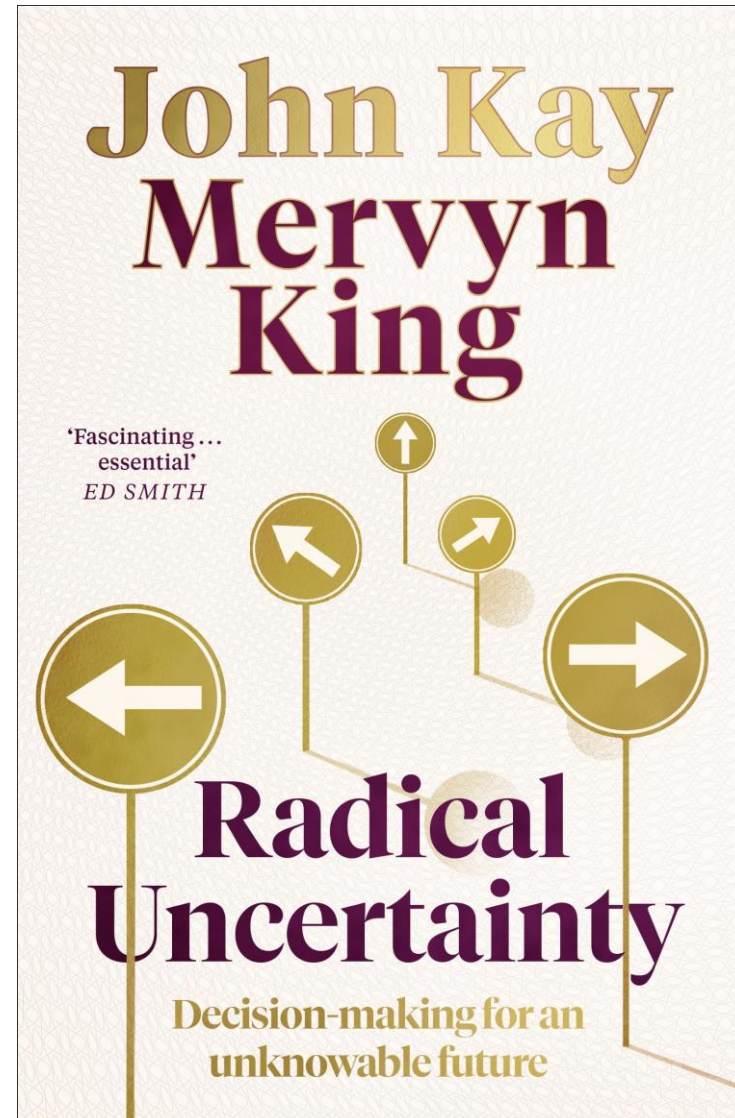


# Radical Uncertainty

Rethinking our Approach  
to Risk and Uncertainty

John Kay

CFA Society India  
5<sup>th</sup> India Wealth Management Conference  
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“A measurable uncertainty, or ‘risk’ proper, as we shall use the term, is so far different from an unmeasurable one that it is not in effect an uncertainty at all.”

Frank Knight, *Risk, Uncertainty and Profit*, 1921



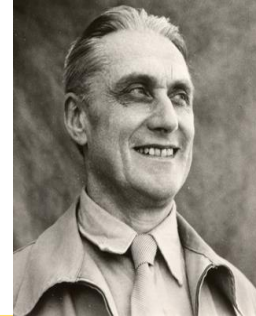
“By uncertain knowledge I do not mean merely to distinguish what is known for certain from what is only probability. The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper, or the rate of interest in twenty years hence, or the obsolescence of invention, or the position of private wealth owners in the social system in 1970. About these matters there is no scientific basis to form any calculable probability whatever. We simply do not know.”

J M Keynes, *General Theory*, 1937



*One evening at the Paris colloquium  
in May, 1952...*





*Maurice Allais*



*Bruno de Finetti*



*Ragnar Frisch*

*Jimmie Savage*



*Paul Samuelson*

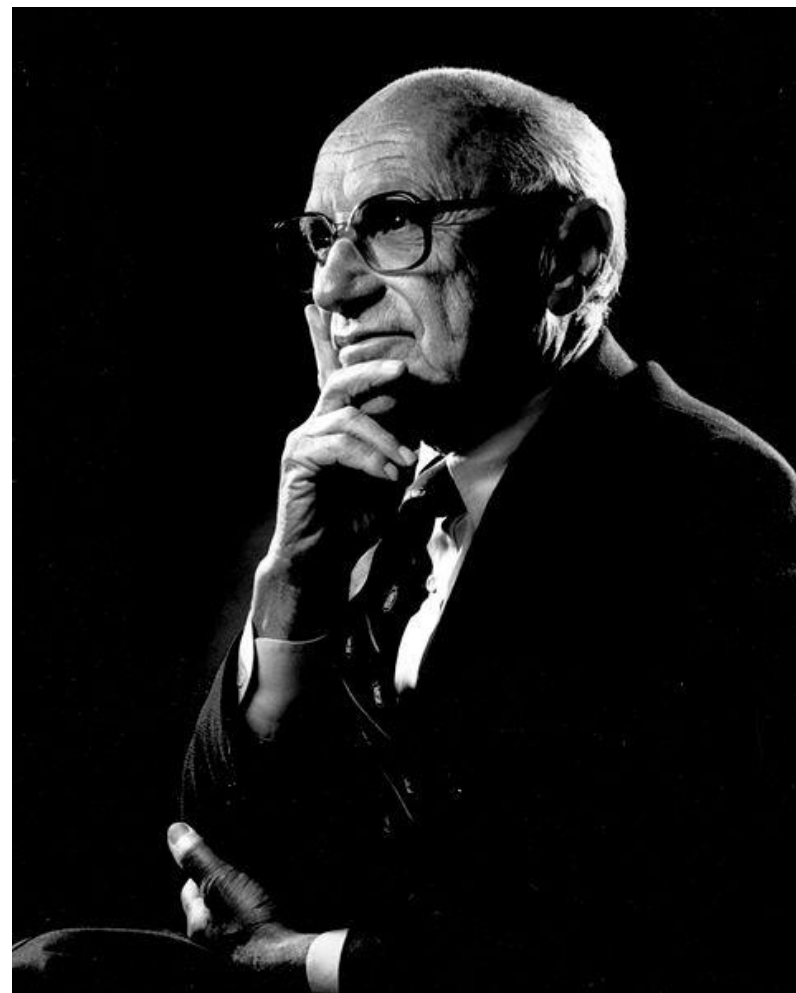


*Milton Friedman*



“In his seminal work, Frank Knight drew a sharp distinction between *risk*, as referring to events subject to a known or knowable probability distribution and *uncertainty*, as referring to events for which it was not possible to specify numerical probabilities. I have not referred to this distinction because I do not believe it is valid. I follow L.J. Savage in his view of *personal probability*, which denies any valid distinction along these lines. We may treat people as if they assigned numerical probabilities to every conceivable event.”

Milton Friedman, *Price Theory: A Provisional Text*. Chicago: Aldine, 1962, 1976



## LIKELIHOOD

- Application of general knowledge of world
- Value of expression of likelihood depends on judgment and experience

## CONFIDENCE

- Subjective
- Not necessarily reflective of judgment and experience

## PROBABLE

- Sometimes synonymous with likely

## PROBABILITY

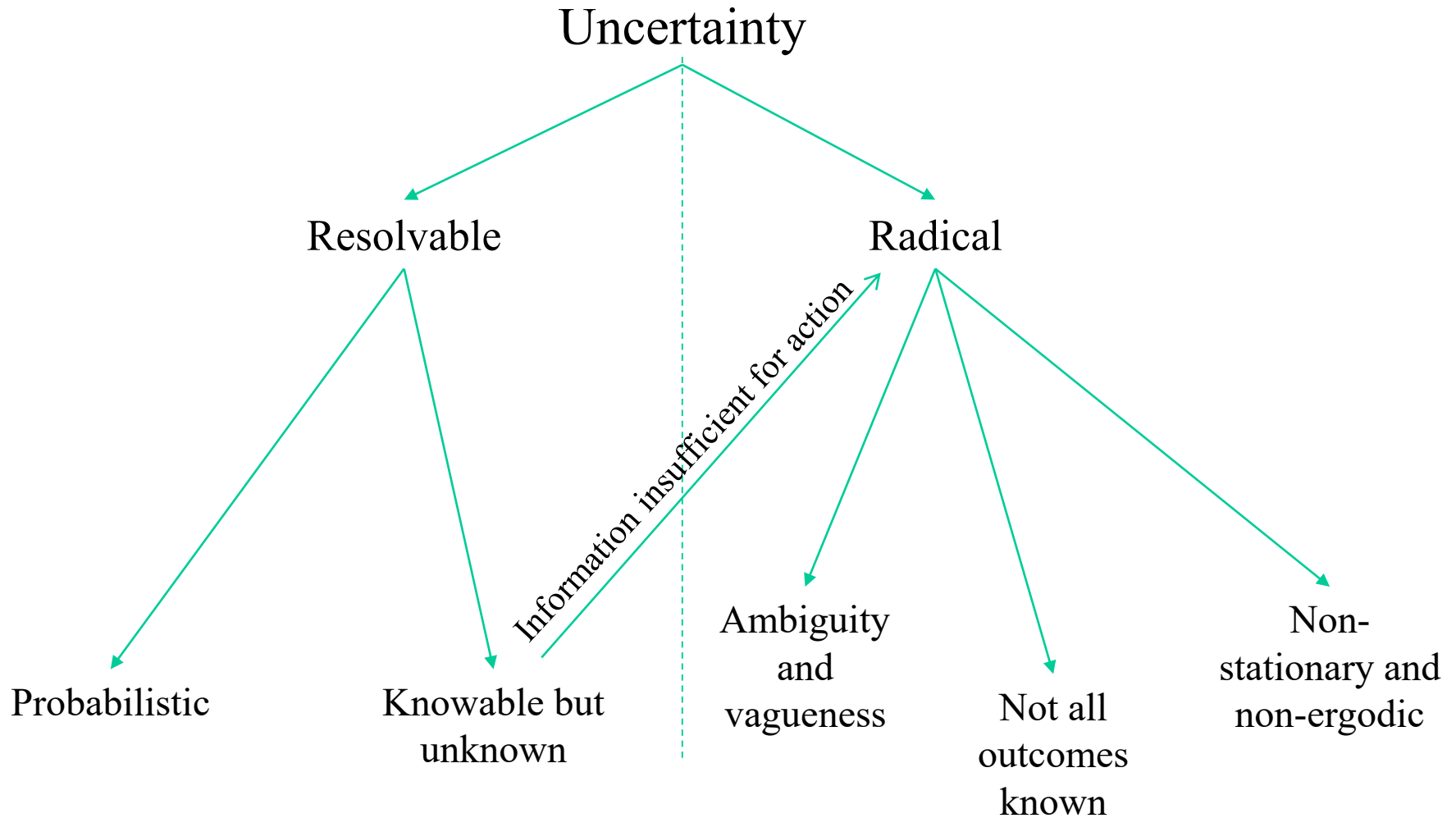
- May be derived from known or observable distribution
- May be subjective/pignistic

On the day when I left home to make my way in the world, my daddy took me to one side. “Son,” my daddy says to me, “I am sorry I am not able to bankroll you to a very large start, but not having the necessary lettuce to get you rolling, instead I’m going to stake you to some very valuable advice. One of these days in your travels, a guy is going to show you a brand new deck of cards on which the seal is not yet broken. Then this guy is going to offer to bet you that he can make the jack of spades jump out of this brand new deck of cards and squirt cider in your ear. But, son, do not accept this bet, because as sure as you stand there, you’re going to wind up with an ear full of cider.”

Sky Masterson in *Guys and Dolls*







“In Italy, for thirty years under the Borgias, they had warfare, terror, murder and bloodshed, but they produced Michelangelo, Leonardo da Vinci and the Renaissance. In Switzerland, they had brotherly love, they had five hundred years of democracy and peace – and what did that produce? The cuckoo clock.”



Harry Lime in *The Third Man*