



Why experts are better than algorithms

Description

Why are experts inferior to algorithms? This is the question posed by Daniel Kahneman in his influential book *Thinking, Fast and Slow*. Kahneman argues that in many cases mechanical procedures provide a more reliable way of making decisions, a view that ostensibly challenges the tenets of philosophical pragmatism. The central thesis is that expert judgement involves taking a whole situation into account, a process that can't be reduced to method.



The book provides a humbling account of how often experts seem

to get it wrong. More precisely, an expert prescribing a course of medical treatment, appointing

someone to a job, awarding a music prize, or deciding how to invest money, on average performs no better than when someone with moderate expertise blindly follows a procedure.

You can assess success in terms of whether and how soon the patient recovers, the new recruit goes on to be promoted, the prizewinner produces a series of hits, or the investment yields a return.

The procedure adopted of course is designed from a base of expertise, but once formulated can be trusted to perform at least as well, often better statistically, and with much less cost, than relying on case-by-case judgements made by individuals or teams of experts.

According to Kahneman, supporters of expertise claim that in dealing with individual cases they are treating the interpretive situation *holistically*, taking account of the whole person or situation under investigation, and looking for marginal clues that would go unnoticed by non-experts or algorithms.

For Kahneman such holistic talk simply acquiesces to the dictates of “fast thinking,” that crucial but error-prone human capacity to make rapid judgements often described as “intuition.” He argues that claims to holistic expertise obscure several limitations of human judgement.

Thinking too fast

Here are some of the ways Kahneman thinks fast thinking lets us down.

- Fast thinking is not very effective in unfamiliar circumstances.
- We humans have a built-in tendency to be overconfident about the information we have to hand or need in making a judgement.
- In complicated and difficult situations we default to fast thinking mode and confidently jump to conclusions on the slimmest of evidence, i.e. we treat complex problems as if they are simple problems.
- We are prone to the halo effect, e.g. if someone is physically attractive, in the absence of other information, we’ll assume they are also good at their job.
- When taking decisions most of us are biased to be optimistic, e.g. in setting up a business we’ll ignore the statistics indicating just how low the chances of success are.

The main setting in which the dispute between the exercise of holistic case-by-case expertise and a more algorithmic approach is in clinical reasoning as explained in a seminal book by psychologist Paul E. Meehl. Should a doctor predict a patient’s recovery on the basis of the doctor’s own optimistic assessment or recall the statistical likelihood of recovery? Kahneman, following Meehl, says you should put more trust in statistics and mathematical statements about probabilities than in the “holistic” judgement of a clinician.

What’s wrong with algorithms

Kahneman’s position is engaging, with many helpful insights about the foibles of human nature, but the limitations of his argument are fairly obvious.

People don’t necessarily want or need the best decision. They want *accountability*, which often involves consensus. Looked at cynically, people want to know who to blame when things go wrong. Procedures are a great way of avoiding accountability.

Decisions that are sub optimal for an individual may be beneficial for the community at large. It's good that would-be entrepreneurs exist, even if most of them fail. Without the risk-takers and failures we wouldn't have those who succeed and innovate. As well as entrepreneurship perhaps we should have courses in how to deal with failure in business, as statistically that's what most entrepreneurs specialise in.

We are sociable creatures. Not only do we make decisions collectively, but meetings, dialogues between clinicians and patients, employers and prospective employees, amongst recruiters, and on judging panels are crucial for the life of any community, including among experts. I sometimes think that the outcome of a meeting is less important than the fact that people came together and exchanged views, feel involved in the process, and sign up to an outcome even if they disagree with it, or the decision turns out to be sub optimal. Solidarity trumps optimal decision making.

Outcomes are not simply the result of a lone decision. A selection panel may fail to recruit the best candidate for a job, but it's sometimes the work environment that determines how successful the new recruit turns out to be. Entrepreneurial decisions are also multi-faceted involving a cascade of sound and unsound decisions. In any case, how can we ever be so sure about what constitutes a successful outcome?

Wicked problems

According to Kahneman, when confronted with a difficult question we convert it into something simpler with which we are familiar, and answer that question: e.g. Q: Is David Cameron an effective leader? A: Well he sets a good example by riding a bike. A wicked problem (questioning a politician's performance) gets converted to a tame problem (something we can see and identify with). But Kahneman's book is subject to the same accusation. It is full of highly important, but tame, decision making problems, for which we have little difficulty recognising the quality of an outcome: a cure, a promotion, a hit song, a higher profit. Most problems are *wicked*, and not like that.

Wicked problems are typically ill-defined, with no easy measure of success, and sometimes motivated other than by success: choosing a career, a life partner, a PhD topic, deciding whether to build a new high-speed rail service, or answering questions like, "Can Scotland go it alone?" Kahneman is right in observing that we easily replace the answer to a difficult question with the answer to an easier one, e.g. the answer to "Do you like Scotland?"



References

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- Kahneman, D., *Thinking, Fast and Slow*, London: Penguin, 2011.
- Meehl, P.E., *Clinical vs. Statistical Prediction: A Theoretical Analysis and a Review of the Evidence*: University of Minnesota Press, 1954. Available [online](#).
- Rittel, H. and M. Webber, "Dilemmas in a general theory of planning", *Policy Sciences*, 4, 1973, 155-169.

Note

- Of course giving priority to algorithms succumbs to the criticisms advance by phenomenologists and critical theorists against the insidious nature of calculative reason: it marginalises whatever is not susceptible to calculation, it bureaucratises knowledge, supports acquisition and conspicuous consumption as indicators of success, and becomes a tool used by the powerful to subjugate the weak.
- Note that Kahneman's idea of algorithms is loose. Algorithms are human-designed simple heuristics. For example he recommends that in deciding candidates for a job you could do worse than formulate a list of requirements, score each candidate against the requirements and pick the candidate with the highest score. Once decided then stick rigorously to the procedure. It's a human process, but less prone to being swayed by extraneous factors, such as appearance, mannerisms, and performance under formal interview conditions.
- In the preface to the 1996 reprinting of his book, Meehl is at pains to point out that he's not saying as his critics assert that "objective psychological tests predict better than clinical interviews" (p.ii). It seems the critics cannot get it quite right. There might be another heuristic in play here about demanding greater precision from your critics than you do from your own presentation of the case.
- Also see blog post on [wicked problems](#), and blogs tagged [hermeneutics](#).



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