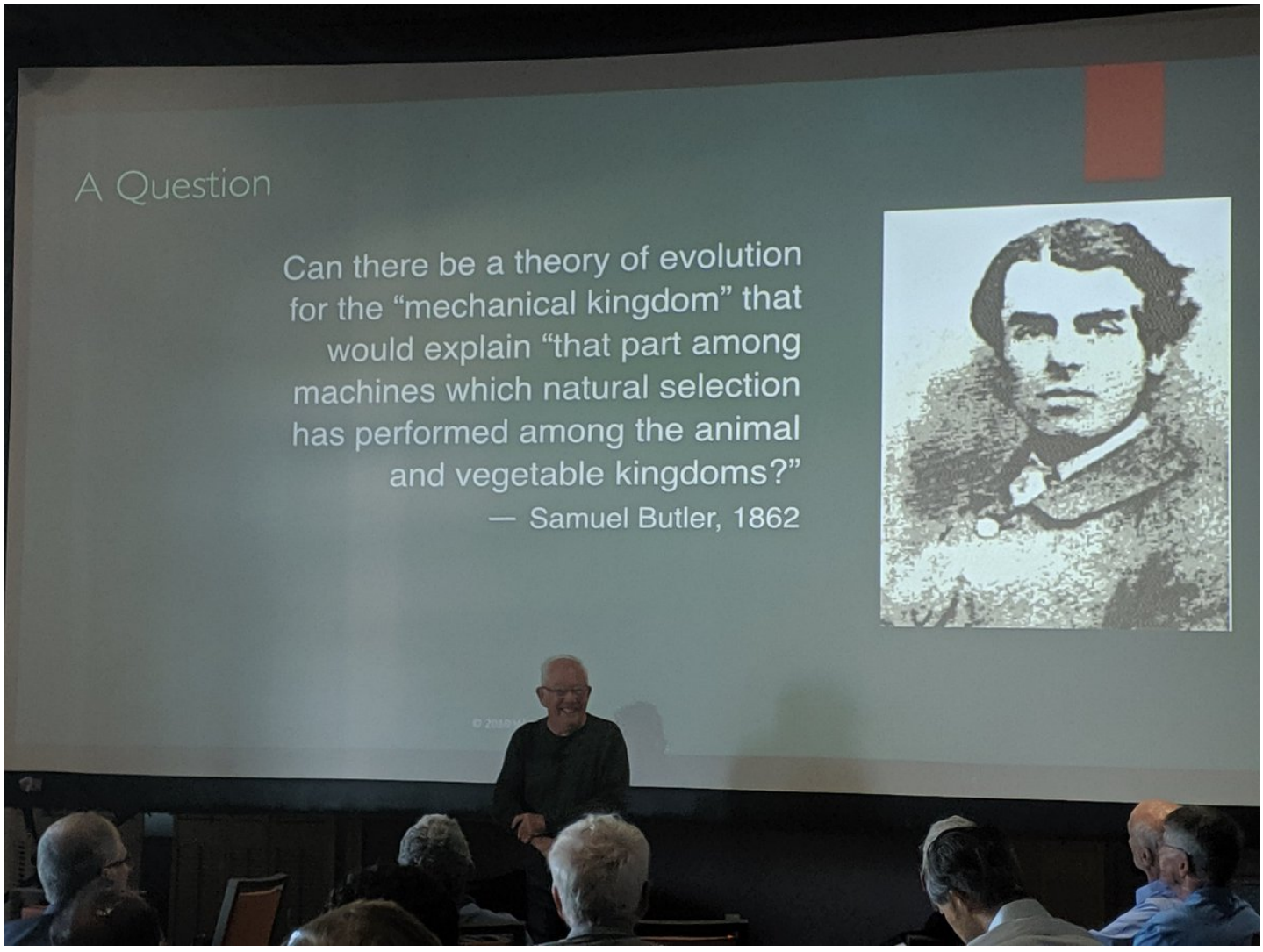
Twitter Thread by Santa Fe Institute

Santa Fe Institute
@sfiscience

"You don't see radio changing gradually and suddenly become radar. #Darwin's theory doesn't work for #technology, and we have to make a new observation."

- W Brian Arthur at SFI today

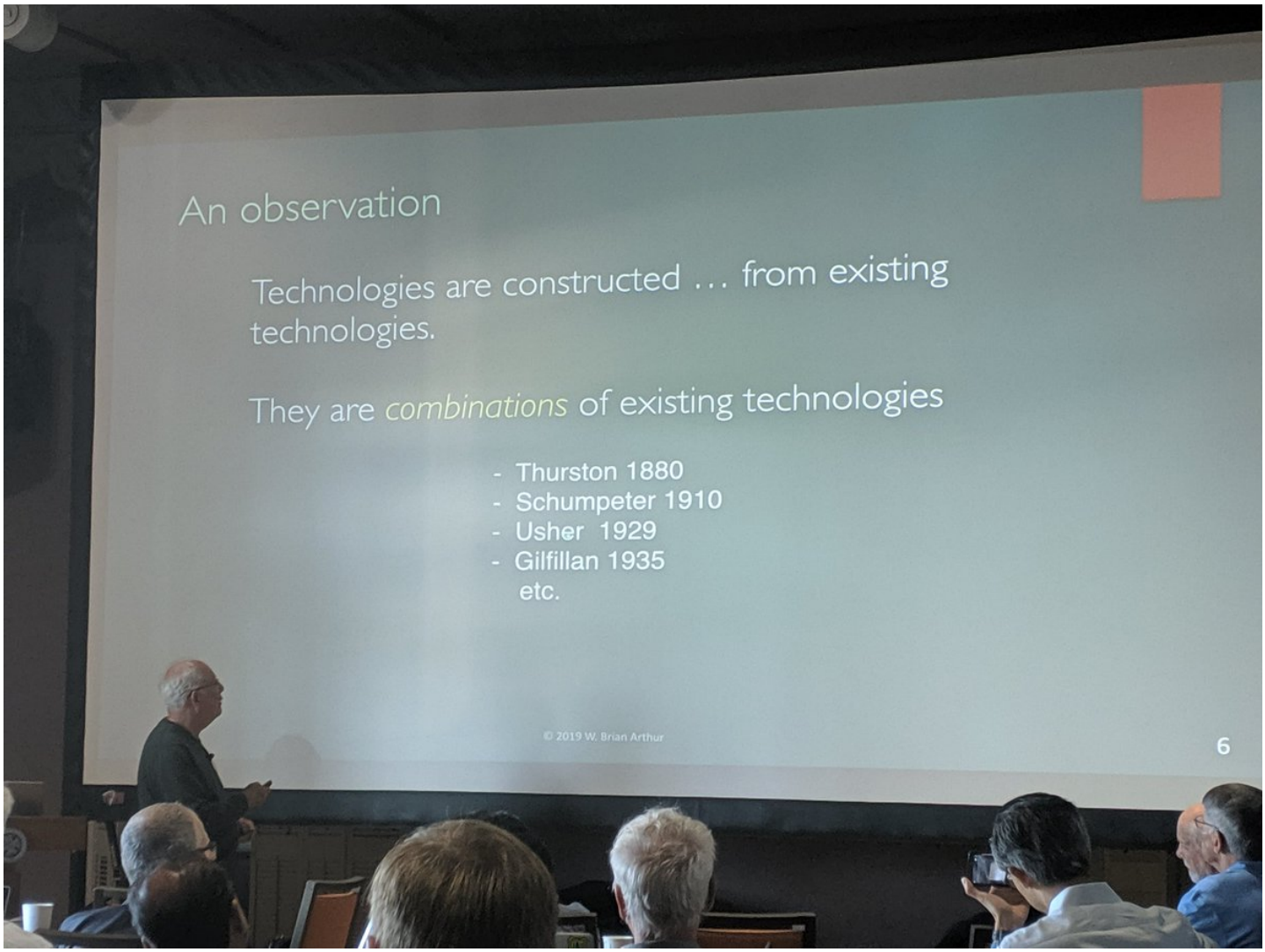
#evolution #innovation #invention



"Novel technologies are constructed from existing technologies. These offer themselves as components for the construction of further technologies."

- W Brian Arthur at SFI today

#evolution #innovation #invention #technology #engineering #design



Unlike the two-parent #inheritance typical to (but not ubiquitous among) #complex organisms, #technology inherits features from n parents - a "vast ancestral #network" more like horizontal gene transfer networks in #bacteria.

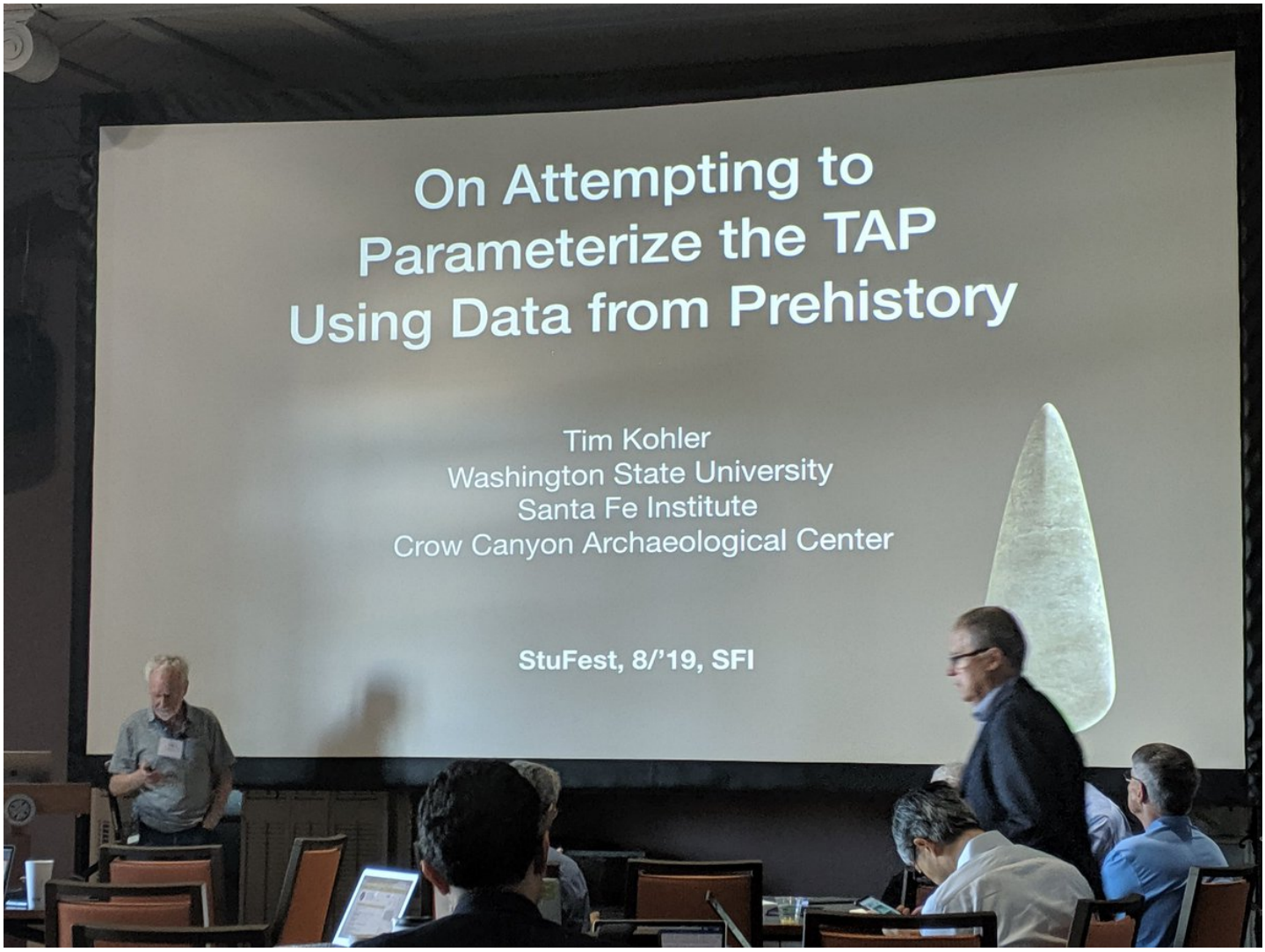
W Brian Arthur on sumulating #invention on a chip:



Does #Archaeology support the Theory of the #AdjacentPossible - that #innovation is combinatorial, persistent, cumulative?

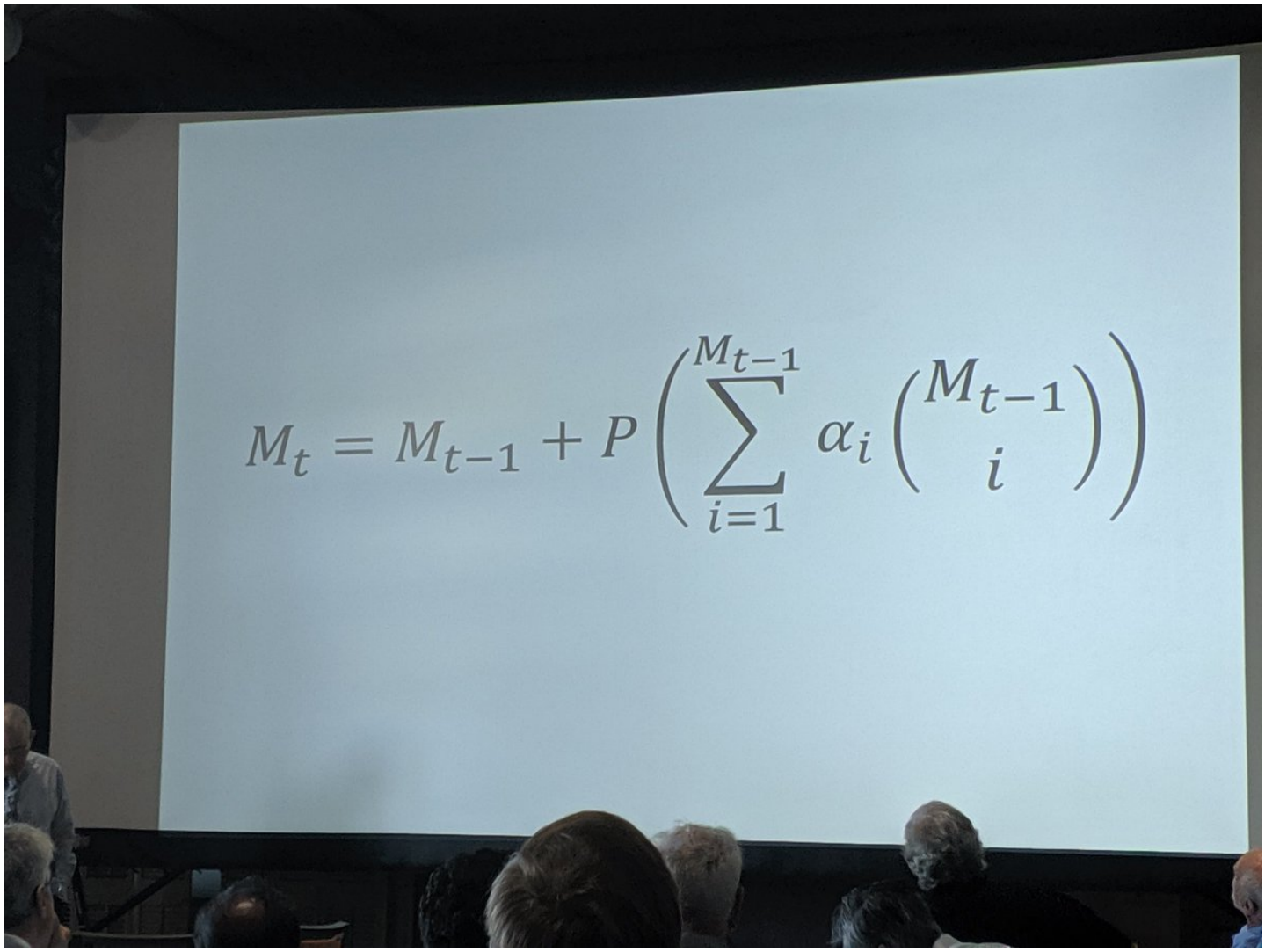
In short, yes. SFI's Tim Kohler on the #Paleolithic data of #technology #evolution & the #prehistory of the infamous "hockeystick" curve:

■ @SAPIENS_org



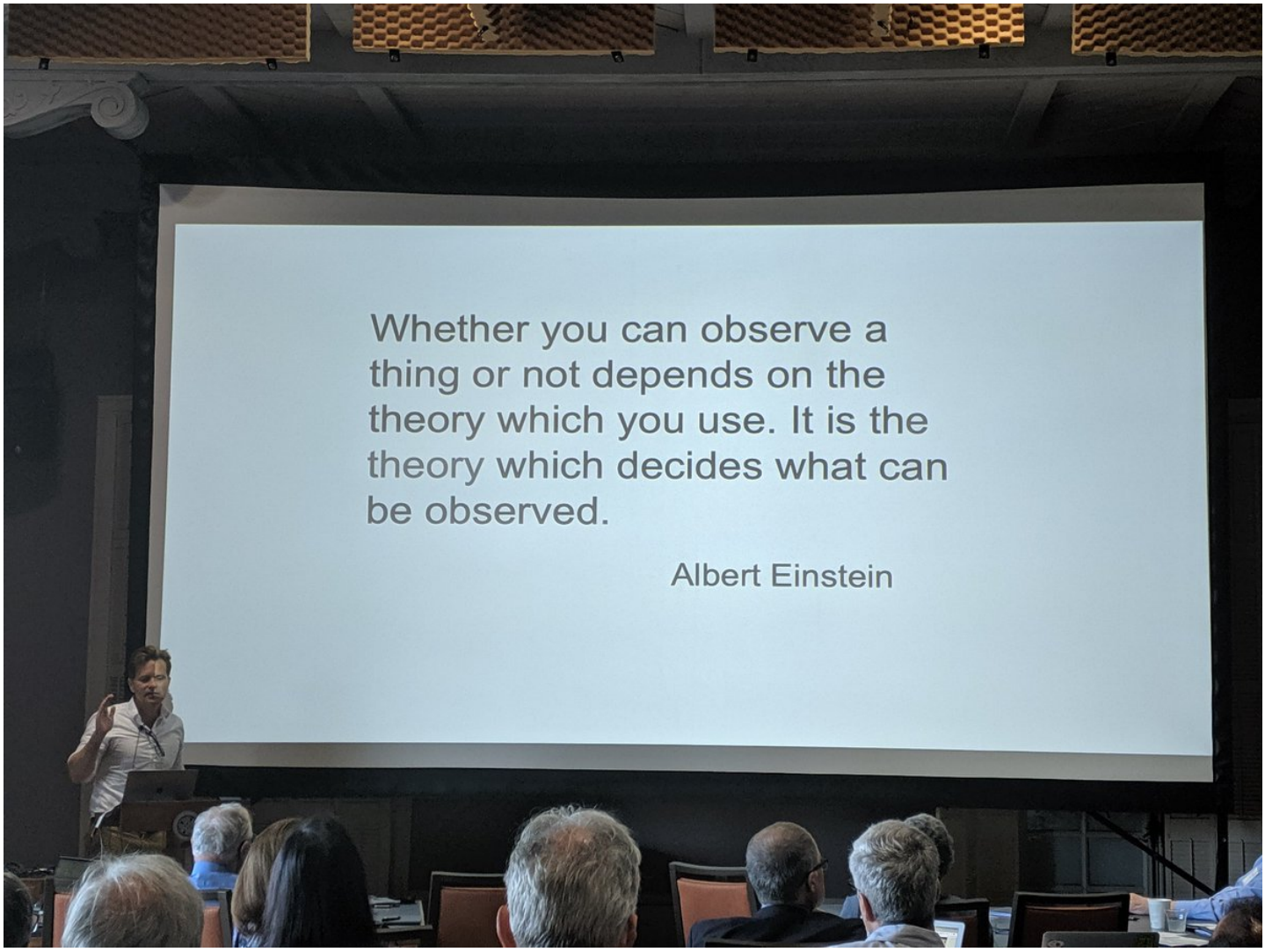
#Economist Roger Koppl of @SyracuseU presents a model for the #AdjacentPossible at SFI.

Output = "a combinatorial explosion" or #singularity, albeit one that arguably occurred millions of years ago, or in the distant future (since the model doesn't specify t = 0):



"We can't have universal models if organisms differ. But most of our models are universal. So how do our models need to differ for species-specific #search?"

- @toppofelin (@UniofOxford) reminds listeners at SFI today that we live in worlds, plural:
#umwelt #suchbild #affordance


Whether you can observe a thing or not depends on the theory which you use. It is the theory which decides what can be observed.
Albert Einstein