

A MAN FOR ALL MARKETS

In lieu of the conversation with Ed Thorp that everybody would benefit from, we finally have his autobiography, *A Man for All Markets*. Dan Tudball speaks to Ed about the book...

“Let’s say you were born in Communist Russia, instead of the United States,” I ask Ed Thorp. “How do you think you would have expressed your basic characteristics – the desire to learn, the need to prove everything to yourself on your own terms, a fundamental sense of right and wrong, a sense of frugality, and a sense of fairness – if you hadn’t had the opportunity to go and take those characteristics and the learning you had to the financial markets? How do you think you might have expressed yourself in that sort of situation?”





ED THORP

Ed pauses, considers the question, then answers: “I don’t know, I’d have to think about that one; there are so many possible scenarios.”

Ed’s long-awaited autobiography, aptly named *A Man for All Markets*, is filled with striking moments. One such transports us back to August 1961, when Ed and Claude Shannon, the father of information theory and Ed’s collaborator in inventing the world’s first wearable computer, are wiring themselves up in preparation for taking their roulette-predicting computer out on its inaugural trial by fire at the tables of Las Vegas. Standing ready to leave for the casino, Shannon impishly asks Ed: “What makes you tick?” Stopping that moment in time, Ed describes two paths available to him then – the life of a professional gambler or a tenured academic. It is Heraclitus who provides the clue to the answer: “Character is Destiny.”

Fortunately for me, Ed was far

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too charitable to say, “What kind of question is that?” when the Soviet Union poser was put to him. In fact, the secret of Ed’s success is entirely revealed in the 16 words he chose to respond with, and in the preface to his book there’s a neat summary from Ed that unpacks everything behind this answer.

“Because of circumstances, I was largely self-taught, and that led me to think differently. First, rather than subscribing to widely accepted views – such as *you can’t beat the casinos* – I checked for myself. Second, since

A MAN FOR ALL MARKETS

Savings and Loans

Recognizing an opportunity to which he was introduced by his son Jeff, Ed explains how the simple act of opening passbook accounts at the multitude of mutual savings and loans in the USA, beginning in 1990, allowed father and son to profit by up to \$1 million a year as the mutuals converted to stock companies.

I tested theories by inventing new experiments, I formed the habit of taking the result of pure thought – such as a formula for valuing warrants – and using it profitably. Third, when I set a worthwhile goal for myself, I made a realistic plan and persisted until I succeeded. Fourth, I strove to be consistently rational, not just in a specialized area of science, but also in dealing with all aspects of the world. I also learned the value of withholding judgment until I could make a decision based on evidence.”

In the preamble to talking about the book, we discuss the US presidential elections, which were then about

and they’re not as rational as I would like them to be about just working with the information they have. They’re angry and upset, and they basically want to overturn the apple-cart, and they don’t realize how bad it can be if they are successful.”

These are people who would benefit from a conversation with Ed Thorp. In lieu of which, there is now this book.

The process of writing the book

A Man for All Markets had been a project of Ed’s for some years, and I was curious to know whether the process

she shared Ed’s draft with him, but the feedback wasn’t entirely positive, observing that it was too dry, it wasn’t going to ‘go over,’ that it had to have more personality, and so forth.

Ed thought about this and concluded that he would let it sit. The book proposal had gone down well, but in its current form the book was too academic. Ed wasn’t the only one tangling with the vagaries of book publication at that time. Nassim Taleb, yet to achieve the status of celebrity risk guru in the popular consciousness, had seen the small imprint that had published the hardback edition of *Fooled by Randomness* fold. Despite good reviews, no one (bar, perhaps, Taleb himself) knew that this was to become the stepping off point for a four-volume philosophical essay on uncertainty that would provide a powerful narrative to the global financial crisis and its aftermath.

An astute editor at Random House, Will Murphy, had spotted that no one held the rights to the softback edition of Taleb’s work. Despite its original publisher’s eventual demise, the book itself had caught on in certain circles and evidently there was an opportunity here to bring it to a wider audience. Once Random House had acquired the rights, *Fooled by Randomness* went on to sell millions and paved the way for the blockbuster that was *The Black Swan*. Taleb and Thorp first met in person at a conference in Paris in 2005, and it was soon after this meeting that Murphy contacted Ed on Taleb’s advice that if there was anyone Random House should be working with, it was Ed Thorp.

“I brought this book-writing project back to life,” Ed recalls. “I’d put it aside, had let it sit; time had passed, more things had happened, so there was more to write.” Ed still thought

a month away. Rudy Giuliani, in the running to be Secretary of State, was on the news, proclaiming Trump’s personal income tax dealings to be a work of genius. Seeing the man whose photo had served as a dartboard in Ed’s office had prompted the thought: “My goodness, I wonder what Ed Thorp would have to say about that?”

“It’s the Giuliani I knew...” Ed chuckles. “There’s a frighteningly large number of angry, irrational people who feel they’ve had the short end of things, and they’re not educated as well as they should be about the facts,

of writing had revealed anything to him, allowed Ed to reinterpret certain things from his storied past – whether it had allowed him surprising reflection. What was to become an autobiography had begun at the turn of the millennium as something slightly different, a more didactic collection of writings covering Ed’s ideas and how he had applied them. This was written up and presented to a literary agent who had represented a contact of Ed’s at the *Wall Street Journal* with some measure of success. The agent’s husband was a Wall Street type and

they wanted something along the lines of ‘How to Do It,’ something didactic, more academic, so that’s what he produced. “No, this has got to have more of you in it, it’s got to have more human interest, it’s got to have stories...”

The Thorps had received the devastating news that Ed’s beloved wife, Vivian, was afflicted with brain cancer. By now, it was 2009, and Ed delivered a completed manuscript. “I can’t do anything,” Ed told the publishers, “I’ve got to take care of her. That is all I’m going to be doing for the next period – a year, two years, whatever it takes.” The book project was shelved. Vivian passed away on August 18, 2011.

Having had enough time to recover from the family’s loss, Ed returned to writing the book and considered the constant requests for more human interest, more stories, and better writing too. “Well, I used to be able to write pretty well as a teenager and as a beginning college student,” Ed told the publishers, “but I’ve written so many didactic papers, math papers, science, and so forth, that I don’t write the kind of prose that the general reader likes anymore. It’s too compact, it’s too dense, and it’s too difficult.” Even though Ed thought the science papers he had written were pretty straightforward for a science reader, they were definitely heavy duty for the general reader who doesn’t have that kind of background.

Ed engaged a line editor and set about the task of rebuilding the book into something more accessible. The architecture of the book was changed from articles by topic to a more sequential narrative, the prose was overhauled to make it more readerly, and the book went through ten partial rewrites over the course of a year, until finally it got to a point where Ed

liked it and “everybody else seemed to like it.”

Ed says that the hardest passages to write were in the middle and later sections that involved finance. Things needed to be explained in a way that people would understand, but also have enough content so that the book would actually be worth reading and they’d find something new. “So, I had to work at that quite a bit, to get it to become manageable, and I had to write around things that a numerate person would find very easy.”

A work of this nature, with a general audience in mind, requires a linking narrative that roots events in character and motivation. Despite the disciplinary shift in style that required a degree of wrestling to achieve, self-analysis was not an unwelcome guest at Ed’s writing desk. “I had a pretty clear idea of the parts of my character that were important in doing all these things, and when they were formed and how they were formed, and so it made sense to me to incorporate that, and show in the book how it made the things that

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came later possible from things I developed earlier.”

The final phase involved taking out a lot of things, “...because I had quite a few things in the book that not only made it longer, but you could argue also might be tangential.” Among the sections that didn’t make the final cut were passages dealing with a murder trial that Ed testified in, using probability theory, High School girlfriends, observations on

A MAN FOR ALL MARKETS

Giving Back

In 2003, Ed and Vivian endowed a Chair in Mathematics at UCI. The objectives were: “(1) to support the research of an individual mathematician of exceptional talent; and (2) using an unusual investment and distribution policy, to cause the principal to increase through compound growth, so that the Chair eventually becomes one of the most richly endowed in the world, thereby attracting extraordinary mathematical talent to UCI.

physical fitness and health, “...a whole lot of things that were parts of my life at one point or another that have good stories associated with them but they didn’t focus the main line enough.”

The book was finally completed in late 2015. “It’s been a long trip; it’s been a lot harder than any other book I’ve ever written, but I feel well satisfied – there’s not a whole lot that I would attempt to change at this point.”

Financial crisis

The 2008 financial crisis, the sub-prime crisis, the ensuing global financial crisis, the increase in regulation – the contributing factors to that passage in history has always been accounted for in Ed’s work. The

Long-Term Capital Management threatening to bring down the financial system with liabilities that they would place on other people’s books when they collapsed; and the mortgage derivatives and leverage crisis that brought real estate down tremendously in the United States, and caused the second biggest dip in the market over a period of time since the Great Depression.

“One of the themes there, is that people overuse leverage, and they do it because they think that when things are going up, they can make a fortune and that they can get out without being burned. The Great Depression was very much that way too – people bought stocks on 10 percent margin,

book provides an insight into Ed’s thinking postfinancial crisis and what the financial industry manifested because of that trauma, a trauma born of society’s ignorance of risk and the existence of those willing to exploit that without compunction.

“One of the things that I observe in the latter part of the book is that we’ve had recurring crises; for instance, the market crash of 1987, when we lost 23 percent in a day;

stocks would go up, they’d reinvest the money, and so on.”

So, this is a lesson that never seems to be learned, and one of the reasons is that the group that Ed calls the ‘politically connected rich’ likes this particular situation. If things go belly up, as they did in 2008, the government will bail them out. He said: “I think it was called ‘The Greenspan Put’ at that point, so it’s heads they win, tails the taxpayers lose. Another



ED THORP

A MAN FOR ALL MARKETS

Buying Low, Selling High

While teaching finance in the UCI Graduate School of Management, Ed conceived of the Indicators Project – a study of how the historical returns of securities were related to various characteristics, including earnings yield, book value, market value, etc. (an approach denounced by EMH acolytes, but whose time had come with the advent of high-quality databases and powerful computers). This led to the lucky discovery, by one of the researchers, of the basic idea behind statistical arbitrage. Ranking stocks by gainers and losers over the preceding two weeks produced the insight that gainers would subsequently underperform the market in the following weeks, while the losers would outperform the market over the same period. Buying the bottom tenth and shorting the highest tenth provided a historical annualized return of 20 percent and constituted a market-neutral portfolio. The system, christened MUD (for Most Up most Down), was put aside for a while, owing to the fact that it had larger fluctuations than other portfolios at the time.

By chance, a few years later, Gerry Bamberger developed a product at Morgan Stanley based on observing the same effect, but with significantly less variability. Bamberger never reaped the rewards for this discovery while at Morgan Stanley, and left, eventually partnering with Ed's outfit. Bamberger reduced risk in the portfolio by trading industry groups separately on top of hedging overall market risk. By 1985, BOSS (Bamberger (plus) Oakley Sutton Partners) was earning 25–30 percent on capital ranging from US\$30 million to US\$60 million. This stabilized to a return of 15 percent by 1988, but the waning profitability and mounting attacks by Giuliani on PNP led Bamberger to retire a millionaire. Ed further developed the strategy by introducing factor analysis. The modified strategy, named STAR (Statistical Arbitrage), allowed Thorp to remain ahead of the markets, even though firms (most notably Morgan Stanley) were now experiencing losses on the previous strategy in 1988. Thorp would return to STAR in 1992 and, despite the LTCM disaster, the dotcom disaster, and 9/11 all occurring in the period from August 1992 to September 2002, when the account was closed down the annualized rate of return was 21.10 percent, in contrast to 9.93 percent on the S&P500. Annualized standard deviation was 7.11 percent, in contrast to 16.91 percent on the S&P500.

way to put it was 'private profits and socialized risk.'

"The reason that this lesson isn't learned is that people who are able to learn it and prevent it from happening don't want to because they feel like they are going to be bailed out. They feel like they can keep doing really well and keep making a lot of money. If you look at income inequality in the United States over the last four years, it's been working for them."

Quantitative finance and research

Wrong-headedness and conflict of interest doesn't just affect what Tom Wolfe would call the Hooples – the common folk – but also the very people who, according to the same writer, supplanted the Masters of the Universe (well, castrated them, actu-

ally), the "quants."

"One thing about quants and the vast amount of quantitative literature that has appeared over the last couple of decades, I think, is that the people

all sorts of beautiful solutions, but outright they don't fit with what's happening. That's a big problem as I see it, and it's driven, in part, by the fact that a lot of young people are coming

Is there a structural change that might be introduced that would make research into aspects concerning the financial markets more reflective, more accurate, and better directed?

producing a lot of the mathematical-type quant papers are choosing models that will lend themselves to beautiful math as opposed to models that necessarily represent fairly accurately what is going on. So, they will build models that look great and have

up with a great deal of quantitative talent, but not a broad view of the financial and economic world, and so they'll keep building these things and writing more papers, and a lot of the academic stuff you write papers about to get advancement rather than to

actually solve real problems."

So, how is it that a quant would be able to gain a better grasp of reality?

"You know, I don't have the answer to that, but I'm going to have to figure it out because I have a very smart grandson who is a sophomore at MIT, one of the three triplets who all got into MIT, and they are all sophomores there, two boys and a girl, and he is interviewing for internships this summer at different financial organizations, so he's asking me questions like this.

Is there a structural change that might be introduced that would make research into aspects concerning the financial markets more reflective, more accurate, and better directed?

"I think that having academic research into the financial markets going on is valuable because the research there has a better chance of not being self-serving and tainted by the objectives of the institutions being studied. On the other hand, there is knowledge in the institutions that would be studied and would be valuable for any research on them that might not always be available to the academics. So, there's kind of an often-friendly flow of people back and forth, and I think that helps facilitate

academics do a more objective study if they don't want to return to industry. If it's a revolving door, then you don't really have any independence."

Society and politics

One of the striking passages from the

beginning of the book deals with Ed's time at Narbonne High School, located, at that time, in Lomita, California. His family had moved to Southern California from Chicago in the early 1940s, and Ed quickly discovered that his classmates were bigger than their Midwestern counterparts, and much more athletic. The school languished at 31st place out of 32 schools in the Los Angeles district on SATs: with a predominantly working class student populace and a class social structure that favored jocks and students from wealthier families, the scales were firmly tipped against Ed and his ilk. Systematic biases had far-reaching consequences; grades in physical education were counted in college applications, and the quota of As in the academically irrelevant subjects were automatically handed out to those on the football and track teams, leaving the others with Bs, Cs, or worse. Inspired by the 1948 presidential campaign, Ed rallied the school's silent majority, the 'outs,' against the 'ins' who constituted the student government, and swept the elections, winning 13 out of 15 available positions. This desire to strike a blow against the 'ins' of this world would continue to be discernable at every step in Ed's career.

Ed chuckles when reminded of that time: "Well, I suppose that might have been a small motivation for launching tens or hundreds of thousands of players against the casinos, for example." He reflects. "Maybe a motivation for extracting money from Wall Street; though those weren't the main motivations, I would imagine that it helped tilt me that way – made me want to implement a little more than I might otherwise."

The 'ins' become, in the later stages of the book, a group of people that Ed dubs the 'politically connect-

A MAN FOR ALL MARKETS

Swindles...

"Most people that I know are not particularly well educated economically or financially, and they also are unable to process what information they have. They can't screen out the noise, they don't know what's true and what's false, and they aren't focused enough that they can see contradictions in the information that is coming in and realizing that they have to dig deeper."

In 1991, Ed discovered that Bernie Madoff Investments was a Ponzi Scheme, 17 years before Madoff confessed to defrauding investors of US\$50 billion. Ed had been asked by an international consulting company to review their hedge fund investments. He approved the portfolio, but with one exception. The numbers for Bernard Madoff Investments didn't add up. Madoff had been claiming to use a split-strike price strategy, which should over time return approximately the same as equities. Madoff had been returning profits of 1–2 percent per month for years – some of his clients had enjoyed such returns for a decade! Months that should have been losers were miraculously converted to winners by shorting S&P index futures. Ed's investigation into the Madoff outfit, and subsequent delving into public records that would prove without a shadow of a doubt that Madoff was a scam artist, led the consulting company to withdraw their investment, saving their money and reputation. Ed's analysis of the reasons why Madoff wasn't caught earlier is a perfect cautionary tale about the power of cognitive dissonance.

ed rich.' "I distinguish them from the rich overall because what I've observed over all these years is that they are the rich people who want to tilt the playing field in their favor.

"Merit is not enough, it's whatever they can do to get more for themselves, and they are never satisfied. Then there are the rich people who

kinds of benefits in the tax code, so they pay much less tax, and the rich who are not involved in this pay very high tax rates. So, the politically connected rich say: 'The tax rates on the rich are too high!' Of course, their tax rates are not too high, but they want to get their de facto low rates down even further, so they talk about the others

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don't do that; they are at a considerable disadvantage for the most part. What typically happens is that when income tax time comes, the politically connected rich have carved out all

who are not connected, who are paying high taxes, and saying: 'Gee, these taxes are outrageous.'

"I see them as the mischief makers in society and the most powerful, and

the most powerful drivers of inequality; they are just plain greedy, they just want more and more and more, and they rationalize their behavior to fit their goal, which is to get more and more and more.

"They don't have any ethics; they see the effects of climate change but they run a coal company and they're against restraining pollution or charging for it. If you talk to them about the people dying by the hundreds of thousands from cigarettes, they'll hire scientists who'll say there's nothing to it..."

Ed hopes that if *A Man for All Markets* is a success, it might afford a platform to discuss socially beneficial actions that could actually be managed. "With a lot of proposals, you can't get them done because, even though in the abstract they make a lot of sense, they are not politically doable with all the different self-interest groups, but I've had some thoughts about some of these issues, and I think that they can be presented in such a way as to make them politically doable. That's one thing that I've given some thought to during the writing of the book."

One example is the gun control debate in the United States. "Now, we have about 15 or 20 times as

many deaths per capita by guns than other first world countries." Ed explains: "One reason is that there is an unconstrained flood of guns that aren't regulated or accounted for in



ED THORP

A MAN FOR ALL MARKETS

More Swindles ... and Hazards

Analysis of a rudimentary con perpetrated by a college student that led to a crash in the stock value of a firm called Emulex in 2000 brings focus on the efficient markets hypothesis: “How does the collapse of 60 percent in 15 minutes in response to false information represent the rational incorporation of information into the price? I also ask believers in the EMH to explain why the stock failed to recover in the 11 days after the hoax was exposed. The news for Emulex was good. So...?” And it isn’t just scams, hoaxes, and frauds that wrongfoot investors. Routine financial reporting, offering explanations for insignificant price changes without resort to robust statistical analysis, brings a constant stream of unnecessary noise to the proceedings.

the United States, and in fact a lot of our guns are being sold by 6,000 gun shops to Mexican drug dealers along the border.

“We are arming them at an enormous cost to everybody for rather small profits, by comparison, for these gun dealers. I figure that maybe they make US\$100 million a year selling guns in these 6,000 gun shops – that’s their net profit – but it costs billions in enforcement, in the slaughter of people, in ruined lives, and so forth.”

Okay, so what do we do about guns? Ed notes that in the United States currently there are about 35,000 motor vehicle accidents a year, and about 35,000 gun deaths a year – so, why not deal with guns the way we deal with motor vehicles?

“The way that would work is, if you want to own a gun, you’ve got to register it, you’ve got to get a license, and you also have to pass a test showing that you can use your gun properly. Then, the next thing is that you have to get insurance for your gun, just like you have to get insurance for your car. Now, the insurance companies are going to be unpaid government assistants in checking everybody out because if they issue insurance to somebody who should not own a gun, they are going to end

up paying too much in premiums and they will be hurt financially. So, the insurance companies can do the job of checking people.

“My idea is just to follow the analogy of motor vehicles, and it’s hard for me to see what the argument by anybody is against that, except people that want to sell more guns and make more money by doing it.”

Just looking back at the life I've led, at one point in the book, I mention a trail that has junctions on it where you can go in many directions; these junctions are a mixture of choice and chance

Simple, this writer thought – the solution was going to involve some sort of clever tradeoff between how much is spent on enforcement, public health, etcetera, and the profits that these gun shops make. Charitably, Ed says this is a good point: “We could pay all these gun manufacturers a subsidy to not make guns – get the same money they’re making now, for not making guns – and the benefits to the country would far

exceed the amounts being paid out. It’s like paying farmers not to grow crops, although that’s something I’m against...”

Final observations

“Just looking back at the life I’ve led, at one point in the book, I mention a trail that has junctions on it where you can go in many directions; these junctions are a mixture of choice and chance – sometimes chance flips you a certain way and sometimes you see what the choices are and you take one. So, just looking at my own life, I can see that different things that happened by chance might have been different and directed me in different paths, and how I might have made different choices.

“During the writing of the book, I thought to myself, knowing what I know now, given the uncertainty and lack of knowledge I had when

I made various key choices, would I have done anything differently? I didn’t find any major junction in my life where I would have chosen differently, even if I’d had the wisdom (or whatever you want to call it now), the perspective (I guess), the knowledge, and the experience that I have now at that point then. So, looking back, I’m satisfied with the choices I made. Chance, I can’t complain about – I had no control over that...”

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