Why Hindsight Can Damage Foresight

by Paul Goodwin

WHAT IS HINDSIGHT BIAS?

In 1972, President Richard Nixon made a historic trip to China, which had become virtually a closed country following the 1949 revolution. There was intense speculation on what Nixon might achieve. In a now-famous study, Baruch Fischhoff and Ruth Beyth (1975) asked their students to estimate probabilities for events relating to his visit. An example: "The USA will establish a permanent diplomatic mission in Peking, but not grant diplomatic recognition."

The students were not told that, after the visit had been concluded (and widely reported), they would be asked to recall their estimated probabilities. The study found that if an event had occurred, most believed they had assigned it a higher probability than was actually the case. When an event had not occurred, the opposite was true. This is *hindsight bias*: the tendency to believe that our forecasts were more accurate than they were. In retrospect, things often appear to be much more predictable than at the time of our forecast. The credit crunch, the Democratic victory in 2008, and the recent success of my favourite soccer team – all now seem inevitable, with the benefit of hindsight.

Why should forecasters, eyeing the future, fear hindsight bias? Because hindsight bias makes us believe we're better forecasters than we really are, and that the world's a much more predictable place than it really is. Hindsight bias can hinder our learning from our past forecasting errors, hence limiting the extent to which we can improve our forecasting skills through experience.

Researchers continue to investigate the nature and implications of hindsight bias and ways to reduce its impact. On one database, I counted 46 papers on the topic, published in the last two years alone.

PROBABILITY OF A SUCCESSFUL START-UP

In a study by Gavin Cassar and Justin Craig (2009), 705 people from the mainland U.S. in the early stages of starting new business ventures were randomly selected and asked to estimate the chances that their start-ups would become operating businesses. Later, 198 of these individuals who had failed to create an operating business were asked to recall what the probability of success had been at the time of their initial involvement in the start-up. Evidence of hindsight bias was significant. When they were beginning their projects, the median estimate by the entrepreneurs that they would succeed was 80%, but the recalled probabilities had a median value of only 50%.

Interestingly, while those with more education exhibited lower hindsight bias, any actual experience of previous start-ups by the entrepreneurs apparently had no effect on the bias. The researchers expressed concern that these individuals would not learn from their experience of failure and would go on to overestimate their chances of success in future ventures.

FINANCIAL FORECASTS

Another recent paper by Bruno Biais and Martin Weber (2009) reports the results of two studies that investigated whether hindsight bias applies to forecasts of financial variables, like the prices of stocks, currency exchange rates, and commodity prices. In the first study, students were asked to forecast levels of prices one week ahead, and to put two bounds around their forecasts so that they were 90% sure that the actual value would fall between these bounds. Biais and Weber were able to infer from the prediction intervals how uncertain the students were about the future prices – the wider the interval, the greater their level of uncertainty. One week later, when the true prices were known, the students were asked to recall their point forecasts and their prediction intervals. In both cases, they exhibited hindsight bias. They thought that their point forecasts had been closer to the actual values than they really were, and that their prediction intervals had been much narrower than was really the case. In other words, they thought that they had been much more certain about the future prices than their original prediction intervals had suggested.

In their second study, Biais and Weber collected data from 85 bankers working in the Frankfurt and London branches of a large investment bank. While it may not be surprising that students exhibit biases, given their lack of forecasting experience, you might expect the competitive forces of the banking world to erode such errors of judgment. Success in financial markets relies critically on the ability to compare the latest information with your original expectations in order to assess the significance of any discrepancies. Unfortunately, the bankers displayed levels of hindsight bias similar to the students'. Worse still, as in the Cassar and Craig study, greater experience made no one particularly immune from the bias. Moreover, hindsight bias had important implications for the bankers: those demonstrating the greatest bias received significantly lower levels of pay. Since a large part of their pay included bonuses, this suggests, in turn, that more hindsight bias was associated with lower levels of performance.

PSYCHOLOGICAL BASIS OF HINDSIGHT BIAS

Psychologists have tried to gain an in-depth understanding of hindsight bias, given its importance and prevalence. Recent studies suggest that this phenomenon comprises three distinct psychological processes. Depending on the circumstances, different processes take prominence (Nester & Egloff, 2009).

The first process, ***impression of inevitability***, kicks in when the forecaster is able to identify apparent causes of the event's occurrence so that, retrospectively, the event appears to have been inevitable ("My team was bound to have a losing season, given the lousy coach it hired."). If the causes are easily explained, this increases the likelihood of hindsight bias.

The second process, i***mpression of foreseeability***, engages when there's no surprise associated with the event that occurred: the forecaster perceives it, then, to have been foreseeable. It follows that if the event is surprising and the forecaster finds no apparent causes for it, then hindsight bias will be avoidable.

The third process is ***memory distortion***: people simply forget what their original forecast was and assume it was closer to the outcome than in actuality.

Sometimes our underlying motivations can influence the extent of hindsight bias. If you're disappointed with an outcome, then impressions of inevitability act as a coping mechanism ("I didn't stand a chance. Things were bound to turn out this way."). By contrast, impressions of foreseeability are diluted if you had a strong commitment to a particular outcome, and an alternative occurs. If you sink your resources into a new product that turns out to be unsuccessful, it's less painful to look back and conclude that failure wasn't foreseeable.

CAN HINDSIGHT BIAS BE OVERCOME?

Hindsight bias is a stubborn quality of human judgment and difficult to eliminate. Simply warning people of its dangers has almost no effect at all. However, there is some evidence that the bias can be reduced when individuals are asked to explain how events, which did not actually occur, could have occurred (Fischhoff, 1982). This apparently makes the possibility of the alternative events more salient, reducing the perceived inevitability of the event that did occur. Researchers continue to investigate other possible remedies. For example, a recent paper by Harry M. Wallace and colleagues (2009) found that having to work hard to gain new knowledge causes people to reduce their perception of the level of their past knowledge. Having invested effort to acquire new knowledge, you're less likely to conclude that you "knew it all along." In contrast, people perceived they had more prior knowledge when they received new knowledge passively and effortlessly.

Should we deliberately make forecasters work hard to obtain new information to reduce their hindsight bias? Perhaps not, but as with the bankers, hindsight bias has serious implications – particularly in making people overconfident about the accuracy of their forecasts so they underestimate the risk of large errors. For these and other reasons, more research on how to overcome hindsight bias seems to be well justified.

REFERENCES

Biais, B. & Weber, M. (2009). Hindsight bias, risk perception, and investment performance, *Management Science*, 55, 1018–1029.

Cassar, G. & Craig, J. (2009). An investigation of hindsight bias in nascent venture activity, *Journal of Business Venturing*, 24, 149–164.

Fischhoff, B. (1982). Debiasing. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment Under Uncertainty: Heuristics and Biases*, New York: Cambridge University Press.

Fischhoff, B. & Beyth, R. (1975). "I knew it would happen," Remembered probabilities of once-future things, *Organizational Behavior and Human Performance*, 13, 1-16.

Nestler, S. & Egloff, B. (2009). Increased or reversed? The effect of surprise on hindsight bias depends on the hindsight component, *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 35, 1539–1544.

Wallace, H.M., Chang, M., Carroll, P.J. & Grace, J. (2009). I knew it all along, unless I had to work to learn what I know, *Basic and Applied Social Psychology*, 31, 32–39.

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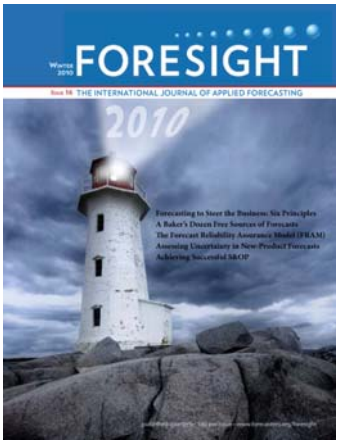

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