

PRICEVALUEPARTNERS

Three little words

1st June 2020

“As I’ve written in past memos, I have an indelible recollection of the first book I read as a Wharton freshman in 1963. The book was *Decisions Under Uncertainty: Drilling Decisions by Oil and Gas Operators* by C. Jackson Grayson, Jr. (who in 1971 would take on the role of “price czar” in the Nixon administration’s efforts to get inflation under control).

“The best and most lasting thing I took away from Grayson’s book – and the first thing I remember learning in college – was the observation that **you can’t tell the quality of a decision from the outcome**. This revelation had a profound influence on me as a 17-year-old and represented the first critical building block in my understanding of how the world works.

“As Grayson explained, you make the best decision you can based on what you know, but the success of your decision will be heavily influenced by (a) relevant information you may lack and (b) luck or randomness. **Because of these two factors, well-thought-out decisions may fail, and poor decisions may succeed. While it might seem counterintuitive, the best decision-maker isn’t necessarily the person with the most successes, but rather the one with the best process and judgment. The two can be far from the same, and especially over a small number of trials, it can be impossible to know who’s who.**”

- Howard Marks of Oaktree Capital, [You Bet!](#)

The White Sands Proving Ground sits in the Jornada del Muerto desert, southeast of Socorro, New Mexico. On July 16, 1945, it became the test site for the world’s first nuclear detonation. The Manhattan Project – the race to build the atomic bomb – had started modestly enough six years earlier, but as it gained momentum it would go on to employ more than 130,000 people, burning through the equivalent of \$26 billion in today’s money in the process. There was once a time when that was a significant sum.

Among the scientists and military men in attendance, there was no consensus as to what the results might be. The physicist Norman Ramsey forecast that the bomb would fail to go off completely. Robert Oppenheimer predicted an explosive yield equivalent to 300 tons of TNT. The Ukrainian-American chemist George Kistiakowsky plumped for 1,400 tons of TNT. The

German-American physicist Hans Bethe went for 8,000 tons of TNT. The Polish-born physicist Isidor Isaac Rabi chose 18,000 tons of TNT (he would win the bet).

But the Italian physicist Enrico Fermi proposed a different wager altogether. He darkly suggested two options: given that the atmosphere would ignite, would the blast destroy 'just' the state of New Mexico, or would it go on to incinerate the entire planet ?

Fermi's prediction was not as outlandish as it might sound. Earlier in the war, in the spring of 1942, German physicists approached Hitler's Minister for War Production, Albert Speer, to discuss the possibility of their building a nuclear bomb. Speer asked Werner Heisenberg, spokesman for the scientists, whether a successful detonation could be kept under control or whether it might continue, unchecked, throughout the atmosphere. Heisenberg did not give a definitive answer.

Speer later wrote in his memoirs,

Hitler was plainly not delighted with the possibility that the earth under his rule might be transformed into a glowing star.

One of the American physicists who worked on the Manhattan Project would go on to have a glittering career. Richard Feynman, one of the most charismatic and brilliant scientists to have lived, was always aware of the limitations of human knowledge. He once excoriated the pretensions of 'social scientists' and supposed experts:

They don't do scientific...they follow the forms...you gather data, you do so and so and so forth but they don't get any laws, they haven't found anything, they haven't got anywhere yet, maybe someday they will but it's not very well developed, but what happens is...even on a more mundane level we get experts on everything. They sound like a sort of scientific experts. **They are not scientists.** They sit at the typewriter and make up something.. Maybe true but it hasn't been demonstrated one way or the other but they sit there on the typewriter and make up all that stuff as if it's science and then become experts on food, organic foods and so on. There is all kind of myths and pseudoscience all over the place. Now I might be quite wrong, maybe they do know all these things but I don't think I'm wrong. You see, I have the advantage of having found out how hard it is to know something, how careful you have to be about checking the experiments, how easy it is to make mistakes and fool yourself. **I know what it means to know something** and therefore I can't...I see how they get their information and I can't believe that they know it. They haven't done the work necessary, haven't done the checks necessary, haven't done the care necessary. I have a great suspicion that they don't know that this stuff is...and they are intimidating people by it.

The problem is bigger than false science. Because we, the public, crave certainty, even – and especially – where it simply cannot exist.

In his lecture 'This Unscientific Age', Feynman put it as follows:

Suppose two politicians are running for president, and one goes through the farm section and is asked, 'What are you going to do about the farm question?' And he knows right away – bang, bang, bang. Now he goes to the next campaigner who comes through. 'What are you going to do about the farm problem?' 'Well, I don't know. I used to be a general, and I don't know anything about farming. But it seems to me it must be a very difficult problem, because for twelve, fifteen, twenty years people have been struggling with it, and people say that they know how to solve the farm problem. And it must be a hard problem. So the way that I intend to solve the farm problem is to gather around me a lot of people who know something about it, to look at all the experience that we have had with this problem before, to take a certain amount of time at it, and then to come to some conclusion in a reasonable way about it. Now, I can't tell you ahead of time what conclusion, but I can give you some of the principles I'll try to use – not to make things difficult for individual farmers, if there are any special problems we will have to have some way to take care of them,' etc. etc.

Now such a man would never get anywhere in this country, I think. It's never been tried, anyway. This is in the attitude of mind of the populace, that they have to have an answer and that a man who gives an answer is better than a man who gives no answer, when the real fact of the matter is, in most cases, it is the other way around. And the result of this of course is that the politician must give an answer. And the result of *this* is that political promises can never be kept. It is a mechanical fact; it is impossible. The result of *that* is that nobody believes campaign promises. And the result of that is a general disparaging of politics, a general lack of respect for the people who are trying to solve problems, and so forth.. It's all generated, maybe, by the fact that the attitude of the populace is to try to find the answer instead of trying to find a man who has a way of getting at the answer.

Rarely have investors had to live with such uncertainty. As the hedge fund manager Harris Kupperman [puts it](#),

..the current market is one of the most difficult that I've seen in my career as the range of outcomes are so wide. Big picture, you have a global depression with hundreds of millions out of work, offset by "[Project Zimbabwe](#)" and while I think the big guns at the Central Banks ultimately emerge victorious, there are likely to be many scary moments along the way. I want to buy those scary moments, not the afterglow of one of the strongest rallies in market history.

As I sit on the beach and mull this over, these are just some of my many concerns; as quarantines end and infection rates go parabolic, will governments lock everyone down again? Will people lock themselves down on their own initiative? How has the pandemic changed how we consume goods? How will new regulations impact businesses? How will the virus impact global trade and movement of people? What happens to a business if the revenue level plateaus at some lower level while many of its expenses are fixed at the old higher level? Sometimes, I look at a set of outcomes and say, "You know what; I just don't know."

Investing, by its nature, is about making decisions under uncertainty. Our ‘default’ investments are in carefully selected, defensive ‘value’ stocks, companies run by principled, shareholder-friendly management with superb track records of capital allocation and generating superior returns. They are claims on the real economy, inasmuch as we will have one when the lockdowns end or are meaningfully eased. But it seems to us that it’s impossible to be too diversified given the range of possible outcomes. So we also maintain a significant allocation to the monetary metals, gold and silver, and to related mining companies carrying little or no debt, because, like Harris Kupperman, we nurse grave fears about the likely success of “Project Zimbabwe”. And we go beyond that, by holding a range of systematic trend-following funds that we think offer decent prospects for hedging against **our own overconfidence** in asset allocation.

At the end of a life sadly cut short by a rare cancer that may have been caused by his work on the Manhattan Project, Richard Feynman would go on to sit on Ronald Reagan’s investigatory committee into the space shuttle Challenger disaster. It was Feynman who traced the cause of the explosion, to rubber O-rings just a quarter of an inch thick that were supposed to seal the sections of the shuttle’s solid rocket boosters. The structural integrity of these O-rings would be seriously compromised at low temperatures. Ice had built up on the launch pad, the night before the shuttle’s launch.

During the hearings into the shuttle tragedy, Richard Feynman released a damning summary of NASA’s chronic inability to assess risk. Decision making smothered by bureaucracy became

a kind of Russian roulette. . [The shuttle] flies [with O-ring erosion] and nothing happens. Then it is suggested, therefore, that the risk is no longer so high for the next flights. We can lower our standards a little bit because we got away with it last time.. You got away with it, but it shouldn’t be done over and over again like that.

Science offers practical tools to help address these risks. NASA chose not to utilise them. A random array of data points – the depth of erosion in those rubber O-rings, for example – would be reduced by NASA engineers to overly simplified, linear rules of thumb. But a hot jet of super-powered gas carving channels in rubber is highly non-linear. The response to a scattered range of data should be probability distributions rather than single discrete numbers. The science of a shuttle flight is complex and complicated. It is probabilistic rather than certain.

Richard Feynman concluded his personal report on the Challenger disaster with the following words:

For a successful technology, reality must take precedence over public relations, for nature cannot be fooled.

Nature cannot be fooled. And neither can the markets, nor the economy, forever. Rather than rely on the spurious precision and fundamental overconfidence of economists, central bankers, government scientific ‘advisers’ and epidemiologists – let alone grandstanding show

ponies in the mainstream media – there are three words we should voice as we all navigate these treacherous waters. Sometimes:

We don't know.

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Ref 158/2/KC2505.