

# **A Solution to Employment for Indigenous Australians**

**By  
Tristan Barnett**

The author went on a tour to Litchfield National Park a few hours drive for Darwin, Australia in 2010. On the way we stopped at an Aboriginal cultural centre where there were two presentations, one by a male and one by a female (the men and women in Aboriginal culture tend to not mix in the sense that they undertake different tasks). The male Aboriginal was talking about the history and land of Aborigines and then most impressively played the didgeridoo (using a circular breathing technique - accomplished by breathing in through the nose while simultaneously pushing air out through the mouth using air stored in the cheeks). Following the talk by the Aboriginal male, there was a talk by an Aboriginal female (in particular a girl aged only about 15). She spent the whole time talking about basket weaving. Her communication skills and passion for basket weaving were so impressive, that she encapsulated the entire audience in the sense that everyone was completely speechless by this performance. If the artistic works of Aboriginal Australians are so impressive, then could a model be developed to produce sustainable employment for Indigenous Australians – such as tourism?

## **Famous Aborigines**

Cathy Freeman is one of the most well-known Aboriginal Australians. Her skills and achievements as a runner have been seen by people all over the world as she has competed in multiple Olympic Games. Freeman's greatest achievement was being the first Aboriginal person to win an Olympic gold medal in an individual event (400 metres sprint). Freeman was further honoured by being given a vital role at the Sydney Olympics (2000), which was the lighting of the Olympic flame during the opening ceremony. On 28 April 2018, Cathy received the Order of Merit award, the Australian Olympic Committee's highest honour.

Neville Bonner was Australia's first Aboriginal politician. He then became a senator for Queensland and served for twelve years (1971-1983). He was also the first Aboriginal person to sit in federal parliament. A central focus to his work as a politician involved improving the conditions of his fellow Aboriginal people. Bonner helped change the face of Aboriginal rights in Australia. He was an honest man who never let anger dominate his work.

Archie is Australia's beloved, respected and admired Aboriginal singer/songwriter. He captured the hearts and minds of a nation in 1990 with his debut album Charcoal Lane and the landmark song Took The Children Away which tells the story when he was stolen from his family. Throughout his life Archie has worked tirelessly to heal the Stolen Generations. In the late 1980s Archie and his long-term partner and soul mate Ruby Hunter formed a band, the Altogethers, with several other Aboriginal musicians. In 2010 Ruby died, shattering Archie. In mid 2011 he was diagnosed with the early stages of lung cancer and had to go into rehabilitation. Archie has gone from singing songs about suffering and pain to more uplifting songs after letting go of the past and overcoming his challenges.

Adam Goodes was a champion Australian Rules (AFL) football player with the Sydney Swans. He holds an elite place in AFL history, playing 372 matches over 18 years, winning two Brownlow Medals (2003 and 2006) and two premierships (2005 and 2012). Adam is a four-time All-Australian (2003, 2006, 2009, 2011), member of the Indigenous Team of the Century, has represented Australia in the International Rules Series and was inducted to the Sydney Swans Hall of Fame. He is also Australian of the Year 2014. Adam was actively involved with several Aboriginal sport and community programs. He spent time working with troubled youth, including those in youth detention centres. Together with his cousin and former teammate Michael O'Loughlin, Adam established the Go Foundation which provides educational scholarships and support to the next generation, from kindergarten to tertiary level. Adam co-chairs the foundation, focused on promoting education, employment and healthy lifestyles. His other business, Indigenous Defence & Infrastructure Consortium, helps Aboriginal businesses to win contracts. Adam is a great role model and advocate for the fight against racism both on and off the field. In 2013 he objected to a racist slur from a teenage fan. Because of this he endured more than 12 months of booing from audiences which led to a "I Stand With Adam" campaign against racism. In September 2015 Adam retired from AFL for good, exhausted, and booed until his last match. Two films document his 'final quarter'.

Albert Namatjira (Elea is his birth name) was the first Aboriginal person to become an internationally renowned artist. He always enjoyed painting whilst he was growing up, but it was not until 1934 (aged 32 years) that he began to paint seriously. A man named Rex Battarbee taught Namatjira a lot about the skill of painting, and Namatjira showed Rex some of the best places to paint in Australia. Namatjira's art was very different to traditional Aboriginal art. His first exhibition went on show in 1936 in Melbourne, where his paintings sold out. His success continued and his paintings became very valuable. Although he had become very successful and made a great deal of money, Namatjira still had to follow the strict laws placed on Aboriginal people during that time. He was not allowed to buy a home or any land, and could not rent a property. In 1957, Namatjira became the first Aboriginal person to become an Australian citizen. His art and his life made governments aware of how Aboriginal people were being treated in Australia during that period.

Evonne Goolagong Cawley AO MBE is an Australian former World No. 1 female tennis player. She was one of the world's leading players in the 1970s and early 1980s, when she won 14 Grand Slam titles: 7 in singles (four Australian Open, two Wimbledon and one French Open), 6 in women's doubles, and one in mixed doubles. Evonne Goolagong Cawley ranked in the top 10 for nine years and climbed to the top of the rankings for one week in 1976. She was the first Aboriginal Australian to win a Wimbledon Tennis Championship in 1971. She won Wimbledon again as a mother in 1980, only the second woman to do so. Nicknamed "Gong", she finished her career in the mid-1980s. Renowned for her grace, ethereal touch and fluid speed around the court, Goolagong Cawley started playing as a young girl by hitting a ball against a wall with a board from an apple crate. Fact In 1993, the State Transit Authority named a RiverCat ferry in Sydney after Goolagong.

Each year on Australia Day (January 26th) Australia honours the Australian of the Year, persons who "inspire us through their achievements and challenge us to make our own contribution to creating a better Australia"

Here is a list of the Aboriginal Australians of the Year.

- **2014** Adam Goodes (AFL player)
- **2009** Mick Dodson (Professor of law)
- **1998** Cathy Freeman (athlete)
- **1992** Mandawuy Yunupingu (Yothu Yindi band leader)
- **1984** Lowitja O'Donoghue (nurse and ATSIC chairperson)
- **1979** Neville Bonner (first Aboriginal parliamentarian)
- **1978** Galarrwuy Yunupingu (Yolngu leader, brother of Mandawuy)
- **1971** Evonne Goolagong Cawley (tennis player)
- **1968** Lionel Rose (boxer)

Fact In 2014, there were 14 Aboriginal finalists for the Australian of the Year Awards. By 2015, one in 7 Australian of the Year recipients were Aboriginal.

<https://www.creativespirits.info/aboriginalculture/people/famous-aboriginal-people-role-models>

There is a surprisingly long list of successful Aboriginal sportspeople and role models across all disciplines of sport.

More recently, this includes in athletics Cathy Freeman, Kyle Vander-Kuyp, Nova Peris-Kneebone and Patrick Johnson. Aboriginals have also been highly successful at basketball, boxing (Anthony Mundine, Lionel Rose), Cricket (Jason Gillespie), Football (Adam Goodes, Anthony Mundine, Greg Inglis, Jonathon Thurston, Lance Franklin, Laurie Daley, Michael Long, Michael O'Loughlin), Hockey, Jockeys, Paralympians, Soccer, Softball, Surfing, Tennis (Evonne Goolagong).

<https://www.creativespirits.info/aboriginalculture/sport/famous-aboriginal-athletes>

Given the success of Aboriginal Australians in music (such as playing the didgeridoo, the Yothu Yindi band), the artwork (painting, basket weaving) and in elite sports performance suggests that Aboriginals have a talent for these areas as compared to say academic performance in mathematics, physical and social sciences; and whilst a proportional of Aborigines may be suited to attending a university to further their education for the prospects of obtaining a highly paid job, the evidence suggests that Aborigines should use their artistic (and sports) talents to obtain employment such as elite athletics or in tourism (in reference to the young girl with her passion for basket weaving). Hence, the primary and secondary level education system should reflect on this. It should also be noted that Torres Strait Islanders are also considered as Indigenous Australians and also have talents in music and creative arts based on the author's experiences in attended such cultural experiences. The Torres Strait Islands are also part of Australia. According to the Bureau of Statistics, the final estimated resident Aboriginal and Torres Strait Islander population of Australia as at 30 June 2016 was 798,400 people, or 3.3% of the total Australian population. This population estimate represents a 19% increase in the Aboriginal and Torres Strait Islander population estimates from the estimate of 669,900 for 30 June 2011. The population of Australia as of 2017 is estimated as 24.6 million.

<https://www.abs.gov.au/ausstats/abs@.nsf/mf/3238.0.55.001>

## Education

With the success of Aboriginal Australians in sport this should be highly encouraged throughout education to identify particular talent which could create opportunities for Aborigines to develop a career in elite sport. Also, children enjoy playing sport and this is a very healthy lifestyle. Artwork should also be highly encouraged where it appears that males overall are gifted in painting and females overall are gifted in basket weaving. Also, pottery, patchwork, rock and sand art, body painting and other arts-and-craft making, dance and other forms of artwork could be included as part of artistic education. Music should also be highly encouraged, in particular males in playing the didgeridoo and singing. Storytelling such as dreamtime stories have been traditionally used in education and should be encouraged. Also, holistic education, spirituality, yogic philosophy, gardening, fruit-picking could also be encouraged as part of education as way of interacting with nature and understanding big concepts such as our purpose in life and the existence of a God.

Students also enjoy playing games. Therefore, it seems logical to use games that have a mathematical basis in order to enhance the understanding of mathematical concepts for teaching primary and secondary level mathematics. This could include playing a toy roulette wheel, blackjack, backgammon, le her, poker and video poker. An explanation of the percent house margin in roulette could be explained and compared to the simulated results. Basic strategies in blackjack could be explained along with the percent house margin with perfect basic strategy play (refer to The Wizard of Odds), and students could watch the movie "21" during class to have an appreciation on how with a high level of sophistication a gambling game can be profitable. Backgammon (refer to GNU Backgammon) and video poker (refer to Zamzow software solutions) probabilities could be explained and students could play this software during class.

Similarly, students enjoy watching sport (tennis in particular), and the mathematics of tennis can also be used for teaching primary and secondary level mathematics. Probability theory is a key underlying concept in primary school mathematics education. Primary school students can learn the mathematics of tennis through counting paths (p1 'The Mathematics of Tennis') and build a simple Excel spreadsheet of a tennis game using built-in absolute and relative referencing formulas (hands-on experience) and hence obtain the chances of players winning a game (p17 'The Mathematics of Tennis'), and extend this to the chances of winning a set and a match conditional on the scoreboard, and hence use their calculator to develop the understanding of mathematical probabilities during an actual tennis match as a classroom exercise. OnCourt tennis software can be used to obtain the initial parameters for the tennis model (chances of players winning a point on serve) and post-match statistics from OnCourt can be used to calculate the actual percentages that players won on serve (and compared to the estimated pre-match percentage of players winning a point on serve).

High school students can extend their Excel spreadsheet (if not successful at a primary level) to obtain the chances of winning a tiebreak game, set and match; along with the chances of winning from any score line within the match, and hence obtain a calculator similar to Interactive Java Tennis Calculator (refer to Chapter 2 'The Mathematics of Tennis'). Students could also learn backwards and forwards recursion concepts in mathematics. OnCourt allows you to compare serving and receiving statistics conditional on the court surface for head-to-

head and across all players, and hence engage students in statistical knowledge. OnCourt also provides match statistics at the completion of each match which can be used in teaching for understanding probability theory at a more advanced level compared to primary school mathematics (Barnett 2010). A comprehensive tennis calculator has been developed in Excel (Tennis Calculator) based on recurrence formulas (no programming) and students could further their tennis calculator by developing the mean and variance of the number of points in a game, set and match and hence obtain an understanding of such concepts. The Binomial theorem (and Pascals triangle) can be applied in tennis to obtain the chances of winning a game as well as the distribution of points played in a game. The chances of players winning from deuce in a game can be obtained by summing an infinite geometric series.

The distribution of the number of points played in a game of tennis is 4,5,6,8,10,12,.....  
To play say 4 points in a game requires the server either winning to 0 or the receiver winning to 0. This can be represented graphically by using say colour blue to represent the server winning to 0 and say colour maroon to represent the receiver winning to 0. The distribution of the number of points played in a game can be easily built in an Excel spreadsheet using forward recursion (no programming). Hence, tennis using Excel spreadsheets is not only an excellent method for teaching primary and secondary school mathematics but also an excellent way for creative flair in artwork (electronic art or multimedia), which Indigenous Australians could potentially be quite good at. Refer to (p53 'The Mathematics of Tennis').

## **Solution**

Given the success of Aboriginal Australians in music (such as playing the diggeridoo, the Yothu Yindi band), the artwork (painting, basket weaving) and in elite sports performance suggests that Aboriginals (as well as Torres Straight Islanders) have a talent for these areas. Sport in education should be highly encouraged throughout education to identify particular talent which could create opportunities for Indigenous Australians to develop a career in elite sport. Also, children enjoy playing sport and this is a very healthy lifestyle. Artwork should also be highly encouraged where it appears that males overall are gifted in painting and females overall are gifted in basket weaving. Also, pottery, patchwork, rock and sand art, body painting and other arts-and-craft making, dance and other forms of artwork could be included as part of artistic education. Music should also be highly encouraged, in particular males in playing the diggeridoo and singing. This combination of art (dance, music and arts-and-crafts) could be used by Indigenous Australians for cultural experiences in tourism and could potentially be funded by the government to create further tourism. Selling of artworks such as paintings, basket weaving, diggeridoos, music CD's and other art works would create further employment (as is currently the case). Similarly, stories of Aboriginal history in the country could be used in tourism to create sustainable employment.

Storytelling such as dreamtime stories have been traditionally used in education and should be encouraged. Education could also include holistic education, spirituality, yogic philosophy, gardening and fruit picking as way of interacting with nature and understanding big concepts such as our purpose in life and the existence of a God. Further, mathematics can be taught in education through playing games and kids building their own tennis calculator in an Excel spreadsheet is an excellent way for creative flair in artwork (which utilizes electronic art or multimedia) which Indigenous Australians could potentially be quite good at.

## References

The Mathematics of Tennis

<http://strategicgames.com.au/book.pdf>

Tennis Calculator

<http://strategicgames.com.au/tennisdeucesim.xlsx>

Interactive Java Tennis Calculator

<http://strategicgames.com.au/TennisCalc.jar>

The Wizard of Odds

<https://wizardofodds.com/>

Zamzow Software Solutions

<http://www.zamzone.com/>

OnCourt

<http://oncourt.info/>

Barnett (2010). How the interpretation of match statistics affects player performance. Journal of Medicine and Science in Tennis 15(2), 23-27.

<http://strategicgames.com.au/article18.pdf>

GNU Backgammon

<http://www.gnu.org/software/gnubg/>