‘Money Without Work’: The Art and Science of Profitable Betting

By Russell Clarke

Contents

1 Back to Betting Basics

Success in betting is typically approached with the primary, and sometimes exclusive, goal of selecting winners. Whilst undoubtedly important, such an approach rather puts the cart before the horse (pardon the pun). Understanding the betting marketplace, and some of the basic maths, is the cornerstone of any viable strategy. This can then be built upon to identify areas that should be utilised and exploited by the knowledgeable punter.

In this report, I will cover:

The Efficiency of the Marketplace: Why it is crucially important to recognise and accept The Wisdom of the Crowd, and how you can utilise it to assess the validity and accuracy of angles/edges/systems from limited data samples.

"Sharp" and "Soft" Bookmakers: Who is who? Why there is a difference and how to utilise that difference. Which are the greatest potential source of profit, and how.

Bookmaker Concessions: The Great, the Good and the Ugly. Evaluating and measuring new account opening offers along with "reload" offers and ongoing offers. Examining 'price boosts', where to find them and how to measure them. The importance of Best Odds Guaranteed and how much difference this concession makes to a successful strategy. Last, but definitely not least, a look at the vexing question of each-way betting. When is it optimal over win only betting, and are enhanced place terms better than the standard offers?

Variance and Positive Expected Value (EV+): Understanding the crucial role of variance even for "The Best System in the World" (well….possibly). How to calculate EV+.

Betting Psychology: Examining cognitive behaviours and their potential effect on betting.

The Logistics of Betting: Creating an optimal betting strategy that mathematically gives you the greatest chance of profit.

The purpose of this series of articles is to increase the efficiency of readers' betting and thus impact directly upon your 'bottom line'. There will be no reference to selection methods; instead I will concentrate on understanding the marketplace, and utilising that knowledge to create an optimal strategy. The articles should be useful for both the experienced and less experienced amongst you.

But, before all of that, who am I, and what qualifies me to write about such things?

About the Author: Russell Clarke

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Those of more mature years may remember me from decades long since past! For those who don't, in the 1990's and 2000's I ran what was, I hope, an ethical and successful racing service, wrote articles for the much missed Odds On magazine, and, was generally known for my statistical approach to betting: a poor man's Nick Mordin if you will! Whatever happened to him?

I moved to Dubai in 2007 and, along with a betting partner, became one of the first to pay the Betfair Premium Tax for our football betting exploits. I remain as an advisor to a Scandanavian-based football betting syndicate.

However, the story starts some time before that, as a youngster (maybe 9 or 10 years old) compiling speed figures for my uncle. He took his racing and betting seriously and subscribed to both the form book and the daily Sporting Life. I was fascinated by the theory that you could calculate the likely winner of any given race through the use of numbers or ratings, an objective approach that appealed greatly to my nascent scientific leanings.

I was also drawn to Dick Whitford's ratings that appeared on page 2 of The Sporting Life each day. Whitford was the doyen of private handicappers in those days and, as a curiosity, his top rated horses were awarded the lowest figures. Another part of the Sporting Life that attracted my interest in those early days was The Sporting Life Naps Table. I was young and naïve, and therefore surprised that such a small number of experts (typically around 20%) managed to show a profit on their 'naps' over the season. I also noticed that each season it was a different group of tipsters that headed the table. Clearly their subjective methods were not a route to profit! Almost half a century has since passed and yet the racing correspondents still seem to rely on the same opinions and hunches that have never worked on any long-term basis. Anyway, I digress...

These early experiences encouraged me to concentrate on an objective approach to betting. In my early teens I was rating horses' performances based upon time. I also dabbled in private handicapping via collateral form and started to explore the murky world of systems and systematic betting. In those days systems were sold in the media by unscrupulous rascals (I'm looking at you Mr Dawson) and most were useless. One of the more honest purveyors of the systematic approach was a gentleman who operated under the pen name of Alan Gregory. He wrote books on systematic betting and produced a weekly newsletter in the 50's, 60's and early 70's. Much of the stuff, in hindsight, was misguided, but it certainly introduced me to an alternative way to make betting profitable.

The advent of computers and their processing power was the revolution that changed the way many successful punters approached their betting. One product in

particular, Racing Systems Builder (now unfortunately no longer with us), allowed you to test various factors in minutes rather than devoting weeks or months to ploughing through old newspapers. Many long-held racing truisms and beliefs were challenged and overturned using this product. Users were able to measure accurately the effect that hundreds of variables had on racehorse performance. They no longer had to guess how important, or otherwise, it was for a horse to be a distance winner, a winner on the prevailing ground, stepping up in class etc.; it could now be measured and quantified. I was like a dog with two tails!

With the information revolution underway, profitable betting came within reach of the ordinary punter. During this period, the racecourse market thrived (as it was a way of avoiding betting tax and obtaining better prices than starting price). I went racing three or four times a week and there were a number of professionals operating on any given circuit. Off-course bookmakers began offering more generous early morning prices and this was truly a golden age for punters. Although accounts were closed, they were relatively easily re-opened and the bookmakers were far less sophisticated than they are today. Some bookmakers headed abroad to places such as Gibraltar, Alderney and Malta, to provide tax-free betting facilities. Things got better still when betting exchanges took their first steps. Flutter and Betfair led the way until the latter bought the former and became the dominant force.

During all of this change I had become more and more aware of the influence of value on profitable betting. It is now accepted that value is an intrinsic part of profitable betting, but from the 70's to the mid 80's, the majority were simply interested in finding a winner at any price. It was Mark Coton's Pricewise column that really brought the concept of value to the masses. By this time I had begun reading American racing books and their knowledge was clearly far in advance of their British counterparts.

Interestingly, despite the fact they had to bet into pools and, therefore, value becomes difficult to calculate, many of the American authors wrote extensively about measuring value and optimising staking. One overseas author that had a great influence on myself was an Australian professional punter called Don Scott. I think Don retired as a losing punter overall, but his book The Winning Way introduced me to the calculation of an odds line. An odds line, also known here as a tissue, allocates a percentage chance of winning to each horse and that is then converted into a price. The simple theory is that, to obtain value, you must bet at odds greater than the odds line indicates. This brings in the concept of backing horses that are perhaps not your first choice in a race - indeed they could be your 5th, 6th or worse, choice. That takes a change of thought process!

At this stage, I was a regular winner at early morning prices and the number of accounts closed approached a hundred. I was operating a full-time tipping service and more and more of my personal betting was via the exchanges. I had also begun to explore other sources of potential betting profit. My theory was simply that what worked in the very complex world of horse racing should also work in other sports. Football was the obvious target because it had such liquidity.

I found a talented football/computer addict as a partner and together we set about betting for profit on Premier League football. Our approach was systematic and, using a fantastic piece of software that my partner had developed, we bet into every available market on all the televised games. The software worked out a price on every market and we simply offered to lay at, or below, that price or back at a margin above that price. The software was able to operate in-play as long as it knew the current score and number of minutes until the end of the game (other relevant information such as injuries, sending-offs, etc. was factored into the price calculations).

Our profits exceeded seven figures and it was only when Betfair effectively doubled their ill-conceived Premium Charge (profits tax) to an effective 50%, did we call a halt to our betting partnership.

Personally, a good deal of my time is now spent on investments within a Hedge Fund that utilises similar statistical techniques to those utilised by myself in the sports betting arena. I was attracted to this approach to financial investments because of the huge liquidity alongside the availability of large amounts of data and advanced statistical tests/techniques that make much of what we utilise in horse racing look, quite frankly, a little amateurish by comparison.

That's more than enough about me. Matt has invited me to pass on my experience in a series of articles, reproduced in this report, that I have entitled “Money Without Work”. Those of you who go racing will know this is the catchphrase of a well-known Midlands bookmaker. I have used it here because the articles will hopefully provide easy to utilise advice that will improve your returns with no effort on your part in terms of changing your selection process. I hope you'll enjoy them.

2: Wisdom of Crowds

I have deliberately kept mathematical 'proof' and academic rigour of the theories of Wisdom Of Crowds and the related Efficient Market Hypothesis out of this report.

Those who are interested can easily research further their efficacy online. For what it's worth, I believe both theories have limited real world applications, though their usefulness in sporting prediction markets is undeniable.

A brief definition of the Wisdom of the Crowd is that large groups of people are collectively smarter than individual experts at predicting outcomes. Explanations of the wisdom of the crowd are numerous but the Diversity Prediction Theorum attempts to mathematically quantify via the definition, “the squared error of the collective prediction equals the average squared error minus the prediction diversity”.

In layman’s terms, when group of predictors is large and diverse, the error is small. There are more complex layers to add to the wisdom of the crowd theories and explanations involving independence, bootstrapping and other exotically named theories, but for our purposes, we will omit the bells and whistles of academia. This is simply about, to misquote Jeremy Corbyn, “why the many are smarter than the few”. It is especially true when the crowd is diverse and independent, which is very much the situation in betting markets.

It has been demonstrated in numerous studies that the crowd is particularly accurate in the fields of quantity estimate, general world knowledge and spatial reasoning. If we look at quantity estimate, I saw a programme on this subject where office workers were asked to guess the number of sweets in a large jar. The estimates had a huge range and yet the average was just 4 sweets from being correct! More famously, at a 1906 Plymouth Fair, 800 people were asked to guess the weight of an ox and the average was within 1% of the actual weight. I know, I need to get out more…

Related to Wisdom Of Crowds is the Efficient Market Hypothesis. The EMH in its simplest form suggests that asset prices reflect all available information (and thus, by association, it is impossible to beat the market). The latter conclusion is a stretch of the theory, particularly in sports betting.

So, what are the implications of this theory when we look at, for example, horse racing? I have evidence that in recent times a real sea-change has occurred in the racing markets and this has been caused by the increasing wisdom of the crowd. It has gone largely unnoticed as it has been gradual and marginal. However, it has been incremental and, as a result, the marketplace today is very different from that of even a few years ago.

Let me rewind to a time when starting prices were produced by the on-course betting market. A few “good men and true” would form a huddle at the 'off' of each race and compare the prices they saw offered by the bookmakers. They came to an agreement or average and that was declared as the starting price. This SP was basically the result of supply and demand in the on-course marketplace (racecourse punters and the major bookmaking offices who sent cash to the course to reduce the prices of horses that they had large liabilities on). This method was later replaced by a similar method, but one which included more on-course bookmakers.

However, the methodology is not of major importance. The SP’s were still, in theory, a result of supply and demand mechanics within the racecourse crowd. The rise and rise of betting exchanges and, crucially, their use by virtually every racecourse bookmaker means that is no longer the case. Today, the SP’s are a reflection of the betting activity on the exchanges rather than the activity on a racecourse. Suddenly, the crowd is no longer a few hundred punters on a racecourse, it is tens of thousands on an exchange. The new crowd is better informed, more diverse and greater in number. The wisdom of the crowd has increased.

If we accept the aforementioned theories at face value, the best approximation of the chance of an outcome would, in horse racing, be the Betfair Starting Price (BSP) and, in football, the Asian Handicap closing lines. That is because those markets are the largest, deepest and smartest markets for those individual sports. The participants in those marketplaces are diverse, independent and largely devoid of any 'group think'.

In both of these markets there is virtually no margin to account for and so the final prices (once every participant has eventually 'voted') can be readily converted into a percentage chance of that outcome actually happening. A BSP of 2.0 represents a 50% chance, 3.0 represents a 33% chance, 5.0 represents a 20% chance etc. Similarly, Asian Handicap Lines can be converted into % chances for football betting. Numerous empirical studies have shown both to be almost wholly accurate.

I realise I have ‘banged on’ a bit here, but, the importance of this knowledge cannot be overstated. It demonstrates the futility of trying to beat the market when it is at its most accurate. In plain English, it is arrogant in the extreme to believe you know more than the market at the closing and you will eventually find out that it pays to be humble! If you bet at BSP (Betfair Starting Price), the commission is likely to ensure you are a long-term loser (although it is a more favourable strategy than betting with bookmakers at SP with their much higher margins than the exchange commission). If you accept that logic, then it is clear that you should be betting early, when the market has less participants and is therefore less accurate.

Another use for the EMH is if you want to accurately assess systems, strategies or the records of tipsters/experts. It is a quicker and faster way to assess than simply looking at a profit/loss account, which can be wildly erroneous. So, traditionally, even those that do their research, will look at a series of results and concentrate on factors such as profit/loss, strike-rate, longest losing run, taken from a set of past results. On the surface this seems logical and sensible. However, the downside is that you will almost certainly be dealing with an inadequate sample size (again, if you need the maths, then an online check) and even if you have thousands of results, a

simple Monte Carlo simulation will demonstrate the huge variance in results you could experience moving forward (more of which anon).

Using our appreciation of the accuracy of the markets, we can gain a quicker and more accurate guide to how a strategy will perform in the future and in the longer-term. We can ignore profit/loss figures and instead concentrate on how the selections (winners and losers) perform against the market. There are a few criteria you could apply but a very simple method is demonstrated below:

Two figures you require are the price at which the selection is advised (or a morning price) and the eventual BSP. Then it becomes a simple comparison. If a horse is advised at 10/1 (11.0 digital odds) and the bsp is 7.0, then that would be assessed as +4 (11-7). Similarly, a horse advised at 8/1 (9.0) and the bsp is 9.0 would be assessed as 0 (9-9) and a horse advised at 12/1 (13.0) that has an eventual bsp of 18.0 would be -5 (13-18).

After as few as fifty bets you would get a good reading of the number of selections that are positive as opposed to negative, and, the running total would give an indication of the magnitude of the long-term profits/losses that are likely. The actual results and profits/loss are largely irrelevant as they may just reflect either a favourable or unfavourable run of winners/losers. You can be sure, however, that if you continue to beat the "closing line" you have unearthed a source of long-term profit.

3: Sharp & Soft Bookmakers

The terms “Sharps” and “Softs” refer to bookmakers that operate very different business models. Sharp bookmakers operate a low margin/high turnover model and Soft bookmakers operate a high margin/low turnover model. Examples of Sharp bookmakers would be Pinnacle or one of the larger Asian firms such as SBO, or indeed an exchange. Examples of Soft bookmakers are all around us in the UK (Ladbrokes, Hills, Corals, 365, indeed, all of the household names). Why is this of any concern to us as punters?

To answer that, we need to refer back to our old friend, The Efficient Market Hypothesis (EMH), discussed in Part 2. The hypothesis posits that in public markets, at any given time, all information is incorporated into the prices. Therefore, prices only move in reaction to new information. As a consequence it is not possible to “beat the market”. There is strong mathematical 'proof' of the EMH but also compelling empirical evidence that appears to contradict the theory; however, that discussion will have to wait for another day. This conflicting evidence results in there being “weak”, “semi-strong” and “strong” versions of EMH. For betting purposes, we can assume that the EMH exists and is, at least, semi-strong.

Back in our real world, let us take an example of a football match. Well in advance, the Sharps will offer tentative prices and punters (skilled and unskilled) will begin to place their bets. The Sharps will take more note of the skilled punters' judgement and adjust prices to gradually build a balanced book as the prices become stronger and a closer reflection of the supply and demand in the market. The prices become ever more accurate and the margins ever smaller as kick off time approaches and more information (such as team news) comes into the market place. At kick-off the “closing line” price is the most accurate assessment of the likely outcome. This is not open to argument or interpretation. Logically, the closing price will be more accurate than the earlier prices because there are now more participants and more information in the market. This is backed up by any number of empirical studies.

Can punters beat the closing line? EMH says no. Certain tipsters and companies that act as adjudicators of tipsters, offer empirical evidence that says yes. They are, or know of, a tipster that bets at closing line (or BSP if referring to UK horse racing) and has recorded profits. But, is the sample size of bets large enough?

Is the tipster merely experiencing a lucky run? If we had a coin-flipping contest with 5,000 coin-flippers, one would emerge victorious and he would be “champion coin-flipper”, but so what? Again, the argument is mathematically complex and this article is not the place for such mathematical proofs. For now, let us just agree that beating the closing line of the Sharps is extremely difficult.

It is with the Sharp bookmakers that we see evidence of the EMH. Sharp bookmakers have the largest markets in terms of liquidity, of money wagered. In

reality, Soft bookmakers are merely brokers of bets. The Sharps are the market makers and the Softs merely copy the prices. At first glance, because the Sharps bet to slim margins and allow big bets and don't restrict/close accounts, it looks like they are the bookmakers we should concentrate on and find it easier to win with. But, in reality it is the opposite that is true. It is the Softs that offer the greatest scope for profitable betting. It is their business model that makes them vulnerable as we will see when we examine bookmaker concessions in later articles.

To win with either, it is clearly optimal to bet before the closing line. The following applies to horse racing but can be applied to other sports betting. We need to bet before the closing line because we know at the closing line, the market is at its most efficient. Let us run through the stages for betting on horse racing:
Ante-Post: Softs protect themselves with large margins in their quoted prices.

Ante-Post betting is one of the few aspects of horse racing betting that has been largely unchanged over my lifetime. The major top-class and prestigious handicaps continue to be used as a shop window by the major betting firms for publicity. It remains an area for bookmakers that is generally a loss leader and thus qualifies as an area of special interest to profitable punters. It is true that bookmakers are now far more sophisticated and sensitive to price movements than they were in the past, but, nevertheless some scope remains.

Aside from the major showpiece events, bookmakers price up the major Saturday races on a Tuesday/Wednesday and this also affords scope for the independent thinking punter. When bookmakers price up a race ante-post , the game becomes *Your Skill v Bookmaker Odds Compiler* and that is a much easier battle to win than *Your Skill v Combined Knowledge of the Marketplace*. The marketplace is a far shrewder opponent than a bookmaker odds compiler!

The one slight difference with ante-post betting is the allowance for the potential of your bet not running and/or horses being supplemented and introduced into the betting subsequent to your wager. Both can be accounted for and are not as crucial as many in the media (and racing itself) would have you believe. Forget all the nonsense you hear from people such as "he's 10/1 just to line-up" when they are talking about a Classic contender for the following season. If the horse has a realistic chance, barring injury - and they are very rare - the said horse almost always arrives at the start on the day.

Another modern-day advantage punters have when betting ante-post is the betting exchange. Although Betfair and Betdaq have weak ante-post markets (because understandably punters don't wish to tie up their betting capital for months) they can be useful closer to, and on the day of, the event. If your ante-post selection has shortened in price it offers the chance to hedge or lay-off part of the bet.

Getting meaningful stakes on to a horse ante-post without the help of agents is almost impossible for shrewd punters and so ante-post betting can only form a small part of a profitable strategy, but nevertheless it is attractive enough to pursue as the returns on investment can be very high. The anguish of non-runners can soon be discounted when you land a touch at four or five times the returned starting price!

First prices: These appear late afternoon/evening before racing. Again, Softs have large margins and restricted stakes. Consistently betting at this time will flag you up

to bookmakers (if you are winning or consistently beating the starting price). A number of tipsters use evening prices. Whilst it is credence to them that they can recognise “value”, such a *modus operandi* becomes impossible to replicate in the real world.

Morning Prices: Margins are reduced and higher stakes permitted. On the exchanges (Sharps) liquidity is building. At this time, best odds guaranteed is available with most soft bookmakers and, providing you are not obviously “arbing” (backing horses at morning prices that are trading at lesser odds on the exchange), then the bookmakers are more willing to lay reasonable sums, at least until they recognise you as a winner.

Pre-race: 15 minutes prior to the “off” time of the event. Lowest margins and highest stakes permitted. The market becomes more and more accurate. At this stage, the exchanges will be betting to 103% or less and, in most instances, this is where you are likely to find the better prices, rather than with the soft bookmakers.

We are aiming for the sweet spot of lower margins, better liquidity and a less than perfect/knowledgeable market. To some degree, where that sweet spot is depends upon your own circumstance. The takeaway here is that, despite the lure of the low margin, betting at BSP or the closing line is a fools’ errand for all but the most successful players. Your own sweet spot will depend upon your account availability, your need for liquidity (i.e. how much you stake) and the appeal of valuable concessions such as Best Odds Guaranteed and Enhanced Place Terms. For most, the morning of the race should witness the majority of your betting action.

In the next chapter, I will cover some concessions that the Soft bookmakers offer and how and why you should take advantage.

4: Bookmaker Concessions – What Are They Worth?

In this fourth chapter, I am going to look at concessions that are offered from time to time by the "soft" bookmakers; and how we can assess if these concessions or offers are worthwhile, ***writes Russell Clarke***.

The definition of "worthwhile" is exactly equal to "profitable" and, whilst we cannot know if any individual offer will be profitable, we can calculate (with the help of the “sharps”) whether, in the longer-term, these offers give us a "positive expected value" (known as EV+). At the most basic level, for example, if you are offered "enhanced odds" by a soft bookmaker, you can check if they truly are enhanced by examining the equivalent price with a sharp.

You should take advantage of whatever offers/concessions bookmakers are making when there is positive expected value. The market is a competitive one and bookmakers are keen to secure business.

The Fab 4 Bookmaker Concessions

The four most important concessions are:

- Generous Account Opening Offers/Reloads/Ongoing Offers

- Best Odds Guaranteed

- Price Boosts

- Enhanced Place Terms

Let's look at each.

Opening Offers/Reloads/Ongoing Offers

Opening Offers are obviously 'one-offs' so should be utilised but are clearly short-term. Some bookmakers do subsequently offer clients concessions to encourage loyalty. In the world of soft bookmakers, the competition for new clients is fierce. This is reflected in the offers they make to encourage punters to open accounts.
The generosity of the offers appears to ebb and flow, and often the best time to avail of the most generous offers is prior to the leading racing festivals such as Cheltenham, Aintree or Royal Ascot, or prior to major sporting events such as the World Cup. If you don’t have an account with any of the scores of bookmakers available, then before such events is often the optimum time to join as the offers can be especially generous.

Account opening offers tend to fall into different categories:

- **Bet x, Get y in free bets**: One of the better ones of this genre in recent times was from Bet365 where you could deposit up to £200 and receive the same amount in free bets once you had bet your deposit.

- **Risk-free sign ups**: Bet x and get y back as cash if your bet loses. This is, in effect, a free bet.
- **Multi-bet Offers**: Bet x and get y back as cash/free bets, but released in stages. The idea here is to get you 'used' to betting with the company involved.
- **Profit Boosts**: A profit boost (often 100%) on the return from your first bet.
- **Miscellaneous**: A good example might be 0% commission with an exchange for a period of time.

Almost every bookmaker offers an incentive that is a derivation of those above to open a new account. They all have a common denominator, which is a positive expected value (or EV+), more of which later. In essence, they offer real and measurable value to us as punters. You should look to take advantage of ALL such offers and try to 'time' your new account openings to coincide with the more profitable offers.

Related to opening offers are the 'Reload' offers that some bookmakers give to existing clients from time to time. These are designed to get you betting with the respective bookmaker and are often watered down versions of the opening offers. These can offer EV+. An example as I write this article was Paddy Power offering up to £10 cash refund on a £10 bet on Dortmund v Schalke if Dortmund win (they did).

Finally there are 'Ongoing' offers. The best example of these are the Weekly Bet Clubs run by a number of bookmakers, typically a free £5 bet if you stake £25+ on any given week. Again this is designed to get you to bet with them regularly: if you are betting £25 typically, then it is a neat bonus for simply having £12.50 e/w in an enhanced place terms race at best odds guaranteed. Be rude not to!

Bookmakers want your business and are prepared to offer 'loss leaders' to sign you up, and further incentives to keep you betting. So, take advantage. They may be less keen on you when they recognise you only bet in EV+ situations, but you should cross that bridge only when you come to it!

Best Odds Guaranteed

Previously we have looked at the Efficient Market Hypothesis and how the "closing line" (Betfair Starting Price in horse racing) is the most accurate representation of the market. In order to beat the market we have to aim to consistently take odds that are greater than the closing line. One bookmaker concession that helps us to do this on a regular basis is Best Odds Guaranteed.

It should already be clear what a valuable concession BOG is. In the correct hands it enables you to bet at early prices (really valuable to punters who can correctly identify "value") with the guarantee that you get a bigger price if you are wrong (and

even the shrewdest will see the market move against them on a fairly regular basis). In effect you are betting against the bookmakers' odds compilers when betting at BOG. They are quite a shrewd animal, but by definition cannot be the beast that is EMH or the "wisdom of the crowd" (which is what BSP or the closing line represents).

So, if you are skilled and have a profitable strategy, betting at BOG is optimal over BSP, despite the minimal margin you are attempting to overcome with the latter. Conversely, if you have a losing strategy, you would be better off betting at BSP and simply losing the low margin (essentially your commission), which amounts to a more enjoyable - or at least longer-lasting - punting demise!

There are examples when betting at exchange prices in the 15 minutes before a race (to assure liquidity) is optimal over BOG. One such example might be outsiders in big fields, or in races where a win bet is optimal over an each-way bet. But these are specific circumstances and should be viewed as exceptions that prove the rule. As a profitable punter you should utilise BOG for as long as you're able: it is one of the key concessions that the softs grant.

On almost any set of profitable results, BOG returns will be better than BSP. BOG should be your first call, exchange prices next (once the market is at 103% or less) and, finally, Betfair Starting Price. Never, ever, EVER bet at industry starting price.

I have a couple of real life examples of profitable strategies and the difference between SP and BOG, and then the difference between BSP and BOG:

The first example sees a series of 234 bets with a high percentage of winners (60%). The 141 winners brought a level stake profit of +22 at Starting Price (9.4% ROI) and +44 at BOG (18.8%ROI).

The second example comes from a shrewd gambler who some of you will know from his articles (I won't name him). His last 480 bets have shown +75 at Betfair Starting Price (15.6%ROI - he'll never keep that up!) but the same 480 bets are +190 at BOG (39.6%ROI - again, he'll never keep that up, but it demonstrates the difference between BOG and BSP if the prices move!)

Those may be extreme examples, but they demonstrate the potential difference when a methodology identifies value before the market gets progressively more informed. If you have a winning strategy then BOG will outperform BSP. If you have a losing strategy, then BOG will obviously still beat SP, but is less certain to outperform BSP.

Price Boosts

Price Boosts are offered on an ad hoc basis to existing customers. Typically they will be available for a limited time and often to limited stakes. They are available on all sports and can be a simple price enhancement on a single horse, for example “was 7/4, now 9/4”, or an enhancement on a football accumulator. Most price boosts (but by no means all of them) offer EV+ but this should be checked rather than assumed.

Explaining how to calculate EV+ (positive expected value) is probably best done by way of an example. So, let us imagine a football accumulator being offered by Hills:

Man City/Liverpool/Brighton all to win at 11.0 (10/1).

How can we calculate if there is any real “value” in this offer? To do this we rely on the sharps to be the most accurate guide as to the true price of the 3 teams winning. In the football market we can use a company called Pinnacle and adjust their odds to 100%, or the Asian Markets, or the lay price on the exchanges. Let us assume Man City are 1.27, Liverpool 1.66 and Brighton 4.1 to lay on the exchanges. Multiplying these figures together we get 8.64 (1.27 x 1.66 x 4.1).

So, in this instance the bet has a Positive Expectation of 1.27 or 27%. This is calculated by dividing the price offered (10/1, or 11.0) by the true odds (8.64).

In real terms this means that if you placed this bet 1000 times at £1 per bet, your £1,000 stake should, in theory, return £1,270! At this point, I should point out that, in the real world, we have to put up with something called “variance”. That is definitely another article in itself (as you are soon to find out!) but, in theory, you have a bet here with a mathematically sound 27% positive expectation.

Virtually every “price boost” you see from a soft bookmaker can be evaluated in this way. You simply ignore all negative expectation “boosts” (if the price being offered in the above example was 7/1, then the expectation would be below 1.0 because 8/8.64 = 0.93) and so would have a negative expectation of -7%) and just back all the positive expectation boosts.

I know of two punters who utilise this methodology and who have shared their returns. The first showed his first 100 price boost bets (he has done many hundreds since). After 18 bets he was even, bets 42-80 he was losing and by bet 100 he was making a profit of 6.96%ROI. He calculated this was below the expected value of 9.15% ROI because the average price he took was 5.46 and the average true odds were 5.00. The second punter had made a profit of 4,775 from stakes of 20,059, a whopping 23.8% ROI.

Price Boosts are best found by looking at matched betting sites on facebook where contributors highlight boosts they have found, or, more labour intensively, by scouring the websites of the bookmakers that regularly offer such concessions.

Next week, in part two of Bookmaker Concessions, we'll drill down into the maths of enhanced place terms. There's nothing too complex, but knowing when it is better to bet to standard each way terms and when the enhancement offers value is crucial for win and place players.

5: Bookmaker Concessions – Each Way Betting

The fifth chapter goes hand in glove with the preceding episode about bookmaker concessions. Last time we looked at a range of bookmaker concessions, and when they offered positive expected value. This chapter the focus is very much on each way betting and, specifically, 'extra place' races.

The mathematics surrounding each-way betting and extra place concessions is complicated and many factors have to be taken into account including the price of the horses concerned and the pricing make up/shape of the betting market on individual races. So, I will deliberately simplify, as follows:

Current e/w terms are typically

Non-handicaps: 5-7 runners, ¼ odds (2 places)

Non-handicaps: 8+ runners, 1/5 odds (3 places)

Handicaps: 5-7 runners, ¼ odds (2 places)

Handicaps: 8-11 runners, 1/5 odds (3 places)

Handicaps: 12-15 runners, ¼ odds (3 places)

Handicaps: 16+ runners, ¼ odds (4 places)

On these terms, we can mathematically calculate which races may favour the punter over the bookmaker in place terms. There are only two!

Let us look at the place part of the bet only... For ease of mathematics in a 9-runner race the true odds of a place are 6/3 (6 unplaced and 3 places in a 9 runner race) or 2-1 (3.0), but the place odds paid are 8-5 (2.6, assuming all runners have an equal 8/1 chance of winning and place odds are 1/5).

That is poor value, even if the assumption of all runners being equal is simplistic/unrealistic. Using the “all runners are equal” assumption, the only races where the place terms are in the punters' favour are 16+ runner handicaps. In a 16-runner race the true place odds are 12/4 (12 unplaced and 4 placed in a 16-runner race) or 3/1 (4.0), and the place odds paid are 15/4 (4.75, assuming all runners have an equal 15/1 chance of winning and place odds are ¼). The same equation can be used to calculate races with a different number of runners. Remember, there is no profit margin built into the bookmaker prices in these examples which is also, of course, unrealistic.

On a more practical level, an empirical analysis was undertaken for all of the races during the Flat 2018 season that calculated, from the starting prices, the overrounds (profit margins) that the bookmakers enjoyed in all races (win and place). Obviously, there was a positive overround for all win bets in all races. However, the place

market (because bookmakers were arbitrarily offering 2, 3 or 4 places and 1/4 or 1/5 odds) tells a different story:

Non-Handicaps: place overround by number of runners

Runners	Place Overround
5	9.50%
6	18.70%
7	26.90%
8	2.10%
9	5.20%
10	7.70%
11	11.60%
12	16.80%
13	17.80%
14	21.30%
15	28.20%
16	34.80%

In non-handicaps, in every race there was a positive place overround in favour of the bookmakers. However, in 8-runner races this was only 2.1% (compared with 18.3% for the win market). In 9-runner races it was 5.2% (compared with 18.7% for the win market). In these instances, you are better splitting your stake into an each-way bet than betting win only (this was also true, albeit to a lesser extent, in 10-, 11-, 12- and 13-runner non-handicaps). For reference, betting in a 16-runner non-handicap the place overround is an eye-watering 34.8% and this gets worse still as the number of runners increase. Playing each-way in such races is betting suicide.

Handicaps: place overround by number of runners

Runners	Place Overround
5	22.30%
6	31.60%
7	39.60%
8	10.60%
9	14.80%
10	19.90%
11	24.20%
12	12.40%
13	15.40%
14	18.60%
15	22.90%
16	-3.50%
17	-1.50%
18	1.20%
19	2.60%
20	6.50%

In handicaps, the story is a little different, because of the better place terms. In 16- and 17-runner handicaps there is actually a negative overround - an underround - of -3.5% and -1.5% respectively. This means that the place element in an each-way bet in 16- and 17-runner handicaps is actually in the punters' favour!

Overall, the place overround is below the win overround in 8-, 9-, and 12-plus runner races. So, in these races, splitting stakes for each-way betting is optimal over win only betting. In races of 5, 6, 7, 10 and 11 runners the reverse is true and you should bet win only.

Here are some tables that tell you the optimal bet (win or each-way) and the % advantage win/each-way bet has over the alternative win/each-way bet.

Non-Handicaps: Win or each way? By number of runners

Non-Handicaps	Optimal (Win or EW)	% advantage over alternative
5	E/W	1%
6	WIN	3%
7	WIN	7%
8	E/W	8%
9	E/W	6%
10	E/W	5%
11	E/W	4%
12	E/W	2%
13	E/W	1%
14	-	-
15	WIN	2%
16+	WIN	5%+

Handicaps: Win or each way? By number or runners

Handicaps	Optimal (Win or EW)	%advantage over alternative
5	WIN	6%
6	WIN	9%
7	WIN	13%
8	E/W	3%
9	E/W	1%
10	WIN	1%
11	WIN	3%
12	E/W	4%
13	E/W	3%
14	E/W	2%
15	E/W	1%
16	E/W	15%

At this stage, bear in mind all of these numbers are at starting price. You can, therefore, move these percentages more into your favour by taking the best prices available and simultaneously utilising Best Odds Guaranteed.

It should also be borne in mind that these are *strictly comparison figures*. Some of the WIN advantage percentages are only as high as they are (for example 7-runner handicaps at 13%) because the each-way alternative is so poor.

Key win vs each way points

The salient points from these tables are:

- The sweet-spots for each way betting are 16- and 17- runner handicaps.

- Each way betting is particularly advantageous (relatively) over win only betting in 8-10 runner non-handicaps.

This, in all probability, is a function of the reality that such races will be less competitive and have 'lopsided' markets dominated by a short-priced favourite; or, there is a big spread in prices (which is less likely in a handicap). In these instances, the mathematics make each-way betting more favourable.

Extra Place Each Way Betting

But what happens when the bookmakers offer extra places? And what effect does the tactic of reducing the fraction from 1/4 to 1/5 have on such offers?

The maths is not easy, so you may have to trust me here! I have restricted this analysis to handicaps (which is where the offers generally occur anyway).

Handicap extra place: 5 places instead of 4

If the offer is five places instead of four but odds are reduced to 1/5:

Runners	Place overround	Optimal Bet	% advantage over alternative
16	-10.10%	E/W	19%
17	-8.10%	E/W	18%
18	-5.40%	E/W	17%
19	-4.00%	E/W	16%
20	-0.40%	E/W	14%

This makes the overround negative for bookmakers on the place part of the bet in races with 16, 17, 18, 19 and 20 runners (rather than just 16 and 17 runner races under the normal terms). In 16 runner races the negative overround increases to about -10%, which is a huge boost for punters!

Handicap extra place: 4 places instead of 3

If the offer is four places instead of three but odds are reduced to 1/5;

Runners	Place overround	Optimal Bet	% advantage over alternative
12	-3.50%	E/W	12%
13	-0.50%	E/W	11%
14	2.70%	E/W	10%
15	7.00%	E/W	9%

This makes the overround negative for the bookmakers on the place part of the bet in races of 12 and 13 runners. It also makes the place overround less than the win overround in all races from 12-15 runners. This means that all bets should be each-way rather than win bets when this concession is offered.

Handicap extra place: 3 places instead of 2

Finally, if the offer is three places rather than two (a rare bird):

Runners	Place overround	Optimal Bet	% advantage over alternative
5	-11.60%	E/W	11%
6	-2.00%	E/W	7%
7	6.00%	E/W	4%

This makes the overround negative for the bookmakers in 5- and 6- runner races (11% and 2% respectively) and still makes the place overround (although now in the bookmakers favour) less than the win overround in 7-runner races.

Again, these numbers assume starting price overrounds and you can reduce these substantially by taking the best available prices and simultaneously utilising best odds guaranteed.

Extra Place Concessions: Summary

Extra place concessions are highly favourable to punters and make each-way betting (in the majority of cases) mathematically optimal. You should therefore take advantage.

Of course, in certain big races, bookmakers get even more 'generous' and offer 6, 7, and occasionally 8 places, and on these occasions they should be viewed as “loss leaders” from the “soft” bookmakers that you can take full advantage of until they won't let you any more!

A final, important, caveat is that you must not accept enhanced place terms at the expense of ‘skinny’ win prices, and so some judgement is required.

Concessions are generally utilised by bookmakers to gain new clients or to gain client share from rivals. They invariably offer a degree of value and that degree can be calculated via the techniques shown in this article. Some are generous enough that they reward blanket support! Most will add to your bottom line if used judiciously.

6: Bond, Bloom, Benham and Buffett – Variance and EV+

In part 6 of this report, ***Russell Clarke*** looks at the bigger picture through the prism of short-term hiccups.

IT'S ALL ABOUT THE ODDS

Value betting as an accepted *modus operandi* is a relatively recent concept in the mainstream betting world. The Pricewise column in the Racing Post during the 1980's was the flag bearer and the continued success of that column has seen the concept of value become uppermost in the minds of most intelligent backers. We accept that value is subjective and that the market is accurate but we believe we are shrewd enough to spot the anomalies, otherwise why bother betting at all?

What image comes into your mind when you hear 'professional gambler'? A James Bond type, suave and handsome, standing at a roulette wheel, martini in hand and a gorgeous blonde draped over his shoulder? He pushes forward a huge pile of chips onto a number, and watches with smug certainty as the ball falls into the right slot. Yep, that's me...

This is all absolute nonsense of course. For a start, James Bond's favourite game was baccarat not roulette. Secondly, if you shake a martini you chip the ice and just get a watered down drink. Thirdly, those lazy gender stereotypes went out of fashion a very long time ago around these parts. And fourthly, neither James Bond nor anyone else in the history of human civilisation (fictional or real) has ever been able to accurately predict where the ball will finish on a roulette wheel. A roulette wheel is an efficient random number generator, and the only way to beat it is by having the odds on your side.

So how do successful gamblers win? How do some investors make loads of money, when most investors lose? Every successful professional gambler/investor in history has something in common: they bet with Positive Expected Value (EV+). An EV+ is having the odds in your favour. Over time, if the odds are in your favour then you will win. How to calculate EV was covered previously in the chapter on Price Boosts (Episode 4).

So the reality of professional gambling is somewhat less glamorous than the James Bond fantasy. A pro gambler is much more likely to be found reading a newspaper, perusing a website, or playing with numbers in a spreadsheet than standing in a casino, drinking and flirting with the opposite sex. The reality of professional gambling is mostly a little dull, and unfortunately there's no way of explaining the basics that will be a roller-coaster ride of page-turning excitement. So, I won't even pretend to try.

But if you master the basics it could just be possible for you to become filthy stinking rich through professional betting. Witness Messrs. Bloom and Benham, and just look at Warren Buffett. The latter leads a frugal, slightly eccentric life, with his head buried in a newspaper most of the time. But, depending on what the US stock market has

done in the previous couple of days, he may very well be the richest man in the world as you read this (he isn't, but it read quite well, so I have left it in!).

All Warren Buffett has done his whole life is practice 'value investing'. He's a professional gambler. He bets on the share prices of companies. He buys them for less than they're worth and then sells them for more than they're worth. That's it. He understands randomness, he recognises value and he has developed investing methods to turn that value into EV+.

VARIANCE (or Randomness)

The first step to becoming a successful investor is to understand variance. Variance is a theoretical concept that you need to 'get' before you can move on. It is invisible, but you have to know that it's there, and how it works. Like a physicist has to believe in, and understand, gravity even though he can't actually see it.

Understanding variance/randomness is the opposite of believing in fate. Events are not preordained. Events are chaotic and random. Nothing happens 'for a reason'. Things just happen because events that take place, no matter how small, have an effect on everything around them (sometimes known as 'the butterfly effect').

The influence of the laws of cause and effect are at play all around us, every second of every day, everywhere in the universe, from the moment of the big bang (if you believe in that). Anything that can happen, might happen. Indeed, it will happen if you wait long enough. Everything that happens in the universe does so within a framework, the 'laws' of how the universe works. These are the rules of the game. Our best way of describing these laws is with:

1. The standard model of particle physics
2. Einstein's general law of relativity

Essentially, the force of gravity and the speed of light are fixed. Everything that happens in the universe conforms to these laws, but what actually happens within the framework that these create is random and chaotic. There is loads of stuff in the universe, moving around, so it is interacting all the time with lots of other stuff. Even the tiniest event, the briefest collision between the most tiny and insignificant of these can set off a chain reaction that leads to a radically different outcome than would be observed if the tiny event hadn't taken place. By the way, if you are a physicist you will know that some of what I have just said is not strictly true. I know this because my youngest daughter is a physicist and she has pointed this out... daughters, eh?

OK, enough already with the physics. What on earth has all this got to do with gambling? Everything, is the answer because games of sport, hands of cards and the economies of the world all work in the same fundamental way as the universe: there are rules and there is randomness. That's all.

Take a football match. The rules are fixed. There will be 22 players, a referee, a rectangular field and 2 sets of goals. The referee will blow his whistle and the players will start to play. What happens over the next 90+ minutes on that rectangle is random. There is a discernible and predictable pattern to the randomness for sure.

We can know that it's likely that the better players will play better. The team with more of the better players is more likely to win. The number of goals scored is most likely to be between 2 and 4. Et cetera.

We can know these things, these 'likelihoods', by observation and research, considering data on previous similar occurrences, i.e. other football matches, especially those involving these teams and these players. But what we cannot do is predict ***exactly*** what will happen. From the moment the referee blows his whistle to start the match there is a virtually infinite number of possibilities of how the game might play out. Every decision a player makes, every spin and deflection of the ball, every instruction given by the coach, each breath of wind, every noise from the crowd that the players hear, every decision by the officials; they all come together to create a narrative, a story on a timeline across the 90 minutes that describes exactly what happened. And if you played the match a trillion times, the story would never be exactly the same twice.

This is because every variable is multiplied by every other variable to come up with the total number of possible story lines. In the infinite number of story lines a percentage of them will result in the score ending nil-nil. A different percentage will lead to 1-0, 2-0, 3-1 etc. A much smaller percentage will result in the score ending 12-7. But if it is possible that it can happen, it will happen, eventually, even if it's a tiny percentage of the time.

Every possible outcome will be included in the percentage distribution of different scorelines that result from our near infinite number of story lines. We can look to this distribution to observe the implications of the rules of the game, the framework within which it operates. None of the story lines will end up yielding a score of 5000-0. The rules of the game are that you play for 90 minutes (plus a bit more) and that after a goal the ball gets placed back on the centre spot. The clock continues to run while the ball is returned to the middle. So there isn't enough time for a team to score 5000 goals in a football match. That possibility exceeds the framework of the game established by the rules, so it will never happen. Nothing will ever travel faster than the speed of light.

So what are the practical implications for understanding this randomness theory? First, you understand that, fundamentally, predictions are useless. It is impossible to predict exactly what will happen because the number of actual possible story lines is almost infinite. But it *is* possible to guess at the pattern of likelihoods in advance. That is the best we can do, and it is what we must do.
We know that, within the framework, all the things that are possible *will* occur a certain percentage of times. The job of the professional gambler is to discern the pattern in the randomness; to say '*how likely*' something is to happen. Not to say what 'will happen'. And then to compare those perceived likelihoods against market prices.

Where the subject involves animate objects, like players, officials, fans, the pitch and weather of a football match then the pattern in the randomness cannot be projected precisely. It involves an element of guesswork. Observation, such as watching previous matches involving the teams, or analysis by looking at a league table can make the guesswork more accurate than a guess plucked from thin air. Modelling the relative strengths of the teams and the players using sophisticated analysis, and then feeding that into an engine which works out a distribution of possible scorelines can get you pretty close to projecting the percentage distribution within the infinite story lines. But it is still guesswork, even when it is very informed guesswork using a computer model.

When two boxers get into a ring the better fighter will normally win. But the rules of the ring dictate that either fighter could win. So there doesn't have to be a 'reason' why Buster Douglas knocked out Mike Tyson. Randomness means that it was inevitable that it would happen at some point, if you iterated that fight over enough times. It just happened to be that night.

But where the subject involves an inanimate object such as a roulette wheel or a drum of lottery balls then we can be absolutely precise in discerning the patterns in the randomness. So long as the roulette wheel (let's use a European wheel here with a single 0) is well made and working properly then the distribution of the ball falling into each slot will be 2.703% over an infinite number of spins of the wheel.

When a roulette wheel spins it is randomness that governs which slot it falls into. There is no memory to the wheel, no number is 'due' to come up just because it hasn't come out for ages. In 1913 in the Monte Carlo Casino, the ball in a roulette wheel landed in a black slot 26 times in a row. The odds of that happening were over 67 million to 1. So while it was surprising to the onlookers (and ruinous to the 'red backers') the sequence was actually no more surprising than any of the other 67 million possible story lines that the 26 spins could have produced.

So the point of learning the theory of randomness is to realise that predictions are useless to a professional gambler, because they are impossible. It is impossible to see into the future. It is one of the immutable laws of nature. It is part of the framework. We need to understand that our job is not to predict, but to discern patterns in the randomness; to express *how likely* something is to happen, not to say what we think *will* happen. Once we understand this principle we can move on to Expected Value.

Positive Expected Value (EV+)

Positive Expected Value means finding investment opportunities where the odds are in your favour. It is, for instance, backing something with a 50% chance of happening at odds of 11-10.

If anything can happen (and we cannot know what is going to happen), how can we profit from betting on something that is going to take place in the future? The answer is that all you need is to be armed with an idea of how likely something is to happen, and then to know that the chance of it happening is greater than the odds being offered when you make your investment.

It's all about the odds.

An investment is risking something in the hope of a profitable return. The profit you make when you win, divided by the amount you risked are the odds. So if you bet £100 on a horse, and it wins, and you get £400 back then your profit was £300. 300 over 100 is 3 over 1. Your odds were 3/1.

On this occasion the horse won. But how likely was it to win? If we ran the race a million times, on how many occasions would our horse win? What is the pattern in the distribution of the randomness? Let's say out of a million races our horse wins 200,000 times. The pattern in the randomness is that our horse's true chance of winning the race is 800,000 over 200,000. Thus the horse's true odds were 4/1.

If we bet £1 a million times on our horse at 3/1 we would lose money. We would get back £800,000 having staked £1,000,000. Our loss would be £200,000. £200,000 is 20% of £1,000,000 (apologies if this is labouring the point). 3/1 is 'bad value' for that horse, to the tune of 20%: the EV was only 0.8.

But if we could get 5/1 about the horse the sums become £1,200,000 return on our £1,000,000 stake. The horse becomes value, at 20%. An EV of 1.2.

When I say the 'horse' becomes value, I don't really mean the horse. I mean the odds of 5/1 are value. Odds of 3/1 are not. The horse is, effectively, irrelevant. What matters are the odds that you get, not the horse itself. Any horse, no matter how slow, has a chance of winning any race that it lines up for. Those are the rules. That is the framework within which we are operating. What happens in the race on any single occasion doesn't make the bet a bad bet. Single results don't prove whether something was value or not, whether it was a good bet to make or a bad bet.

The truth of value investing only reveals itself over time.

There's a paradox that gamblers have to get their head around. The difference between short-term and long-term. The only thing that matters is winning overall, in the long term. But winning on any one single occasion barely matters at all. Value investing is a war waged though a series of many, many battles. Winning or losing any single battle does not really matter. Looking back on all the battles, from a position of triumph having prevailed in the war, the fuss that you made about the loss of any single battle will seem ridiculous. Value investing is nothing to do with trying to win every battle. The only thing that matters is having the odds on your side consistently as you fight the battles, so that as the results of a great number of battles become known your superiority becomes apparent.

Even great football teams lose games. The best poker players regularly lose loads of hands. The best investors buy shares in companies who go bust. The best golfers make bogeys. Champion jockeys lose far more races than they win. Short-term losses are ultimately irrelevant. All that matters is long term overall victory.

There is a neat, simple mantra for any professional investor to adhere to:

Decisions Not Results

If you keep making the right decisions, keep betting with the odds in your favour, keep finding Positive Expected Value (EV+) then, as long as you stay in the game for the long-term, you will end up a winner.

So how do we know if odds are value? When we're dealing exclusively with an inanimate object like a roulette wheel then we can tell for certain. While randomness dictates that the ball could land in any of the 37 slots on any given spin, we know that pattern to the randomness will play out to reveal an even 2.703% distribution in each slot over a long period. There is exactly a 36/1 chance of each slot being the winner on each spin. So to get value in betting on a single number on a roulette wheel we would need to get odds of greater than 36/1. The casino actually offers 35/1. So we can say that roulette is bad value. If you play for long enough you will lose. It is inevitable. The only exception would be if you stumbled across the equivalent of the run of 26 blacks in a row, and kept betting black. That would be the equivalent of a lottery win. Don't hold your breath.

Poker is different. Although the cards are inanimate the other players are human, meaning that betting on hands of poker is very much chaotic and random. For a top professional player like Phil Ivey his ability to win overall at poker comes from his ability to discern the patterns in the randomness of the betting on the hands. It has nothing to do with the hands he gets dealt. Over a long term the strength of the hands he has are exactly the same as they are for any other player. It's what he does with the betting on the hands that makes him successful.

Part of the job of understanding the randomness of poker hands comes from an understanding of the likelihood of any particular card or type of card being turned over on the flop. But it also comes from understanding opponents. How likely they are to have certain hands. Phil Ivey doesn't *know* which card is going to get turned over on the flop. Nor can he know for certain which cards the other players hold. But he is able to discern enough from the hard and soft evidence at his disposal a good estimate of how likely he is to win the pot. His decision to bet or not bet is then based entirely on value. If the odds of return (the amount of money in the pot) exceeds the chance that he will win it then he bets. The exact same principle as betting on the horses. He bets when the odds are in his favour. What happens on any single hand is irrelevant. The only thing that matters is winning in the long run, winning the war. To accurately compute odds, we must take a trip to the Cote d'Azur...

Monte Carlo or Bust

Monte Carlo simulations are “computational algorithms that rely on repeated random sampling to obtain numerical results”, according to wikipedia. The further definition is even more off-putting for non-mathematicians, so I will spare you that! Instead, I will attempt to explain, in layman’s terms, how a Monte Carlo simulation (MC Sim) is a useful tool in determining accurate percentages and thus, true odds.

Monte Carlo Simulation: THE 2010 WORLD CUP

A good example of how you can utilise an MC Sim was how myself and the betting syndicate I advise used it for the 2010 World Cup. First, we handicap the teams in terms of goal superiority. For example, if we top rate Spain, they were on 0.00. Germany may have been 0.2 (0.2 goals inferior to Spain), Brazil 0.3, England 0.6 and so on. We then used previous World Cup data to calculate the average goals per game in first group game, second group game, third group game, quarter-final, semi-final, and final. This gave us a prediction for every group game in terms of superiority and total goals. Finally, we programmed the World Cup draw into the MC sim.

The next stage is to simply decide how many iterations (the number of times the simulation plays the tournament) and hit the Start button. Playing the World Cup 10,000 times according to the inputs gave us the percentage chance of any criteria we wished (winner, group winner, number of goals etc). As the tournament progressed, we had actual results to input as well as altered handicap marks. After every game I would generate another 10,000 iterations, get the updated percentage chances and bet accordingly. I must have played half a million World Cups!

Without an MC Sim to help you calculate EV, you can utilise the “sharp” bookmakers as the “true odds”. An MC Sim is undoubtedly ideal to predict variance, but without such an aid, your safest option is to trust your EV+ and ‘accept’ the inevitability of variance.

A real-world example of this can be demonstrated by “The Best Racing System in the World” (well, possibly). This is an each-way system. The brief ‘rules’ are to back horses each-way, where the place element of the bet is EV+. These are highlighted by a simple piece of software that surveys bookmaker sites searching for odds and comparing them with the current offer with the exchanges. It is slightly more complex, but those are the bare bones. Lots of bets (sometimes hundreds) can be found in a day.

In a recent sample I saw 3,770 bets had been placed (1 pt e/w) for a profit of 1900. The system works because it calculates that there is EV+ in all of the bets at the time they are placed. In fact, the system can be improved further by laying back the win element of the bet on the exchanges (because it is the place part of the bet that holds the EV+). But, before you start clamouring for more precise details, there are notable drawbacks, primarily the logistical drawback of getting the bets on without restrictions and/or account closures.

But, more importantly, the variance with these bets is extreme and I have seen examples of 1,000+ bets making a loss despite the implicit EV+ of the proposition. That becomes psychologically demanding and leads me nicely (this hasn't just been thrown together you know!) to the vital subject of psychology, which we will cover in detail in the next episode.

Until then...

7: Betting Psychology

It is perhaps the greatest paradox in the investment world that many consistently profitable money managers have a large percentage of losing clients, ***writes Russell Clarke***.

I recently saw the records of a very successful US Hedge Fund, that showed over 40% of their lifetime client base had actually lost money while investing with the fund! This was a fund that had a relatively consistent record of double-digit annual gains over decades. This rather odd story is by no means an isolated incident, it is repeated within many successful funds.

So, what causes this phenomenon? Bad timing and illogical emotion probably covers the answer. It is human nature to be tempted to buy into an investment when it is doing well and sell when doing badly. Jack Schwager in his cult classic, *Market Wizards*, sums up "the common dual tendency of many people to initiate an account after a manager has already had a large winning streak and to liquidate in the midst of a drawdown is the single biggest blunder investors make". Clearly, if the path to riches was as simple as to just invest in a fund that was currently outperforming, we would all be rich.

The Turtles Story

In 1984 a man called Richard Dennis had a wager with his financial trading partner, William Eckhardt, that he could train a selected number of people (later to be termed The Turtles) to trade profitably in the financial marketplace, with no prior financial trading experience. It was a classic Nature v Nurture experiment. Over a thousand people responded to simple classified advertisements placed in The International Herald Tribune, Barrons and The Wall Street Journal. From these, around 40 were interviewed and a dozen or so were initially chosen.

The Turtles were given just two weeks training and were then allowed to trade with real money, strictly following the relatively simple systems and rules taught them by Dennis and Eckhardt. This story is almost folklore in financial circles, albeit a little cultish. The systems they were taught were simple and took up very little of each day. They traded at simple desks in a non-descript office where the most used piece of equipment was a ping-pong table!

The Turtles were "trend-following" traders. Trend followers wait for a market to move and then follow it. The aim is to capture the majority of a trend, either up or down. The doyen of trend followers was Richard Donchian; as far back as 1960, he encapsulated the philosophy into a brief rule, "When the price moves above the high of the previous two weeks, cover your short positions and buy. When the price breaks below the low of the two previous weeks, liquidate your long position and sell short."

The Turtles themselves entered markets on breakouts. For example, if a contract made a 55 day breakout (i.e. higher than at any time in the past 55 days), it was a

buy. Similarly, if it broke to the downside they would sell. They were buying rising markets and selling falling markets….the age old wisdom of “buy low and sell high” turned on its head! The Turtles also used a shorter term breakout system that operated over 20 days. Each turtle was allowed to use either system, or both, or any combination of the two.

In terms of staking, the Turtles were taught about risk management and how much to risk on each trade. This was done by calculating the daily volatility in each market. Again it was a relatively simple calculation. Given this, it is perhaps surprising to note the differences in returns made in that first year by the Turtles. Jim Melnick produced an outstanding +102% in 1984, wheras Liz Cheval managed a loss of -21% over that same initial 12 month period. The same methodology brought very different results with cognitive behaviour and biases playing a major role.

The story itself is a fascinating one and I cannot do it justice in such a short article, but the result was that Dennis was proven correct as a number of the Turtles went on to take their place among the most successful traders on Wall Street over the following three decades.

Turtles and Betting

How does this relate to betting? As a boy, I was both fascinated and perplexed, in equal proportions, by The Sporting Life Naps Table. Each year less than 20% of the full-time racing journalists in the competition ever managed a level stake profit, and every year it was a different 20%! Their results looked completely random. The conclusion that screamed at me was that fundamental/subjective analysis of form (as practised by virtually every racing journalist) was very difficult to profit from, and individuals, over a lengthy period of time, are just not suited to profiting from their own opinion. To be entirely fair, they were also presenting their tips without any knowledge of the price of the horses they were selecting.

Given this, why is fundamental/subjective analysis of form, going, distance, trainers, so popular? Because most people know no other way? Because we need to feed our ego (my opinion is superior to your opinion)? Because it seems the most logical thing to do? Probably it is a mixture of these reasons and maybe others that I have not considered.

Returning to the financial world where information is available 24/7 and is far more public than in sports betting, I researched the published results of the most successful funds. To eradicate luck and optimisation, I looked for exceptional performance over a lengthy period of time. I chose 20 years to cover bull and bear markets and a myriad of economic conditions. I settled on 20%+ pa average returns over the 20 years. Unsurprisingly, with the bar set so high, only seven funds qualified.

Name of Fund	Inception	Average Return
Eckhardt Trading Co	1990	22.34%
Hawksbill	1988	22.11%
ECM Capital Man.	1987	21.75%
MJ Walsh & Co	1985	21.14%
Blenheim GL	1986	22.06%
Tudor BVI Global	1986	20.67%
Berkshire Hathaway	1965	20.30%

Of these seven funds, four are systematic investing funds. The definition of systematic would be “rule-based trading”. One of the others (Paul Jones' Tudor) certainly uses a systematic approach, even if it is not strictly rule-based. And, of course, Berkshire Hathaway is the investment vehicle of Warren Buffet! That more than half of this most exclusive league table is made up of systematic investing funds is even more remarkable when you know that less than 1% of all funds available worldwide operate on a systematic basis.

So, why does an objective approach achieve superior results to a subjective one? The major reason is **Psychology**. The brain is not the rational, calculating machine that we like to believe. Over its evolution it has developed many shortcuts, biases and downright bad habits. Some of these would have helped early humans (fight or flight), but they create problems for us today. In addition, some of the brain’s flaws may result from socialisation rather than instinct. As a result of both nature and nurture, the brain can be a deceptive guide for rational decision making.

The brain’s inadequacies have been rigorously studied by social scientists. In the world of economics and investment, behavioural economists question the basic assumption of human beings as rational decision makers. They are correct to do so because the evidence is overwhelming. The insights presented here, primarily from the world of finance, are equally relevant to sports betting. Investments are no more than bets on the financial markets and sports bettors can learn plenty from the more sophisticated financial world.

"Overconfidence killed the caterpillar"

Our brains are programmed to make us feel overconfident. This has been tested in numerous studies. For example, people were asked to guess the weight of a London double decker bus; but, rather than a precise figure, give a range within which they were 90% confident they had the correct answer. Time and again, they fell into the trap of quoting too narrow a range and thus missing the correct answer. Most of us are unwilling to reveal our ignorance by specifying a very wide range.

We prefer to be precisely wrong than vaguely correct.

Overconfidence in our own abilities spills over into over-optimism. This can have dangerous consequences when developing strategies, as these are based on what may happen and, too often, are unrealistically precise and over-optimistic estimates of the uncertainties.

Mental Accounting

This term was first coined by a pioneer of behavioural economics called Richard Thaler. He defined Mental Accounting as “the inclination to categorise and treat money differently, depending on where it comes from, where it is kept, and how it is spent.” For example, a gambler who loses his winnings, typically feels he hasn’t really lost anything, despite the fact he would have been richer had he stopped when he was ahead. This can cause problems such as erratic staking.

Status Quo Bias

Nothing to do with Francis or Rick! In a classic experiment conducted by Samuelson and Zeckhouser, students were given a hypothetical inheritance. Some were given the inheritance in the form of a low risk profile portfolio, others were given it in the form of a high risk profile portfolio. Both sets showed a reluctance to change the allocation. The rational choice would have been to re-balance the portfolios, but the students largely chose not to change. The fear of changing comes from aversion to loss.

A similar bias is the Endowment Effect, which is an irrational desire to hang on to what you own. To demonstrate this, Thaler gave students a mug emblazoned with their University Logo. On average, the students demanded $5.25 before they would sell. However, students without the mug were only willing to pay $2.75 to acquire one.

Both the Status Quo Bias and the Endowment Effect make for poor decision making.

Anchoring

A well-known bias. Present the brain with a number and ask it to make an estimate of something completely unrelated, the estimate will be anchored by the original number.

A classic example of this is when two groups were asked at what age Ghandi died. The first group were asked if he died before or after age nine and the second group were asked if he died before or after age 140. Both examples were obviously wrong, but, the anchor effect made the first group guess an average age of 50 and the second group an average age of 67.

Anchoring can be seen in price negotiations (buyer starts low, seller starts high), or advertising a retail price. Fund managers advertise past performance, and, despite the fact that there is very little correlation between past performance and future performance, it is anchored in the consumer's mind.

Related to Anchoring is the need for really statistically robust numbers for predicting the future. A great example is Equities. Anyone looking at the 1980’s and 1990’s would have a double digit per annum return firmly anchored. But the noughties brought a negative return! And the 60’s and 70’s returned a miserable 2% per annum. Double digit returns have been achieved in only four of the past 13 decades. So beware of a mere 20 year track record!!

Sunk Cost

Otherwise known as “throwing good money after bad”. Why do we do it? Loss aversion is the broad answer and the current trend for “kicking the can down the road” by the governments of the world is a classic example. Bailing out countries such as Greece (that can never repay their debts) is deemed preferable to accepting the inevitable loss today.

On a more personal level, you buy shares in ABC for £1, but the price falls to 70p….do you accept the loss? For most people, the answer is “no”. Indeed, Anchoring kicks in (i.e. you may sell if the price recovered to £1, despite the fact at £1 you originally felt the share was a buy).

Herding Instinct

The desire to conform to the opinions and behaviour of others is a fundamental human trait and an accepted principle of psychology. We don’t mind being wrong, if everyone else is also wrong! To quote Warren Buffet, “as a group, lemmings may have a rotten image, but no individual lemming has ever received bad press”.

For punters, the herding instinct is difficult to resist. Give yourself half a chance, and stop reading the Racing Post! [Read geegeez.co.uk instead! - Ed.]

False Consensus

The tendency to over-estimate the extent to which others share your views or beliefs. This happens for a number of reasons, including:

- **Confirmation Bias** is the tendency to seek out opinions and facts that support your own beliefs (readership of newspapers with a certain political bias is a good example, the twitter accounts you follow perhaps another).
- **Selective Recall** is the habit of only remembering facts and experiences that reinforce our assumptions or beliefs.
- **Biased Evaluation** is the quick acceptance of evidence that supports your own hypothesis, whilst reserving rigorous analysis for any contrary opinion. And, finally...
- **Groupthink** is the pressure to agree with others in team-based cultures.

False Consensus is a very dangerous psychological trait in either financial investments or in betting.

An awareness of the brain's flaws and psychological traits can be a major factor when attempting to be successful in any form of investment/betting. The human brain itself makes it unsuitable as a primary tool for financial analysis. Therefore attempting to profit from betting using a subjective approach, whilst emotionally satisfying when proven correct, is fraught with dangers and difficulties that can be potentially circumvented if one adopts and maintains a 100% objective, rule-based approach.

I realise that here at Geegeez the majority will follow a hybrid of objective and subjective methods for bet selection. The purpose of these articles is not to change your approach. Rather, it is to highlight mathematically optimal situations in which to bet (either objectively or subjectively). This particular article is designed to highlight some of the more common psychological ‘traps’ that can scupper even the most advantageous EV+ strategy. They are especially problematic when variance takes a turn for the worse!

8: Logistics

In previous articles we have covered the Efficient Market Hypothesis and the Wisdom of the Crowd, and how these theories help us identify opportunities that have a positive Expected Value (EV+). Our task as punters is to try and limit our individual bets to those that have an EV+.

We can do this by opening new accounts with bookmakers when they are offering EV+ bets as an opening offer. We can do this by taking advantage of reload/ongoing offers from bookmakers. We can also hunt for EV+ Price Boosts. We can bet each-way in races where the fractions and extra places are in our favour. And, we must always take the best prices available and utilise Best Odds Guaranteed where possible.

In addition, we have identified the 'sweet spot' in terms of when to place our bets, which is when BOG is available, margins are not too severe, and there is a degree of liquidity in the market.

Finally, we have recognised and prepared ourselves for the variance that occurs even within a large series of EV+ bets. Psychologically we are prepared for adverse sequences and this knowledge gives us the confidence to carry a plan through.

That's all great in theory, but what about the practice?

Every individual will have a preference for how they like to bet and a tolerance for risk/reward. What follows is a framework that readers may elect to build upon and adapt to suit their own style and situation.

1 Take Advantage of Opening Offers… Smartly!

To keep up to date on such offers matched betting sites are useful. Most charge a subscription but there are free sites on social media (try searching Matched Betting on Facebook).

There are scores of bookmakers and each can be seen as a potential profit centre. You should try and wait for the most generous offers. These will often be prior to major sporting events, but can be at any time.

The ultimate goal is to open accounts with all of them. This will give you maximum profits from the opening offers but also keep your options open for the other concessions.

2 Keep abreast of reload/ongoing offers

Again, the Matched Betting sites are useful for these. The largest one on facebook seems very busy and people post the latest offers and experiences.

3 Resolve only to bet in EV+ situations

Potential bets should be either the majority of the below or a combination of at least two or more of:

- Price Boost

- Enhanced Place each-way

- Best Odds Guaranteed

- Best price available

- Opening Offer

- Ongoing Offers (free bets)

4 Always be on the lookout for Multiples

If you find two EV+ bets with the same bookmaker, then placing a double simply multiplies your EV. For example, if you have two horses and one represents an EV of 1.15 and the other 1.20, then the double has an EV of 1.38. The same calculation can be done for trebles and above. Clearly the strike-rate falls with this type of bet, but the EV+ is enhanced.

5 Accept ‘variance’ for what it is…

…and stick as closely to these rules as you can for the vast majority of your bets.

I hope you have enjoyed this series of articles and picked up at least a small amount of knowledge that will enhance profits or at least reduce losses. The closer you stick to these rules, the more you will have shifted the mathematics in your favour.

And we've achieved all of this without even touching upon any selection methods!

- ***RC***