Tenet 9: Unique Self Medicine is Antifragile

A porcelain cup is sitting on your table. You drink up from it and rest it back on the table. The cup's fine. You drop it from an inch up. This makes you a little nervous, but the cup stays intact. You drop it from 4 inches. The cup cracks. You drop it from a foot. The cups shatters into a hundred pieces.

This is the simple observation that helped Nassim Taleb to define what's fragile. Something is fragile when shocks of higher intensity cause greater and greater harm.

If you drop the cup 12 times from an inch up, it's not the same as if you dropped it from a foot up. The scenario is nonlinear. The damage on the cup when dropped from a foot high is clearly greater than the damage when dropped 12 times from an inch. If the scenario were linear – say, if dropping the cup from a hundredth of an inch up caused 1/1200 the damage of dropping it from a foot up, then the cup couldn't exist.

And as Taleb explains, anything fragile doesn't like volatility. The cup will survive longer in a location not prone to earthquakes than in a location that is.

In volatile situations, things that are fragile have more to lose than to gain. If you drop the cup from higher up, it has increasingly more damage; if you just pick it up and put it down gently, it stays the same.

So anything fragile in a nonlinear environment has more downside than upside, especially under conditions of volatility.

Now say you exercise through a program of lifting 1-pound weights. Your muscles grow slightly. You change your weights to 10 pounds. Your muscles grow faster and bigger. You eventually change your weights to 50 pounds. Your muscles hypertrophy even more.

In his book **Antifragile: Things That Gain from Disorder**, Taleb coins a new word to describe this exact opposite situation from fragile: antifragile.

Something is antifragile when shocks of higher intensity cause greater and greater benefit.

Again, the scenario is nonlinear. Lifting a 20-pound weight once would lead to greater muscle growth than lifting a 1-pound weight 20 times. Otherwise, we would all be Arnold Schwarzeneggers.

Antifragile things thrive on volatility, as they have more to gain than to lose. If your exercise program had no resistance training with weights, you would still have your muscles; with variable resistance training, your muscle gain would accelerate (up to a point).

So anything antifragile in a nonlinear environment has more upside than downside, especially under volatile conditions.

Taleb emphasizes that antifragile isn't the same thing as robust. If you're robust, you stay the same in volatile situations. You're resilient. Antifragile goes a step further: if you're antifragile, you gain in volatile situations. You actually need volatility to benefit more.

If you're antifragile, you have a trial-and-error strategy. You tinker and tweak, making mistakes along the way but limiting their magnitude. You're not interested in the rightness or wrongness of things. You're interested in payoffs, especially the big one.

In Taleb's lexicon, a Black Swan is an event of rare probability that we cannot predict with mathematical models or evidence analysis – no matter how intelligent or advanced we think we are. Taleb says that these outliers have deep historical impact, but human nature makes us rationalize them after the fact.

If you're antifragile, you mitigate risks and are even willing to take small losses during regular times. When the rare Black Swan event occurs, you're in position to exploit it for a big payoff.

Fragile systems seek to control volatility so as to take small gains. But unpredictable Black Swan events wipe them out. And they retrospectively model for these events, only to be exposed to the next Black Swan.

Natural systems are inherently antifragile. Indeed, natural selection rewards it. Evolution itself can be seen as the promotion of the antifragile, the survival of things that had greater upside than downside in nonlinear systems of high volatility.

And though we consider the physiosphere a linear system, biological, cultural, and socioeconomic systems are decidedly nonlinear.

So if we attempt to engineer the removal of volatility, the randomness, the stressors on these systems, in order to make them more uniform and (apparently) predictable – we're fragilizing these systems. Which makes them more prone to blowing up when the unpredictable inevitably occurs.

Taleb says it's a lot easier to figure out if something is fragile than to predict a Black Swan event that would harm it. If something has more downside than upside from random shocks, it's fragile.

And he says that our modern, top-down world has been fragilizing just about everything: education, politics, food, parenting, the monetary system, and the economy.

The most obvious recent example of this, the example that Taleb put his credibility on the line to warn against before it occurred, is the financial system. Taleb had identified in 2003 that Fannie Mae and banks were fragile, and the banking system would collapse. Other economists apparently ran simulations showing otherwise.

The crucial difference is that Taleb wasn't predicting the chance of rare events; he was predicting fragility. With a simple rule-of-thumb. So simple that academics and sophisticated policy wonks missed it.

In 2008 we know, of course, what happened.

In this essay, I would like to show why Health 2.0, as it's being crafted, is increasingly making our health care system fragile. And why Health 3.0, or Unique Self Medicine, is antifragile. As is Unique Self itself.

(One of those economists who felt Fannie Mae was safe, Peter Orszag, went on to help craft Obamacare.)

THE PROBLEM WITH CENTRALIZATION

One of the main effects of Obamacare (let's equate this to Health 2.0 for now, though they're not exactly the same) has been the consolidation of healthcare. (In fact, some have argued that this was its conscious intent from the beginning). We've been sold that this creates efficiency because we won't duplicate tests. That quality of healthcare will rise because we're held accountable to standardized measures and outcomes. That data crunching will help standardize those measures better. And that through economies of scale, the value of the healthcare we deliver will go up.

Sounds great, doesn't it? Who wouldn't want all this?

Well…I'm not exactly seeing this happen yet, as a practicing physician. What I am seeing in spades is hospital systems buying up medical practices (the most profitable ones first) and leveraging their power to negotiate rates with payers. Which is making healthcare prices go up in those markets. And payers are in return consolidating themselves.

All of this in the name of value. When in reality it's a monopoly play.

Let's set aside the mercantilism of this; this argument is for another time.

There's something more deeply dangerous about this consolidation, something that gets us back to fragility.

We can appreciate that Health 2.0 wants to control volatility. The reasoning goes that if we can make healthcare more homogeneous, we can reduce costs.

But Taleb argues that fragility occurs when we have small payoffs, at the risk of large mistakes that can't be distributed when the system is consolidated.

This is THE danger. We are fragilizing our healthcare system, in the name of efficiency. And we're doing it fast, before we fully appreciate the consequences.

There are several ways that this is problematic.

First, conformity. We're being pushed to conform to "meaningful use" measures, with increasing penalties if we don't. Measures like cholesterol, blood pressure, and blood sugar are targeted. And our system incentivizes us to take additive steps instead of subtractive steps to control these measures (more on this later). In other words, more medications.

Initially, it may appear that we're making progress. The measures look better. We might even be improving short-term outcomes.

But what would happen in such a system if the measures by which the entire quality of healthcare is based were to become less valid? Or the interventions to control these measures put people in harm's way?

For example, let's say you were incentivized to give statins to control cholesterol, in order to prevent a first heart attack. We've learned that you have to treat about 100 people with a statin to prevent one person from getting a heart attack. For 5 years.

We've also learned that for every 50 people we treat with a statin, one person gets diabetes. And for every 10 people we treat, one person gets muscle damage.

But the system wants you to hit that core measure, because evidence-based medicine says so.

About a quarter of Americans aged 45 and up already take statins. With the latest change in the cholesterol guidelines from the two leading American cardiology societies, almost half of Americans age 40 to 75 would be advised to take statins.

Some researchers are arguing that it would be "cost-effective" for two-thirds of this age group to take statins. And this, in an editorial in the Journal of the American Medical Association: "There is no longer any question as to whether to offer treatment with statins for patients for primary prevention, and there should now be fewer questions about how to treat and in whom." Are you kidding me?

Taleb calls thinkers like this "fragilistas." A fragilista thinks he knows what he knows. Through pseudo-sophisticated risk modeling and cost-benefit analysis, the fragilista entrenches his opinions (Taleb terms this the "Soviet-Harvard delusion").

But what about what we don't know? The fragilista mistakes the unknown for the nonexistent. And his models don't account for the nonexistent.

Taleb calls this naïve rationalism. And naïve rationalism creates fragility.

For example, there are studies that suggest increased aggression with lower cholesterol levels and statin use. And some people develop cognitive impairment such as memory loss and confusion on statins.

Researcher John Ioannidis has for years now questioned how valid most published medical research findings really are. Some of the most highly cited research studies of clinical interventions have been diminished in subsequent studies, never tested again, or even outright refuted.

I'm not against evidence-based medicine at all. I deplore the practice of medicine that's evidence-ignorant.

But I am vehemently against naïve rationalism in medicine.

If a centralized system outputs evidence-enslaved and naively rationalistic medicine, in the name of standardization, and that evidence base is incomplete or even wrong, we have a problem. A major one.

Because of centralization, the mistakes aren't distributed. And non-distributed mistakes are dangerously amplified. These iatrogenic errors can destroy many lives.

If we have a centralized system that promotes statins and incentivizes this promotion across the board, and we find later that statins do more sinister things, that mistake is concentrated and magnified, and that mistake would affect many lives. And what we originally thought was cost-effective is destroyed by the Black Swan.

Taleb recalls the Greek myth of Procrustes, an innkeeper who wanted to fit visitors perfectly in his bed. So he cut the limbs of the too-tall ones and stretched the limbs of the too-short ones.

Health is nonlinear. And Procrustean medicine is fragile. We are in danger of setting up a healthcare system that will accentuate big mistakes, especially in volatile conditions. I fear the ramifications of a "too big to fail" healthcare system, which like the banking system is in greater danger of imploding.

For Taleb, antifragility calls for decentralization, not centralization. Only a decentralized system can seek large payoffs while keeping mistakes small. And reduce risks to the entire system because the mistakes are distributed and localized.

Taleb applauds the airline industry for setting up a system where mistakes such as plane crashes, tragic though they are, are independent from each other. They are investigated transparently and factored in to reduce the odds of future mistakes. And as result, the industry has a stellar safety record.

Decentralization is key in Unique Self Medicine. If we could practice in a healthcare system that allows us to take small risks independently, and learn from them without fear of inappropriate litigation that makes us defensive, we could antifragilize the system dramatically.

The issue of risk brings up the second problem of centralization: the very nature of risk taking.

In Health 2.0, risk taking is discouraged. We don't want volatility, we want uniformity. Which ossifies the evolution of medicine.

But the risk hasn't been eliminated. We actually end up taking greater risks because we have a near-fanatical belief in statistical analysis and predictivity, in a nonlinear system like health. We pretentiously think we're smarter than we really are, that we can precisely model such a complex system. The risk has now just been taken underground, as we have seen. Where it festers, until a Black Swan event undoes the system.

In Health 3.0, risk taking is encouraged, with heuristics rather than with theoretical modeling. One heuristic in Unique Self Medicine would be that we would have guidelines on when to intervene and when not to, not how to intervene. We would not intervene when the benefit is small and a Black Swan event would be devastating; we would intervene when the benefit is big, and the risks are small and manageable.

And because uniqueness is an asset, not a liability, the risks taken aren't all the same. Also, the risk taking is transparent, so that mistakes remain small and inform us as we move forward.

In a decentralized system where intelligent risk taking is encouraged, a Unique Self medical practitioner can through trial and error tinker with best practices while being evidence-informed. And be free enough to make mistakes but keep them small by collaborating with other Unique Self practitioners on best practices. So the mistakes won't be concentrated and liable to take the whole system down.

This is Evolutionary Unique Self Medicine in action.

This is risk at the level of the system, but what about risk at the individual level? Physicians in Health 2.0 at first glance have more apparent security. As employees rather than independent practitioners, they may find the package of a good salary, benefits, and set hours quite enticing.

But as Taleb explains, they're at more risk than they realize. Much more.

For one thing, physicians in Health 2.0 are becoming commodities in a machine. In exchange for apparent security, they are exposing themselves, knowingly or unknowingly, to being canned when the system is squeezed.

In other words, physicians are becoming fragile to shocks to the healthcare system. As the system becomes more exposed to an unpredictable event, their livelihoods will be threatened. Much more than if they had remained independent practitioners, who can more easily adapt to changing environments.

And the autonomy they once enjoyed has taken a back seat to conformity to production targets, quality measures, and utilization guidelines.

Overburdened by these constraints, physicians have had two responses: checking out, and burning out.

If you commoditize what a physician does, if you promote a system of shiftwork and automation, you risk the physician abdicating responsibility to this robotic system. Taleb notes that the Federal Aviation Administration figured this out with pilots.

For example, it would not be that unusual to find hospitalist-employees who care for patients in shifts, patients they do not see outside of the hospital, feeling at times less accountable to a patient's care.

And one of the biggest reasons for increasing burnout in physicians today is the loss of their unique voices in a centralized system. Under the continual burdens of documenting adherence to core measures, dictating to billing codes rather than patient care, struggling with intrusive electronic health record (EHR) systems, and pandering to administrators concerned with maintaining the patient census, physicians are feeling trapped. A work setting more predictable, yes – but antifragile, no.

I mentioned physicians getting the squeeze when a fragile system is under strain. Taleb defines a squeeze as what occurs when an institution has to take an action, regardless of cost.

This reflects the third problem of centralization: squeezes get bigger with size. The bigger the institution, the costlier the squeeze. And this is nonlinear.

We are building big healthcare conglomerates, in the name of efficiency and economies of scale. Sure, we may reap cost savings in the short term. But these big institutions will be the most squeezed in Black Swan conditions.

Taleb advocates that government funding should go not to big institutional research, but to lots of trials spread out in small amounts. There is an element of this in the Affordable Care Act. But he also says that the government should give this funding to people, not projects. People who aren't constrained by academic reputations, people who are willing to take risks and continually tinker based on feedback from mistakes which are kept small. This is not what Obamacare supports.

RATIONAL OPTIONALITY

This is a fundamental agent of the antifragile – what Taleb calls taking the option. An option is a choice you get to make in situations of randomness. And you can make it rationally. So by trial and error, you are able to rationally let ride what gives you the biggest payoff.

Unique Self Medicine would champion rational optionality in medical decision-making.

This actually harkens back to medicine's past. Taleb recalls that the history of medicine is rich with empirics who through trial and error and tinkering, not through deep understanding, made major discoveries. The biggest advances in medicine were from exploitation of serendipities, not from Manhattan projects.

For example, penicillin was discovered by accident – completely randomly or by some directed tinkering, depending on which story you choose to believe. Cardiovascular surgeon Michael E. DeBakey crafted the first Dacron artificial artery for grafts by calling upon the sewing skills he learned as a boy from his mother. And even more recently, Barry Marshall discovered through optionality that the bacterium Helicobacter pylori causes peptic ulcer, at a time when conventional wisdom thought that no bacteria could survive in the acidic environment of the human stomach. Marshall even tinkered with himself by drinking a culture of Helicobacter pylori to support his observations.

Taleb argues accurately that institutionalized medicine, to protect its reputation and income stream, attempts to rebrand empirics in medicine as charlatans or quacks. It's a turf war.

But as Taleb explains further, it is logically fallacious for academics to say that if quacks are present among nonacademics, then nonacademics are all quacks. Taleb, again: "They keep doing it: the statement all that is nonrigorous is nonacademic (assuming one is a sucker and believes it) does not imply that all that is nonacademic is nonrigorous."

Herein lies the key to deciding if someone in medicine is an empiric or a quack: if there is demonstration of rigor, based on rational optionality – not merely based on academic knighthood, as validated exclusively through randomized double-blind placebo-controlled trials – then you're not a quack.

And as Taleb points out, the irony is that iatrogenics actually increased to a much larger scale with the institutionalization of medicine.

The healthy evolution of Unique Self Medicine will come from empirical tinkering and rational option-taking, not from accumulating knowledge and pontificating. We can pontificate on the map of Health 3.0. But we must never forget that we're just describing the map, not the territory itself. Ken Wilber has corrected the distorted understanding of Thomas Kuhn when Kuhn was writing on the history of scientific revolutions. The discovery of anomalies by empirics comes first, then the paradigm shift. Not the other way around.

SECOND SIMPLICITY IN HEALTHCARE

As Taleb sees it, the option is a great substitute for understanding.

We don't have to know exactly how things are working. We just have to reward the things that work and limit and learn from the things that don't.

Nature works this way. It's a pretty complex system, but it doesn't have complicated rules and regulations that govern its evolution. And it evolves just fine.

Why can't our healthcare system be the same way? Why is the Affordable Care Act (ACA) 10,000 to 20,000 (depending on who's counting) pages of regulations long?

Modern and postmodern thinking believe that complex systems require complex policies. But Taleb warns that this make the systems fragile.

Perhaps premodern thinking was too simple, for instance because it didn't protect the weak enough.

But rational optionality is an exercise of post-postmodern thinking. It brings forth a "second simplicity," as Marc Gafni puts it.

And this second simplicity is more antifragile to shocks in the system. Which protects the less fortunate more, as they are often the first to suffer when a system collapses.

And Taleb believes that the more intricate the policies, the more opportunities there are for insiders to game the system.

This is happening regularly in healthcare. It occurred with hospital groups, pharmaceutical companies, insurances, unions, and physician associations lobbying heavily for their piece of the pie during the run-up to the ACA. It's occurring now, with easy manipulation of meaningful use measures in the EHR. And it will occur in the future, as I've discussed above with the monopolization of the healthcare market.

THE *VIA NEGATIVA* APPROACH

Often I feel like we're making healthcare reform way too complicated. We can become more antifragile in health AND cut healthcare costs tremendously by practicing what Taleb calls *via negativa*, or the negative road. *Via negativa* means that we gain more from subtracting than by adding. We avoid the side effects that compound when we keep adding to a situation, making it increasingly fragile.

In healthcare, this means we improve health by subtracting a potentially harmful thing through rational trial and error, like a food, habit, or toxin. As opposed to stacking one medication or medical intervention on top of another, without a true understanding of the side effects that also stack up on each other. All in the name of "evidence-based" medicine.

I challenge anyone to explain to me rationally how all these medications and interventions are interacting with each other, in a way that any evidence-based medicine could really inform!

Think about it. It's ridiculously less expensive to subtract than to add in healthcare. When someone says eating healthy food is expensive, is it more expensive than having a heart attack,

ambulance services, an emergency room visit, cardiac ICU care, a heart catheterization, and a heart bypass? What about the non-monetary expenses of all the pain and suffering of the patient and his family?

If you could reduce your cholesterol level through subtracting certain foods and habits, versus taking a statin, which is the more antifragile option? Which option has more downside? And shouldn't we in the healthcare system be promoting the more anitfragile option?

There are several reasons the healthcare system doesn't function in this way.

The obvious (and most cynical) one is that there's more money to be made in doing things than in not doing things.

We physicians make more money in scheduling more office visits and doing more procedures. Pharmaceutical companies make more money when you take statins than when you eat vegetables. Hospitals make more money when their beds are filled with patients utilizing their high-dollar service lines.

Perversely, even health insurance companies make more money with this setup. Now, you would think an industry built on actuarial assessments of health would lose money the more people utilized healthcare services. But this higher utilization just gives insurance companies the cover to mark up healthcare premiums, way more than they could if healthcare were practiced *via negativa* style. Contrast private payers with government payers like Medicare and Medicaid, who can't mark up premiums like this but through increasing taxes. Who's much more likely to go bankrupt?

Of course, even private payers will start losing money if we healthcare practitioners suddenly started doing even more tests and procedures. But over time they can distribute the costs and preserve their profits by raising premiums.

Which simply illustrates an economic reality: healthcare isn't free!

And when practiced *via positiva* style, healthcare overall becomes more expensive. Way more. In America these costs are passed primarily to businesses, who through greater cost-sharing pass them to you. Or, through higher premiums, deductibles, and taxes, they're passed straight to you.

Either way, let me repeat: healthcare is NOT free.

But certain interests in the healthcare system make out like bandits. And these interests – Big Physician, Big Pharma, Big Hospital, and Big Insurance – have lobbies that want to keep it that way.

Now, I would argue that the Big Physician lobby is easily the weakest of this group and has been crushed in the run-up to Obamacare. Nevertheless, we physicians are culpable in promoting *via positiva* over *via negativa* in healthcare. Why is this?

Taleb rightly points out that it's much easier to sell acts of commission than acts of omission. Imagine I as a doctor saying to you, I'm going to fix X by doing Y. Versus I'm going to protect you from X by not doing Y. Which one would persuade you more easily?

The Hippocratic oath directs us to do no harm. A directive as quintessentially *via negativa* as there ever was.

But in modern medicine in America we disregard this maxim all the time. In part because our tort system penalizes acts of omission way more than acts of commission.

If you go to any ER in America today with abdominal pain, you will almost certainly get a CT scan of the abdomen. Ninety-nine of them may be negative. But the threat of being sued for not doing a CT scan that would have picked up the one in a hundred serious abnormality is too great. So it's much easier to perform this act of commission.

And the acts of commission keep going. Some of the other 99 with no serious abnormality on the CT scan end up having something incidentally seen on the scan. Which leads to more office visits, more scans, and maybe more procedures. All for something that may have caused no meaningful harm. The specter of the lawsuit looms over each successive act of commission.

Let's say you go *via negativa* and don't order the original CT scan in the ER. The patient does fine. And you prevented the radiation from the scan from giving her cancer later in life. Would you ever get credit for this act of omission?

Many patients believe that their doctor who runs the most tests is the best doctor around, because acts of commission sell better. Even as their healthcare becomes increasingly fragile from all the tests.

And we often have big blind spots to the risks that may be compounding with all these acts of commission. If we don't stop and seek to connect the dots, we can't see what's happening.

For example, let's say you have reflux. Instead of encouraging you to subtract foods and habits that may be fueling your reflux, I give you a proton pump inhibitor (PPI) that powerfully blocks acid production in your stomach. Later you develop a deficiency of iron or vitamin B12. I then have you take supplements to correct this. Then later you develop a diarrheal infection from a bacteria called *Clostridium difficile*. I give you an antibiotic for this. Still later you develop osteoporosis. I give you a bisphosphonate drug to strengthen your bones. This causes more reflux, so I increase your PPI.

This seems absurd, right? But it happens every day in modern medicine! All the above side effects have been correlated with PPI use. But we don't go back and connect an original action we committed, like starting a PPI, to later events that crop up in a patient's health. And even if we did, we cite meta-analyses from medical journals that state that there is no statistically significant evidence that PPIs actually cause any of these side effects.

The key principle that Taleb wants us to remember here, however, is that absence of evidence isn't evidence of absence. We're helplessly biased toward evidence of confirmation. If there's no clear proof that PPIs cause vitamin deficiencies, we don't believe this exists. Even if common sense would suggest that blocking stomach acid production indefinitely is unnatural.

Another example: tobacco companies would in the past deliver the excuse that there was no clear evidence that smoking caused cancer. Again, in the face of common sense that would suggest that filling our lungs with smoke and chemical agents isn't natural.

On the contrary, we foolishly disregard evidence of disconfirmation. As Taleb relates, you don't need a large sample size to prove disconfirmation. N=1 is sufficient. Because disconfirmation of something is more valuable than confirmation of something that might be refuted later.

Taleb invokes Karl Popper in arguing that science should establish largely negative, not positive evidence. You learn early in life not to touch a hot stove. You didn't need meta-analytic evidence-based medicine to get this. Your sample size was yourself.

Similarly, if in healthcare we focused on eliminating things, reducing risk, letting nature run its nonlinear course, and taking advantage of favorable outcomes, we'd have a much more rational and inexpensive system.

We could then allocate some of the massive healthcare dollars freed up to *via positiva* medical treatments that are necessary when nature's course would lead to death. I agree with Taleb that we should be as aggressive as possible, say, in a case of necrotic bowel, which Mother Nature hasn't solved. But in many other cases of illness, we should get out of Mother Nature's way. She's proven the antifragility of her treatments over a vastly longer period of time than we have.

But as Taleb recognizes, pharmaceutical companies are less in the business of going for homeruns in extreme diseases than in nibbling around the edges of illnesses of diet and lifestyle. Instead of cures for rare metabolic disorders, infectious diseases, or cancers, we get drug after drug for erectile dysfunction, reflux, high cholesterol, and diabetes. How many of these do we really need? For conditions that can be cured without drugs?

Moreover, we push these drugs to ever-expanding ranges of what we consider disease. For example, instead of limiting anti-depressants to patients with major depression, we use them for people with melancholy. Even in the face of studies that show that aerobic exercise is better at relieving depression than drugs, with less downside.

As Taleb clarifies, Big Pharma itself isn't ignoble; what's ignoble is its business practice of settling for singles in diseases of primarily diet and lifestyle. Conversely, when a company does hit a homerun, it should be rewarded handsomely.

Malcolm Gladwell has also argued for this, in the debate over how much money Gilead Sciences should charge for its blockbuster drug Harvoni. Harvoni has revolutionized treatment of

hepatitis C, a virus that can cause cirrhosis and death from liver failure over time. Until recently, curing hepatitis C involved a drug combination that lasted up to a year and caused significant side effects. And in advanced cases, the cure rate was poor. Harvoni has reduced the treatment period to 12 weeks and raised the cure rate to over 90% -- even in advanced cases of hepatitis C! And side effects are minimal. But currently the wholesale price for a 12-week course of Harvoni is close to $100,000.

Now, many governmental and policy groups are pressuring Gilead to drop the cost. But Gladwell rightly asks, why should it? Why shouldn't Gilead reap the rewards of delivering a medicine that effectively cures a potentially devastating disease, in a circumscribed period of time? This IS what we should be incentivizing pharma to do – not come out with yet another copycat drug of marginal benefit over what we already have (and that is always cheaper).

But what, instead, does Big Pharma bombard us with? Commercial after commercial advertising a medicine that is purportedly the key to your quality of life. A life that has become increasingly medicalized. But one that would involve enjoying lunch in a sunny café, having a nice backyard barbecue with your neighbors, or tandem bicycling in the park with your significant other – if only you would "ask your doctor if [fill-in-the-blank-medicine] is right for you." Now, such a commercial wouldn't be complete without the legally requisite listing of downsides in as pleasant a voiceover as possible.

All this would be fodder for hilarious comedy (which it is, if you've ever watched Saturday Night Live), if it weren't so dangerous to the lives of millions of people and to the healthcare system itself.

Another example of the danger of *via positiva* healthcare: bariatric surgery. This surgery involves some form of gastric bypass to restrict the intake and/or absorption of food. Not a month passes by that I don't see some study in the medical literature proving its benefits in reversing obesity and its many complications.

But let's apply the principles of fragility and ask ourselves, what are we doing here?

In 2013, The American Medical Association (AMA) officially recognized obesity as a disease. This isn't just a question of semantics. Once the AMA calls obesity a disease, it gives obesity the imprimatur of being the end itself. A target for which drugs and surgery become increasingly justifiable treatment measures, by a profession that's all too eager to promote acts of commission over omission. And then the target expands. Our profession finds more and more ways to medicalize obesity. Which we can readily sell to a society eager for a quick fix.

To be sure, bariatric surgery may be the fastest way to help a person lose weight and eliminate diabetes, hypertension, and sleep apnea.

But what of the downside? Bariatric surgery advocates point out that the complication rates of surgery have decreased. But most of these surgeries are irreversible. They involve some

alteration of digestive anatomy from which there's no going back. And the nutrient deficiencies that result from the alteration can be lifelong.

Does this sound like an antifragile strategy to you?

Wouldn't a *via negativa* strategy of promoting constructive changes in diet, lifestyle, environment, relationships, and mindset be more antifragile?

The refrain I hear from advocates for surgery is either that this just isn't realistic for a morbidly obese person, that it's more nature than nurture, or worse, that this is insensitive – it guilts a person who's tried everything to lose weight.

I think it's unimaginative, self-serving, and just plain lazy for our profession to have this stance.

Let me be clear: Obesity isn't a blame game on someone who just hasn't tried hard enough or is weak and morally lacking. Obesity is a fragilizing consequence of modern civilization, for which we are both individually and collectively responsible. And instead of figuring out more creative, holistic ways of helping someone overcome obesity, we push another fragilizer of modernity, a gastric bypass? This is nonsensical.

Finally, Health 2.0 promotes so-called accountable care organizations (ACOs). These ACOs rely on performance meaures that invariably pressure healthcare practitioners to prescribe more medicines to target, say, cholesterol or blood pressure.

But why are we satisfied with an increasingly fragile healthcare system filled with ACOs that pat themselves on the back when they save 5-10% on healthcare costs? This, through onerous campaigns that expose the system in hidden ways to big downside effects?

We know that a few people account for the lion's share of healthcare costs. Why don't we focus our interventions on them – and stop with the massive interventionism on everyone else? That may save 40-50% on healthcare costs.

Via negativa.

HORMESIS

Remember the antifragile behavior of our muscles in response to lifting heavier weights? This is a prime example of hormesis. Hormesis, a concept first described in pharmacology, is the finding that a substance that in large doses would be harmful to an organism, is in small doses actually beneficial to the organism. We tear muscle fibers in response to lifting a weight. During recovery, our muscles adapt to the stress through repair and hypertrophy. If the weight we lift is too much, we'll pull a muscle and be out of commission for a while.

Modern medicine doesn't allow much for hormesis. We aim for comfort in medicine. And then we lament when we break down with age. We inappropriately attribute the breakdown to age

itself. But (again, up to a certain point) it's not age that's slowing us down – it's the accumulation of habits of comfort over time. Habits that don't tap into hormesis.

There is an epidemic of narcotic use in American society. Our medical profession has helped feed it. And what's fed it is our increasing allergy to pain. But as Marc Gafni relates, the opposite of pleasure isn't pain. Built into pleasure is always an element of tension and pain. The opposite of pleasure is comfort.

Nobody in the healthcare profession wants to see people suffer from excessive pain. But we're medicating people to be comfortably numb. And in not allowing small doses of pain to strengthen our patients, we're denying them the very pleasure of good health that we would want them to enjoy.

Anti-depressants for major depression can be a lifesaver. But some of the greatest works of art, music, and literature have been gifted to us through hormetic doses of melancholy. And great contributions have also been made by people who fit current criteria for attention deficit disorder and would be medicated for it.

Another illustration of hormesis: We've seen a rise in autoimmune diseases in the industrialized world. The hygiene hypothesis attributes this to the lack of exposure in early childhood to microorganisms that help us develop immune tolerance. In other words, we're growing up too clean.

Unique Self Medicine would employ hormesis in its care. Taleb explains that we pick up a foreign language fastest when we're abroad and thrown into situational difficulties. In such circumstances, we have little choice but to learn faster by getting over making mistakes and communicating. Similarly, Unique Self Medicine recognizes that we understand better and better about how to take care of ourselves through experiencing health stressors that ultimately don't destroy us.

It's like a sailboat moving headwind to get from point A to point B. It doesn't get there in a straight line – it uses the wind to tack from one side to the other. In effect, the boat is consciously going off course to stay on course.

Taleb talks about hormesis not just at the individual but also at the collective level. He sees evolution as the process of hormesis on populations. At the expense of the more fragile individuals succumbing to stressors, the species as a whole becomes more antifragile.

In the same vein, Unique Self Medicine will evolve as more fragile healthcare practices fail.

If this sounds disconcerting from the point of view of an individual practice, it is.

But entrepreneurship is the engine of evolution. And in entrepreneurship, things fail.

What we have currently in the practice of medicine is a dearth of entrepreneurship, in its truest form. A practice can deliver substandard healthcare and dubious value in Health 1.0. But it can still survive – no, even thrive – through cronyism and churning the healthcare wheel.

In Health 2.0, volume is being ostensibly replaced with value. But the cronyism hasn't gone away. Medical practices aren't truly competing and collaborating with each other to allow the best ideas to flourish. And organizations can easily game their electronic health record systems to satisfy performance measures.

NEOMANIA IN MODERN MEDICINE

Ah yes, the electronic health record (EHR). This is one of the lynchpins of True Self Medicine. We've had EHRs for a while now, but the game got really afoot with passage of the HITECH Act in 2009. The law was meant "to promote the adoption and meaningful use of health information technology."

EHRs, and health information technology (IT) in general, have been extolled as the panacea for all that is wrong with Health 1.0. Policymakers have promised us that EHRs would help standardize medical care, integrate our healthcare system, reduce deadly medical errors, make patients more satisfied, increase the efficiency of the physician, and brush our teeth for us.

Don't get me wrong. I am not a Luddite. I have used a paperless EHR system from the very beginning of my private medical practice. And it has helped me in a number of ways. Easy storage and retrieval of records without paper charts consuming office space. Access to records from anywhere with an Internet connection. A convenient way to manage prescriptions electronically. An efficient way to document telephone conversations with patients. And streamlining of insurance and patient billing. So I am completely in favor of the concept of an EHR.

But EHRs have most definitely not lived up to the promises of policymakers. They have not reduced medical errors. They have not made physicians more efficient overall. And most physicians hate it.

The problem is that everything about EHRs and health IT has been infected with what Taleb calls neomania, or "the love of the modern for its own sake." He talks about the profound inelegance of many techno-engineers who lack a literary flair. I resonate with Taleb's perhaps politically incorrect statement of their autistic tendencies – there is indeed a certain autism in their EHR products. I have yet to come across an EHR that has the elegance of Steve Jobs's Apple.

Have you ever had the experience of a doctor punching data into her computer, barely taking a moment to look at you? Did you feel more or less human in the exchange?

Trust me, the feeling is mutual.

EHRs aren't helping patients be more satisfied with their care. These unwieldy systems are the elephant in the exam room. Taleb believes technology works best when it is invisible. EHRs most certainly are not invisible. They are rudely disrupting the sanctity of the patient-doctor bond. And without that bond, medicine has no foundation.

Ironically, many healthcare professionals are now employing human scribes to handle the onerous task of recording information into their EHRs, while they see the patient. So now there are four in the room – the doctor, the patient, the elephant, and the elephant handler. How invisible is this?

Neomania in modern medicine goes beyond health IT. It plagues office managers and hospital CEOs, who engage in a medical arms race with each other to get the biggest, baddest, newest equipment in town – even when evidence supporting the equipment is questionable. Hospital systems spend millions of dollars in advertisements to show how their technology puts them on the leading edge of medical science. But much of it is specious fanfare.

It's not that technology in medicine isn't useful. It's that great medical care doesn't fundamentally depend on technology – it depends on competent, caring people and relationships. Every stakeholder in healthcare – including doctors, nurses, administrators, and patients – needs to understand this.

THE NOISE OF HEALTH 2.0

Health 2.0's neomania for EHRs, medical devices, and wearables has inevitably caused it to fall madly in love with data. Big Data has become all the rage. Health IT experts are promising to track, data-mine and algorithmically diagnose anything and everything that can be measured. They have joined with hospital administrators and our government in having great faith that Big Medicine, powered by all this structured data, will be the answer to the riddle of healthcare.

But Taleb warns that the more data we collect, the more fooled we are prone to become.

The problem is that we disproportionately get more noise than the relevant signal we are seeking. So the noise-to-signal ratio goes up. And when the noise-to-signal ratio goes up, we get more iatrogenics.

An easy example of this is again CT scans. The lower your threshold to order a CT scan, the more noise you're going to get. And when you feel compelled (medico-legally or not) to follow up on every noisy anomaly on the CT scan, the more iatrogenics to which you will subject your patient.

Another example: EHRs again. With an electronic medical record, cutting and pasting information from old notes into new ones becomes really easy. And "note bloat" buries the information doctors actually need for good patient care.

During the Ebola scare in 2014, a man arrived to an emergency center in Dallas, Texas. He had allegedly said that he had recently traveled from Liberia. But he was sent home at first, without the proper diagnosis. When he returned to the hospital even sicker, he was correctly diagnosed with Ebola. But it was too late for him to survive. Reportedly, the information about his recent travel wasn't easily accessible in the hospital's EHR system by crucial healthcare personnel. But I'm pretty sure he had a 5-page bloated note of extraneous data.

If true, this is a cautionary tale of noise in medicine. One major role of the Unique Self practitioner will be to help the system sort signal from noise. We will need to be editors, to in Taleb's words, "ration the supply of information, as naturalistically as possible."

Our role as editors will become even greater and more challenging with the coming explosion of wearables and other real-time personal trackers. But at least the data-collecting with these devices is consumer driven. Not so in the medical office and hospital. Administrators and regulators place the burden of inputting all that structured data to feed Big Medicine squarely on doctors and nurses. And that burden is breaking our backs.

In the United States, we are about to transition from ICD-9 to ICD-10 coding of diagnoses. This will increase the number of codes from 14,000 to 69,000. The U.S. is the only industrialized nation that hasn't made the switch yet.

We are told that ICD-10 is crucial to the future of medicine. We are told that it will improve quality measures, public health, research, and performance monitoring.

But let's not be naïve. The primary reason health administrators care about ICD-10 is that it's tied to reimbursement. And the U.S. is the only country to have this link.

In Health 3.0, we welcome metrics. More sophisticated metrics can measure and validate what's true in healthcare. But the methods of collecting those more refined metrics aren't themselves sophisticated enough. If you have an intelligent data crawler that takes our narrative medical record written in human language, de-identifies the data, and then extracts the information – I am fine with that. Or if a hospital administrator hires someone to do the same, I'm fine with that as well. But if you want doctors and nurses to speak and record in the tongue of ICD-10, so you can extract maximal payment from that patient encounter – I have a problem with you.

The problem of noise is even broader. Taleb decries that with Big Data comes even bigger cherry-picking. Researchers can take a large amount of data and create statistical pretzels. Once they come up with conclusions that conform to their beliefs, they can stop. And all this they can do in the name of "science."

Policymakers then codify these spurious conclusions in meaningful use measures. Which pop up as reminder boxes to complete on our artificially intelligent EHRs. So we can receive our bonus incentives…and in the future, so we can avoid penalties.

This isn't meaningful use. This is meaningless use.

What is meaning, anyway? According to the deans of Health 2.0, it's whatever can be measured and codified. But can the sacred, unique patient-doctor relationship be pigeonholed into the generic flatland of objective quality measures and performance metrics?

Physician Danielle Ofri writes about an encounter with a patient in her forties who asked about getting a mammogram. Dr. Ofri knew evidence for this screening test in this age group has been quite conflicting. But a memo from her department administrator was urging her to order the test. Why? Because regulatory agencies were using mammograms as a performance indicator to grade her hospital's quality of care.

Dr. Ofri spent extra time explaining the controversy regarding the test. The patient decided to have the mammogram. But if she hadn't, Dr. Ofri's performance indicator would have been penalized.

So who's offering the higher level of care? The doctor who shepherds her patient through the messy imperfections inherent in much of medical decision-making? Or the doctor who plays to the metric?

Taleb believes fundamentally that data should only be used in a *via negativa* way. Again, that disconfirmation of something is more useful than confirmation of something that might be refuted later. In this vein, Big Medicine at its best will be an empirical cataloguer of best practices. It will not be something that deterministically dictates, via a regulatory board, how we should care for a patient.

But we still need more sophisticated metrics, to capture the level of healthcare Dr. Ofri is delivering. We're obsessed with metrics to measure what's true in healthcare. But we give lip service to metrics that would capture what's good, and what's beautiful in healthcare. Those metrics aren't in the objective realm, they're in the subjective realm.

We need a Unique Self metrics, which honor both our exteriors and our interiors. Only then can we really measure meaningful use.

The danger of Big Medicine is that we will have so much data, we will be incapable of distinguishing signal from noise. This will lead to neuroticism and over-intervention. Health and illness involves pathology, yes. But it also involves mythology. Big Medicine's neuroticism will pathologize rather than mythologize.

Pathology is fragile. Mythology is antifragile. Unique Self metrics can better capture the mythology of illness, rather than just the pathology. And our whole healthcare system sorely needs to recognize mythology in medicine.

SKIN IN THE GAME OF HEALTHCARE

Taleb believes the biggest cancer of modernity is the increasing lack of skin in the game. Internet bloggers, journalists, politicians, bankers, Wall Street CEOs, and academics alike are inoculating themselves in their respective industries. They get to do what they want and get benefits while others pay the price, often unknowingly. In effect, they transfer their fragility to others.

The medical industry is no exception to this trend.

From 1970 to 2009, there's been an over 3000% increase in healthcare administrators in America! This dwarfs the increase in doctors. Have these administrators helped us get better healthcare for our dollar? I think not.

This explosion in administrators is only going to accelerate with Obamacare. When you have thousands of pages to decipher in the ACA, you get thousands more administrators.

Many hospital CEOs make hundreds of thousands of dollars more than physicians. What value are they truly providing? In the same 1970-2009 period, there's been a 2300% increase in U.S. healthcare spending per capita. Do you think we're getting a big bang for that buck?

I hear sometimes that nonprofit hospitals are a morally superior option to for-profit hospitals. As if nonprofit hospitals aren't just as guilty of playing this game with little skin. Remember, they pay no taxes on their income. Some of those nonprofits are the richest hospitals around.

Administrators of both nonprofit and for-profit hospitals will whine about physician-owned hospitals cherry-picking patients with good insurances for their high-margin service lines. Such hospitals will leave more complex, underinsured patients to their non-physician-owned counterparts.

This actually does happen. But the next time you drive past your non-physician-owned hospital, see if construction cranes are busy adding another wing.

Physicians can be just as guilty as big hospitals of exploiting the system. One trick is to set up a physician-owned facility that stays out of insurance networks. The facility then charges high rates for services, much higher than what an insurance company would pay if the facility were in-network with the payer. The company pays a fee smaller than the bill but larger than what the contracted fee would have been. The facility then writes off the outstanding balance for the patient.

Now physician-owners of the facility can milk the cow, by feeding the facility with patients. Insurance networks can discourage patients from going to out-of-network facilities, but ultimately they recoup their own profits by raising premiums for their members. And the beat goes on.

Now, there is nothing inherently unethical about a physician-owned facility that chooses not to contract with insurance payers. Contrast the above scenario with Surgery Center of Oklahoma. This facility is completely physician-owned and managed. It is not in network with insurance payers. It transparently advertises prices for dozens of procedures on its website, which states this:

"Transparent, direct, package pricing means the patient knows exactly what the cost of the service will be upfront. Fees for the surgeon, anesthesiologist and facility are all included in one low price. There are no hidden costs, charges or surprises. The pricing outlined on this website is not a teaser, nor is it a bait-and-switch ploy. It is the actual price you will pay. We can offer these prices because we are completely physician-owned and managed. We control every aspect of the facility from real estate costs, to the most efficient use of staff, to the elimination of wasteful operating room practices that non-profit hospitals have no incentive to curb. We are truly committed to providing the best quality care at the lowest possible price."

If the facility didn't deliver on its promise, patients wouldn't come. And it would fail. But it is thriving. Patients are visiting the center from all over the country. And large, self-insured companies are sending their employees there because the fees are transparent and fair.

That's skin in the game.

True Self Medicine is trying to get more healthcare provider skin in the game by emphasizing value over volume. First, through incentives like sharing cost savings. But eventually, through penalties for not meeting healthcare mandates.

But this top-down approach is fragile. The more middlemen we have between the doctor and the patient, the more they can game the system. The middlemen will have no skin in the game, because they don't answer directly to the patient. The middleman will be the most antifragile stakeholder in this game.

Even the doctor needs to check in with herself, about her own level of skin in the game. Is she putting something at risk, or is she owning an upside option at someone else's expense?

For example, in Health 2.0 we've seen the rise of hospitalist medicine (I had mentioned hospitalists before). Hospitalists are physicians who take care of patients only in the hospital and then discharge them back to their personal physicians. The advantage to the personal physicians is that they don't have to go to the hospital and can focus their time on patients in their clinics. The advantage to the hospitalists is that their hours are fixed as shiftwork, and the overhead of running a clinic doesn't exist. The advantage to a hospital is that it has an exclusive arrangement with the hospitalist group, either in an independent-contractor relationship or even in an employee relationship. This enables the hospital to exert influence on the hospitalists.

Sounds like a reasonable arrangement, doesn't it? But there's a problem with skin in the game. Hospitalists know they don't have to follow a patient after discharge. They usually get paid a

fixed salary based on shifts. And if they keep the hospital administration happy, their jobs are more secure. So they get complacent, and that complacency leads to worse patient care.

The only thing that stops this from occurring is integrity. Many physicians have it. But some don't.

Here's another example, going back to bariatric surgery. If you're an obese bariatric surgeon, would you undergo bariatric surgery yourself? If yes, at least you're demonstrating skin in the game. If no, why not? If you think it's too risky for you relative to the alternatives, then you have an outright conflict of interest. Let's say you are okay with it for yourself – but since you obviously can't perform the surgery on yourself, you won't proceed because you don't trust another bariatric surgeon to do it. Where does that leave all other obese patients? They only benefit if they have surgery through you? What then does that say about the industry of bariatric surgery, on the whole?

A lack of skin in the game like this runs rampant in our current healthcare system. From administrators to doctors to big pharmaceutical companies, no skin in the game means compromised patient care.

And when the system divorces the true cost of healthcare from the patient himself, who isn't asked to pay for it upfront – that may be the biggest lack of skin in the game of them all. Who is the sucker here? The taxpayer.

All of us deserve a safety net to cover us for catastrophic healthcare. But all of us are responsible for our health.

THE ANTIFRAGILITY OF UNIQUE SELF

Let us return to the nature of antifragility. Taleb writes repeatedly of antifragility needing randomness, or variability, to flourish. Healthcare becomes fragile when we take away variability – in all four quadrants. Uniform nutrition makes health fragile (UR). Evidence-enslavement makes medicine fragile (LR). Robotic patient-doctor relationships make those relationships fragile (LL). And repetitive work makes the psyche of a physician fragile (UL).

We are destroying the essence of medicine by attempting to control variability. Unique Self Medicine acknowledges, accepts, and embraces the fallibility of human design in a healthcare system. That fallibility actually makes the system stronger.

Variability is where Taleb and Gafni meet. Variability = Uniqueness.

Taleb, citing Benoit Mandelbrot, observes that things that grow naturally have a fractal quality. That is, they have a self-similarity in their randomness. Gafni has the same insight, that Uniqueness has differentness and sameness within it. Unique Self is the fractal evolution of True Self – growth by a self-organizing pattern. A pattern that is wonderfully unique.

Taleb goes on to say that the notion of the "me" as its own end, a notion birthed by Western enlightenment, is ultimately fragile. Because the "me" can't live forever, no matter how hard it tries.

We can't say True Self lives forever, at least not in the traditional sense. Because True Self is beyond time.

Unique Self resolves this paradox. Unique Self is the personal essence of True Self. It's True Self with perspective. So we can say Unique Self can live forever, as it exists in time (and space).

And in this regard, Unique Self is antifragile to the "me." It's antifragile to separate self.

Taleb muses on the fragility of God. For him, the monotheistic God of Jews, Christians, and Muslims of the Levant is certainly not fragile. But He is not antifragile either. As perfection itself, this God is robust. There is nothing to be improved. Antifragility implies an imperfection seeking to improve, or evolve.

But Gafni's Unique Self isn't perfection. It's the imperfection in the perfection (or the perfection in the imperfection, depending on your point of view). Gafni writes about *tikkun*, or the "fixing," that Unique Self engages in. The vessel that is God, in its original unbreakable form, has shattered in the fragility of the separate self. Unique Self takes up *tikkun* to fix the broken vessel. Like a fractured bone that heals, the vessel is stronger than in its original form. Unique Self is the quintessence of antifragility.

Even greater, Taleb cites author Matt Ridley in saying that humans, unlike other animals, have the ability to collaborate – in the terms of Barbara Marx Hubbard, to engage in the "suprasex" of ideas. Taleb observes that collaboration has an explosive upside. This is Gafni's Evolutionary Unique Self, a sangha of Unique Selves coming together to evolve the source code.

CONCLUSION

Taleb writes, "since you cannot forecast collaborations and cannot direct them, you cannot see where the world is going. All you can do is create an environment that facilitates these collaborations, and lay the foundation for properity." Taleb and Gafni both encourage these collaborations, with explosive upsides.

It is, I am sure, obvious to the reader by now that I believe Nassim Taleb has crucial insights into the source code of reality. Insights that have direct application to the future of medicine.

Taleb himself discusses some of these applications to medicine and health in **Antifragile**. I have simply expanded on his discussion.

If there is any critique of Taleb, it's that I think he gives medicine too much of a free pass. He finds that medicine hasn't been infected as much by fragile thinking as, say, our economic systems.

As an actively practicing physician, I'm afraid he's somewhat mistaken. We have been fragilizing our healthcare system. And Obamacare has accelerated it.

A la Taleb, I can't forecast the future. I can't predict the Black Swan event that will lead to disaster in our healthcare system. I just know that our system is becoming increasingly fragile to the Black Swan. There will be a much bigger downside when it occurs.

Taleb says major corporations are in the long-term so fragile that they will eventually collapse under the weight of managers with no skin in the game. These managers will milk the corporations dry, at the taxpayers' expense. The reason this doesn't happen sooner is because these corporations lobby the state to prop them up for a while.

On its current track, I see this occurring with the healthcare system in the U.S. There has been too much invested by now in health IT and Obamacare at the federal level for our system to be allowed to collapse sooner. And all the major insurance payers and hospital systems around the country are playing right along.

In the end, the collapse of Fragile Medicine will also be borne by the taxpayer.

Taleb warns that once a package breaks under stressful conditions, it doesn't fix itself when the stressful conditions end. That is, once an iatrogenic event occurs, it's very hard to undo. So mitigating fragility isn't an option, it's a duty.

Gafni would call here for your Sacred Obligation. Each of you has a unique obligation that serves a unique need, which is fulfilled by your unique gift. This unique gift is what only your Unique Self, and no one else, can offer the world.

Taleb says that often the state's incompetence can help save us from its centralized grip. Perhaps the incompetence of centralized medicine (see the rollout of healthcare.gov) will buy us some time to enact Unique Self Medicine.

He also observes that lions in captivity live longer and lead more secure lives.

As a physician, I do not want to be a lion in captivity. I will do what I can to be free. And I will align with other physicians and stakeholders in our healthcare system to renew our antifragility, our Unique Selves.

Taleb talks about having not just your skin in the game, but your soul. Skin in the game means you keep your own downside. Soul in the game means you bear downside on behalf of others.

Evolutionary Unique Selves have their Unique Souls in the game. They are the Jedi Knights of the source code.

These Jedi Knights of Unique Self Medicine will likely not come from academia or big medical institutions with fragile reputations at risk. They will be antifragile individuals who seek to boldly reimagine their roles as healthcare practitioners, collaborate with other Unique Selves, and evolve medicine for the betterment of all.

And I seek to narrate the fable of Unique Self Medicine. Taleb writes, “a fable writer is there to stimulate ideas, indirectly inspire practice perhaps, but certainly not to direct or determine practice.” I make no pretense that my Unique Self Medicine fable will direct or determine practice. But I do hope it inspires.

Both Taleb and Gafni have a particular affinity for the wisdom and intuition of our elders. Many of those elders were logicians who nevertheless understood the limitations of logic in knowing the Divine. Taleb writes, “If there is something in nature you don’t understand, odds are it makes sense in a deeper way that is beyond your understanding. So there is a logic to natural things that is much superior to our own.”

I trust I have argued logically why Unique Self and Unique Self Medicine are antifragile. And why this matters. As for the rest of it, I choose to embrace the Unknown.

-- Venodhar Rao Julapalli, M.D.