for some of their own electrical power only compounds the ironies and connections."

- Richard White, *The Organic Machine*



Nitrogen
and
Phosphorous



The World is Messy!

Friction - Resistance to relation or interconnection
- Difference to be overcome
- e.g. merging data sets, relating to other people, relating people to technologies, etc.
- See Edwards (2010) A Vast Machine and Tsing (2004) Friction: An Ethnography of Global Connection

"...the awkward, unequal, unstable, and creative qualities of interconnection across difference."
- Anna Tsing, Friction: An Ethnography of Global Connection

Work - The process of overcoming friction/Difference and building new relationships
- Produces new ways of organizing, and reshapes the world
- Different kinds of work produce different worlds

Mangle - Nothing is left unchanged in the encounter between friction and work
- We are reshaped by technologies, organisms, institutions, etc. just as they are reshaped by us
- See Pickering (1995) The Mangle of Practice

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The Work of Modeling the Chesapeake Bay

- 30 years of overcoming frictions
 - Adding new data
 - Making the model better fit existing data
 - Making model data useful to policy makers and the public
 - Addressing challenges to the Model (e.g. Limnotech)
- What kind of world has been produced?
 - Large infrastructure
 - Complex Model
 - Lots of computing power
 - A lot of people involved
 - Large institutional structure (CBP)
 - Government centric approaches



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Some Thoughts on Working with Multiple Models

Adding to the Mess

- New Sources of Friction
 - Increased Uncertainty?
 - Public confusion?
 - Reconciling data sets?
- New Possibilities
 - Greater Participation?
 - Poly-centric approaches?
 - Broader understanding?
 - What else?

"We cannot reason ourselves out of our basic irrationality. All we can do is learn the art of being irrational in a reasonable way."

- Aldous Huxley (1963), *Island*

Some Sources

Edwards, Paul N. 2010. *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming*.

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