

# News and Views from the Dismal Science

Dr. Econ's commentary on global economic and other affairs

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## Risk and Uncertainty

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In a classic work, *Risk, Uncertainty, and Profit* (1921), Frank H. Knight defines risk and uncertainty as follows: “It will appear that a measurable uncertainty, or ‘risk’ proper ... is so far different from an unmeasurable one that it is not in effect an uncertainty at all.” Knight differentiates between “a priori” probability—a probability that can be computed from mathematical principles, such as the probability of throwing a five with a perfect die—and “statistical” probability, one that emerges from experimentation and experience and can be used in business applications such as life insurance. There is uncertainty as to whether or not a “five” will result when the die is thrown once but there is no uncertainty at all that, over many repeated throws, one-sixth of the time a “five” will come up. Similarly, in life insurance, there is uncertainty over the age at which a particular insured person will die, but over a very large number of people, the distribution of deaths is well-known, and on this knowledge an insurance company can make sure money, provided that the health and other characteristics of the insured match the comparable characteristics of the population from which the age distribution of deaths is calculated. In this sense Prof. Knight is correct: there does not exist “in effect an uncertainty at all.”

Knight then introduces a third kind of uncertainty, which he calls “estimates” or “true uncertainty,” which essentially require judgments to be made about unique situations or circumstances to which neither mathematical principles nor statistical regularities can be applied. Part of the skill of life is to make correct judgments, i.e., forecasts about the consequences of the decisions one takes in business and one’s personal life. The more unique the situation, i.e., the less often a particular situation occurs, the less one can learn from the outcomes of decisions taken and form views on the patterns and regularities, if any, in the outcomes. For example, the young tend to be more error-prone than the old because to them new situations are, by definition, without precedent. As a cohort, they experiment with decisionmaking. There will be a wide variation in decisions taken and as the cohort grows older, it will learn from their experiences, errors will occur less often, and the variation in decisions taken will narrow. The young accumulate experiences and go through a pattern-recognition process that the old have already gone through and consolidated. Maturity is, in part, a function of time and is one reason why the old (or the aging process) teach the young, and not vice versa.

Even the old will of course encounter new, unique situations—but even here they have an advantage in that they have had more years over which to learn about encountering new situations. Consciously or not, they will form principles of decisionmaking, rules of thumb, that accumulate into “wisdom.” For example, “do not put all your eggs in one basket” is sensible advice proffered by the old more readily than by the young. Similarly, as a group old folks are more likely to not only appraise the upside of a new situation but also to consider how to mitigate potential downsides, so that the consequences of a mistaken decision do not loom fatefully large. But to err on the side of caution itself is risky: after all, a *potential* downside is not a self-fulfilling prophecy. Indeed, a potential downside may be no downside at all and some decisions taken may turn out to be blockbuster successes: this is one reason why innovative new

ideas and concomitant entrepreneurship tend to emerge from the young while boring management tends to be handled by the old. (Actually, there is a difference between maintenance and management; proper management includes entrepreneurship and risk-taking.) Likewise, not every potential upside works out either: not every entrepreneur forms the next Apple, Microsoft, or Google.

Downsides can be managed by explicit recognition of ways to avoid, reduce, retain, or transfer risk, the colloquial word for “uncertainty”. Consider two options, A and B. If both offer the same upside but B comes with a clearly identifiable downside, a mistake can be avoided by not choosing B. But perhaps ways can be found to reduce the downside of B, or the risk of B can be deliberately, self-consciously retained, or the risk can be transferred and, in part, carried by someone else (e.g., via insurance markets). Risk management is a huge business and one must be careful not to become paralyzed by uncertainty and risk management to such an extent that one neglects the upside of decisions to be made.

What if, despite care, a decision taken turns out to have been “wrong”? My answer is practical: life is an experience good. Since we have neither perfect foresight nor can change things in hindsight, life is about a reasonably careful accumulation of experiences, sorting through these experiences, and learning from—and forming judgments about—them for future decisions about cases in similar classes or categories. “Paralysis of analysis”—being stuck in a decisionmaking loop without recourse to probabilities or statistical patterns and without recourse to ways and means to assist decisionmaking, such as explicit decisionmaking criteria and risk management—gets one nowhere at all. Sometimes decisions just have to be taken. If after proper deliberation, you still can’t decide, arrange to maximize the upsides, minimize the downsides, roll the die, and never look back with regret: just learn, so that you learn to become an ever better judge of yourself and of your future actions.

Jurgen Brauer’s next book, *War and Nature: The Environmental Consequences of War in a Globalized World*, is forthcoming in September 2009 with AltaMira Press.