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# Can't Win for Losing

By Doug Norris

**U**CLA Bruins football coach Henry “Red” Sanders once said, “winning isn’t everything; it’s the only thing.” Although in the sporting realm winning is generally considered a good thing, Sanders’s advice does not necessarily translate into the real world (or even the actuarial world).

Picture a scenario where you work for a car dealership, and are attending an auto auction. You see a car that you like, and have a price in your head that you feel would be fair. The auction begins, and the bid price quickly rises above your expectations. Finally, the bidding slows, and you can win the auction with just one more bid. Alternatively, you must go back to the dealership empty-handed. You place your bid, at a higher value than you originally would have liked, and win the auction. But was winning the right move?

Back at the dealership, the car is placed on the lot for sale. Many months pass, and no one will buy the car at a profitable level. Winning the auction has proven to be very costly. We all have different estimates of what things are worth, and in an auction situation, the winning bidder will always have assumed the highest value. This phenomenon is known as the “winner’s curse.” The greater the number of participants in the auction, the more likely it is that the ultimate winner has overvalued the item. Moreover, the likelihood that the difference between the winning bid and the “fair” value will be large increases with the number of bidders.

Bidding situations exist throughout our world, with companies bidding for engineering contracts, water rights, or advertising space. In these situations, bidders typically assign different “values” to the object up for bid; this can be due to differing objectives, prior information, influences, stakeholders, and importance to the overall business. In the insurance industry, bidding is commonly done by setting rates to attract consumers and gain market share.

When the Patient Protection and Affordable Care Act (ACA) legislation was passed in 2010, there were a lot of things that we knew were unknown about the ACA market (and even some things that we didn’t know that we didn’t

know). The relative morbidity of the then-uninsured commercial population, the level of pent-up demand that would be experienced in the post-ACA marketplace, the impact of future regulation and legislation, how well the exchanges would function, and the efficacy of the “3 Rs” risk mitigation programs all represented items that had an innate unknowability to them. Actuaries had various opinions on how they would impact prices. Ultimately, health insurers are “bidding” for customers, and in this case, the lowest price goes a long way toward determining who “wins” (attracts the most customers).

At the time this article is being written, we are in the midst of a third year of ACA pricing, and there are many things that we do not yet know. When bidding for customers in the commercial health care marketplace, it is important that carriers ensure that their assumptions focus on long-term sustainability and not just short-term market share gains. Yes, someone will have the lowest price in the market at the end of the day, but remember that market share is not the be-all and end-all. Even once rates are set and customers are gained, it’s important to continually monitor emerging experience to test the validity of assumptions. Are claim costs coming in higher than I expected? Are more members focused in one product, or one area, or one demographic segment? Why? Tightening and honing assumptions benefits us all.

On the other hand, just because an insurer happens to offer the lowest price does not mean it is underpriced. First of all, someone has to offer the lowest price. One company may have true advantages in terms of administrative costs, better negotiated discounts with providers, or more efficient medical management practices. But the products of another might line up better with enrollees in terms of health outcomes (and also reduce their costs of care). That company may have estimated costs appropriately, whereas the others’ estimates were too high.

This effect applies to actuaries in fields outside of health insurance as well. Consumers shop around for the cheapest auto, home, or life insurance policies, and there’s always the

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risk that the winner's curse will rear its head. Remember to keep this phenomenon in mind when developing rates. As always, knowledge is the best defense. Sensitivity-test your assumptions. Know where breaking points are. Understand the markets. Get corroboration where possible. Make sure to be fully up to speed on any Actuarial Standards of Practice that may be relevant to setting assumptions. If risks are material, remember that it's OK to be conservative.

One place where I'll always feel like a winner relates to the three years that I've spent on the Forecasting and Futurism Section Council. My term as section chair will end at the SOA annual meeting in October, and it's been exceptionally rewarding. As a health actuary, I'm quite familiar with techniques that health actuaries use, but being exposed to thought leaders in a variety of practice areas has been a boon to my career. As the "tools and techniques" section within the SOA, this is a great place to stay abreast of innovative practices that can be applied broadly, and our section newsletter is a great resource. In this issue, Dave Snell has catalogued the history of the Forecasting & Futurism Section's newsletter articles, and I hope that you'll find it as useful as I do. There's just so much stuff out there, and this makes it a lot easier to find (and may also spur you on to write something in the near future).

Our volunteers, from within both the SOA and the industry, have been great at helping us spread the word about predictive modeling, behavioral economics, futurism techniques, analytics, complexity science, and other leading-edge topics for actuaries. If you're enjoying this issue, I'd invite you to consider writing an article, attending sessions at the SOA meetings, or volunteering within the section in some other way. Our section members are our lifeblood. From getting



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the chance to meet with many of you, I know that there are still a lot of untapped ideas out there. Where should we head next? It's up to you. If you'd like to talk more about areas where you might be able to best contribute, feel free to send me a note at the address below.

Congratulations to both Kurt Wrobel and Steve Mathys, who were chosen as co-winners of the 2014 Forecasting & Futurism iContest. As you can tell by the name of the contest, it took us a while to get to this point, but I think that each entry presents a compelling narrative (and ultimately, given the nature of the two finalists, it was tough to compare them against one another).

Also, congratulations to Craig DeAlmeida, the Forecasting & Futurism Section's winner of the 11th Annual Speculative Fiction contest. We were a co-sponsor (along with the Technology Section and the Actuary of the Future Section), and were very impressed with the slate of entries in this year's contest. I found it interesting (and truly telling) that there were six distinct prizes chosen, and that no single entry won more than one category. Be sure to check out the entries on the SOA's website, and consider entering next year's contest.

Last but not least, congratulations to the winner of the 2015 Forecasting & Futurism NCAA Bracket Challenge. Although we set up the contest at the (relative) last minute, we had 39 entries, but none fared better than SOA staff fellow David Schraub. David's bracket came on strong in the later rounds, and correctly predicted that Duke University would defeat the University of Wisconsin. In the interest of full disclosure, my bracket entry placed 36th out of 39 entries. Please do not correlate this showing with my article on successful sports forecasting, later in this issue.

Anyhow, please enjoy the newsletter—with each issue, Dave Snell sets the bar even higher, and I think that we're at Renaud Lavillenie levels now (current world record pole vaulter). Hopefully, you can help us to set the bar even higher next time! ▼

# Why Smart People Make Big Money Mistakes

Why Smart People Make Big Money Mistakes and How to Correct Them: Lessons from the New Science of Behavioral Economics by Gary Belsky and Thomas Gilovich, reviewed by Ben Wolzenski

**T**he authors explain: “traditional [economic] theory holds [that] we make decisions because of a consistent and sensible pursuit of satisfaction and personal fulfillment, of getting the most out of life with our current and future resources.” They then proceed to give examples of how this is not the case in reality, and posit behavioral economics as a way to explain why not. Early research (1970s) by Tversky and Kahneman showed that people use heuristics rather than logically thinking through every decision. Human heuristics developed over millennia are generally useful, but not always; “... in some ways, behavioral economics can be fairly described as the study of obsolete heuristics.”

## CHAPTER 1—NOT ALL DOLLARS ARE CREATED EQUAL

The authors start with an anecdote that illustrates why we do not value “house money” (at a casino) equal to other money. This is the “inclination to value and handle money differently depending on where it comes from, where it is kept, or how it is spent.” This is why “Reimbursements send people on trips to the bank. Bonuses send people on trips to the Bahamas.”

“Mental accounting” is one of the pillars of behavioral economics. It explains why it is worth extra time and effort to buy an item at 50 percent off for \$25 instead of \$50, but not worthwhile to exert the same extra time and effort to save the same \$25 off the price of a \$500 item, only a 5 percent savings. Or why a small bonus or refund is more likely to be spent (“found money”) than a large bonus or refund, which is more likely to be saved. Credit cards also cause us to treat dollars differently. In a “landmark” experiment, bids for prime tickets from the half of bidders who were told the high bidder would pay by credit card averaged about twice as much as those from the half who were told the payment would be in cash. But mental accounting can be used to one’s advantage, too. Certain workers who were paid weekly found it hard to save, but when they were paid in six envelopes, one for each day they worked and a sixth not tied to any day, their savings increased fourfold within three months.

## CHAPTER 2—WHEN SIX OF ONE ISN'T HALF A DOZEN OF THE OTHER

Prospect theory is the second pillar of behavioral science. The name comes from an oft-cited 1979 article by Tversky and Kahneman: “Prospect Theory: An Analysis of Decision Under Risk.” This chapter deals with two aspects—loss aversion and the sunk cost fallacy.

An example cited is described below.

- You are given a sum  $\$X$  and the choice of
  1. accepting a sure additional  $\$.5X$  (to end with  $\$1.5X$ ) or
  2. flipping a coin to determine whether you get nothing more or an additional  $\$X$ , ending with either  $\$X$  or  $\$2X$ .
- Research says you are more likely to choose option 1, the sure gain.
- You are given a sum  $\$2X$  and the choice of
  1. accepting a sure loss of  $\$.5X$  (to end with  $\$1.5X$ ) or
  2. flipping a coin to determine whether you lose nothing or lose  $\$X$ , ending with either  $\$X$  or  $\$2X$ .
- Research says you are more likely to choose option 2, the chance to lose nothing.

(It would be interesting to know if the research results would be the same if the subjects were all actuaries.) Since the outcomes are equivalent, traditional economics suggests that you would be no more likely to choose option 1 in the first case than the second. The authors describe the reasons for the different choices in these terms.

“Prospect theory offers an alternative approach. It says that people generally do not assign values to options based on the options’ expected effect on their overall level of wealth.

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... Prospect theory says we assign values to gains or losses themselves. ...It is the actual gaining or losing—and our feelings about it—that matters more to us. ...”

This helps explain why individual investors typically sell their winning investments too soon (to lock-in a gain) but hold onto their losing investments too long (to avoid booking a loss). The authors cite research data that shows that is indeed what happens: the stocks that investors sold outperform those they held over the next year.

“Framing” refers to the specific environment and/or language in which questions or problems are presented. As an example, votes regarding a proposed school tax increase were more favorable when the polling location was situated ... in a school.

The authors relay several anecdotes to exemplify the “sunk cost fallacy,” including the results of this experiment. Discounts were randomly distributed to theater subscribers. The result was that subscribers who paid more for their tickets (greater sunk cost) attended performances more often than those who received discounts, even though everyone had initially expected to pay full price.

Applying these lessons to investments and financial management generally, the authors enumerate 12 “suggestions that should help you make wiser decisions.” These are written in a reader-friendly (not technical) narrative—and I think they represent good advice.

### CHAPTER 3—THE DEVIL THAT YOU KNOW

What causes “decision paralysis?” Research shows that decisions to delay or take no action are more likely “when there are many attractive options from which to choose.” Needless to say, not taking any of a number of attractive financial options will usually produce worse results than choosing one. Research further showed that the greater the number of attractive choices, the more likely it was for no choice to be made. The extent of choice difficulty depends on the extent to which a person is a “maximizer” (one who wants the best) rather than a “satisfier” (one who wants

“good enough”).

The book has a few inset boxes with their own narrative. There is one in this chapter; the following is a direct excerpt. “BIG EYES—Options are con artists. They seduce with a promise of joy but often leave us confused and wanting. Consider this experiment ... When they offered consumers a choice of different digital devices ... some six in ten picked the option with the most features. ... But when actually using their new gizmos, most consumers quickly fell prey to ... ”feature fatigue”; that is, they quickly tired of using all those extras (if they even figured out how to). ... We might just say that humans have “big eyes. ...”

The huge number of investment choices (over 8,000 mutual funds, plus individual securities and ETF’s) encourages investment decision paralysis. In employer sponsored plans, a research study showed that employee participation rates decreased 2 percent for every 10 additional investment choices added.

A related phenomenon is “status quo bias.” In an experiment, a group of students with finance experience were given a choice of four investments with different degrees of risk and potential return. With a clean slate, the distribution of choices was 18 percent-32 percent-32 percent-18 percent from most to least risky—a nice bell curve. However, a different result was obtained when the question was presented as a large amount is already invested in one of the same four choices and how would you choose to deploy it. No matter which of the four existing investments was the current place for the investment, that investment was the most popular choice for future investment!

In “What’s Mine is Mine, and What’s Yours isn’t Worth as Much” describes the “endowment effect.” If a person owns something, the sale price is significantly higher than the same person would be willing to pay for the same something. Then there’s “regret aversion”—we’d rather feel bad for something we didn’t do than for something we did, even if the net result is the same.

The authors once again conclude the chapter with a set of suggestions—seven this time.

#### CHAPTER 4—NUMBER NUMBNESS

One can sum up this chapter's theme by the authors' observation that "... people have trouble with numbers." This may not be true of actuaries and a few other professions of our ilk, but the book describes how this is too often true of the general population in an entertaining manner.

The authors identify and exemplify three of the ways this leads to money mistakes: not taking inflation into account; mistaking or misusing probability ("Odds Are You Don't Know What the Odds Are"); and a bias toward bigness (people tend to discount the importance of small numbers, such as small but frequent expenses). Even though some of the financial examples reflected the book's 1999 vintage, this was an easy and enjoyable chapter to read.

Shown below are this chapter's suggestions to avoid "big money mistakes" with some explanatory additions in brackets.

- "Don't be impressed by short term success [of investments]."
- "Because chance plays a far greater role than you think in investment performance, you should play the averages."
- "Know when time [and compound interest] is on your side and when it isn't."
- "Enhance the base rate [mind long term trends]."
- "Read the fine print."

#### CHAPTER 5—DROPPING ANCHOR

In this chapter the authors explain and provide ample evidence for "anchoring" and "confirmation bias." Anchoring is defined as "clinging to a fact or figure or idea that may or may not have relevance to your judgments or decisions." Confirmation bias is "a tendency to search for, treat kindly, and be overly impressed by information that confirms

your initial impressions or preferences." As usual, the authors' examples bring these terms to life, as does their turn of phrases, such as: "Once an idea sets in your head, it often sets in concrete; you can break it, but you may need a sledgehammer." Anchoring can work for marketers in many ways, including the suggestion of how much to buy. (I once overheard a grocery store employee tell another that they sold more of an item when it was advertised as "10 for \$10" than when it was advertised with a \$1 price!) Sure enough, the authors cite similar examples. Anchoring can result from numbers that have nothing whatsoever to do with the value in question. "In another study, participants were asked what they were willing to pay for a meal at restaurant 'Studio 97' or 'Studio 17.' We're sure you can guess the result. On average, participants were willing to pay one-third more for a meal at 'Studio 97.'" The chapter concludes with five suggestions for avoiding bad decisions due to anchoring and confirmation bias.

#### CHAPTER 6—THE EGO TRAP

The general meaning of this chapter can be inferred from the title, or from this line in the chapter: "... almost as long as psychologists have been exploring human nature, they have been amassing evidence that people tend to overestimate their own abilities, knowledge and skills." What is impressive is the evidence provided. Study after study and example after example demonstrate that this is true and is broadly based. That is, it applies to people of widely different backgrounds and levels of knowledge or skills. One of my favorite studies is about how consistently people underestimate how long a task or project will take.

When it comes to financial decisions, the implication is that people think they are in better financial condition than they are. So people are often underprepared for what lies ahead, and too often willing to make substantial spending decisions while not as well informed as they think they are. What does this mean about investment decisions? The authors contend that most people "have no business at all trying to pick investments, except perhaps as sport" and cite supporting research.

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Investor overconfidence is maintained in the face of not-always-supporting experience by a phenomenon described as “heads I win, tails it’s chance.” We tend to attribute success to our ability, failure to bad luck. This chapter’s concluding advice includes paragraphs on “Investor, Know Thyself,” “Ask Three Good Questions” and “Get a Second Opinion.”

### CHAPTER 7—HERD IT THROUGH THE GRAPEVINE

The theme here is that retail investors “follow the herd” when it’s too late. They buy investments after they have done well and sell investments after they have done poorly. The authors cite a single factoid that shows this all too clearly: from 1988-2008 all stock and bond mutual funds averaged returns of 8.4 percent and 7.4 percent respectively, but the investors in stock and bond funds averaged 1.9 percent and less than 1 percent respectively! Other examples are cited to the same point.

The authors point out that there are a number of ways in which society encourages conformity—following the herd, in this case. The tendency to conform is enhanced in uncertain situations—such as choosing investments when one is not an expert in the area. Doing what everyone else is doing seems a reasonable choice.

The chapter-ending advice advocates patience, avoiding hot investments, establishing investment rules and sticking to them.

### CHAPTER 8 – EMOTIONAL BAGGAGE

“... emotions are partners in all the decision-making processes we’ve been discussing. ...” Different parts of the human brain produce emotions (the reflexive system) and

logic (the reflective system). The authors assert that behavioral economics needs to take both into account, since emotion affects all behavior, including financial behavior. They support the assertion with page upon page of examples and research results. We feel better when the weather is nicer, but did you know that “examination of stock markets in 26 countries over a 15-year period revealed that the amount of sunshine on a given day is ... positively correlated with market performance”? On the other hand, “When we feel bad ... about one thing, significant or not, it can color our view of all things at that moment.”

At chapter’s end, the authors offer techniques for keeping emotions from having too much influence on our financial decisions, under these headings:

- Voice your reason;
- Use checklists;
- Play decision chess;
- Mind your pros and cons; and
- Don’t just do something, stand there.

### CONCLUSION & POSTSCRIPT

As a prelude to their 14 “Principles to Ponder” and eight “Steps to Take” the authors make this acknowledgement. “It is also difficult to alter many of the behavioral-economic habits we’ve discussed in this book because, although they cost you money, they reflect psychological tendencies that bring great benefits in other ways or in other areas.”

The “Principles” and “Steps” provide an excellent summary of the conclusions and advice of the book, without all the supporting evidence. If you cannot spare the time to read the whole book, go to the Conclusion first; it is only 18 pages long. But when you can, go back to the full text to be entertained and further informed. ▼



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