MAFL Tipsters For 2009

What's an Heuristic When It's At Home?

You've just been told that, next weekend, Ecuador will meet Guam in a full international soccer match. Someone's offering you $1,000 to tip the winner. Without doing any research, which team do you predict will win?

Some of you might know that Ecuador is ranked in the top 40 teams in the world and Guam is ranked around 200. If that's you, I'm guessing you'd tip Ecuador.

But I'd also guess that many others of you would opt for Ecuador too, citing reasons such as "I think I remember seeing them play once and they were okay", or "Ecuador's in South America and I know a lot of good soccer teams come from there", or "I'm pretty sure Ecuador's a lot larger than Guam, so they'll have a larger pool of players to draw on".

Those of you who reasoned in a way similar to what I've just described have employed what are called "heuristics", which are rules of thumb that allow us to combine what we know that we think might be relevant to come up with a decision that we feel is reasonable.

The notion of heuristic-based decision-making contrasts starkly with the alternative 'rational human' theories, which posit that we gather all relevant information, weight it appropriately and then come to an optimal, fully-considered decision. Rarely is such an approach applied in practice, firstly because we don't have the time to gather all relevant information (and how would we know if we had it all anyway?) and secondly because we've not had enough experience to know how to optimally weight it all in any case.

Heuristics don't always produce strictly the 'best' decision, but they often produce something close to it, according to a range of studies that have looked at how humans actually make decisions in relation to artificial and to real-world problems. For a taste of what's out there, have a look at:

- The Wikipedia entry for heuristics: http://en.wikipedia.org/wiki/Heuristics
- Polya's book: http://www.amazon.com/How-Solve-Mathematical-Princeton-Science/dp/069111966X/ref=pd_bbs_sr_1?ie=UTF8&s=books&qid=1230861451&sr=8-1
- Gigerenzer's book: http://www.amazon.com/Simple-Heuristics-That-Make-Smart/dp/0195143817/ref=sr_1_4?ie=UTF8&s=books&qid=1230861580&sr=1-4
- Kahneman & Tversky's book: http://www.amazon.com/Judgment-under-Uncertainty-Heuristics-Biases/dp/0521284147/ref=sr_1_2?ie=UTF8&s=books&qid=1230861704&sr=1-2

(If you've an economic bent, also have a look at what Google throws up if you search on "behavioural economics" or its Americanised spelling equivalent.)

This year, in place of all the MM, SMM and other models that we used last year, I thought I'd create a number of AFL Tipping strategies based on heuristics.

To do this, I'm going to start by creating simple building-block heuristics, and then combine them into strategies. Each strategy will comprise one or more heuristics ordered so that, if one heuristics fails to produce a selection, another heuristic will be employed to break the impasse. Think of it as the Lego® style approach to tipping supremacy.

Here are the heuristic building-blocks from which we'll construct strategies:

Heuristic Name	Heuristic Description	Move to the Next Heuristic If
Favouritism	Tip the team that is the TAB Sportsbet favourite as at 12 noon on the Wednesday before the match	The two teams are equal favourites
True Home Team	Tip the team that is the true Home Team for the match	There is no true Home Team for the match in question
Most Recent Tipping Success	Tip the team that has most recently, in the current season, been tipped and won or drawn. If, in the same round, one team has been tipped and won and the other tipped and drew, select the team that won. Revert to the immediately previous round if neither team was tipped and won or drew in the round currently under review, even if one or both teams were tipped and lost.	Both teams' most recently tipped win (or draw) was in the same round or neither team has a tipped win (or draw) in the current season
Season-Long Tipping Success	Tip the team that has been most often correctly tipped in the current season (treating wins as 1 correct tip and draws as ½)	Both teams have the same aggregate tipping score for the current season
Team's Most Recent Success	Tip the team that has most recently, in the current season, won or drawn (for this rule a recent win beats a draw in the same round). Stop if both teams' most recent win (or draw) was in the same round.	Both teams' most recent win (or draw) was in the same round or neither has a win (or draw) in the current season
Team's Season-Long Performance	Tip the team that is currently higher up on the competition ladder. If they are both currently tied revert to the previous week's ladder. In Round 1 use the ladder from the previous season as at the end of the home-and-away games (ie Round 22 in 2008).	(In the unlikely event that the two teams were tied on the previous season's ladder, continue working back through the weekly ladders in the previous season until the tie is broken)
Team's Most Recent Result	Tip the team that, in the current season, won by the larger margin (or lost by the smaller margin) in the previous round.	Both team's margin of victory (or of defeat) in the previous round were identical
Longest Successful Tipping Streak	Tip the team that was tipped (in the current season) last round provided that it won or drew (a win beats a draw). If both teams were tipped in the previous round and won, tip the team with the longest streak (in the current season) of being tipped and winning or drawing (again, a win beats a draw at the start of a streak of the same length). The streak is broken if a team is not tipped or is tipped and loses.	Both teams have the same length streak (note that a streak cannot extend into the previous season)
Team's Longest Streak of Success	Tip the team that won or drew (in the current season) last round (a win beats a draw). If both teams won, tip the team with the longest streak (in the current season) of winning or drawing (again, a win beats a draw at the start of a streak of the same length). The streak is broken if a team loses.	Both teams have the same length streak (note that a streak cannot extend into the previous season)

The next step is to combine these heuristics into strategies.

For this purpose I've allowed only one strategy, BKB, to use the Favouritism heuristic. This means that every other strategy is based on, at most, information about team successes and about the accuracy of its previous tips.

The columns in the following table describe the strategies that will be tipping in season 2009. The numbers in each column denote the priority of the relevant heuristic for that particular strategy.

Heuristic Name	BKB	CTL	Home Sweet Home	Shad-ow	Silho-uette	EI I	EI II	STM I	STM II	Ride Your Luck	Follow The Streak
Favouritism	1										
True Home Team			1								
Most Recent Tipping Success				1	2	2	1	2	1		
Season Long Tipping Success				2	1						
Team's Most Recent Success								1	2		
Team's Season Long Performance	2	1	2	3	3	3	3	3	3	2	2
Team's Most Recent Margin						1	2				
Longest Successful Tipping Streak										1	
Team's Longest Streak of Success											1

As you can see, no strategy uses more than three heuristics and many use only two. All of them have the Team's Season Long Performance as their final rule though, in practice, some of them rarely have need to use this rule.

Here's a quick summary of each strategy:

BKB (short for Bookie Knows Best) is one of the simpler strategies. Each week it tips the TAB Sportsbet favourite unless the teams are equal favourites in which case it uses ladder position to break the tie.

CTL (short for Consult The Ladder) is also a simple strategy. Each week it tips whichever team is higher on the ladder, referring back to earlier rounds if a tiebreak is needed, and using the final regular-season ladder from the previous season to make its selections for Round 1.

Home Sweet Home tips the true Home Team when there is one, and otherwise resorts to the CTL strategy.

Shadow is the first of the more complex strategies, combining heuristics pertaining to its own performance with, if required, those pertaining to team performance.

Silhouette, named because of its similarity with Shadow, is another more complex strategy. It differs from Shadow only in the priority with which it applies its base heuristics.

EI I (short for Easily Impressed I) is a strategy that selects the team that won by the most (or lost by the least) in the previous round. In the event of a tie it tips the team with which it has had most recent tipping success. In Round 1, since neither of these rules produces a tip, the strategy must use another rule; it mimics CTL.

EI II varies from EI I in that it puts the Most Recent Tipping Success ahead of a Team's Most Recent Margin.

STM I (short for Short Term Memory I) is a strategy that looks firstly at the length of time since each team's most recent success, then at the length of time since it has successfully tipped each team, and then at ladder position.

STM II varies from STM I in that it puts Most Recent Tipping Success ahead of a Team's Most Recent Success.

Ride Your Luck is the first streak-based strategy. It tips that team that has provided it with the longest streak of successful tipping, reverting to ladder position in the event of streaks of equal length.

Follow The Streak is the second streak-based strategy. It tips that team that has had the longest streak of success, reverting to ladder position in the event of streaks of equal length.

2008 Tipping Performance

The table below summarises the performance of each strategy in Season 2008. The percentages denote the accuracy of the given heuristic when it is used by the given strategy as the final basis on which to come up with a final selection, and the number in brackets below the percentages denotes the number of games for which the rule was used, except in the final row where they denote the ranking of the performance of the relevant strategy. The cells that are greyed are those that relate to the strategy's number one priority heuristic.

Heuristic Name	BKB	CTL	Home Sweet Home	Shad- ow	Silho- uette	EI I	EI II	STM I	STM II	Ride Your Luck	Follow The Streak
Favouritism	72.2% (176)										
True Home Team			54.3% (164)								
Most Recent Tipping Success				64.9% (134)	58.3% (12)	100% (1)	62.1% (132)	66.1% (31)	64.1% (131)		
Season Long Tipping Success				68.4% (19)	69.3% (140)						
Team's Most Recent Success								64.4% (111)	73.3% (15)		
Team's Season Long Performance	- (0)	69.3% (176)	66.7% (12)	65.2% (23)	70.8% (24)	50.0% (8)	50.0% (8)	67.6% (34)	66.7% (30)	71.4% (91)	69.8% (63)
Team's Most Recent Margin						59.3% (167)	58.3% (36)				
Longest Successful Tipping Streak										69.4% (85)	
Team's Longest Streak of Success											66.4% (113)
Total (Rank)	72.2% (1)	69.3% (3)	55.1% (11)	65.3% (6aeq)	68.8% (4)	59.1% (10)	60.8% (9)	65.3% (6aeq)	65.3% (6aeq)	70.5% (2)	67.6% (5)

As you'd expect BKB heads the pack, but 8 of the 11 strategies tipped at better than 65% in 2008, which is extraordinary when you consider how simple these strategies are. Collectively, BKB aside, these strategies know as much about AFL as a fig-eating Bornean tree shrew, yet they each managed to turn in wholly unembarrassing performances.

In particular, Ride Your Luck, CTL and Silhouette performed solidly, tipping above or around 69%. Ride Your Luck's performance can be at least partly attributed to the success of CTL since it fell back on the CTL strategy in over one half of the contests last year. Silhouette, however, used CTL's strategy in just 24 games. Its performance was instead crafted around the Season Long Tipping Success heuristic (which I suppose will inevitably be a good strategy when it's being a good strategy ... if you know what I mean).

Tipping Performance in Earlier Seasons

As MAFL Investors can attest, it's one thing to do well in a single season, but quite another to repeat the performance over an extended time period. With that thought in mind I decided to see how well each of the 11 strategies has fared over the last 10 seasons.

The table below has the results.

Tipping Performance of Each Strategy (1999 - 2008)

Year	BKB	CTL	HSH	Shadow	Silhouette	EI I	EI II	STM I	STM II	RYL	FTS
1999	110.5	107.5	98.5	106.5	97.5	105.5	99.5	111.5	103.5	109.5	110.5
2000	120	120	99	115	118	110	109	112	115	113	114
2001	116	115	85	111	112	104	110	115	118	112	114
2002	123	103	107	106	100	95	103	98	102	104	104
2003	120.5	110.5	103.5	103.5	101.5	99.5	99.5	106.5	104.5	106.5	103.5
2004	118	111	107	103	104	101	110	101	106	108	107
2005	114.5	107.5	106.5	100.5	102.5	100.5	101.5	101.5	101.5	107.5	103.5
2006	116	114	100	109	108	101	106	110	109	122	115
2007	114.5	102.5	101.5	95.5	104.5	97.5	113.5	96.5	94.5	102.5	99.5
2008	127	122	97	115	121	104	107	115	115	124	119
Average	118.0	111.3	100.5	106.5	106.9	101.8	105.9	106.7	106.9	110.9	109.0
%	63.8%	60.2%	54.3%	57.6%	57.8%	55.0%	57.2%	57.7%	57.8%	59.9%	58.9%
Rank	1	2	11	8	5	10	9	7	5	3	4

So, over the longer term, the efficacy of CTL, Ride Your Luck, Follow The Streak and Silhouette – the strategies that finished 2nd through 5th in 2008 – are borne out.

I'll confess to being quite surprised about the poor performance of Home Sweet Home, especially when you consider that about 10% of its tips are based on CTL. What's more is that it seems to have been on a fairly steady decline since 2004.

Here's another way of looking at the tipping performance data, this time by comparing each strategy's performance with BKB's in the same year.

Tipping Performance of Each Strategy Relative to BKB (1999 - 2008)

Year	CTL	HSH	Shadow	Silhouette	EI I	EI II	STM I	STM II	RYL	FTS
1999	97%	89%	96%	88%	95%	90%	101%	94%	99%	100%
2000	100%	83%	96%	98%	92%	91%	93%	96%	94%	95%
2001	99%	73%	96%	97%	90%	95%	99%	102%	97%	98%
2002	84%	87%	86%	81%	77%	84%	80%	83%	85%	85%
2003	92%	86%	86%	84%	83%	83%	88%	87%	88%	86%
2004	94%	91%	87%	88%	86%	93%	86%	90%	92%	91%
2005	94%	93%	88%	90%	88%	89%	89%	89%	94%	90%
2006	98%	86%	94%	93%	87%	91%	95%	94%	105%	99%
2007	90%	89%	83%	91%	85%	99%	84%	83%	90%	87%
2008	96%	76%	91%	95%	82%	84%	91%	91%	98%	94%
Average	94.4%	85.3%	90.3%	90.6%	86.4%	89.9%	90.5%	90.6%	94.0%	92.5%
Best	100%	93%	96%	98%	95%	99%	101%	102%	105%	100%
Worst	84%	73%	83%	81%	77%	83%	80%	83%	85%	85%

This table, amongst other things, highlights the relative consistency of the CTL, Ride Your Luck and Follow The Streak strategies. Each of these strategies, even in their worst seasons, still managed to tip at a rate roughly 85% of that achieved by BKB. Indeed if we exclude 2002 and 2003 – the apparent anni horribiles of a range of strategies – then CTL and Ride Your Luck never fall below 90%, and Follow The Streak never falls below 87%.

Wagering Performance of Each Strategy

As I've previously written, tipping success need not and often does not translate into wagering success. This is demonstrated most aptly if we first consider level-staking on the 11 strategies across seasons 2006 to 2008, the table for which appears below.

Return for a 1 unit Level Stake on All Predictions (2006 - 2008)

Year	BKB	CTL	HSH	Shadow	Silhouette	EI I	EI II	STM I	STM II	RYL	FTS
2006	(13.4)	(2.6)	(14.6)	+0.3	(14.7)	(15.6)	(7.6)	+0.2	(3.1)	+18.0	+4.1
2007	(11.4)	(21.8)	(0.8)	(14.7)	(10.7)	(18.1)	+16.9	(26.0)	(19.2)	(18.0)	(21.8)
2008	(1.4)	(0.2)	(10.0)	+2.9	+7.3	(14.1)	(9.4)	(4.4)	(0.2)	+10.2	+1.4
Average	(8.7)	(8.2)	(8.5)	(3.8)	(6.0)	(15.9)	(0.0)	(10.1)	(7.5)	+3.4	(5.4)
Rank	9	7	8	3	5	11	2	10	6	1	4

I've not seen as much red as that since the last time I wrote a MAFL Newsletter.

Even the often saving grace of avoiding bets in the early rounds of the season does little to help these strategies.

Return for a 1 unit Level Stake on All Predictions Commencing Round 6 (2006 - 2008)

Year	BKB	CTL	HSH	Shadow	Silhouette	EI I	EI II	STM I	STM II	RYL	FTS
2006	(11.9)	+0.5	(14.3)	+6.9	(8.1)	(9.1)	(1.1)	(0.2)	+1.9	+21.2	+7.7
2007	(9.6)	(12.6)	+5.3	(10.2)	(6.2)	(19.8)	+12.0	(21.2)	(12.9)	(11.3)	(16.2)
2008	(4.2)	(1.3)	(2.4)	(0.2)	+6.3	(13.6)	(8.3)	(7.5)	(3.4)	+5.7	(1.9)
Average	(8.6)	(4.5)	(3.8)	(1.2)	(2.7)	(14.2)	+0.9	(9.6)	(4.8)	+5.2	(3.5)
Rank	9	7	6	3	4	11	2	10	8	1	5

One other wagering characteristic that I've discussed before is how difficult it is to make money wagering on away teams. What then if I only allow the strategies to wager on home teams (true or notional)?

Return for a 1 unit Level Stake on All True or Notional Home Team Predictions (2006 - 2008)

Year	BKB	CTL	HSH	Shadow	Silhouette	EI I	EI II	STM I	STM II	RYL	FTS
2006	+6.1	+7.7	(3.2)	+10.7	+2.4	+6.5	+9.9	+11.2	+8.3	+18.1	+9.8
2007	+6.6	+2.1	+6.4	(0.8)	+4.3	+6.9	+17.9	(0.1)	(1.8)	+3.7	+1.2
2008	+5.9	+5.2	(3.0)	+7.0	+8.0	(0.1)	+4.6	+3.5	+4.4	+9.9	+6.8
Average	+18.6	+15.1	+0.1	+16.8	+14.8	+13.4	+32.4	+14.6	+10.8	+31.8	+17.9
Rank	3	6	11	5	7	9	1	8	10	2	4

Well that certainly changes things a bit. Now, six of the 11 strategies are profitable in each season and all of them are profitable in aggregate across the three seasons.

What then if we wait until Round 6 before we start in each season?

Return for a 1 unit Level Stake on All True or Notional Home Team Predictions Commencing Round 6 (2006 - 2008)

Year	BKB	CTL	HSH	Shadow	Silhouette	EI I	EI II	STM I	STM II	RYL	FTS
2006	+2.2	+5.9	(6.4)	+10.4	+2.2	+5.7	+9.3	+7.7	+7.3	+16.3	+8.3
2007	+9.3	+7.8	+12.4	+3.0	+8.1	+6.4	+16.0	+4.7	+2.9	+8.5	+5.9
2008	+6.3	+6.8	+4.6	+6.8	+8.9	+1.3	+5.9	+3.4	+4.3	+9.4	+7.3
Average	+17.8	+20.5	+10.6	+20.2	+19.2	+13.4	+31.3	+15.8	+14.5	+34.2	+21.6
Rank	7	4	11	5	6	10	2	8	9	1	3

That's even better. Now the Home Sweet Home strategy is the only one to sully the table with any red ink.

(If you're wondering whether these results have been achieved on the back of just a few, lucky wagers, please note that none of the strategies bets on fewer than 80 matches in the penultimate table and none on fewer than 60 in the ultimate table.)

Something else for us to watch this year then.

Other Tipsters in 2009

Alongside the 11 heuristic-based strategies will be two other tipsters this year: Chi and ELO, the latter based on the team-rating system I started last year.

Chi, as you might recall, tipped 121 from 176 in the regular season last year. The ELO strategy I'm planning to use would have tipped 118.

In total then there will be 13 tipsters this year, not quite the 64 we had last year, but still enough to carry some interest, I hope.

'til next time,

Tony

5 January 2009