HINDSIGHT: THINKING BACKWARD

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Is hindsight better than foresight or just different? The formal difference between the two tasks is the hindsightful judge's possession of outcome knowledge, telling him how things turned out. It is this additional knowledge which is reputed to confer the "wisdom of hindsight". In the studies reported here, outcome knowledge is found to increase the perceived inevitability of the outcome reported. Judges are, however, largely unaware of the changes in their perceptions due to outcome knowledge. As a result, they believe that they and others had in foresight insights which they themselves only had as a result of outcome knowledge. Failure to appreciate the effects of outcome knowledge can seriously prejudice the evaluation of decisions made in the past and limit what is learned from experience.

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In the spring of 1974, Carl Cletus Bowles, "convicted murderer, bank robber and all-around bad actor" (Eugene Register Guard, June 5, 1974, p. 12A) was released on an overnight social pass from the Oregon State Penitentiary where he was serving a life sentence. The social pass program had been initiated by the Oregon state legislature to help convicts maintain contact with the outside world so as to make it easier for them to eventually rejoin it. Bowles, who had been a model prisoner, promptly absconded. Warden Cupp, who bore ultimate responsibility for all passes issued in the penitentiary, came under heavy fire. According to a local newspaper, "It was an error in screening. Bowles' record, in the prison and out, as we read it now, shows that he could not be trusted." (ibid.) The state's governor informed Warden Cupp that he would have to resign if Bowles committed violence while at large.

Following the Japanese attack on Pearl Harbor, the Naval C. O., Admiral Kimmel was removed from his command and lowered in rank. A Congressional investigatory committee convened in 1946 produced 39 volumes of evidence, much of it highly critical of those responsible for Pearl Harbor's security. Irving Janis (1972) blames "collective groupthink (pressures to conformity) among interlocking groups . . . for America's astounding unreadiness at Pearl Harbor," after noting the success of American intelligence in deciphering the Japanese secret codes known as MAGIC, (p. 99).

In accepting President Ford's pardon, former President Nixon indicated that he could see now how he should have understood the meaning of Watergate in July of 1972. He regretted his misunderstanding and subsequent failure to take suitable action.

The structure of each of these examples is similar: misfortune occurs, a culprit is identified, his decision second-guessed, and his folly chastized either by others or by himself. Why are such critics in a position to criticize? Because they know how things turned out. Their hindsight they feel, provides them with wisdom illuminating the follies of others, or even of themselves. Or does it? Would we, could we, or should we have known better than Warden Cupp, Admiral Kimmel, President Nixon, or would we do better now if placed in their shoes?

Is hindsight really better than foresight, or just different? How aware are we of these differences? Do we, as Nietzsche suggests, begin by looking backward and end up thinking backward? Our awareness of these differences in large part determines both how much we le rom experience and how we mete out justice. In Admiral Kimmel's case, for example, if he saw or could have seen what was happening, but didn't take action accordingly, then he was clearly negligent, incompetent, or worse. Our own lesson from his experience is to find better officers and teach him a lesson. If, however, the imminence of a Japanese attack is apparent only in retrospect, then Kimmel deserves either a fairer shake than he got, or else conviction for a rather different crime--failure to be ready for any and all possible surprises. In this particular case, with the limited resources at his disposal, he may well have done the best he could. Our lesson is, then, to spend more on eliminating surprises and/or being readier for them when they come.

My colleagues and I have recently conducted a series of experiments designed to obtain an understanding of the differences between hindsight and foresight, and to better understand how to get the most out of each. Supposedly, the sharper and surer our hindsight, the better our foresight. Our results indicate that this need not be the case.

The first experiment in the series was designed simply to see how foresight and hindsight differed in a number of aspects. In it, subjects read a short, unfamiliar historical passage, such as the following:

> For some years after the arrival of Hastings as governor-general of India, the consolidation of British power involved serious war. The first of these wars took place on the northern frontier of Bengal where the British were faced by the plundering raids of the Gurkas of Nepal. Attempts had been made to stop the raids by an exchange of lands, but the Gurkas would not give up their claims to country under British control, and Hastings decided to deal with them once and for all. The campaign began in November, 1814. It was not glorious. The Gurkas were only some 12,000 strong; but they were brave fighters, fighting in territory well suited to their raiding tactics. The older British commanders were used to war in the plains where the enemy ran away from a resolute attack. In the mountains of Nepal it was not easy even to find the enemy. The troops and transport animals suffered from the extremes of heat and cold, and the officers learned caution only after sharp reverses. Major-General Sir D. Ochterlony was the one commander to escape from these minor defeats.
>
> The Age of Reform
> by E. L. Woodward
> Oxford, 1937, pp. 383-4

Five groups of subjects received each story in varying versions. There was one "foresight" group which was not told what had happened subsequently (the British won). There were four "hindsight" groups each of which was given the same story with one of several possible outcomes appended to it as the "true" outcome. These were, in this case: British victory; Gurka

victory; military stalemate with a peace treaty; military stalemate without a peace treaty. Thus, for three of the four hindsight groups, the reported outcome was in fact false. Note that even though the event took place a century and a half ago, foresight subjects not told what had happened are in much the same position as contemporary observers of the British-Gurka struggle.

All subjects were asked to: 1) judge the probability that each of the four possible outcomes was going to happen; 2) evaluate the relevance of each of the facts appearing in the story in determining what happened; and 3) give reasons for their answers.

The most dramatic result was that hindsight subjects consistently perceived reported outcomes (whether true or not in fact) as having been more likely to occur than did their foresightful counterparts; knowing that something had happened roughly doubled the perceived odds that it was going to occur. Interestingly, however, subjects almost never assigned 100% probability to what was reported to have happened. Evidently, they felt that in the light of the facts given in the description other outcomes were still possible (e.g., "The Gurkas had a 70% chance of winning, but the British still might have pulled it off.").

The perceived relevance of the facts in the description and the reasons which subjects offered to justify their answers depended, as well, upon the outcome reported. Interestingly, though, there were some data (e.g., Hasting's decision to deal with the Gurkas "once and for all") and some reasons (e.g., "the experience of Viet-Nam" or "what's going on in the Middle East today") which were relevant no matter what happened.

Knowing that something has happened clearly increases its perceived inevitability, as well as restructures our perceptions of what we know about it. How justified are these changes? It's hard to say, simply because no one knows the objective probabilities associated with unique events like the British-Gurka struggle. Consider another example: If we claim that there was no chance (or a 7% chance or a 98.6% chance) of a thermonuclear war during the 1960's who's to prove us wrong? Indeed, the only wrong estimate is that it was 100% likely.

Let us call the tendency to see whatever is reported to have happened as having been relatively inevitable "creeping determinism"--in contrast with philosophical determinism, the conscious belief that whatever happens has to happen. These two types of determinism are essentially independent. The philosophical determinist may believe that a reported event (e.g., Bowles' escape) was inevitable, since whatever happens is, by definition, inevitable. He may, however, still be surprised by its occurence. Indeed, he may well set for himself the task of researching the situation until its inevitable character becomes apparent. He might, thus, insist that Bowles was bound to escape, yet deny that anyone was in a position to foresee it. The creeping determinist may well be totally unaware of the raging debate over historical inevitability and free will. He perceives reported events as having been more or less bound to happen, simply as a matter of course.

Our second experiment was designed to determine how aware judges are of the hindsight-foresight differences which we have called "creeping determinism". The importance of such awareness for the historical second-

guesser has been discussed already; its importance for anyone trying to learn from history is discussed below.

Each group of subjects in Experiment 2 received stories like the British-Gurka episode, each with one of the four endings appended to it. Thus, subjects in each group knew as much as did subjects in the comparable hindsight group in Experiment 1. They were asked to complete the Experiment 1 questionnaire as they would have "had they not known what really happened", i.e., like foresight subjects. People aware of what they have learned from knowing what happened should be able to perform this task successfully.

Our subjects' success was limited at best. They consistently believed that without outcome knowledge they would have displayed the creeping determinism shown by Experiment 1 subjects with outcome knowledge. They believed that had they been asked, they would have seen the relative inevitability of the reported outcomes. Their reconstructed relevance judgments, too, bore the imprint of the outcome knowledge they were to ignore. For example, foresight subjects in Experiment 1 attached relatively little importance to British suffering from "extremes of heat and cold." Experiment 1 hindsight subjects told that the Gurkas had won, attached greatest relevance to this fact. Experiment 2 subjects told to ignore the report of Gurka victory indicated that even without that report they would have perceived the importance of climatic extremes.

Failure to ignore outcome knowledge is not without its benefits. It is, indeed, quite flattering to believe, or lead others to believe, that we would have "known all along" what we could only know with outcome knowledge,

that is to say, that we possess hindsightful foresight.

Returning to the introductory examples, perhaps this failure to empathize with ourselves in a more ignorant state is paralleled by a failure to empathize with outcome-ignorant others. Experiment 3 examined this question. In it, five groups of subjects were asked to respond to the questionnaire used in Experiments 1 and 2--as they thought other subjects, similar to themselves, had responded. These other subjects were described as not knowing the "true" outcome. One of the Experiment 3 groups was equally ignorant of what had happened. The remaining groups each received one of the possible outcomes as the "true" outcome. They were essentially asked to respond like foresightful others, more ignorant than themselves.

Subjects who did not know what had happened believed that outcome-ignorant others would respond much the same way as foresight subjects in Experiment 1. Since this is presumably the way they themselves would respond, they seem to have projected their own judgments on others. Experiment 3 subjects who did know what had happened, however, attributed to outcome-less others probability and relevance judgments which clearly bore the imprint of the outcome knowledge which they were asked to ignore. In particular, they believed that others in foresight would have seen the relative inevitability of reported outcomes which they themselves perceived only in hindsight. As before, this result was obtained for true and false outcome reports alike.

In a fourth study, (Fischhoff & Beyth, 1974) subjects were asked on the eve of then-President Nixon's trips to China and the USSR in 1972 to estimate the probability of various possible outcomes of the trips (e.g., meeting

Chairman Mao, visiting Lenin's tomb, announcing that the trips were successful). Two weeks to six months after the trips' completion, these same subjects were asked to remember as best they could, their own original predictions. Finally, they were asked to indicate for each event whether or not they believed that it had actually happened.

The results showed that subjects remembered having given higher probabilities than they actually had to events believed to have occurred and lower probabilities to events which hadn't. Their original predictions showed that they were too often surprised--many highly unlikely or impossible events (assigned probability = 0%) did occur. Their remembered probabilities, however, indicated that they perceived a past which held too few surprises for them; indeed, almost no events which they remembered assigning low probabilities to were perceived to have occurred.

Summarizing these results: Finding out that something has happened increases its perceived inevitability. We are unaware, however, of this effect of outcome knowledge and tend to believe that the inevitability was largely apparent in foresight, without the benefit of knowing what happened. This undiagnosed creeping determinism biases our impression of what we would have known without outcome knowledge (Exp. 2), as well as our impressions of what we ourselves (Exp. 4), and others (Exp. 3), actually did know in foresight. In retrospect, we tend to believe that we and others had a much better idea of what was going to happen than we (or others) did.

How do we do this? How do we manage to see the relative inevitability of whatever is reported to have happened, true or false, yet remain unaware

of the effect which outcome knowledge has had on our perceptions? The data relevance results provide an important cue. In particular they suggest that the data in the event description change their meaning or significance when different outcomes are reported. Those data which were highly relevant whatever happened, for example, must have meant something different in each context: just as Bowles' good behavior in prison would have meant one thing had he returned from his social pass and actually meant another when he did not. In either case, it was a highly relevant datum.

What kind of meaning adjustment goes on? Two related interpretations seem worth considering. The first is that we are biased to view whatever happens as being inevitable, and then juggle or manipulate whatever else we know to concur with that feeling of inevitability. For example, upon hearing of Bowles' escape we say, "That was bound to happen." and then go about figuring out why. Looking at his record, we may highlight details pointing to his errant character and reinterpret other details which are inherently ambiguous. Critics of deviance labelling such as Lofland (1969), Shur (1971), or Rosenhan (1973), have suggested that just such a process goes on when the public and professionals rework or reinterpret the biographies of deviants to show that their labels are inevitable products of their life histories. Doggedly and professionally pursued, such reconstruction can find cause for the continued incarceration of even perfectly "normal" patients who have had themselves committed just to see how hospitals operate from the inside.

The alternative explanation proceeds in the opposite direction. It suggests that when we receive outcome knowledge, we immediately make sense out of it by integrating it into what we already know about the subject.

Having made this reinterpretation, the reported outcome now seems a more or less inevitable outgrowth of the reinterpreted situation. "Making sense" out of what we're told about the past is, in turn, so natural that we may well be unaware of outcome knowledge having had any effect on us. Even if we are aware of there having been an effect, we may still be unaware of exactly what it was. In trying to reconstruct our foresightful state of mind, much evidence suggests that we will remain "anchored" or rooted in our hindsightful perspective--leaving the reported outcome too likely looking. Both processes may, of course, be operative.

The negative effects of unperceived creeping determinism are probably apparent by now. When we second-guess Warden Cupp's decision, for example, our natural tendency seems to be to see Bowles' escape as having appeared more likely at that time than it really did seem. In this light, the warden's decision to issue the social pass seems like an act of irresponsibility or just plain incompetence--whereas in truth, the probability of escape may have justifiably seemed very small to him (judging by the governor's comment, even after the escape the probability that he would commit violence while at large was still unclear). All the signs in Bowles' "record in the prison and out, as we read it now (which) show that he could not be trusted" may well have meant something very different before his escape (e.g., his good behavior in jail). The fact that he escaped does not in itself mean that the decision to release him was a bad one. Good decisions, those which maximally utilize all available knowledge, may have bad outcomes. The information about Bowles' true nature which would have led to a better decision either may or may not have been available when the warden issued the pass.

The point is that from our perspective, it is very hard to tell and therefore dangerous to rely on our intuitive (retrospective) impressions.

Aside from making us unduly harsh in judging decisions made in the past, unperceived creeping determinism may also make us insensitive to what is to be learned from the past. If the description above is accurate, then Warden Cupp's lesson from this harrowing experience (Bowles eventually kidnapped and probably murdered an Oregon couple) seems to be "don't issue passes to prisoners you can see are going to escape." It's hard to see how that kind of advice is going to advance anyone's capabilities.

As with Pearl Harbor, there is an alternative lesson to be learned. It is that the issuing of social passes is a risky business, that the predictability of temporarily released prisoners' behavior is far from perfect, and that the system should be redesigned to accommodate or reduce this uncertainty (e.g., denying all passes, statistically identifying risky prisoners, or explaining to the public the risks and benefits of the program in order to make them understand and assume some responsibility for its successes and failures).

If we look at the past and find that it holds few surprises for us, we are essentially denying that we have anything to learn from it. Even though outcome knowledge changes our perceptions of specific events (by making them seem inevitable), without a feeling of surprise we probably feel little compunction to reevaluate the "world hypotheses" or rules with which we interpret what goes on around us. It is conscious refining of these hypotheses which improves our ability to understand our past, present and

future. We generally believe that being able to explain or make sense of the past increases our ability to predict the future. If what we call explaining the past is actually "explaining away" the surprises it holds, the very opposite may occur. A surprise-free past may well portend a surprise-full future.

What can we do to make our hindsight more insightful? The most basic bit of advice is to accept the existence of uncertainty in historical judgments. Even though people don't much like dealing with uncertainty, they will usually acknowledge its presence in their understanding of the present and future. If they don't, events will sooner or later prove their fallibility. The past, however, is less able to produce surprises which can show up the know-it-all. As a result of its defenselessness, it may have deterministic schemata imposed on it that would appear as sheer effrontery if imposed on the present or future. The uncertainty is there, however, and will remain as long as there is any question about the meaning, reliability, or validity of any of the components of our historical knowledge, the facts we presumably know about the past, the facts we need to know about the past and don't--and must surmise from what we do know--or the explanatory principles (rules) with which we make a coherent whole out of what we know.

Simply doubting what you believe you know about the past may produce some quick benefits. Consider the responses of one subject in Experiment 1 who was told that the British had been defeated by the Gurkas. She justified giving a higher retrospective probability to a Gurka victory by citing the "fact" that "in 1812 (the time of the Gurka campaign), the British were also defeated by the United States in the War of 1812." The reader may remember that

in that war, the British managed to burn Washington, D.C., and conquer Fort Detroit by the mere presence of their forces 120 miles away in London, Ontario; and that they only broke off the engagement (i.e., lost the war) in 1814 when called away by events in Europe. Had she known of the pitfalls of creeping determinism, she might have adopted a more critical attitude toward her own information.

Similarly, one might make it a habit to ask himself questions like, "Did I really give the Donalds' marriage only a one in ten chance of lasting when they got married?" or "Was I really certain that Mao and Nixon would get together?" Most investigatory committees would also do well by asking first not who erred and why, but was there an error at all, i.e., could anyone else on the scene conceivably have known what was going on and acted more optimally?

After acknowledging the existence of uncertainty in the past, a good practice might be to try to hunt it down in its original form. For example, are there records of the deliberations which preceded the decision to issue Bowles the infamous social pass; are there transcripts of the information reaching Admiral Kimmel prior to 7 AM on December 7; is there a notebook showing the stocks you considered before settling on Waltham Industries; are there diaries capturing Stalin's (or Chamberlain's) view of Hitler in 1939? Any of these records might show the difficulty of the decisions facing these actors. If you have hopes of learning how to forecast better, it might well pay to keep a written record of your own predictions and the considerations which guided them--a record which can be evaluated in the light of reality (what eventually happens). It can't hurt to know when you knew

and when you didn't know all along what would happen and why.

Such fossilized deliberations are, of course, quite rare. When there is no uncertain past to be uncovered, it must be reconstructed. One simplistic remedy which may have some value is to effect an across-the-board reduction in the perceived likelihood of events reported to have happened. That is to say, assume as a rule that you know less than you feel you do. To get an idea of how much to discount your hindsight, you might keep close tabs on yourself for a couple of weeks to see how prone you are to some of the biases noted above.

Another technique might be to take what you know about past situations and see how readily you can generate alternative futures for them. Try then to gain a day in psychological court for these counterfactual pasts, and see how convincing they are. For example, if you find Thurber's "If Grant Had Been Drinking at Appamatox" highly implausible, then you can feel safer in the opinion that the Confederacy was doomed on April 14, 1865. If it looks reasonable, then you might reconsider. See how much of Admiral Kimmel's behavior can be explained by assuming that he believed informed reports indicating that the Japanese would not dare attack the US while they still had shipping in the Panama Canal area.

If you have examined some historical period or event in depth and perceived some of its inherent ambiguity, don't lose it. Use expressions like, "The Japanese seem to have attacked Pearl Harbor because they saw no other way to break the boycott. This assumes, however that. . . It fails to account for the fact that . . . Possibly . . . A good second guess would be . . ." Although awkward, this kind of hedging should make it easier to

take new facts into consideration and to help you remember just how good (or poor) your best guess about the past is. One variation on this theme would be to concentrate not on producing a best guess about what was happening in the past, but on eliminating possible interpretations. "We can safely rule out the possibility that the Japanese hoped to win a protracted war in the Pacific because. . . " "The warden's personal involvement with Bowles' rehabilitation clearly had nothing to do with his decision to approve the social pass."

All of these suggestions involve pitting our mind against itself to restore or preserve foresightful perspective. An alternative, and probably more expensive, approach is to farm the problem out to genuinely foresightful minds. If we want to know what the warden should have known before he made his decision, let's take the case, disguise it to insure anonymity, ship it to other wardens, and ask them whether or not they would have issued a pass. If they, too, would have released Bowles, then Warden Cupp's verdict bears a more sympathetic review.

It should be obvious by now that this sort of advice is going to make the historical judge's work even harder by producing a much less tidy and coherent picture of the past (than that bestowed by creeping determinism). There is clearly a price to be paid for forfeiting the facile satisfaction of cheap hindsight. The profit to be had? A better feeling for what we do and do not know, and what we have learned; more systematic hypothesis-testing and learning as we follow events in the world; greater transfer from explanation to prediction; a better appraisal of the amount of uncertainty inherent in the past and future. The decision-maker who knows the limits of his

knowledge can better plan the integration of his "executive" and "intelligence" functions. The latter can only be expected to take action on the basis of what he knows. If he can't know enough, he can best prepare to take action if he agrees to "accept the fact of uncertainty and learn to live with it," if he realizes that since "no magic will provide certainty, our plans must work without it." (Wohlstetter, 1962, p. 401)

In many jobs mistakes are inevitable. It is self-defeating and unfair to change decision-makers who have erred in a fallible system--without doing something to improve that system. Consideration of the alternative might make this clearer. Is there a better warden to be had than Warden Cupp? Who is to replace Admiral Kimmel? Are their successors likely to be less error prone? Or is the main trait which recommends them for the job the fact that they have not made the specific mistake made by their predecessor? Isn't it just a matter of time before they too will be on the way out, tripped up by need to act in the absence of certainty?

Possibly Kimmel, Nixon, Warden Cupp, et al, did blow it. Maybe they should have known better. On the other hand, perhaps the handwriting on the wall was written in ink visible in hindsight alone. If we're really interested in knowledge, and not just revenge, investment in the above techniques may save a lot of grief and injustice. The only real loss, beyond the effort, will be the illusion that we know it all.

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Footnotes

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