A path forward for CLCA and decision making

Yi Yang, Reinout Heijungs

When to use CLCA?

- **Well…, we have been always doing CLCA.**
- **LCA is a decision-making tool.**
- **The basis for making a decision is the consequences it generates.**
- **This is a standard way of thinking and modeling.**

In most cases, we rely on ALCA for CLCA.

1) Comparative analysis
2) Hotspot analysis

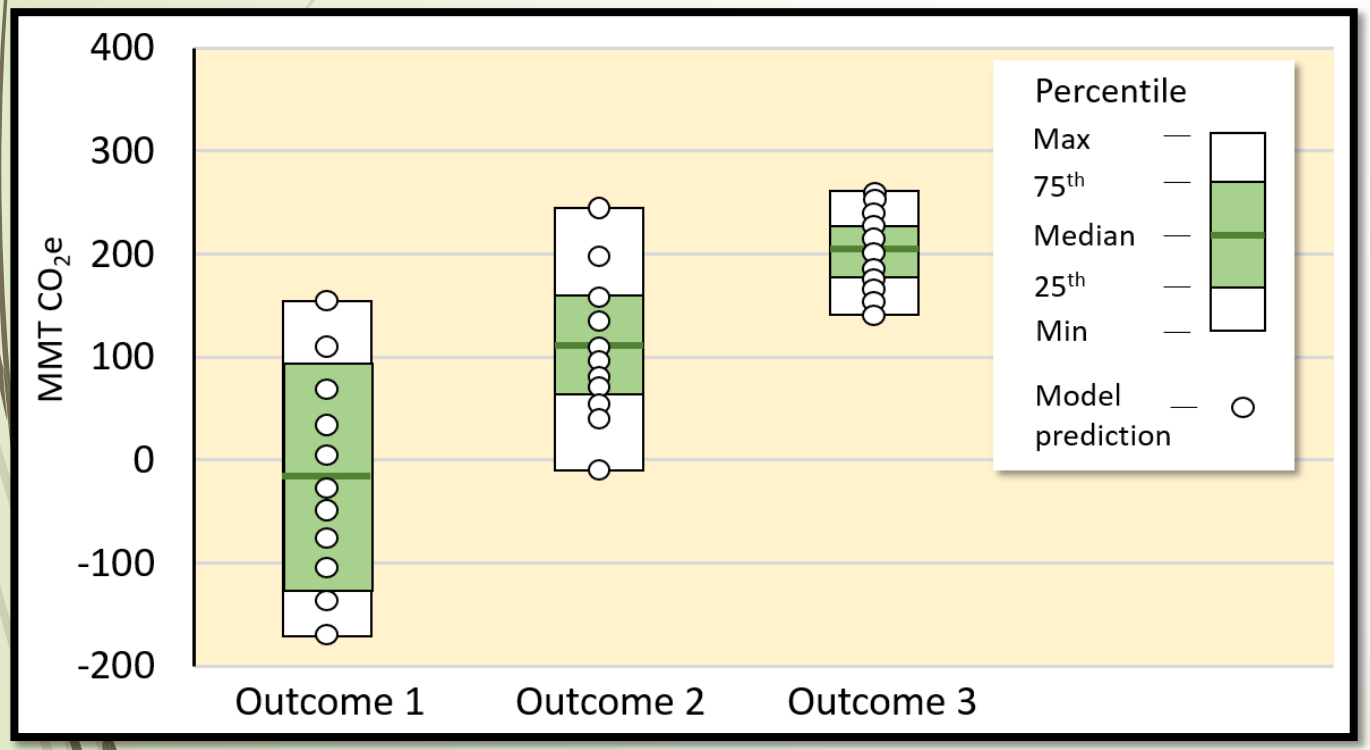
How to do CLCA?

- Linear models (e.g., $AB^{-1}f$
- Non-linear models (e.g., Integrated Assessment Models
- Linear optimization models (e.g., RCOT
- Non-lin s (e.g., CGE

Different models for different CLCA questions???

All hands on deck

- **Rely on them collectively for the same question.**



Why???

1) all models highly problematic

   e.g., linear models – we repeat what we did
   e.g., optimization models – we are highly intelligent

2) hard to say which one is the best

Science, falsification

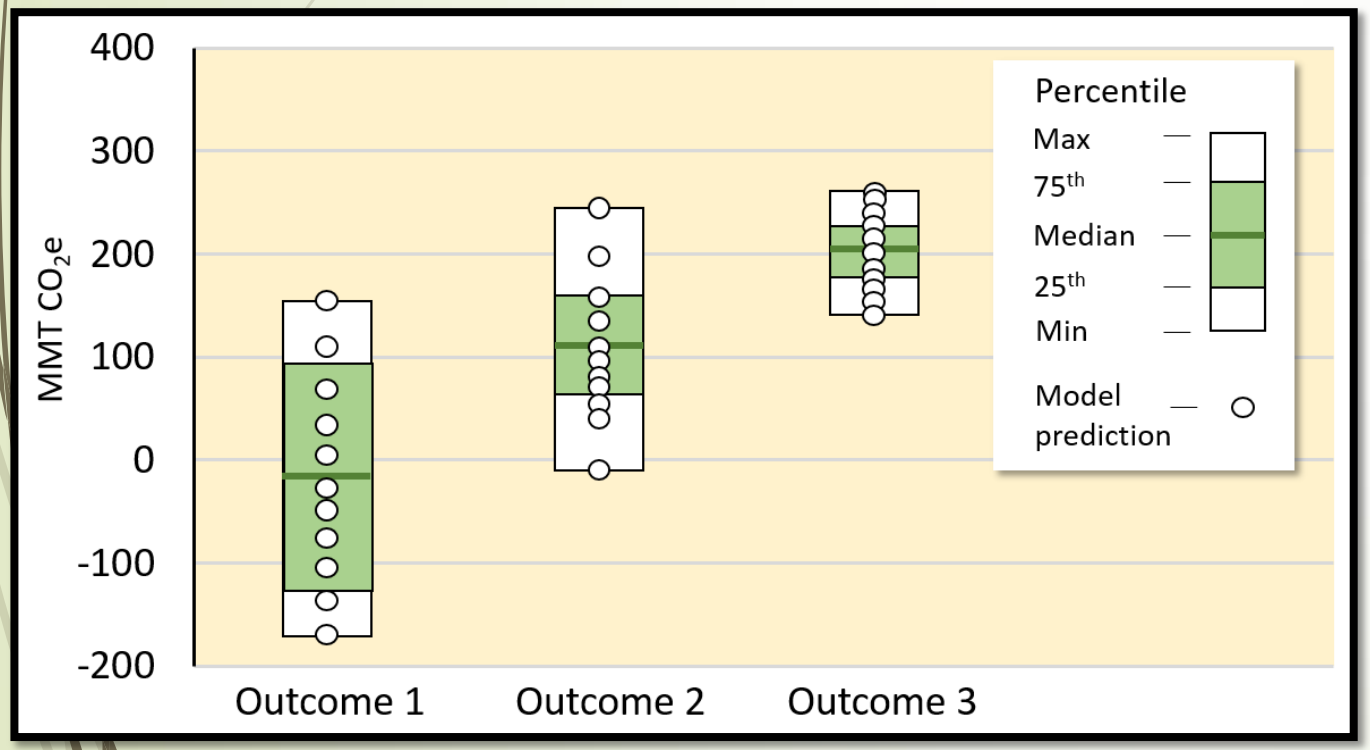
- **Popper's definition of science – falsification**
- **Are we doing science?**
- **Complex system science**

Prof Stephen Schneider, "Is the Science of Global Warming Settled Enough for Policy", at Bren school of Environmental Science and Management, UC Santa Barbara, 2008

"…Falsification is a false doctrine. Falsification is appropriate in classical science, physics and chemistry. Now what's the probability that this is an acid or a base? [He holds up a cup of water and takes a sip.] I don't trust this test. What could I do? I could take a piece of litmus paper, put it in there. Red or blue, it absolutely would falsify a false hypothesis or reinforce it. When you have a complex system science, you have no idea if the new data that's collected has been collected right, you don't know whether it's meaningful, you don't know whether what was left out would trump the conclusion. Complex science is built on preponderance, built over long time…"

All hands on deck

- **Rely on them collectively for one question.**



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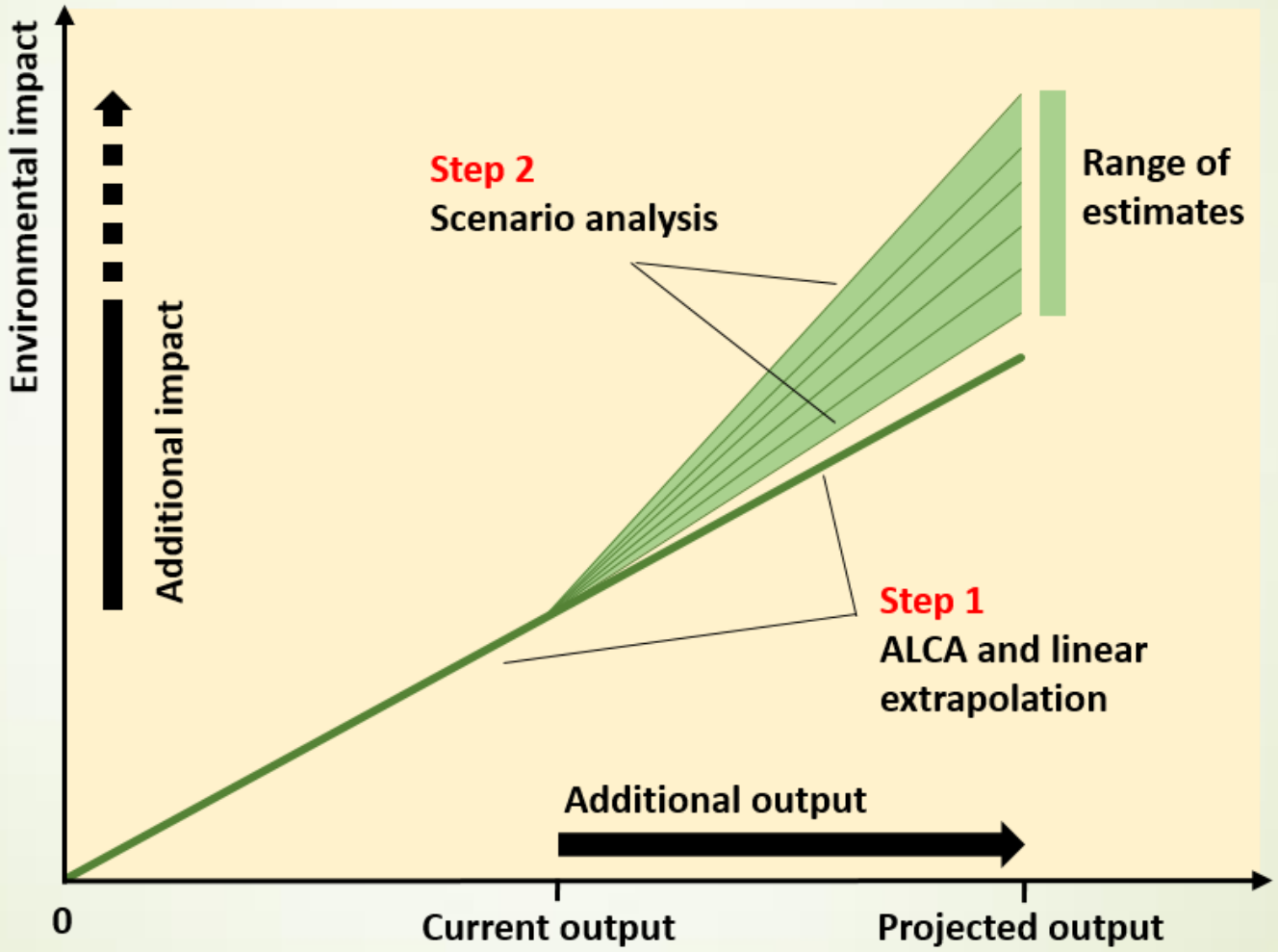

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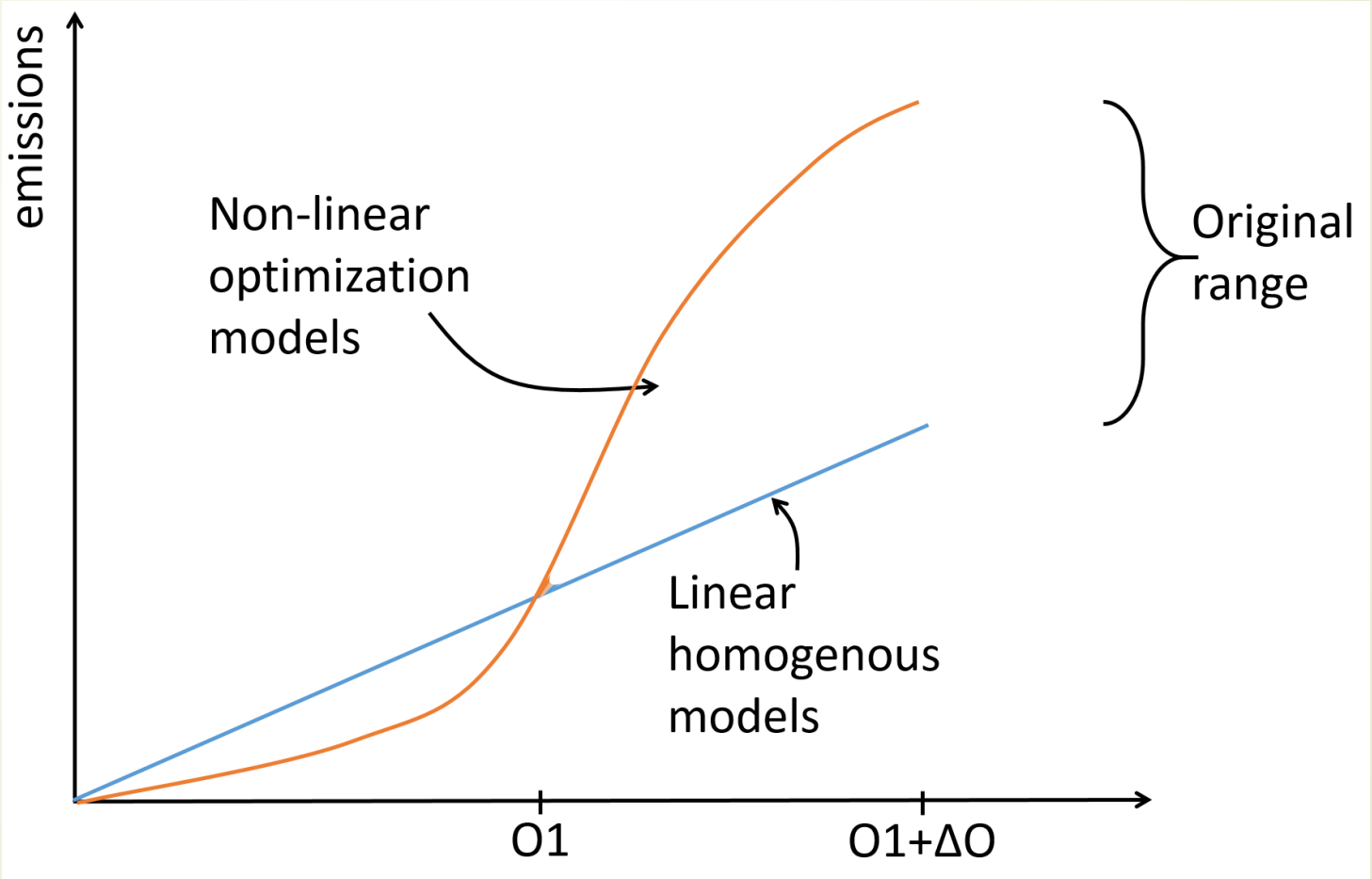

Concluding remarks

- We are all doing CLCA.
- Mathematical sophistication does not mean better estimates.
- Assumptions matter.
- Efforts to improve models.