

January 22, 2002

CREATION: MAKING A BOMB, CREATING A UNIVERSE

Walk in before there is any atomic bomb and see the entire lab working away—some melting plutonium and casting it in carefully crafted molds. Others trimming blocks of high explosives into shapes that join and make a spherical nest about the plutonium. Others study maps of possible targets and drawing up airplane-site schedules—and many more workers equally busy. Time is of the essence.

Knowing how to build a bomb, face a larger challenge: build a universe. Hah! That's ever so much harder, if at all possible. There is no time, no before, no after. The words "here" and "there" don't make sense because the category of space is as clearly lacking as the category of time. Therefore, it is of no help to remember and recite your mantra "spacetime tells mass how to move, and mass tells spacetime how to curve." Now we are beginning to appreciate what it must mean to build something—or everything—out of nothing. Being total amateurs in this enterprise, we plunge in to start with no experience to guide us.

January 29, 2002 (Following Taylor visit on Jan. 24)

NOT SOMETHING FROM NOTHING, BUT *EVERYTHING* FROM NOTHING

No space, no time, no gravity, no electromagnetism, no particles. Nothing. We are back where Plato, Aristotle, and Parmenides struggled with the great questions: How Come the Universe, How Come Us, How Come Anything? But happily also we have around the answer to these questions. That's us. Are we to look upon this great world as a thing "of imagination all compact." (Shakespeare?) And what of Joseph Berkeley? Is the whole show then so trivial as two colleagues sitting on a bench trading questions and answers back and forth? That's part of the story, yes; but there is ever so much more: The questions and answers that came yesterday and the day before, and the day before that. . . .

January 31, 2002

Nothing. Nothing but nothing to start with. This whole enterprise starts with the idea of building everything from nothing by asking a question and partially the answers as illustrated by the diagram in my 41 lecture. But if there has to be somebody around who will ask those questions, how is the whole show to get started? I can put the whole question to Parmenides, Plato and Aristotle because they, too, had nothing to start with. I must look up my extensive quotations from Parmenides. But in which paper or book to begin? However, had I not hogtied myself right at the start by presupposing the ideas of "before" and "after". Did they not come a little later in the show? Who has grappled with these questions? Should I not talk with him about them? (Thanks to Emily, I now end up with an appointment to talk with B. van Fraassen on the phone at 10 a.m., Tuesday, February 5.) To come to this issue is to experience a decisive shock. If physics and/or Austerity" if to be the goal, as I think it must, then it must be *really* austere, deprived even of the "before and after" associated with the terminology "question and answer". I come here to territory that would take a Godel to navigate. But in an enterprise like the present, motivation is everything. And the real Godel was anti-motivated—he simply didn't believe quantum mechanics. So van Fraassen is my next bet. So now I fall back on the words of Theodore Roosevelt, "Do what you can with what you have where you are."

Wheeler, John A. How come Existence? How come the Quantum? Buseck's decision. - 2001