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SYMPOSIUM ON NASSIM TALEB, THE BLACK SWAN

# COPING WITH THE BLACK SWAN: THE UNSETTLING WORLD OF NASSIM TALEB

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## ABSTRACT

Nassim Taleb rightly points out that although people may acknowledge in the abstract that the world is uncertain, they still behave as if a large enough sample size is all that is needed to predict, and model, the future. He also rightly notes that ever-increasing quantities of information are relevant only in simple situations, such as in predicting the range of human height, but are misleading in more random arenas, such as financial markets. However, while Taleb decries the use of narratives for falsely forcing the facts to fit a given story, we need narratives in order to make sense of a complex world. Further, Taleb fails to take sufficient heed of the fact that human narratives themselves become objects that act on subjects in an ever-increasing web of complexity.

# Notes

1. Taleb has insisted that this is in fact a “gray swan”: Those involved should have seen it coming but were blind to it. I think this raises an interesting question. If agents are disinclined to see the information in front of them due to sociological factors (more on this below), then gray swans are functionally equivalent to Black Swans despite being knowable in principle. As Taleb puts it, “If you know that the stock market can crash … then such an event is not a Black Swan.” Fair enough, but to me the interesting question is when and why people stop believing Black Swans are possible in the first place.

2. “Turing computable” means that there exists a definite algorithmic procedure to generate a definite result.

3. And also his Fooled by Randomness, particularly the endnotes on non-ergodic systems therein.

4. Personally I do not like the term “causal mechanisms,” since mechanisms presuppose a generator. However, since it’s become increasingly common to use this term to describe causal processes in the social sciences I use the term here.

5. To see that this is the case, consider the volatility of the price of oil in 2008 and the multiple interpretations of its causes, from “Chinese demand” to “reverse contangos.”

6. Consider the following example. In the recent financial crisis an oft-heard response to those who failed to anticipate the crash was that the world cannot be predicted based on ten years of data. The implication is that with more data we may have been more crash-proof. However, from a Talebian perspective there is no reason to think that more data alone would improve predictive accuracy. For example, imagine a time series of banks’ lending behavior over 100 years. In principle 100 years is better than 10, but consider that U.S. banks started operating with deposit insurance in 1933. This constitutes a structural break in the data, such that the behavior of the agents in question changes irrevocably after that moment. As such, the data are non-comparable across periods, but that fact is not knowable from the brute analysis of the data itself. I thank David Wyss for this observation.

7. In my own work, which borrows from Taleb here, I reduce this to three possible worlds, with three different generators, by assuming that Taleb’s type-3 world is an

extreme case of type his type 2. See Blyth 2006 for details.

8. Simple payoffs are yes/no type decisions. Complex payoffs are frequency of outcome multiplied by the impact of the outcome.

9. The quotations in the cells are Taleb's words.

10. As Taleb (149) puts it, "What matters is not how often you are right, but how large your cumulative errors are."

11. I thank Bob Jervis for this formulation of the problem.

12. Taleb's warnings about garch techniques and the VaR analysis that is based upon it are cases in point here (155 and 225).

13. Processes, such as electromagnetism, or events, such as death, exist of course independent of our inferences about them. But a death becomes a murder only under a theory of law, and resistance becomes V=I/R only in terms of a theory of electromagnetism.

14. Actually, they are second-order indicators (survey responses) of something else that is held to be a fact: unemployment, which is itself a sociological category.

15. This is not stating a normative preference for a given policy outcome (low or high unemployment). Rather, the point is to show how two theories (Kennedy-era Keynesianism and Greenspan-era inflation aversion) can turn numbers of any value into data with definitively different meanings.

16. Gullible Gaussians are those afflicted with the desire to see normal distributions in non-normal environments.

17. We can expect boys and girls (and occasionally hermaphrodites) from analyzing past births, and we can even note the frequency of twins, especially in families, but no sampling of past data on the frequency boys and girls (50/50) and hermaphrodites (error term) will tell us that in a particular case the outcome will be twins. The splitting of the zygote in any particular case is an emergent phenomenon that is not knowable from past data.

18. Remember that such "transparency enhancement" was supposed to make the banking system stable (Blyth 2003).

19. This goes beyond being an information-theory problem (how much signal can you get down the cable) to being a social problem (what does the signal actually say).

20. Ergodicity means that sample paths converge over time to a mean. Or, to put it another way, the relevant statistical properties can be known from an adequate sample of the process. We saw above why that may not be the case.

21. Which was of course Popper's claim in The Poverty of Historicism. I thank Jeffrey Friedman for this reminder.

22. The irony is that many proponents of CDSs and other such derivative instruments argued that their propagation would make the system more stable rather than less. Some authors contend that CDSs did not in fact cause the crisis (Wallison 2009), which may be the case. But they may have contributed significantly to the crisis by inspiring the fear that they would detonate latent systemic risk. The perception of risk was as important as the "fact" of risk (or, as Peter Wallison contends, non-risk) from these instruments.

23. Which is what Taleb's work on fractals and power-law distributions also admits.

24. See http://en.wikipedia.org/wiki/Kolmogorov_forward_equation and http://en.wikipedia.org/wiki/Kolmogorov_backward_equation.

25. A point Taleb (71) acknowledges at least implicitly when he argues that "we have far too many ways to interpret the past for our own good."

26. In my own work, for example, I have shown how people can become cognitively locked into one theory of the world that allows them to project forward and act meaningfully, even if doing so results in extreme diminishing returns (Blyth 2001 and 2002).

27. Until some players figured out what other players would do—since they all used basically the same model— and started to play against their positions, thus undermining the model's fit. This point was made to me in recent interviews I conducted on Wall Street.

28. This is, in a sense, Robert Merton (senior)'s "self-fulfilling prophecy" writ large, where rather than such behaviors being endogenously destabilizing, they may be partially stabilizing too. I thank Robin Varghese for this observation.

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