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end of their playing days – even to the extent of having many, if not all teeth replaced with implants. This is not an option for many community-level players. There is a concern that the availability of such “fix-up” options may lead to a more cavalier approach to dental safety at the elite level.

The most extreme manifestation of the negative story, and like the entertainment business, those that get the most publicity, are those about athletes and coaches resorting to illegal performance-enhancing substances – drug scandals.

Allegations of this kind made about some members of the Australian Olympic cycling team received massive publicity just prior to the Games. All involved must still feel shaken by the experience. And this despite subsequent exoneration and gold medal triumphs. How much publicity did the Anderson Report and its subsequent exoneration of the team members, finding the accuser’s word could not “be safely accepted or acted upon”<sup>3</sup> actually receive? Compared to the initial accusations, virtually none.

Such stories get far more publicity than positive stories about how science and medicine are used legitimately to get the best out of an athlete. The article from the AIS in this edition of Sport Health is a rare example of the latter.

Sensation and scandal are the bread and butter of the entertainment business. It is a given that information about reduced injury rates and improved recovery regimes will get nothing like the same publicity.

1 Brukner P. Sport Health, Spring, 2004.

2 Banky J. JSMS, 2:1; 68.

3 Hon Robert Anderson QC. Report to the ASC and Cycling Australia, P15.

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# What is the best final 8 system?

by John Orchard

The Final 8 concept is uniquely Australian. Just as our favourite horse race, the Melbourne Cup, is a handicap event with a premium on a close finish, our football competitions are obsessed with providing entertainment value in the finals rather than necessarily selecting the best team of the year.

The Australian approach to football finals lies somewhere between the contrasting perspectives taken by the British and American systems.

In the UK, the major football competition, Premier League Soccer, is decided by a simple first past the post system, with the team having the most number of points being declared the winner without finals being required. An exception to the status quo in England is the Rugby Super League, which has a final six that is somewhat similar to Australian systems.

Soccer in Europe has a variety of alternative knockout type finals systems, with the final 8 sorting themselves out in knockout quarter finals, in a similar fashion to tennis.

All of the major American sports also follow the knockout quarter final approach to their last 8, although it is worth noting that baseball, basketball and ice hockey all have multi-game playoffs, which reduces the likelihood that a poor team can knock out a superior one with a single upset win. The NFL has close to the most brutal (but perhaps therefore the most exciting) of all playoff systems in the football world, with a 16 match regular season being decided by a knockout finals system with no double chance, meaning that a team could be undefeated in the regular season but fail to make the final four if they lost one playoff game.

The major Australian football competitions – the NRL and AFL – will both persist with a final 8 playoff system in the foreseeable future, because both of them need the revenue and the TV product, and for the side effect of making the home and away seasons more exciting. Although the NRL currently has 15 teams and the AFL 16 teams, both have a compromised home and away season in which teams do not have a balanced set of fixtures against all opponents. In the NRL, stand-downs associated with the State of Origin series further compromises the fairness of the regular season. Therefore both AFL and NRL administrators would be justified in wanting to have a fairly ‘open’ finals series to allow for the inconsistencies of the home and away seasons.

SYSTEM	QUARTER FINALS	MCINTYRE (NRL SYSTEM)	DOUBLE FOUR SYSTEM (AFL)	WARREN RYAN SYSTEM	WILDCARD SYSTEM
Relative advantage to minor Premiers	None (0/5)	Moderate (although not much advantage over team 2) (3/5)	Small (teams 1-4 all have similar situation) (1/5)	Large (4/5)	Very large (5/5)
Guaranteed double chance after week 1	No teams (0/5)	Teams 1 and 2 only (3/5)	Teams 1-4 (4/5)	Teams 1-5 (4/5)	Teams 1-3 (5/5)
Double chance later in finals	No teams (3/5)	No teams (3/5)	No teams (3/5)	No teams (3/5)	Team 1 can lose in week 2 and still progress (4/5)
Results of other games can influence a team's fate	No (5/5)	Yes (2/5)	No (5/5)	Yes (3/5)	No (5/5)
Simplicity	Yes (5/5)	No (2/5)	Yes (4/5)	No (1/5)	No (0/5)
Possibility of redundant results (both winner and loser have same fate)	No (5/5)	Yes (3/5)	No (5/5)	Yes (0/5), with teams 4 and 5 having a guaranteed redundant result in week 1.	No (5/5)
Number of games	7 (3/5)	9 (5/5)	9 (5/5)	10 (5/5)	8 or 9 (3/5)
Number of weeks	3 (4/5)	4 (5/5)	4 (5/5)	4 (5/5)	4 (5/5)
Final score	25/40	26/40	32/40	25/40	32/40
Overall comment	Very cutthroat	Exciting but random	Rewards the top four	Week one is a bit redundant	The fairest but most complicated

The NRL currently uses the McIntyre Final 8 system, designed by Victorian lawyer Ken McIntyre, who is also credited with designing the original VFL final 4 system (as a student in the 1930s), final 5 system (in the early 1970s) and final 6 system (in the early 1990s).

All of his systems have been tiered so that the higher finishing teams have had an advantage over those beneath them (including receiving a 'double chance' after a loss early in the finals). However, in his final 8 system the double chance from the first week for teams 3-6 depends on the results of other games. This anomaly led to the AFL abandoning the system in the year 2000, although to be fair to the McIntyre system, some of the perceived injustices of the system were caused by the AFL's contract with the MCG that a certain number of finals must be played at this ground.

The most notable bizarre outcome under the McIntyre system in the AFL was the Adelaide Crows winning the Premiership in 1998 after they finished fifth and were thrashed in the first week (and after which they probably didn't deserve, but did receive a 'double chance'). Personally I feel the most glaring let-down under the McIntyre system in the AFL was the fact that Essendon were clearly the dominant team of the 1999 season, but they lost a knockout Preliminary Final by a point to Carlton and didn't even get to reach the Grand Final. This anomaly could still occur under the new AFL finals system, by the way.

The NRL now uses the McIntyre system, although there is constant debate that this system may be shelved in favour of the AFL system, which although it bears no specific name is actually a double-final four system (based on the original Page-McIntyre design). The NRL has also looked at an alternate system submitted by media commentator Warren Ryan, which is included in this review. I don't think the Warren Ryan system is a viable one, as teams 4 and 5 both play a match in week 1 (not against each other) and irrespective

of any results, both progress to a knockout semi in week 2, which would give them no incentive to try to win their week 1 match. Also included in this review is a system designated the 'Wildcard' system, which differs from the alternatives in that it more highly favours the minor premiers. Although an interesting concept, the Wildcard system is unlikely ever to be adopted because of its complexity.

A further point of note regarding the AFL and NRL finals systems is the importance of home ground advantage. In the NRL system currently, home ground advantage is only offered to higher placed teams during the first week of the finals. In the AFL, home ground advantage is offered in theory during the first three weeks, although the AFL must reserve the right to rescind home ground advantage on occasion in order to fulfil a contract it holds with the MCC.

Studies of home ground advantage show that it definitely exists and is mainly influenced by crowd support. It is controversial as to whether referee bias (due to crowd reaction) is a major component, or whether the home crowd vocal support lifts the players without major help from the umpires. In situations where teams must travel across multiple time zones, jet lag may also influence home ground advantage, but this is unlikely to be relevant in Australian competitions.

Specifically, local ground knowledge and short-haul travel are not considered to be nearly as important as crowd support. The evidence for this is mainly based on the American national competitions, where home field advantage is greatest in basketball and least in baseball. In basketball, the court conditions are exactly the same in every stadium, but the crowd noise is massive due to small enclosed conditions. In baseball, the field size, grass types, stadium conditions all vary significantly, and the home team is given the advantage of batting last, but the crowd influence is less than other sports because the seats are further away from the players.

Therefore, although the NRL and AFL Grand Finals are played in Sydney and Melbourne respectively, there is very little home ground advantage as both are played in front of sellout crowds with many neutral supporters who would be willing to support an underdog. Early finals between two teams from different states would have the potential to lead to a significant home ground advantage. However, the advantage would vary depending on the amount of support the away team has in the foreign city and even the stadium configuration. For example, the Sydney Swans would probably have a greater home ground advantage at the SCG, where the fans are closer to the players and the noise is retained more, than Telstra Stadium, where the fans are more distant.

A comparison chart is also provided listing the likelihood that each team will win the competition, based on a theoretical 60% winning likelihood for the highest placed teams in week 1, and then a 50% winning likelihood (for simplicity) for all games after week 1. From the comparisons provided, the 'fairest' finals system is the Wildcard system, but it suffers from complexity.

The AFL system is probably the next best and fairest and has the major advantage of simplicity. Its major disadvantage is that it doesn't reward team 1 enough. The McIntyre system exchanges fairness with a week 1 lottery that is highly exciting and, if that is the way that administrators want to flavour their finals, it is a reasonable option. I don't like the way that a team must rely on other results to avoid elimination in week 1, but it does keep everyone on the edge of their seats. The Warren Ryan system is an attempt to make the McIntyre system fairer, but it devalues the week 1 games far too much.

Despite the debates, it is likely that both the AFL and NRL will continue with their current systems, and both competitions probably like the fact that more publicity is created by the debate over which is the best system.

**Quarter Finals system:**

WEEK 1	WEEK 2	WEEK 3
QF1: Team 1 v Team 8	SF1: Winner QF1 v Winner QF4	GF: Winner SF1 v Winner SF2
QF2: Team 2 v Team 7		
QF3: Team 3 v Team 6	SF2: Winner QF 2 v Winner QF3	
QF4: Team 4 v Team 5		

**McIntyre Final 8 System:**

WEEK 1	WEEK 2	WEEK 3	WEEK 4
QF1: Team 4 v Team 5	SF1: 3rd highest ranking winner v highest ranking loser	PF1: Highest ranking winner (from week 1) v winner SF2	GF: Winner PF1 v Winner PF2
QF2: Team 3 v Team 6			
QF3: Team 2 v Team 7	SF2: 4th highest ranking winner v 2nd highest ranking loser	PF2: 2nd highest ranking winner (from week 1) v winner SF1	
QF4: Team 1 v Team 8			

**Double Final Four (AFL) System:**

WEEK 1	WEEK 2	WEEK 3	WEEK 4
QF1: Team 1 v Team 4	SF1: Loser QF1 v Winner EF1	PF1: Winner QF1 v Winner SF2	GF: Winner PF1 v Winner PF2
QF2: Team 2 v Team 3			
EF1: Team 5 v Team 8	SF2: Loser QF2 v Winner EF2	PF2: Winner QF2 v Winner SF1	
EF2: Team 6 v Team 7			

**Warren Ryan System:**

WEEK 1	WEEK 2	WEEK 3	WEEK 4
QF1: Team 5 v Team 8	SF1: top-4 highest loser v bottom-4 lowest winner	PF1: highest winner week 1 v lowest winner week 2	GF: Winner PF1 v Winner PF2
QF2: Team 6 v Team 7			
QF3: Team 1 v Team 4	SF3: top-4 2nd highest winner v bottom-4 highest loser	PF2: highest winner week 2 v 2nd highest winner week 2	
QF4: Team 2 v Team 3			

**Wildcard System:**

WEEK 1	WEEK 2	WEEK 3	WEEK 4
EF1: Team 4 v Team 7	SF1: Winner EF1 v Winner EF2	PF1: Winner QF1 v Winner SF1	GF: Winner PF1 v Winner PF2
EF2: Team 5 v Team 6			
QF1: Team 2 v Team 3	SF2: Winner QF2 v Loser QF1	PF2: Team 1 v Winner SF2 (if Team 1 is winner of SF1 then it progresses through to GF without playing in week 3)	
QF2: Team 1 v Team 8			

**Comparison of winning percentages:**

SYSTEM	QUARTER FINALS	MCINTYRE (NRL SYSTEM)	DOUBLE FOUR SYSTEM (AFL)	WARREN RYAN SYSTEM	WILDCARD SYSTEM
Team 1	15%	20%	20%	20%	32%
Team 2	15%	20%	20%	17%	20%
Team 3	15%	18%	17%	15%	17%
Team 4	15%	14%	17%	13%	8%
Team 5	10%	10%	8%	13%	8%
Team 6	10%	8%	8%	10%	5%
Team 7	10%	5%	5%	8%	5%
Team 8	10%	5%	5%	5%	5%
Conclusion	Too even	Good distribution but random outcomes	Good reward for top 4 but huge gap between teams 4 and 5.	Very fair distribution but week 1 games are devalued	Best reward for team one.