A discussion of risk, intelligence and trading

Are some individuals simply better at understanding and analysing risks and estimating probabilities than others? Alistair Evans of Qbasis Invest interviews Dr Dylan Evans, a pioneer in the concept of risk intelligence in individuals, who argues that this is the case and that firms that actively manage risk can benefit from understanding why.

The subject of risk is a fascinating one. So much of our lives is dictated by risk: relationships, choice of career, who we marry, where we live, even such trivial questions such as whether to take an umbrella to work in case it might rain later. Not only are many of us unaware of the influence of risk in our lives, it remains a somewhat intangible term that we often struggle to define. Hence, it may be one of the reasons we often struggle to manage it effectively.

Psychologists and philosophers have long tried to separate different types of intelligence, as many are not satisfied that measures such as IQ provide a full picture of how intelligent an individual may be. Whilst some argue that it is the most appropriate measure available for assessing general intelligence, others put forward the notion that IQ fails to account for equally important things such as emotional (EQ) or interpersonal intelligence.

Psychologist Howard Gardner, for example, believes that there are 8 different types of intelligence: bodily-kinesthetic, interpersonal, verbal-linguistic, logical-mathematical, naturalistic, intrapersonal, visual-spatial and musical. Psychologist Dylan Evans proposes that there is a 9th form of intelligence: a special type for thinking about and dealing with risk, something he calls ‘risk intelligence’. The reason for this, in his opinion, is that popular measures of intelligence such as IQ and EQ both fail to assess how good people are at judging risks and weighting probabilities.

Dr Dylan Evans received his PhD in Philosophy from the London School of Economics and has gone on to write several books on cognitive psychology, emotional intelligence and most recently on risk intelligence in the book ‘Risk Intelligence: How to live with uncertainty’. He is also the co-founder of Projection Point, a company that helps businesses, including some high profile private equity and hedge fund groups, improve their risk intelligence. The aim is that they become more risk-aware and therefore manage crucial business risks more effectively.

Evans is a colourful character and has spent the last few years interviewing some of the best gamblers in the world, many of whom have made gambling a highly profitable full-time occupation. Whilst the word 'gamble' often has very negative connotations, especially when linked to investments and trading, it is his assertion that we can actually learn a lot about the decision-making, probability estimation and risk management process from expert speculators and gamblers. The negative connotations are due to the over-emphasis on problem gamblers that, in his words, “is a bit like studying obesity and then neglecting haute cuisine”.

Making decisions about uncertain events is something humans have been doing for centuries and this process manifests itself elegantly in financial markets. The subject of risk has become a heavily debated topic in recent years and it is arguably due to poor risk management and probability estimation that so many high profile investment firms have blown up so spectacularly within the last two decades. More recently, during the credit crisis of 2008, risk managers were once again placed under the microscope thanks to the proliferation and subsequent collapse of mortgage-backed securities that lead to numerous bank bailouts.

Risk can never be eliminated but some, such as Evans, believe it can be managed more effectively. In this interview, Alistair Evans of Qbasis Invest (a systematic trend-following managed futures or ‘CTA’ investment firm) seeks to relate the subject of risk to the trading and investment universe and indeed to understand how we can all become better at managing risk in order to be more successful in our pursuit of profit. Is IQ or EQ a misleading or, in some cases, even a dangerous measure of how good a trader or speculator may be?
After reading “Risk Intelligence” it struck me that there are some obvious influences in your work such as Nassim Taleb. Who else are you influenced by?

Danny Kahneman is a big influence, a psychologist who won the Nobel Prize for economics in 2002 and has never actually studied economics! He has a book called “Thinking Fast and Slow” which is all about the decision-making process. He is one of the pioneers of the study of judgement and decision-making. I also follow the work of the evolutionary psychologist Steven Pinker.

A recent Deutsche Bank report defined risk as ‘exposure to change’. How would you define risk in terms of investing/trading?

I think the problem with definitions of risk such as this is that they are too vague, too general. I think risk is something that isn’t entirely under your control so it has some sort of random element to it that can leave you worse off or it can leave you better off. Unfortunately I think many people forget the latter! The term risk “management” is quite specific because many people make the mistake of thinking it is something they can eliminate it altogether.

Perhaps that is why in the investment industry, there is a gravitation towards straight-line equity curve / “1% a month” type return streams that appear to be “low risk”. What does this say about risk intelligence and the emotional make-up of typical investors?

I think that shows a bias towards trying to be risk averse but it’s based on this flawed idea that if we’re scientific enough and have enough rules, we can somehow eliminate risk altogether, which is nonsense. As I quote Clint Eastwood at the end of my book “if you want a guarantee, buy a toaster” and that’s about as good as it gets. Risk follows the waterbed principle, if you squash it down in one area it will just pop up in another area and if you follow all these seemingly wonderful rules such as VaR (value at risk) they will give you your nice straight line curves for a while but more often than not, when it does go wrong it usually goes horrendously wrong. I have a preference towards investments where the risk is more obviously acknowledged up front because then you’re not under any illusions and won’t be surprised by some black swan event if and when it emerges.

Let’s talk about asymmetric payoffs or return then. There is one particular hedge fund manager who expects that 95% of the time he will be wrong with his “bets”, yet he is still highly profitable in the long run. What does the fact that most investors / traders seek a high winning trade percentage say about risk intelligence and a need to be right all the time?

Well it just shows they’re not paying attention to the proper variable; that is the expected value and people need to move away from thinking that it’s about how often you are right but rather how much you win when you win. If you are only right 5% of the time but your average pay-off ratio is more than 20 to 1 then you’re going to be profitable in the long run. If you’re right 70% of the time and your average ratio is only 8 to 7 then you’re going to lose money. It’s amazing how many people don’t understand that, even people who really, really should!

This leads me on to your recent interview with Aaron Brown of AQR, where he alluded to the fact that the lack of experienced gamblers / speculators (who were familiar with assessing risks and probabilities) were largely absent from key risk management positions on Wall Street prior to and during the financial crisis. Given that risks were generally more quantitatively assessed during those periods, do you think that active, as opposed to passive, risk management is more important than ever?

The danger in this case was that it relies on thinking that you can just reduce everything to a few simple rules and one number. In the 1980s for example, if a trader went to his boss and said “I’ve already exceeded my exposure for the month or week but I want to take a bigger position in X can I have a bigger limit?” He would maybe have looked it up and down, thought about it more objectively, spoken to a few of the other guys on the desk and would then say yes or no based on a number of different inputs. In 1995 or 1998 however, he would have most probably simply said “what’s your VAR?”. Added to this, he would probably have been a different person, i.e. an MBA in quantitative finance and the guy from the 1980s, who may not have had the same academic credentials, would likely be actively managing risk in a hedge fund or something outside of the investment banking world altogether.
A number of writers and indeed some of the chapters in your book seem to insinuate that heuristics or “gut feel” can lead to accurate judgements. When it comes to investing, surely because of the broad spectrum of often-conflicting “predictive” information perpetuated by the mass media, the availability heuristic is somewhat corrupted and therefore less effective when it comes to making investment decisions?

Yes, absolutely and I think some of these books are hugely successful because they appeal to our narcissism. It makes us feel good and almost encourages us to be lazy about using our intuition and that we can think or make decisions without actually thinking which is nonsense. There may be some circumstances where it’s effective, such as a firefighter running into a burning building but that’s more about instinct than intuition. For the kinds of decisions we’re talking about in investing and speculating, it may have the opposite effect and it’s often the more considered approach that works where we have to check our instincts and, in some cases, go against them. Danny Kahneman distinguishes between System 1 and System 2 in the way that humans make decisions. System one is the snap judgement or gut feel system and System 2 is the more conscious deliberative system where we apply our knowledge and reason and in the speculative arena, I think it’s definitely more system 2 that counts.

Indeed, some of the best traders are able to alter what may have previously been strong opinions within a very short time frame, often to something that is entirely the opposite. Why is that such a rare quality?

Good question, we all have something psychologists call “belief perseverence”. Beliefs have inertia and a lot of people find it difficult to change their minds. Why that is?...who knows...but it’s just a fundamental part of human nature in that we like to feel right. So, it does take a big effort of will for people to look for conflicting evidence, move away from their confirmation bias and accept that you might actually be wrong. For example, how many people do you know who, if you give them compelling evidence that an opinion they hold may well be wrong, will say “actually you’re right, thank you very much for proving me wrong”?

This is linked to something you also talk about called “imagination inflation” and how people often only focus on the positive expected outcomes. Would you say that this, in turn, forces people to take excessive risks when it should force you to be more cautious about estimating probabilities?

Imagination inflation means that just the fact that you think about a certain outcome or event a lot, it can make you think it’s going to be more likely to occur. This is obviously a dangerous bias to have. Whenever you think how likely an event is, you have to stop and question whether your judgement is biased by the fact that maybe you just thought about it more than you thought about the less palatable alternative. It’s often the people who have the ability to think about scenarios that most people cannot conceive...whether that’s the price of oil eventually breaking $100 when it traded around $20-$30 for years on end, or the stock market declining over 80% in the 1920s...who can be hugely profitable in such instances.

Surely this comes down to an innate awareness of what’s really going on in the world. What is the most striking thing you have found in people’s lack of self-awareness of their ability to know their own world and surroundings? Do people just not accept it or since releasing the book, are people more willing to try?

There’s a real paradox here. It’s the people who are aware of their own limitations are the people who will really be able to get a long way down the road to improving their risk intelligence and are therefore the ones who will read the book. Conversely, the people who most need to improve their risk intelligence are least likely to want to read my book. Unfortunately most people suffer from something known as the Dunning-Kruger effect, so not only are they not aware of X, they don’t even know that they’re not aware of it. It all comes down to something known as “metacognition”. The world is full of people who are not just ignorant but also un-aware of just how ignorant they are! This can lead to over-confidence and my favourite analogy is of a socially inept, awkward young man who believes he’s a real Casanova but doesn’t even realise that people are actually just laughing at him.
I think that is generally demonstrated by unsuccessful investors who seek the wrong type of asymmetric return, i.e. they take huge risks, most often unbeknown to them, in order to generate relatively little in return. Do you find that most of the successful, “risk intelligent” individuals you have observed target the other end of the asymmetric spectrum...i.e small risks and potentially large pay-offs?

I don’t know, I think ultimately it’s all about your expected value or expected return and as long as you have positive long-term expected value then in the long run, by the law of large numbers, then you should generate profit. How you mix and match the kinds of bets you’re making so essentially, so you create a portfolio of bets. Using horse racing as an analogy you have a proportion of long shots and a proportion where you back the favourites. I think specific speculative activities lend themselves more to the asymmetric, call option-like pay-off than others. For example, financial markets most likely do whereas in certain types of sports betting, you’re often better off backing the favourite and it’s actually the people who bet on the long shots who lose money in the long run.

Humans have a very poor record of predicting anything. What is your view on predictions and is the term “predict” not a bit of a misnomer in itself?

As Yogi Berra famously said “Prediction is very hard, especially about the future” and I suppose it depends on how you define prediction. If you define it as saying that something WILL happen then yes, it is a misnomer but if you define it as making a probabilistic estimate, which I suppose is more of a forecast, then that’s fine and I think there is compelling evidence, some of which I explore in the book, that we can get better at this. We can obviously never be perfect but we can get more towards what we call the “optimum prediction frontier”. If you imagine a calibration curve with the optimal line down the middle. You are never going to be right on the line but there are definitely ways of getting closer to this over time if you follow certain procedures.

When reading the book, the most obvious question to me was: why do you not draw a distinction between gambling and speculation?

I think that when people do draw those distinctions they are usually prompted more by some sort of concern to avoid a moral association with the bias that gambling is a bad thing.

...surely though, the term gambling suggests the element of luck or recklessness whereas speculation (from its Latin meaning) is more about observing and making judgements based on estimated probabilities?

I don’t there’s no fundamental difference because I think everything has an element of luck...speculating has an element of luck. You can make a more intelligent bet or a less intelligent one just as you can make a more or less intelligent gamble. People always just condemn something to “oh that’s just gambling!” where they are implicitly just defining gambling as nothing more than making completely reckless decisions. I have a very positive view of gambling and if you look at the whole origin of decision theory, they all go back to the analysis of gambling behaviour by mathematicians such Pascal in the 17th Century or John von Neumann analyzing poker and the theory of games. Furthermore, statistical theory originated as a way of calculating the odds for dice games originally. Gambling is a brilliant way of studying the decision-making process. You will find that a lot of the good traders are experts in game theory.

This is possibly why investment firms such as ours, who exist predominantly to manage risk, are very keen to distance ourselves from gamblers. If that is your assertion and obscure as this question may sound, what can traders and investors learn about the probability assessment process from some of the successful gamblers you’ve come across?

I would say that they should try and assign numeric probabilities to their estimates and keep records of those estimates and how they played out. Looking for times they’re wrong and learning from mistakes is what distinguishes that group from the majority of unsuccessful speculators. Good successful traders and investors are obviously most likely to be doing this already.
Would you therefore agree that the best speculators and gamblers you've come across have a more systematic or rules-based approach?

They're systematic, yes, but that doesn't necessarily mean they are following an explicit set of rules. They are probably some combination of a set of rules and an inherent intuition but their intuitions are systematic and they're systematic about the way they manage and use that information and often in how they execute it. I would distinguish, for example, between Blackjack players who are proper system players and are literally just following a set of rules where there is almost no room for maneuver and someone such as a horse-racing better where they are exercising more discretion.

If only a small percentage of people are risk-intelligent, would you agree that systematizing at least the probability estimation process (and therefore investment process) is a better solution?

For most people, I would say very much so. I think that unless you've got the time, resources, skill and energy to become really good at being highly risk intelligent in one particular domain, most of the time you would be better off following a robust process.

Do you think in general that most people are too risk averse and should embrace risk more?

For risk intelligence, you can objectively measure people who are better at estimating probabilities but with risk appetite, it ultimately comes down to personal preference. It doesn’t mean it’s better but I, for example, am ‘risk-loving’ but I find it sad when I see people who are so risk averse they are never willing to try or do anything new. It also depends on the circumstances. You often find that more risk-averse people can make better investors in a mundane market whereas someone who is more of a risk-taker is probably more likely to profit from a crash or a raging bull market. But some prominent risk-takers in history such as Livermore or Paulson have made more money on the way down, perhaps because the market has a gravitational human characteristic.

What would you say is more damaging as a trader; overconfidence or under-confidence?

They are both equally damaging and will make you less profitable but as a matter of empirical fact, overconfidence is just far more common. So, given that it’s more common you should be more worried about it. Polar Bears and cars are probably equally dangerous to humans but which are most people worried about?!

In your study of professional gamblers and investors, how would you characterize their use and analysis of risk in making probability-based decisions versus non-professionals?

In terms of the successful professional gamblers, of which there are very few for a start, they tend to be far better at it than the overwhelming majority of people who think about predictions simply in terms of questioning whether it will or won’t happen, i.e. will it or won’t it rain tomorrow. For most people it doesn’t even cross their mind to think about assigning probabilities to certain events occurring. Getting them to think in terms of probabilities at all is a much higher level challenge in the first instance, let alone before you can work on their ability to assign numeric probabilities to events successfully.

In one of your other books on emotional intelligence, you were critical of the idolization of supposedly un-emotional characters such as Star Trek’s Dr Spock. Would you therefore disagree that un-emotional, logical people are better speculators than more emotional or emotionally intelligent people?

Well, at the time I was criticising the view that the best decision maker would be someone completely devoid of emotion but that’s a bit of a straw man because the sort of emotionless Dr Spock character doesn’t exist. There are situations where it’s useful to have emotions but, having said that, one of the characteristics of good investors and gamblers is they can put emotions to one side when they need to. Good gamblers are cold and emotionless at times and do this naturally when they really need to. If you think about the process of a good speculative decision, you need to take two factors into account; 1) the numeric probability and 2) the expected value. In a way you need to multiply them together. When you’re assessing the probability (number 1), you need to be as emotion-less as possible about the cold hard facts, hence why systematizing this part can solve the problem most people have in this regard. However when you’re considering number 2, the monetary award, you need to work out how important that is to you and how it would make you feel if it worked out in your favour.
Given that on the risk-intelligence test you have in your book and on your website (http://www.projectionpoint.com), if you assigned a 50% probability to every question, you’d emerge perfectly calibrated. Does that suggest that your probability estimates should always be relatively constant?

Not necessarily because you can “game” the test that way. But we can measure how often people use intermediate categories such as 10/20/30/40/60/70/80/90% etc and we give people a point each time they use those intermediate categories, whereas every time they use 0/50/100% they get zero so that forms an index of how reliable their risk intelligence score is. So you can score 100 but get a K score that is very low so you can say that someone has scored well on the test but their risk intelligence isn’t necessarily reliable. On the other hand, if you scored 80 on the test and had a K score of 35-40, that would be very impressive as it forms a much more reliable guide to how risk-intelligent that person is likely to be. If you’re making predictions about geopolitics, assigning a 50% probability on a civil war for example, that wouldn’t really help us prioritise our resources very effectively!

How would you say most traders and speculators can improve their risk intelligence and get closer to this optimum frontier?

I have to say a logical process and plan is vital. Track progress, write down your numeric probability estimates and then monitor how they played out. Score yourself. There is even a spreadsheet that you can download for free from my website so that you can make up your own risk intelligence test and base it on your investment strategy. Keep a trading diary, write down your estimates and then review your performance. By doing this on a regular basis, you can become better at estimating probabilities and hopefully therefore trading as a result.

I quote from the book “By transforming low probability events into complete certainties, especially when the events are particularly scary, worst-case thinking leads to terrible decision-making”. Can you elaborate on this and relate it to trading?

This is the Cheney doctrine where he stated that even if there’s only a 1% chance that Iraq is going to acquire nuclear weapons, we’d better regard it as a 100% chance for the purposes of our reaction which is ludicrous. I think far too many people hugely oversize their bets on a worst case or best case scenario whether it’s a horse winning a race or a view on where the stock market will end up 12 months down the line. Basing your decisions, whether it be a bet, investment or anything else, worst-case scenarios are just as damaging as best case scenarios. It is far better to make a variety of scenarios and assign a numeric probability to each event occurring.