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Religion, Heuristics, and Intergenerational Risk Management

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LINK TO ABSTRACT

This article does not concern what might be termed 'the religious side of religion' (each of us has written about that elsewhere[3]). Both of us are very sympathetic to true religion; to what we call *faith as practice*; to a genuinely spiritual orientation toward life. One of us, Rupert Read, is a Quaker and a Buddhist meditator. The other, Nassim Taleb, comes from a Levantine Greek Orthodox family and, growing up in Lebanon, studied the Quran and other religious texts (Old Testament, Talmud) to practice Semitic languages; he has embraced Greek Orthodoxy as a repository of ancient Mediterranean lore and rites, focusing on the practice aspect (which includes religious fasts and feasts and a focus on the ceremonial), rather than the belief side. A victim of the Lebanese war, he is fully aware of the destructive effects of religious intolerance.

So to the question posed in the Prologue to this symposium (Klein 2014), "Does professional economics needs enrichment by religious or quasi-religious thinking?," our answer is squarely "yes," as we believe that religion has traditionally performed a powerful risk-management function at the level of the individual and the collectivity, particularly in preventing the accumulation of debt in systems and in preventing some kinds of experimentation with natural systems, ones that produce errors with irreversible effects. We argue that religion transmits heuristics

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3. *See* Taleb (2010b, 18-21) and Read (2007, ch. 3).

of risk control across generations, and that religion does so in modes that only it can.[4]

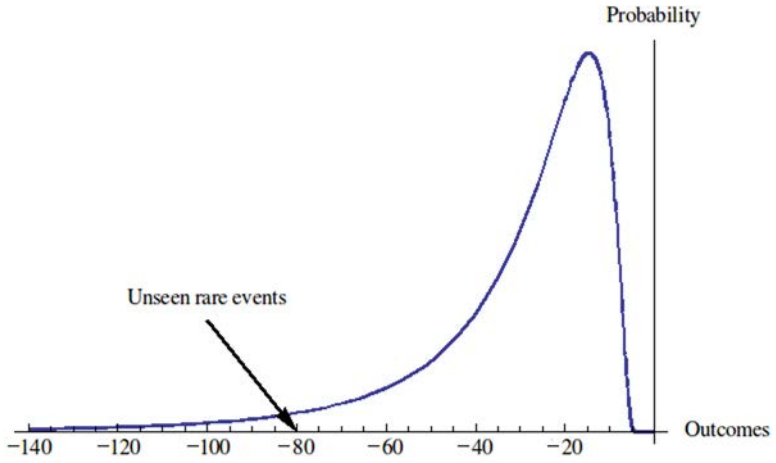

Figure 1. Rare or 'tail' events tend to not show in (recent) past samples. Yet they are terribly consequential. Religion helps with intergenerational memory by carrying a certain class of interdicts.

Let us start by presenting the problem of silent risk, as seen in Figure 1, a class of severe exposures—'Black Swans'—that are so infrequent as to not necessarily show in past samples. Yet these are terribly consequential and determine a large share of the statistical properties. Perhaps one cannot explain their 'causes' except after the fact, and perhaps not even then. If we look at asset prices, we find a large share of rare events without predecessors. Black Swans are often brushed aside with assurances to the effect of 'it never happened before' or 'times are different.'

Evidentiary or statistical methods fail us there. Such methods consist in looking at the properties of past data and reacting based on recent 'evidence.' But

4. These heuristics belong to the class called "convex heuristics," mathematically defined in Taleb (2014). Their aim is not to be 'right' and avoid errors, but to ensure that errors remain small. A convex heuristic has the following properties: (1) Compactness: It is easy to remember, implement, use, and transmit. (2) Consequences, not truth: It is about what it helps you do, not whether it is true or false. It should be judged not in 'truth space' but in 'consequence space.' (3) Antifragility: It is required to have a benefit when it is helpful larger than the loss when it is harmful. Thus it will eventually deliver gains from disorder. (4) Robustness: It satisfies the fragility-based precautionary principle. (5) Opacity: You do not need to understand how it works. (6) Survivability of populations: Such a heuristic should not be judged solely on its intelligibility (how understandable it is), but on its survivability, or on a combination of intelligibility and survivability. Thus a long-surviving heuristic is less fragile than a newly emerging one. But ultimately it should never be assessed in its survival against other ideas, rather on the survival advantage it gave the populations who used it.

risk is not really in the visible past but rather in the future: the past is just a proxy. The 'recent past' may not show these events and yet, typically, has higher weighting in conventional time series analysis. Further, these silent risks, when they hit, are produced most likely by some largely unknown class of distributions.

Using, for risk-management purposes, 'fat tailed' probability distributions (those, such as power laws, that extrapolate beyond the sample set in which they have been calibrated), also fails us because such distributions are extremely sensitive to small changes in parameters.

In addition, consider the class of tail exposures that lead to ruin of a system, whether the economy or the environment. Like a resource that gets depleted in the long term, the risk of ruin makes the system unsustainable. If one incurs a tiny probability of ruin as a 'one-off' risk, and survives it, and then continues to repeat the exposure (simply because one has survived), one will eventually go bust. So over time, and under repetition, a tiny risk ends up blowing up the system (Bar-Yam, Read, and Taleb 2014).

Consider the recent crisis that started in 2008, resulting from the wild accumulation of silent risk via a high ratio of debt and leverage in the system. A good knowledge of history might have given people pause, as a similar rise of the debt-to-GDP ratio occurred before the crisis of 1929, leading subsequently to anti-debt sentiment. But the 1929 experience did not effectively cross generations. Economic theories that Taleb has called "risk-blind" or "Black Swan-blind" displaced the heuristic knowledge of grandmothers (2007; 2010b). The argument made in Taleb (2007) is that debt accumulation reflects overconfidence. Underestimation of one's error rate in forecasting the future leads to more debt, as it makes the payoff under high leverage appear more attractive. In addition, such overconfidence causes fragility in the system.

In the matter of debt, religions have been potent in the prevention of debt accumulation: from the Ecclesiast, to Islam, to Aquinas (*Summa*, II-II, 78). Except for Protestantism, every Abrahamic branch has had some interdict against 'lending with interest.' The interdict's justification invoked issues of moral symmetry between lender and borrower, but we believe that the actual causes for the survival of such interdicts go beyond such a rationalization.

Compare the near-universal religious caution, even exhortation, against debt to the Modigliani-Miller (1958) result establishing that a firm's debt-equity ratio does not matter for valuation, which invited an entire generation of economists to endorse debt, or at least not caution against it. A careful reading of the literature shows that the highly rationalistic approach of Modigliani and Miller ignores the effect of debt on error in the representation of the future. And economists calling this result a "theorem" when it is fragile to change of assumptions caused it to be taken more seriously than was warranted.

Religion counters the modern post-Enlightenment attitude as it allows us to hold that what we don't see or understand isn't necessarily stupid or irrational. In his technical book *Silent Risk*, Taleb (2014) argues that social science has traditionally operated under the modus that what is not explainable is "irrational." Psychologists and behavioral economists often find that people do not appear to follow a normative model, and then suggest that such behavior is "irrational" or "biased." But in talking that way, the analysts are usually missing layers of uncertainty beyond that of a tinky-toy first-order model; it is the researcher who is making a mistake, not the real-world person. Taleb (2014) shows that many "biases" can be made to go away by building a richer mathematical model, one with stochastic parameters. He also suggests that much of the decision-science literature on 'dread risk' (whereby humans overestimate particular small-probability risks and overreact to them) and 'long-shot bias' (overestimation by humans of the odds of large-but-infrequent payoffs) turns out not to be robust to changes in assumptions or environment, as the researchers have derived their conclusions using thin-tailed models and experiments in thin-tailed domains. The role of small-probability events is larger in fat-tailed domains, and once we take that into account much of the so-called bias goes away. It looks instead like we humans underestimate risks of unimagined rare events and overestimate our knowledge about the future.

We believe that religion supplies potent tricks to mitigate people's natural epistemic arrogance and overconfidence about the future. "I don't know" is something hard for humans to accept and say; this is made easier in the Arabic language, as the typical traditional expression is "God knows." Saying "God knows" is easier on one's ego than "I don't know."

Wittgenstein (1961/1921, 6.372) remarked: "…the view of the ancients is clearer in so far as they have a clear and acknowledged terminus, while the modern system tries to make it look as if *everything* were explained."

Religion and beliefs

Let us now enlarge on an idea captured by an aphorism by Taleb (2010, 21): "Restaurants get you in with food to sell you liquor; religions get you in with belief to sell you rules (e.g., avoid debt). People can understand the notion of God, not unexplained rules, interdicts, and categorical heuristics."

When someone discusses religious *beliefs*, he does not necessarily mean belief in the epistemic sense, and the relevance of the epistemic sense of the term decreases as we go back in the history of the fixation of the creed. For ancient Fertile Crescent and Mediterranean pagan systems and what we commonly call

Abrahamic religions (Judaism, Islam, and the various pre-Protestant Christian branches), the notions of piste, πίστη in Greek, *credere* in Latin, or "Amen"/"Amin" (אמון and آمين) in Semitic languages do not map exactly to what we call "belief" in today's language. Rather, such notions are rather closer to the root of "belief": beloved, a sense of commitment, something related to the notion of trust. It is not coincidental that *credere* is related to letter of credit or financial transactions that entail trust (see Armstrong 1994; Boyer 2001).

Accordingly it is an extremely naive interpretation to think that religious 'beliefs' map to the 'justified true belief' standards of modern epistemology (see Ichikawa and Steup 2014); it is naive to examine the supernatural aspect of religion as anything but epiphenomenal. One needs to think of religious 'belief' as closer to a form of trusting, as a form of action, or a willingness to take action, and, most crucially of all, as a set of interdicts upon action.[5] Further, religion establishes a categorical demarcation between sacred and profane, and one that cannot be violated (see Eliade 1959). The sacred is not open to 'rationalization'—what we don't understand is not necessarily irrational, and it might have reasons that can be probed only across generations of experience and experimentation.

What we call *religion* itself conflates many 'religions,' as if they were variations around the same system providing the same functions. To a Protestant in the twenty-first century, religion has a large element of spirituality. But ancient Mediterranean religion, including the three Abrahamic and other creeds, are about heuristics, laws, and regulatory frameworks. In Arabic, "din" (دين), which now means "religion," corresponds to "din" (דִּין), "law" in Hebrew and ancient Arabic. *Medina*, which means state in Hebrew and city in Arabic, means literally a place where the law prevails. In addition, Islamic law was explicitly marketed as a sort of risk management, counter to the great legal confusion towards the end of the sixth century about the various commercial rules in the Arabic peninsula, with recourses to makeshift arbiters (*hakam*) (see Schacht 1964).

Religion enforces interdicts.[6] Interdicts appear to be historically the most potent form of regulation, considerably better than moderation. Jon Elster (2007, ch. 13) writes about how abstinence is more effective than rationing or "moderation."

Consider the evolution of ideas: 'bad ideas' (in the epistemic sense) can survive if they have some side benefits—an idea that seems to be absent in the literature about "evolutionary epistemology" (Popper 1999). It is misguided to

5. Such an understanding of belief is encountered in the philosophy of religion, e.g., by R. W. Hepburn (1958). It is present in the works of Kierkegaard and William James, and especially subtly in Wittgenstein's writings. Wittgenstein offers a reading of what religion in its true sense is. He offers a way of understanding how religion can be possible and necessary *without* its descending into outright superstition.

6. *See* Fourest and Venner (2010) for a list of interdicts across various creeds.

focus on the competition between ideas—and their survival—as an end product. What matters is the survival of the populations that have such ideas. Those with the right risk-management heuristics make it, even if their system of belief does not appear 'rational.'

Conclusion

It is not just that religion is a helpful source of sound heuristics for resisting gambler's ruin and similar hazards. More strongly, we should say that we humans actually don't know whether human beings can live sustainably *without* something like religion. Modernity is in this sense a dangerous uncontrolled experiment. The amount of historical time that any significant number of humans have lived without religion is infinitesimal compared to the sweep of history. Given that, the amount of time that we have sought as societies, as a species, to live without religion is almost nil. It is a symptom of chronic short-termism and over-optimism that people now *assume* that living in such a way is sustainable.

Just as nature is 'wiser' than us (in a statistical, risk-management sense) with regard to a vast swathe of threats, illnesses, etc., just as our knowledge only surpasses nature's in unusual and rare circumstances, so religious man is wiser than irreligious and non-religious man with regard to a vast swathe of threats, moral and spiritual illnesses and problems, etc. The knowledge of irreligious and non-religious man surpasses that of religious man only in rare and unusual circumstances. Until we have had a lot longer to develop non-religious heuristics that work, we should not throw the precautionary, religion-as-risk-management baby out with the superstitious, theological-claptrap bathwater.

The idea advanced here, about the role of religion for system-risk management, has been aired in a manner to provoke attention and interest; we advocate more research about interdicts that are helpful in risk management and about the viable modes, religious or otherwise, of carrying those interdicts.

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Nassim Nicholas Taleb traded derivatives for 21 years before starting a research career. His research focuses on practical, mathematical, and philosophical problems with probability, as well as the ability of systems to handle disorder. He is the author of the *Incerto*, a tetralogy (*Antifragile*, *The Black Swan*, *Fooled by Randomness*, *The Bed of Procrustes*), and its mathematical backup *Silent Risk*. He is currently Distinguished Professor of Risk Engineering at New York University's School of Engineering. His email address is NNT1@nyu.edu.

Go to Archive of Economics in Practice section
Go to May 2014 issue