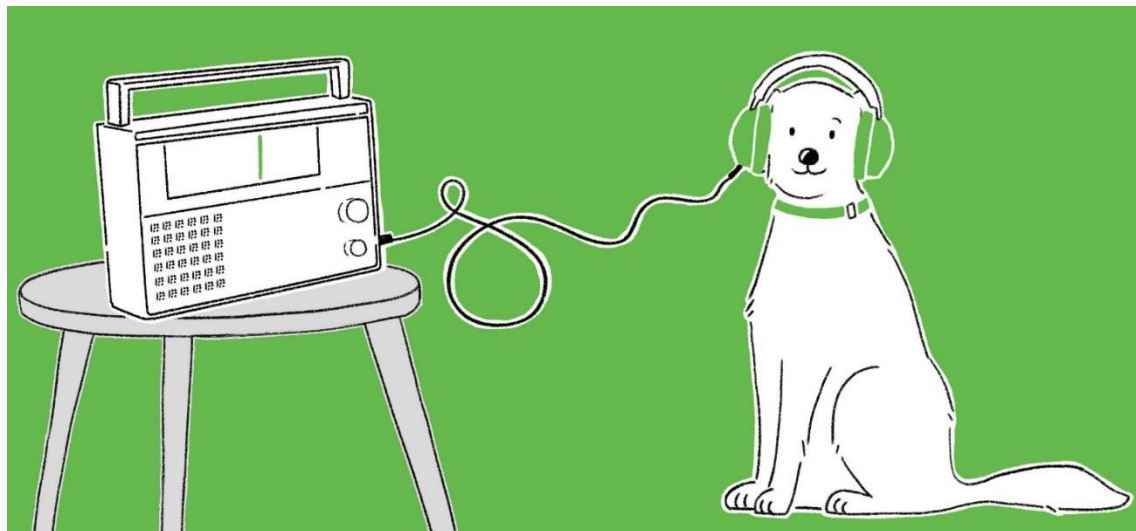# Ruffer Radio

Episode 7
Mind over matter? The uses and abuses of behavioural economics

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Rory McIvor

Welcome to Ruffer Radio. A series of podcasts in which we'll be exploring the investment universe, and sharing our interpretation of what's going on.

Shortly after losing the bulk of his personal fortune and an ill-fated investment in the South Sea Company, Sir Isaac Newton professed that he could calculate the movement of stars but not the madness of men. Newton fell foul of investment behaviour that, some behavioural scientists claim, awareness and careful study can help us avoid.

So what do we now know about how we think and invest that Sir Isaac Newton did not? Is the discipline of behavioural science a saving grace for investors or are we kidding ourselves? And in fact, the chasm between knowledge and wisdom remains as wide as it ever was.

I'm Rory McIvor, and today I'm joined by Investment Director, Lauren French, and Research Director, Andrew van Biljon who won't so much be providing the textbook 101 to behavioural finance but instead will be looking at how it is currently applied. And most interestingly the shortcomings of behavioural economics and what we still don't know.

Lauren, Andrew, thank you very much for joining me. Lauren, first off why are we talking about this?

Lauren French

Well, behavioural finance has become increasingly popular in recent years. And it looks at how we make decisions but particularly around periods of extreme uncertainty. And we're in a historic period in markets with some extraordinary moves. Additionally, we've seen some of the

insights from behavioural science being deployed into addressing the response to the covid-19 crisis, so now feels like a great time.

Rory McIvor

Okay. And I promised that we wouldn't linger on first principles for too long, but Andrew, could you just frame the discussion a little bit for us? I've used the terms behavioural economics, behavioural science, and behavioural finance interchangeably (rightly or wrongly). But how should we define behavioural finance?

Andrew van Biljon

Yeah, well, it's a discipline concerns itself with deviations from rational choice theory, you know, whatever that may be. But it specifically looks at these types of decisions where people might show a lack of rationality in their decision making. It also requires these types of deviations to be very widespread so lots of people do it and it's very common. The deviations are also supposedly very stubborn. So they're very persistent in people, people will do them again and again, and they keep popping up. And they also incur substantial costs for people. So by making these deviations from rational choice, we end up costing ourselves. And finally as sort of a consequence of all that, the theory goes that this then justifies intervention. Whether that be on a sort of regulatory level or even on a state-wide level.

Rory McIvor

And this state intervention in the age of covid-19 really is at the forefront of our minds. So I hope we can maybe come on to that a little bit later on. Andrew, what's the thrust of your thinking on this topic, and what are you going to argue today?

Andrew van Biljon

Well, I think there's three things we'll hopefully try to get at. But the first is what does behavioural science say about us as decision makers, you know, are we any good at it? Or are there these widespread problems in how we approach problem solving, and do we need to be helped? The second thing is are there any shortcomings of the behavioural approach? And if so, what are the alternatives, what else can we use to measure how good we are at making decisions? And the final thing then is are there any takeaways for the individual investor to aid their decision making? Whether that be in markets, or in life, or generally.

Rory McIvor

Central to behavioural finance is this idea of bias. Identifying bias and then overcoming bias. Are biases bad, Andrew? And if so, which is the baddest?

Andrew van Biljon

Well, the gist of the literature is that they definitely are bad. You know, and it goes back to what I was saying about the sort of pervasiveness and the degree of cost that it imposes on us. But if you go on Wikipedia, there are 175 biases to choose from. So it's quite a prolific area of research. But perhaps we should start with a simple example and one it's called over-confidence bias. It's exactly what it sounds like that people tend to be over-confident. But perhaps, let's look at a specific example there. And it's a question that researchers will put to people. Which city is further south? Is it New York or Rome? Now there might be some geographers out there who know the answer to the question for a fact. But most people won't be completely sure, but they'll be willing to have a guess. And what researchers found was that the percentage of correct responses from people was always lower than their expressed confidence in their guess. So there

was sort of this degree of overconfidence there all the time. And what they also found on the other end of the spectrum was for that low confidence guesses the accuracy of their guesses was actually higher than you otherwise would expect. So there was what they call the 'hard easy effect' where we are under confident when faced with what we think are hard questions. And overconfident when we're faced with what we think are easy questions. So what's going on there is that people couldn't seem to match up their degree of confidence with the accuracy of their guesses.

Rory McIvor

It's helpful for the purposes of this discussion to talk of people in a very general sense, Lauren. But is it necessary to distinguish between people and markets in aggregate, and then, on the other hand, the individual investor?

Lauren French

Yes, absolutely. And I think it's an important point to discern here that we're talking mostly about cognitive flaws that we have as individuals. And Andrew's already mentioned the long list of these biases. And they can manifest themselves in practice in many ways. One example, we can hold onto losing positions for too long impacted by our loss aversion. Our prior experiences of losing money and the hope that we have that things will change. Or even our status quo bias where we favour doing nothing if faced with a difficult decision. And we can all place too much worth on judgements from a small amount of easily available data. Fixate on some small details and make rather large generalizations. And this is known as representativeness bias. It can be seen in the stock picking, in views of a company, and retail investors can be based more on emotion and how one feels about a company, its brand power, because others around have also had the success and they talk about it at dinner parties, rather than the numbers themselves.

And linked into this is our anchoring or our aversion biases, you know, checking individual investments on a frequent basis has been seen to lead to poorer decision making. Those that closely follow the daily fluctuations really feel the pain of frequent small losses and this exceeds the pleasure of the equally small frequent gains. So this is why your portfolio manager would write to you on a quarterly basis and might encourage you not to worry about the daily fluctuations that you'd see on the online portal, for example, but to absolutely think of the things in the long term.

Rory McIvor

And at Ruffer one of the building blocks to the investment philosophy, is this idea that clients hate losing money more than they like making it. Andrew, in the 2019 Ruffer Review you wrote about starlings, as in the birds, and casinos to help illuminate one of the core theories of behavioural science. So how does the Ruffer view tally with prospect theory?

Andrew van Biljon

Yeah, it fits quite well, and what Kahneman and Tversky did back in the 70s was to try and get people to actually perform experiments to figure out how they are making decisions and how they approach things. And what they found was that we are very risk averse when we are faced with small gains and large losses. So we're kind of afraid of disappointment, of not getting those small gains, and we're also afraid of those big scary drops that might impact us in a big way. They also, on the other side of the coin, found that we take excessive risks to avoid small losses, and also to try and gain lottery ticket type returns. So those big wins that are very unlikely and infrequent. So that all doesn't quite fit in with ideas of what we might call rationality, and what

happens when you combine the prospect theory with kind of perhaps more classical views of the market. So we could take the capital asset pricing model or the equity risk premium approach. Using prospect theory in those actually makes them fit the data that we see in markets much better. So it does seem to aid us in trying to figure out what's going on in the real world.

Rory McIvor

And that's a very real, tangible and useful application of behavioural science theory in actually aiding investors' risk assessment and ultimately their decision making. But Lauren, what are the issues with behavioural finance and if I were to ask provocatively perhaps, why does it matter if we're all wrong about the same thing?

Lauren French

Well that's the big question here really. You know, we've explored how behavioural finance would have you believe that we're all irrational, but we don't all have these same biases ingrained in our brains, they don't all make us err in the same systematic way, like a hard-wired visual illusion. Let's go back to the Rome versus New York example that Andrew mentioned. How we actually try to make that decision when asked, the question is not just based on our gut intuition but on some intelligent inferences that we might make, based on factors such as temperature and our prior knowledge, and our intelligent brain makes unconscious inferences. And this is evident with our vision. You know, if the brain relied solely on forming pictures based on just the information that it receives from our eyes, then our vision would be impossible. Our brain manages to build a 3D object from two dimensional retinal pictures, and there are many other examples which just show quite how genius the human brain is.

Andrew van Biljon

Yeah, and I think the difficulty that behavioural studies ultimately face is figuring out whether we're actually measuring behaviour or whether it's something else, you know, like how Lauren's just spoken about inferences, and a nice example comes out of mean reversion, which suggests that a lot of the patterns that we see in these studies about behaviour could actually just be explained statistically. So, you know, if you take extreme cases as your starting point so, for example, in the over-confidence example, if you take extreme over-confidence or under-confidence as your starting point, if you then estimate from that point, you'll inevitably see some reversion back towards the average.

So whatever you're trying to estimate will appear less variable, so they refer to the hard easy effect. Actually, that could just be purely a consequence of the statistics behind whatever they're measuring. So I'd say a lot of the patterns that come out of behavioural studies can actually be explained purely by this sort of mean reversion phenomenon. There are also a lot of problems with the behavioural experiments in the way they're conducted. There are base line issues, as I've already mentioned, is rational choice the right thing to be comparing to and to we even know what rational choice is? A lot of the samples are often very small in the experiments, so they're not representative of people in general, and often random error can be mistaken for hard-wired error. So if it's just a couple of people making a random error that's not a problem, especially if it's not hard wired and widespread. Errors are often confused for inferences, so people aren't making mistakes. They're just making inferences about what they see and trying to answer the question and make a decision. And a lot of the studies also are not easily reproduced. People have tried to do them again and get the same results but weren't able to. And I think, kind of fundamentally, there's also the question of whether people are facing risk or actual true uncertainty. Now what do I mean by that? Risk is generally considered something that's quite

well defined. You know, we understand what the downsides are and how likely those are. But true uncertainty means that we don't know what those actual downsides are, and we don't necessarily know how likely they are either, and those are kind of very different phenomena and people will make very different decisions whether they think they're faced with risk or actual true uncertainty.

Lauren French

Yeah. Linked into that uncertainty point, there's the other issue of framing and how we assimilate and analyse information that we're given, particularly around uncertain issues. People tend to avoid risk when a positive frame is presented, but seek risk when a negative frame is presented, and this can be seen in medicine. Let's take a patient being given options on whether or not to have surgery. By using some careful wording, the doctors can frame the options. So if you're told that surgery has a 10% death rate or a 90% survival rate, you might make a different inference and by carefully selecting how to word or frame this to you, the doctors can effectively communicate with you indirectly their beliefs as to whether the surgery is substantially beneficial to you or not.

Rory McIvor

So intelligent inference, mean reversion and framing are all important issues to consider before leaning too heavily on any insights that we might glean from behavioural science. Andrew, you wrote about our intuitions about randomness in this year's Ruffer Review. Could you just elaborate a wee bit on that?

Andrew van Biljon

Yeah, absolutely, and it's fascinating because it turns out that our intuitions about randomness in quite a few examples are actually very good, and I think a nice example comes to us sort of from the US and the sport of basketball and what they call the 'hot hand' effect. It's this idea that if a player has made a few baskets in a row, they're more likely to make the next one because they develop this 'hot hand', their eye gets in and they start to make more and more baskets. Now if you ask any sort of coach or NBA player, they'll tell you that that effect is very much true, and they see it all the time. But some researchers in the 80s set out to test it on a formal basis, and what they did was they looked at the frequency of a player making a basket after they'd made three in a row, and they found out that that frequency was actually the same as making a miss after making three in a row. So their conclusion was that the hot hand effect is a fallacy. All these people have been wrong all these years and we've just been deceived by our sort of biases. But some more recent work has actually figured out that they were looking at the wrong base line. So if you take a given sequence and so just looking at the baskets the players have been shooting, the odds of you seeing four baskets in a row are actually quite a bit lower than you seeing three makes and then a miss. So you shouldn't be testing whether the two are equal. The bar should actually be much lower for that fourth make, and if you see that being beaten then you know the hot hand effect is actually very much real, and all those players and coaches have been vindicated.

Rory McIvor

I'll try not to exhaust the analogy too much, but over the course of the last decade I suppose you could say that we've seen some stocks exhibiting hot hands, the LeBron James and Michael Jordans of the stock market, whereby year after year their value rises in the minds of investors and their share prices gather momentum, seemingly unstoppably. In broad-brush terms, these

stocks have come to be known as momentum stocks. Can this broad momentum trade, Andrew, be explained by behavioural finance theory?

Andrew van Biljon

Yeah, well it often is, you know, and it's the idea that investors will chase the companies that have been performing well and dump the ones that haven't, and sort of create this momentum effect within markets. But the fascinating this is, you know, I just spoke about how the hot hand effect re-appears and is real when we consider the right baseline. Now some more recent research has actually done the same thing for momentum in markets and looked at what the right baseline is for trying to find momentum in markets, and what they discovered was that it's actually indistinguishable from randomness, and so if you're looking for momentum in markets, quite often all you're seeing is just a purely random process. Now that's obviously not great if you're trying to invest in the momentum factor, but there are probably two takeaways that we can really use here. The first I think is that blaming momentum purely on behavioural biases isn't quite right, and you need to be very careful if you're chasing it. And secondly, the truth is probably a mix somewhere between the two, so it's probably partly purely random and partly a consequence of people's investing behaviour, and I guess the ultimate paradox here is that if there is a belief in momentum in the markets then that will actually result in it happening, as people chase those winners and dump those losers.

Rory McIvor

And that I suppose gives rise to a very virtuous circle, virtuous at least for holders of these so-called momentum stocks. Andrew, what are the main limits to the application of behavioural economics?

Andrew van Biljon

Yeah well, for me I think it's that, you know, explaining things using behaviour could be valid and it could be true but, you know, we should first see whether there aren't simpler and more fundamental explanations around, and you know we can take the example of prospect theory which I spoke about a bit earlier. And in terms of that if you just sort of say that investors are simply trying to maximise the growth rate of their wealth, you'd actually see very similar patterns emerging to what the prospect theory said we should see as well. So you're not appealing to any kind of behavioural quirks or biases in people. You're simply just giving them a realistic objective, and that results in the exact patterns that we see, and we can kind of extend that because, you know, the fact is that we still don't really know how the brain itself works, let alone behaviour or our motives and what sits behind them, and there's actually a neuroscientist, Karl Friston, who lives in the UK, and he's come up with what he calls the 'free energy principle', and it seems to be a very promising avenue for trying to explain what we see in a lot of these complex systems.

What he says is that we have models of the world in our head, and we update those models when we're greeted with new information. When we see something that doesn't quite fit with our model, we'll update that model and then use that in the world as we go forward. So what he is basically saying is that we try to minimise the surprise we see in the world. And it turns out that if you use that framework, it's actually very effective for explaining a number of quite complex phenomena that we see. He used it in modelling the covid pandemic last year with quite impressive results, and I know it's being applied to a number of other fields as well. So I think, leaning on behaviour too heavily before you actually need to, or before it's necessary is perhaps a bit counter-productive.

Rory McIvor

At the very beginning of this episode we touched on the idea of behavioural science being used as a justification for, or at least an explanation of, increasing state intervention in our lives, and one example of this is the Nudge Unit which was established in the Cabinet Office in 2010 by David Cameron's government, and the idea here was to apply behavioural science to public policy. Now that would suggest that our behaviour is a problem. Lauren, do we need to be nudged into making better decisions for ourselves?

Lauren French

Well, under the guise of state paternalism, so the governments would have us believe, yes, and it's action that limits a person or group's liberty or autonomy, and it's intended to protect us from ourselves or to protect the population, and it implies that behaviour can be against or regardless of the will of a person, and nudging doesn't necessarily lead to nice consequences and it can be quite a controversial concept.

Many of the opinions that we form are just a matter of exposure to the message. A message that we hear repeatedly is one that we're more likely to believe because we spend so much of our time thinking on auto pilot. You know, political campaigns repeat messages to influence opinions, and sometimes without ever really presenting real substance. The UK government's approach in releasing data in response to covid, you know, rightly or wrongly, this has been discussed in this manner, ranging from the 'hands, face, space' slogan to nudge us all to engage in behaviours aimed at stopping the spread of the virus, to the extent that some have felt that they haven't been given access to the right information at the right times. But ultimately all of these measures were aimed at protecting, but the alternative is that a liberalist normal, you know, giving people all the information and empowering them to make their own decisions. And, of course, the concept of nudging or directly intervening to prevent behaviour, translates into markets. Andrew mentioned regulation earlier, but you can see this through the manipulation of the market makers acting as the overactive parent which ties into what we saw with then the power of the Redditt community recently, and the prevention measures that were taken to stop behaviour there, and you could really take this quite far, you know, the list is long and it goes as far as the provision of liquidity into markets to effectively calm them at times of stress.

Rory McIvor

And this cuts right to the core of modern political philosophy, and it's either wonderfully progressive and helpful or frighteningly Orwellian, depending on which side of the fence you sit. So what are the one or two things that we should bear in mind when thinking about behavioural finance? Andrew, perhaps you would take this first.

Andrew van Biljon

Yeah well, I think we're, you know, we're not perfect investors or decision makers, but a lot of the time our situation or intuition is actually very good, and we have a good feel for randomness, and we actually are very fast learners. You know, when we've seen a situation unfold a couple of times, we're quite good at updating our information and then being able to make decisions from there. And what I'd say I think is, the key is to try and understand the decision you're making to the fullest extent possible. Make sure you have the right data and that it's high-quality data, and if you don't feel like you have those things, then try and avoid that decision or at least minimise the consequences of it.

Rory McIvor

And Lauren?

Lauren French

Well we've established how behavioural finance can't replace traditional theory in providing us with all of the answers, but it can provide a complementary role in understanding markets, where ultimately humans, at least for the most part, are behind every trade. Now Daniel Kahneman said that each of us has an almost unlimited ability to ignore our own ignorance. We can make irrational decisions under pressure, uncertainty, selling in a panic at the worst possible moment, but as Andrew has said, we can still make intelligent inferences and rely on our experience and expertise. So behavioural finance views emotions as cognitive problems that need to be fixed and we're often advised to set aside emotions when we need to make decisions in response to investment. But I think that emotions can complement reason more often than they interfere with it, and the interaction between emotion and reason is mostly beneficial, and we can try to optimise this.

Rory McIvor

So Andrew, as a last word I'll have a stab at answering the very first question that you asked, which city is further south, New York or Rome? So I will don my deerstalker Sherlock Holmes-esque and deduct that I fly more or less west over the Atlantic to New York where at Christmas it's snowing, and I would fly south to Rome for a summer of sunshine. So I will say that Rome is further south, closer to the equator than New York.

Andrew van Biljon

Well you've used a number of very intelligent inferences there, Rory, and I don't think we can accuse you of any sort of overconfidence bias, but New York is further south than Rome.

Rory McIvor

Well there we have it. Some people's instincts less reliable than others. Andrew and Lauren, thank you so much for your time, and thank you for listening.

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