

Can we even *be* rational?



We all expect that we act rationally, don't we? We don't belong to that group of people influenced by emotion and mis-information – we're better than that because we know about irrationality. We've even read all about behavioural finance and economics!

For millennia, philosophers have considered that knowledge, as opposed to opinion, required the specific element of certainty. Unfortunately, certainty is often fluid – just ask the early iterations of the flat-earth society. Pythagoras is arguably believed to have 'discovered' that the earth was probably round about 500 B.C. However, it wasn't until the 1500's that Magellan circumnavigated the globe to really 'prove' it. There are still people that believe it!

I guess the little history lesson above is just to set the scene about how difficult it is to be truly rational as the circumstances, evidence and even history can change.

Gerd Gigerenzer suggests that there might be four separate approaches to rational thinking:

Unbounded Rationality. Here the person understands that the world is not actually fully predictable and that they are likely to make errors. However, they look for the best (optimal) strategy that 'ticks' some important boxes. This is the actually the basis for Bernoulli's concept of utility maximisation. His concept of optimal is interesting in the context of the Best Interest Duty because he suggests that there may be a number of 'best' and certainly not a single one. It's a nice theory, but no-one can be really unbounded... We stop when we think we have the best outcome.

Optimisation Under Constraints. This approach allows for the normal constraints on humans such as limited mental processing ability, limited memory or even the environment the decisions are being made in. 'Optimisation under constraints' models one or more of the constraints. Fundamental to this is the process of searching for information including where to search and when to stop searching. Stigler uses an example of someone looking for a used car who keeps looking for the best one until he realises that the search stops producing useful information. Unfortunately for many of us, we stop when we get an answer that fits our expectations. We stop when we think the costs-benefit of the search has reached its limit.

Logical Irrationality. This is where we introduce Kahneman, Tversky, Gilovich and Griffen et al. The challenge is to even think that humans are rational and its main goal is to focus on understanding the cognitive processes that produce valid as well as invalid responses. It assumes that there are 'norms' for rationality but we drift away from these norms for different reasons. We might think of those who still believe that Donald Trump won the US election.

Ecological Rationality. Perhaps best explained in the context of Simon's 'Bounded Rationality' where the decision-makers environment creates limits to what they can even consider as options. This limitation is created by their environment (in the broadest sense). It is the starting point for

considering the impact and process of heuristics which Gigerenzer suggests relates the mind to the environment (ecology) as opposed to the mind and logic.

This is all fine and academic, but so what?

Well, it is designed to show just how difficult it is to be truly rational.

Even Markowitz, the Nobel prize winner who developed our present day theories on portfolio optimisation, applied a simple '1/N' rule to his personal portfolios. Imagine that his portfolios were simply allocated based on how many assets he was considering for the portfolio!

We've spent a lot of time and effort over the past years trying to overcome biases and heuristics on the basis that they create errors, and they do, but often they produce an outcome that is OK. Not optimal, but OK.

A study by DeMiguel, Garlappi and Uppal in 2006 studied the 1/N portfolio in detail and found it to perform 'at least as well' as the optimised portfolios. In a world of uber-optimised (algorithm-generated) portfolios how could this be possible? It seems that the computational power is not the issue, it is the robustness of the data process. Optimised portfolios performed best when back-tested but worse when predicting the future.

In a similar way we need to re-consider overconfidence bias. I've certainly been guilty of suggesting that overconfidence bias is the 'mother of all biases' because it appears to be so common, but there is growing evidence that it is not as bad as was first thought. A number of researchers have been considering that this is more of a 'mis-calibration' error.

Consider the question which is further north – New York or Rome? While the correct answer is actually Rome, many people would use temperature as a proxy for latitude and consider that New York is colder and therefore further north. People are 'fairly sure' of their answer because of this and so their confidence is high.

What this suggests is that many so-called "irrational" behaviours are not failures of reasoning, but mismatches between the question being asked and the environment in which the judgement is formed. The confidence shown in the New York versus Rome example is not evidence of careless thinking; it is evidence of a fast, experience-based heuristic being applied to an unfamiliar problem. Temperature is a reasonable proxy for latitude in everyday life. The error arises only because the task violates the normal structure of the environment in which the heuristic evolved.

This distinction matters because much of behavioural research evaluates human judgement against idealised mathematical or statistical benchmarks that are rarely encountered outside the laboratory. When people fail to conform to these benchmarks, the conclusion is often that humans are systematically irrational. Yet from an ecological perspective, this conclusion may be too harsh. If a heuristic produces good outcomes most of the time, with minimal cognitive effort, then its use may be entirely rational within that context—even if it occasionally produces a technically incorrect answer.

This also forces us to reconsider what we mean by "better" decisions. Optimality, in the classical sense, assumes stable preferences, complete information, and a well-defined objective function. Human decision-making rarely satisfies these conditions. Preferences shift, information is incomplete or ambiguous, and objectives are often plural, conflicting, or poorly articulated. In such settings, satisficing—settling for an outcome that is "good enough"—may be more adaptive than relentless optimisation.

Importantly, awareness of bias does not immunise us against it. In some cases, it may even create a false sense of superiority. Knowing about heuristics and biases can lead individuals to believe they are less susceptible than others, a meta-bias that reinforces overconfidence rather than correcting it. This is particularly problematic in professional domains, such as finance, medicine, or law, where confidence is often rewarded and uncertainty is uncomfortable to admit.

The challenge, then, is not to eliminate heuristics or strive for an unattainable ideal of perfect rationality, but to understand when different modes of thinking are likely to serve us well or poorly. Rationality may not be a fixed trait that people possess or lack, but a dynamic interaction between cognition, context, and constraints. From this perspective, the more interesting question is no longer “Why are humans irrational?” but “Under what conditions do our decision strategies succeed or fail?”

That shift reframes rationality not as a benchmark to be met, but as a tool to be adapted.

Dr Paul Moran CFP®