

**THE  
BOWMAN  
STANDARD**

A GEOPOLITICAL GAME FOR SPHERES OF POWER

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## PROLOGUE

People have always tried to predict the future to alleviate the constant uncertainty of their existence. Romans analysed the gutted entrails of sacrificed livestock and the Mesopotamians gazed at stars. Years later, betting experts, internet psychics and political pundits evolved to meet the same needs with equally appallingly low rates of success.

The reason why, is because people are prone to bias. We listen to those in authority and rarely question the legitimacy of that authority. We listen to good-looking smooth talkers because their face is nice and voice soothing. We give credence to conspiracies because crazy ideas are more interesting than things staying the same. But mostly, we don't hold predictors to account. Pundits who whiff on elections, horse races and market meltdowns are rewarded with better opportunities to amplify their erroneous information. Statistical models go unverified because the world moves on to the next expert loudly spouting inconsistencies and half-truths.

But forecasting is too important to be left to the inept. Crop rotations, storm alerts and interest rate rises are wholly dependent

on accurate predictions. And so, in 1980, American policymakers sought a better way. Their goal was to eliminate bias from forecasting, to make America a predicative superpower, and to use their advantage against a Soviet Union shrouded in fake data and propaganda. With an accurate understanding of the future, they could craft policies based on the likelihood of their success, to benefit all Americans.

A bi-partisan panel unanimously agreed to outsource the forecasting problem to the US Department of Defence Advanced Research Projects Agency, DARPA, the primary solution provider to humanity's dilemmas at the time and now too.

DARPA's stated mission is to replace all people with technology, so they first looked to software and artificial intelligence to solve bias-induced forecasting inaccuracy. But the computers let them down. DARPA learned early that artificial intelligence would always be limited by its inability to think. AI was remarkably dumb and totally incapable of weighing the benefits and output of complex government and business strategies. To their dismay, DARPA concluded that bountiful data is useless without the right people interpreting insights to make tangible services, policies, products, and behaviours. The perfect calculating machines still required imperfect operators. DARPA posed the question: which operators were the least imperfect?

In 1984, the DARPA Forecasting Challenge – a national prediction tournament covering political, economic, environmental, defence and social issues – was launched to a wide panel of forecasters from all walks of life. They were asked to predict a series of short-term events, relying only on publicly available information and their own brains. Participants were ranked on the accuracy of their predictions, regardless of their profession or

status, and classified by level of bias. DARPA believed the least biased people were the key to forecasting accuracy.

DARPA's tournament proved Bayes' Theorem: that the most accurate predictions are the ones closest to the average of a group. They used Brier Scores to measure how close a prediction is to the group average, and thus its accuracy. Upon review, experts proved terrible forecasters with paltry Brier Scores. The wisdom of the group, however, proved successful, with the aggregate guesses falling to within one per cent of the actual result.

A tiny cohort stood out. Some forecasters were able to consistently guess the guesses of the group, to achieve the average all by themselves, on any topic. They could prognosticate regardless of expertise, with supremely non-biased brains able to ignore headlines and grandiose ideas. They would come to be known as super-forecasters.

The unifying attribute of super-forecasters is not their intelligence, but their mental attitude: they perceive the world as too complicated to boil down to simple declarations. Their humility and ability to adapt makes them subtle thinkers, capable of processing a wide range of inputs. Super-forecasters regress to the mean and recognise that extraordinary events are typically followed by a shift back to normal. They are not interested in how correct they are, but rather why they are correct – or not. They are the least biased people on the planet and produce stunningly accurate predictions.

DARPA had found their people but still needed a system to hold them accountable: a standard measure for long-term forecast accuracy. Super-forecasters can predict anything, but to best serve their government masters they required a framework to evaluate policies and the likelihood of their success. Rather than focus on single measures, like GDP growth or share of global military

expenditure, DARPA needed a way to structure, validate and optimise all government activity: an architecture for the super-forecaster's predictions and policy prescriptions. They wrote a detailed brief and outsourced the problem to the world's smartest think-tanks and consulting firms.

Ken Bowman graduated from an average university to a corporate marketing job selling supermarket products. Upon being given sole responsibility for determining new variants of laundry detergent, wild success ensued. His ideas revolutionised scented toilet cleaners, dishwasher liquid multipacks and thicker paper towels. Consumer product industry boffins worshipped him and when Supermarket Today broke the news, the industry was stunned: Bowman had resigned to pursue a career in elite management consultancy with the world's most prestigious firm, McKendrick Consulting.

Bowman wanted to help mega-corporations evade tax, hoping for a shortcut to a CEO position. Real work is a grind, and he preferred to incite ancient Hindu wisdom to inspire hotel managers and radial tyre distributors at McKendrick leadership forums, whilst biding his time for a top job.

McKendrick Consulting profits billions from uncoordinated, mismanaged, daily briefings on how to run departments, scandals, and shadowy back offices, from most US government officials. Typically, the consultants just cut and paste from old presentations, but upon receiving DARPA's brief, they decided to haze the new guy.

Keen to impress, Ken Bowman went to work, scribbling on a whiteboard in his small office for hours, taking fastidious notes and grouping things. Government complexity is overwhelming,

so he came up with five categories to compartmentalise activity. He determined the most relevant division of responsibilities to be Politics, Economics, Social, Defence and Environment.

Instead of just reeling off cyclic GDP, inflation, and unemployment figures, Bowman thought government should be evaluated on a broader spectrum of accountability. To simplify and make the categories comparable, each would be scored from zero to ten, and given equal weight. To determine scores, like blue-chip fund investing, or fantasy football league, he employed indexing. Twenty factors, evaluated, weighted, and added up to a single score, to make categorical performance easy to understand, forecast and improve upon. No single influence was to be worth more than five per cent, per best practice indexing.

What's more, he thought, countries should choose their own input factors to reflect local conditions. His job was to provide a platform to evaluate policies and predictions. Rational, unbiased policy assessors better understood their country and government, and should therefore determine the category index factors, he concluded.

For example, Chinese economic data is fake and useless because GDP numbers are concocted by provincial officials to meet assigned targets. To determine China's true *Economic* health, officials could analyse electricity consumption, rail cargo and bank lending, among other factors, which can't be forged as easily. Rather than preaching freedoms gained long ago in the West, America could evaluate its *Social* conditions with child poverty, Gini coefficient inequality, gun murders and black incarceration measures, which were largely irrelevant to Australia's cooked, climate-besieged *Environment*, weighed against coal exports fuelling a Chinese *Economic* juggernaut burning the world to oblivion.

Bowman was inspired. He worked late into the night,

converting his notes into PowerPoint slides. At 6:32 am, he sent an email to his boss, with a polished plan attached and went home to sleep. Three hours later, he received a reply commending, 'Great Work!' and advising Bowman to send the report directly to the client with no further discussion required. Bowman doubted he read it but was nonetheless pleased the proposal was approved.

At 10:01 am on November 24, 1988, DARPA received an email from Ken Bowman of McKendrick Consulting, detailing his new strategic framework for government policy and outcome prediction. It was titled, 'The Bowman Standard'.

Bowman showered and left his apartment to return to work. Waiting for a cappuccino at a street stall, he pondered a career as a presidential advisor or a job in national security, thinking his brilliance would spur a recruitment bonanza from government. He considered power over money and decided he wanted both. Wallowing in self-admiration and hope, he walked towards his office in downtown Manhattan. His optimism blinded him from the fifteen tonnes of bus that smashed into the side of his face and pureed his body into a sticky mush on the front grill. As he slithered on the pavement, The Bowman Standard lingered in inboxes, soon to determine the fate of superpowers.

# CHAPTER 1

NOVEMBER 24, 2012

## **9:53 am. Central Planning Office, Beijing, China**

The break room is dim, with white plastic chairs neatly placed under faux wood laminate tables running perpendicular to a small kitchen featuring a lonely sink. Harry plops tea into two mugs and pulls down a tap to let a slow, creaking stream of boiling water trickle. He passes a mug to Edwin, and they settle at the head of a table to gaze out an internal window overlooking a fluorescent-lit cubicle farm and three hundred of their co-workers toiling over agricultural logistics for the southeast region, in Department 87-D. Supervisors lurk and shoot annoyed glances, offering a constant reminder to return to work.

‘Some would consider it degenerative,’ Harry replies to Edwin’s suggestion.

‘Maybe, just one time there could...’

Edwin spots an encroaching co-worker and changes topic, lest they be accused of subversive conversation.

‘Quarter two, sorghum planning, much prosperous.’ Edwin sighs, nodding to a woman in her fifties who doesn’t acknowledge him as she walks past.

‘Much glory to great working people,’ Harry replies, with his



standard banal non-descript response. He sips tea and examines the leaves circling the bottom of the mug. Unable to read them, he concludes nothing.

With the looming threat unwrapping her sandwich four tables away, Edwin continues softly, 'Cultural norms are shifting. People now accept this sort of thing. If you... C'mon.' Another woman in her fifties walks past and interrupts their conversation by glaring at Harry.

'Innocuous banter regarding sports,' Harry assures her. 'Go local team.' She diverts her stare and walks past to join the other woman closer to the sink.

Edwin sips tea and pretends to consider something Harry fake said. The women eat and no longer pay attention to them, so he returns to his explanation. 'All we need is one large...'

'Holy shit, that's Comrade Wang,' Harry interrupts. He instantly recognises Mr Wang, a thoroughbred Chinese Communist Party apparatchik, boss of the building and block, architect of China's superpower ascendance strategy.

Mr Wang frames himself in the doorway for a few seconds, believing it makes him memorable when entering any room. He scans the bleak cafeteria and locks eyes with Harry who nearly snaps the handle off his tea mug in fear.

'Who?' Edwin asks, turning to the door.

Mr Wang, 56, always wears a black Givenchy suit with black loafers and a crisp white shirt. Today he complements his outfit with a pink handkerchief and matching tie. The youngest member of China's inner circle, he is the boy genius strategist for two previous presidents and recently re-appointed Head of Policy. Obsessed with retaining power forever, he tries to preserve a youthful image by having his hair dyed jet black once a week and his skin lasered annually to remove wrinkles.

‘Harry Chan and Edwin Liu? This is you?’ Mr Wang barks as he approaches, waving a finger between them.

Harry stands abruptly and bows. ‘Hello, sir. Yes, I am Harry Chan,’ he says and bows again. He extends a hand which Mr Wang ignores.

Edwin does not recognise Mr Wang and remains seated. ‘Ed. Hi,’ he says and shoots him with his finger.

Mr Wang examines them and says, ‘Very well. Come with me.’ He signals for Harry and Edwin to follow. ‘And get your stuff, you no longer work here.’

Edwin remains seated. Harry slaps his leg. ‘That’s Wang. Wang!’ ‘Narrow it down for me?’ Edwin sips tea, keen to annoy Harry. ‘Boss Wang.’ Harry points to the roof.

‘Oh, yeah. He looks better on the posters.’ Edwin points to the door. ‘Shall we?’

They dash from the breakroom to their cubicles, stuff their laptops into their bags, inspect their desks for personal effects, find none, and follow Mr Wang with a pack of cronies in full pursuit. The group enter a lobby and Mr Wang waves for Harry and Edwin to follow him into a lift. A young woman reaches in to press a button and darts out of the way as the doors close.

Harry Chan, 29, of medium height, build and looks, attended a mid-level university, and graduated to a job in the Central Planning Office, where he has worked for the past eight years. He makes an average salary and lives alone in a small apartment in Beijing’s political district. Harry puts in a bare minimum eight bureaucratic hours a day and spends his free time gaming, drinking beer and mastering his Brier Score, a measure of predictive accuracy, through online tournaments and intensive study. Last month, Harry entered the China Vision Challenge, a CCP forecasting tournament and achieved top scores.

Unbeknownst to him, Harry has been classified by the Chinese government as a super-forecaster.

Edwin Liu, 23, is one size smaller than Harry, with a trendier haircut, and lives with his parents. He pursued no formal education, having overslept the day of university entrance exams, and began his career selling light fittings for his uncle in suburban Beijing. Between bouts of bar hopping, Edwin encountered the concept of scenario prediction five years ago while trying to impress people. He felt his non-bias for the first time, voraciously consumed strategy theory and, soon after, met Harry on an online discussion forum. They struck up a friendship over a shared love of prediction, leading to Harry finding Edwin a job where he worked, at the Central Planning Office. When Edwin isn't prancing around Beijing as its most prolific hipster dandy, he trains for the China Vision Challenge, which recently designated him a super-forecaster.

The doors open on the 39th floor to what appears to be a 70s-style cigar lounge: a dark red cavern full of garish pieces of art so old, ugly, and primal they must be priceless. Angular, artificial light cuts through the antiquarian air, landing on a large wooden desk and illuminating portraits of party kingpins past. Gold trinkets and ancient vases line this replicate lair of a medieval warlord.

'My office,' Mr Wang explains and keeps walking until he reaches a door, adjacent to a red couch, flashes a key card and waves through Harry and Edwin. From garish opulence, they are directed to a modern meeting room with grey carpet tiles, bright white paint, a large TV screen, and a mahogany table surrounded by ten mesh-backed rolling office chairs, overlooking Beijing's skyscrapers. Cameras are positioned in the four corners of the room, their red LED lights blink menacingly.

Two women are seated at the end of the conference table. The larger and older of the two brushes off cracker crumbs from her flowing orange-and-blue flowery dress. She squirms in her chair, causing the armrests to bend. Her cherubic face beams with excitement.

‘Hi! It’s a pleasure to...’

She half stands but Mr Wang intervenes, ‘Enough!’

He straightens his arm, flips his palm downward, and advises her to ‘Sit.’ He snaps his fingers and points to chairs for Harry and Edwin to sit too, with no further introductions. Cindy smiles anyway and settles back in her seat, just incredibly pleased to be in a meeting with other people.

Cindy Chen, 62, from Chengdu, has two adult children with her husband, Don. Cindy retired from her position as a loan risk officer for China Central Lending Bank to become a self-appointed security consultant for Chinese military operations. She uses publicly available satellite data to recommend better missile and ship placements, pioneering open-source intelligence – a modern form of trainspotting – for citizen spies. Her accuracy attracted PLA attention who recruited, jailed, tested, and then deemed her a super-forecaster.

Edwin sits beside Harry but is distracted by the other woman, Jolene. She flicks back a head of thick, raven-black hair to reveal her beautiful face. She wears a red, sleeveless Prada dress with black heels, as though ready for a new car launch. Her body is sculpted from running and ancient Chinese grains. On facial recognition scans, she registers symmetrical perfection. Harry’s cheek twitches and Edwin swoons.

Jolene Cho, 30, achieved a top two per cent Gao Kao university entrance score, studied economics at Peking Technical University, and joined Ali Baba in 2008 to model pricing and forecast

computational power requirements. Jolene became interested in geo-political forecasting after attending a workshop, believing it would enable her to build a power base within the CCP. She trained for tournaments, won, and was recently designated a super-forecaster.

Mr Wang claps and announces, 'You are the winners of the China Vision Challenge. You are China's most accurate assessors of Bayesian mean and have hence been deemed super-forecasters. Congratulations.'

'Oh my God, this is the greatest moment of my life!' says Edwin. 'You train and try so hard, I mean. Thank you, sir, you...'

'Silence!' Mr Wang interrupts. 'As a result, you have been selected, by me, to lead an exciting new endeavour for the great working people of China.' He pauses for an uncomfortably long time, to the point where Jolene is compelled to speak.

'Comrade Wang, I dedicate my life to working for our glorious party. It is with deep honour and with true patriot love for our great working people...'

'Please.' Mr Wang raises his hand, like the Pope giving a blessing. 'We're adults. Spare me the bullshit unless you are worshipping me specifically.'

'Yes, your excellency.'

Mr Wang sips a mouthful of tea and places the cup on a saucer, which is whisked away seconds later by a near-invisible attendant.

'In the last decade, China has pulled three-hundred-and-fifteen million people from abject poverty, increased GDP from \$1.4t to \$8.5t, thirteen per cent of the US to fifty-two per cent, moved GNI from \$3,164 per year to \$11,140, 8.5 per cent of the US to twenty-one per cent. In 2000, we exported \$272b and today it's \$2.2t. We own \$26t in foreign assets, up from \$2t. But we're done selling out at all costs for our customers' benefit. We scurried

for a cash pile to elevate our people, sacrificing their rights and the environment in the process, and now we're a middle-income country, wealthy enough to build institutions for global political influence, competitive defence deterrents and monetary power. China must now acquire the characteristics of a superpower,' he says.

He raises one finger, and the tea attendant swiftly pours and serves him a fresh cup. Mr Wang examines the group who sit motionless and attentive. He sips.

'But what is a superpower? Not just defence, otherwise Russia would be one. No, to measure a superpower is to evaluate a complex organism, with many layers of measurement, but structured in such a way to generate comprehensible objectives, a scorecard, be that as it may. Fortunately, there is one superpower, who use such a system.'

'We're China, copy America. Got it,' says Edwin, hoping to impress, but Mr Wang does not make eye contact.

'WWAD?' Cindy tries. 'What Would America D—'

'Copying is the Chinese way, so yes,' Mr Wang replies. He adjusts his tie and studies the group. His breathing is steady, his gaze subdued.

'Amidst the chaos of the Bush wars and economic meltdown, American leaders knew they were on a path to permanent self-destruction. Partisan politics poisoned economic rationality and made social cohesion impossible. But government business still had to be done. A new system was needed to advance the country, irrespective of inconvenient voters and plodding politicians. And so, in 2008, America's kings of industry and bureaucracy met at their secret Bohemian Grove for their annual pow-wow, bringing with them reams of consultants, academics and data packed with rationales about how to evaluate and progress their country.