

Re: Probable Influence/Causation Versus Algebraic Geometry/Topology 2: PI vs Scheme

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Suppose that we consider the physics conjecture:

Conjecture. The Big Bang caused the expansion of the Universe.

Although some algebraic topologists and algebraic geometers have suggested "rounding off" the Big Bang since singularities are rather embarrassing to "physics as we know it" (substitute "Our bureaucratic physics" for this) and other theorists have come up with alternative scenarios like "repeating Big Bangs" (Steinhardt-Turok-Seiberg Neo-Cyclic Theory) or "time loop theory" (Gott-Li), there still is typically a general receptivity to the above Conjecture in physics, or at least to its plausibility and to the plausibility of investigating it.

Notice that if we let proposition a be "The Big Bang occurred" and proposition b be "the Universe expanded and has been expanding," then $(a \rightarrow b)$ expresses the above Conjecture.

Likewise, if A is the set corresponding to "all (random) scenarios in which the Big Bang occurred" and B is the set corresponding to "all (random) scenarios in which the Universe expanded and has been expanding," then $(A \rightarrow B)$ plausibly expresses the above Conjecture.

The occurrence of the Big Bang preceded the expansion of the Universe in time, and this is a universal feature of (probable) cause-effect provided that simultaneity is allowed to be included under "preceded" (so \leq is meant rather than $<$ in an inequality translation of "preceded"). Furthermore, the first thing intuitively "resulted in" the second thing, roughly like the push of a force results in the motion of whatever is pushed. This again is a universal feature of (probable) cause-effect.

These should be familiar to physicists, since these types of scenarios (usually in more concrete cases than the whole Universe) are what physics is about. Physics is not about listing the Big Bang and the

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expansion of the Universe as separate "facts". It is about relating them, either confirming their relationship or disconfirming it. It is not about isolated facts but causes and effects and correlations, random or not. It is about explanations which turn out to be causal or correlational. And even technology such as plumbing and electricity and building are about these relationships, even if they're "accomplished habitually."

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