

## **"Black Swans, Volatility and Flexibility"**

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### **Black Swans, Volatility and Flexibility**

We live in a volatile world full of uncertainty. *It's all about targeted flexibility, the art of being prepared, rather than preparing for specific events. Being able to respond rather than being able to forecast, facilitates the ability to respond to the consequences of an event.*

#### **Perspective**

It seems that there many experts today who are jumping on the bandwagon and laying claim to some aspect of, or permutation of, the "Black Swan" concept. My question is, **"How is it possible for someone to be able to identify the unknown – unknowns, the highly improbable and extremely rare events before they happen?"** Even Nassim Taleb, the author of the famous book, *"The Black Swan, The Impact of the Highly Improbable,"* has not yet mastered this. Or he is just not claiming the title, "Master Black Swan Hunter" yet.

Nassim Taleb, author of the book "The Black Swan: The Impact of the Highly Improbable" defines a "Black Swan" as:

*"A black swan is a highly improbable event with three principal characteristics: it is unpredictable; it carries a massive impact; and, after the fact, we concoct an explanation that makes it appear less random, and more predictable, than it was."*

If we take the three principal characteristics – Unpredictability, Massive Impact, Explaining the event away after the fact; and assess each, perhaps we too can become "Master Black Swan Hunters."

#### **The Problem**

Kenneth A. Posner in his book entitled, "Stalking the Black Swan" has manipulated and massaged Taleb's original definition. Posner's opening line in chapter one, states: "Black Swans are but one manifestation of the uncertainty with which we peer into the future, mindful that other people are trying to do the same thing and that the interaction of opinions and decisions can affect the very future outcomes we are trying to foresee." Posner focuses on volatility, fluid environments and our inability to calibrate models due to not being able to assess all the data that is out there. There is a general lack of knowledge when it comes to rare events with serious consequences. This is due to the rarity of the occurrence of such events. In his book, Taleb states that *"the effect of a single observation, event or element plays a disproportionate role in decision-making creating estimation errors when projecting the severity of the consequences of the event. The depth of consequence and the breadth of consequence are underestimated resulting in surprise at the impact of the event."*

To quote again from Taleb:

*"The problem, simply stated (which I have had to repeat continuously) is about the degradation of knowledge when it comes to rare events ("tail events"), with serious consequences in some domains I call "Extremistan" (where these events play a large role, manifested by the disproportionate role of one single observation, event, or element, in the aggregate properties). I hold that this is a severe and consequential statistical and epistemological problem as we cannot assess the degree of knowledge that allows us to gauge the severity of the estimation errors. Alas, nobody has examined this problem in the history of thought, let alone try to start classifying decision-making and robustness under various types of ignorance and the setting of boundaries of statistical and empirical knowledge. Furthermore, to be more aggressive, while limits like those attributed to Gödel bear massive philosophical consequences, but we can't do much about them, I believe that the limits to empirical and statistical knowledge I have shown have both practical (if not vital) importance and we can do a lot with them in terms of solutions, with the "fourth quadrant approach", by ranking decisions based on the severity of the potential estimation error of the pair probability times consequence (Taleb, 2009; Makridakis and Taleb, 2009; Blyth, 2010, this issue)."*

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You need to look at long spans of history to catch sight of "rare" events that are all too often forgotten, although they turn out to be far more common and similar than people seem to think. For example, Deepwater Horizon – many called it a Black Swan, but the Aban Pearl a rig that went down off the coast of Venezuela a few month later barely got any press coverage. I guess that distance makes it harder to see the Swan? The long look back is also revealing; as you begin to get a perspective on events and are better able to identify the "Black Swan."

We have the unfortunate tendency to view recent experience through a very narrow window of data sets. The data sets often times are based on convenience of access and data availability, rather than on research and a deeper analysis of a broader base of information. For the most part, this would be fine, except that "rare" events have no set time cycle for occurrence and no arbitrary scale of measurement that we are apt to apply. Predicting an event (generally done in a broad sense, i.e., there's going to be a war) essentially is looking at what is possible. What is possible is a long way from what is probable. Determining what is probable takes a lot more effort and analysis.

If you have limited experience and/or limited data that are available for analysis, then, for example, predicting a hundred year flood becomes an exercise in creative thinking. If you are working with a data set that covers only twenty-five years, you simple do not have sufficient information to give an adequate perspective on the risk. You would have a 1 in 4 chance of observing a one hundred year flood looking at twenty-five years of data. And, you would be using an arbitrary scale to measure the one hundred year flood; one for which you cannot assure the adequacy of as a true measure of a one hundred year flood. The recent Japanese earthquake/tsunami is a good example. Was our frame of reference, the Richter scale, in danger of being exceeded? What would happen if the earthquake was off the scale? Perhaps, a new scale would be developed; or perhaps we would rationalize the event as an aberration?

If you don't have experience, your ability to target your response will be limited. The nature of "rare events" is that they are rare to the person who experiences them; not that they are "rare." Take for example financial collapse of a country. Throughout history we have vast data that shows financial collapse (Sovereign debt default) is not that rare. In fact it is quite common. In its early years as a nation state France defaulted on its external debt no fewer than eight times. Spain has had thirteen defaults thus far. It is a relatively small number of countries that have not defaulted on Sovereign debt to date. And, this number may rapidly shrink in light of the current financial crisis. Which even Taleb says is not a "Black Swan."

### **Speculate Less, Think More**

While it is trendy to write about "Black Swan" events and to carry the moniker of "Master Black Swan Hunter," do we really have the ability to predict with any accuracy the nature of severity of an event, no matter how "rare" that event is deemed? In 2002, I made the following statement:

*"Information, no matter how well managed, is not knowledge unless it can be used."*

With the popularity of deeming every large scale event (an arbitrary judgment on one's part) a Black Swan (was Hurricane Irene coming so close after a 5.9 magnitude quake that shook Virginia and the east coast a "Black Swan?"), it seems that credentialed professionals are making the classic error of creating false positives for themselves. These false positives are quickly reinforced by masses of adherents who seem to have lost their capacity to think, to research and analyze. Or, are we just so enamored of the quick fix, the easy solution and a convenient "tag" to characterize events we cannot predict?

Are we attempting to predict the unpredictable? A "Black Swan" by definition (Taleb) is unpredictable. Therefore to be a Master Black Swan hunter you must have to be a bit of a psychic. But then psychics and palm readers more often than not are revealed as charlatans, schemers and, even if legitimate, predict after the fact or with such generalities as to be able to apply to a broad general audience.

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### **Shapeshifting, Disasters and Black Swans**

Shapeshifting is also a common theme in mythology, folklore and fairy tales. It is also found in epic poems, science fiction literature, fantasy literature, children's literature, Shakespearean comedy, ballet, film, television, comics, and video games. In Greek mythology, shapeshifting is often a punishment from the gods to the humans who crossed them. Circe transformed all intruders to her island into the form of beasts. In Norse mythology, Odin transformed Svipdag into a dragon because he had angered him.

I suggest to you that events that are being labeled Black Swans ("rare events") are really disasters that have been distorted by shapeshifting. In its broadest sense, shapeshifting occurs either voluntarily or involuntarily. In the first instance, shapeshifting is influenced and somewhat controlled by the individual. If the shape change is voluntary, its cause may be an act of will, a decision, or situational awareness. If the change is involuntary, its cause may be the result of limited information, failure to work through the process of solution, nature and/or extreme influence by external forces. In essence, the shapeshifting is controlled by another. We see the second instance more often than the first. All one has to do is turn on the television and watch the nightly news, any reality show (really are they?), even historical events are affected by shapeshifting.

Disruptive events, disasters, emergencies, crises all share two common threads. First, they all evolve. Their uniqueness is in the way that they evolve. Second, they are not linear. As they evolve they change form, like the shapeshifter. Collateral factors come into play. Consequences last long after the event has ended. As a result of these permutations, we find that there is no one single, simple solution. Multiple issues must be identified and addressed. The identification process is ongoing and requires the ability to recognize the warning signs after the initial impact. What you thought were the consequences initially; may turn out to be not what the real consequences are. Perception on the part of various audiences (customers, employees, shareowners, stakeholders, etc.) takes a paramount role in shaping the consequences of an event. Take for instance, the company that has an event and via social media, news media and other non-official channels there is a perceived concern for the company's survival. Suddenly, you may have a self-fulfilling situation. Nervous shareowners start to liquidate positions; as a result the stock price drops. Media (news, social, etc.) fuel the fire with articles, tweets, blog posts, etc. Soon you find yourself in the position of endless defense reacting to each new issue; and a potentially futile defense too. Once attributes are associated with your company it is almost impossible to shake the label.

As you can see an event seldom ends in the form that it started. There are multiple layers and levels that go on and on, like a Rubik's cube with no solution. These effects last long after the event that triggered the problem. The ability to recognize impacts, business or otherwise, and the ability to address consequences as they materialize is critical to effective resilience.

How do you know that you have successfully hunted the "Black Swan" if you have never experienced it before? Go back to Taleb's definition and the three criteria: 1.) *unpredictability*; 2.) *massive impact*; and, 3.) *after the fact, an explanation that makes it appear less random, and more predictable, than it was*. Until the event occurs and is cataloged, it cannot be labeled a "Black Swan." You simply have too little information available to quantify an event that has not occurred as rare, predict its impact and the timing of its occurrence. The simple fact is; you cannot classify that which you cannot recognize until it occurs. Hence, the ability to be a "Master Black Swan Hunter" may fall into the realm of mythology and folklore. Many may lay claim to being a "Black Swan Hunter;" however few, if any, possess this ability. Claiming the title of "Master Black Swan Hunter" often enables the claimant to trick, deceive, mislead and meddle. Throughout history many murder sprees have been attributed to the presence of these beings.

To paraphrase Darwin, "it is not the strongest of the species that survives, not the most intelligent, but the one most responsive to change." The whole problem with "Black Swan" hunting is the scope of the challenge. "Black Swans" cannot be incorporated into processes, models or methodologies because they are simply unthinkable. Because we are human, we generally can only relate to that which we have experienced. Therefore, if I have not experienced the unexpected, unpredictable, etc.

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(it being beyond my experience), how can I plan effectively for what I do not know? How can I develop the skills of the "Master Black Swan" hunter to anticipate unpredictable, unexpected eventualities? I do not have the capability to model them, because I cannot think of them! We can make assumptions; but assumptions are at best, a best guess of what we think might happen or what could be on a scale that we are comfortable with. Perception is our reality. For example, in differential calculus, an inflection point, point of inflection or inflexion (inflexion) is a point on a curve at which the curvature changes sign. Observing the curve change from being concave upwards (positive curvature) to concave downwards (negative curvature), or vice versa is not a static proposition. If one imagines driving a vehicle along a winding road, inflection is the point at which the steering-wheel is momentarily "straight" when being turned from left to right or vice versa. The change in direction is based on our perception influenced by our visual capacity to determine a change in direction. Here are some limitations to consider:

- Incompleteness of the model (as the "Black Swan" is unpredictable, can you really model it?)
- Incorrectly specified parameters/scope (Measurement tools are inadequate)
- Overly complex (It's not easy to detect paradigm shifts, it's best to claim to detect as many as possible and quietly bury your failures)
- Scenarios may no longer be appropriate (Unpredictability, evolving nature of the event over time means that the event seldom ends in the form that it started)
- Obsolescence of the model (Unpredictability and evolution make the model obsolete)
- High cost to develop, operate and maintain (Skill set requires vast amounts of experience; limited by time and the nature of rare events)
- Require a high degree of interpretational skill (knowledge, experience, background – human capital)

### **Conclusion – You Cannot Forecast – You Cannot Anticipate**

Clearly defined rules for the world do not exist; therefore computing future risks can only be accomplished if one knows future uncertainty. The problem that faces us as we examine the efficacy of the Black Swan concept is that the "Black Swan" event cannot be anticipated – it is unpredictable! Taleb's own definition requires that the event must already have impacted us before we can determine, with certainty, that the event is really a "Black Swan" event. Further compounding the value of this concept is the fact that no two people, organizations, companies, etc. are necessarily impacted exactly the same by a common event, let alone an event tagged as a "Black Swan." For one person, organization, company, etc. an event might be cataloged as a negative "Black Swan" after it is over; while that same event might be an inconvenience or a positive "Black Swan" for another entity. Since impact to each entity is defined by the entity and not unilaterally by the event, the idea of "Black Swan" cannot be absolute. "Black Swans" are, in fact, subjective. So as you go searching (hunting) for that elusive Swan, you must deal with the simple fact that you cannot know if you have found it until after it has occurred; and dependent on its impact, might be positive or negative! By then that elusive bird has flown away and is long gone, making the entire hunting effort (attempting to predict) of questionable value.

This "after the fact" logic leads to a number of problems with the whole concept of the "Black Swan." One must ask, "What value is there in this concept, if it can only be identified after it has occurred?" You cannot preclude the "Black Swan's" impact (unpredictable). Nor can you mitigate its effects (again unpredictability) as a "Black Swan." You can, at best, only deal with the consequences of its occurrence. This is like looking at your car after a hurricane and finding a large tree has fallen on it and crushed it. Do you really care if it is a Black Oak that crushed your car or an Elm tree? You must now deal with fixing and/or replacing your car. The kind of tree that caused the damage could not

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have been forecasted, predicted, etc. and now it is not relevant, only the damaged car is relevant. Further, if this is the only car you own this event may be a negative “Black Swan.” If this is one of two cars you own, then this could be a positive “Black Swan” or at worst an inconvenience.

The vast majority of planners find they are limited by that common human frailty – we cannot know the future and are therefore condemned to deal with the after effects of an event. At that time management’s focus is on addressing the consequences of the event, quickly and effectively. You can ponder the color of the Swan (disaster) on your own time, not theirs.

*Being able to respond rather than being able to forecast, facilitates the ability to effectively react to the consequences of an event.* A “Black Swan” or not; we leave it to you, mighty “Master Black Swan” hunters.

### **About the Author**

**Geary W. Sikich** is the author of *"It Can't Happen Here: All Hazards Crisis Management Planning"* (Tulsa, Oklahoma: PennWell Books, 1993). His second book, *"Emergency Management Planning Handbook"* (New York: McGraw-Hill, 1995) is available in English and Spanish-language versions. His third book, *"Integrated Business Continuity: Maintaining Resilience in Uncertain Times,"* (PennWell 2003) is available on [www.Amazon.com](http://www.Amazon.com). His latest book, entitled, *"Protecting Your Business in a Pandemic: Plans, Tools, and Advice for Maintaining Business Continuity"* is published by Praeger Publishing. Mr. Sikich is the founder and a principal with Logical Management Systems, Corp. ([www.logicalmanagement.com](http://www.logicalmanagement.com)), based near Chicago, IL. He has extensive experience in management consulting in a variety of fields. Sikich consults on a regular basis with companies worldwide on business-continuity and crisis management issues. He has a Bachelor of Science degree in criminology from Indiana State University and Master of Education in counseling and guidance from the University of Texas, El Paso. Geary can be reached at (219) 922-7718.

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