

This is a repository copy of *Historical firsts and superlatives : public engagement versus historical accuracy in association football.*

White Rose Research Online URL for this paper: <u>https://eprints.whiterose.ac.uk/190630/</u>

Version: Accepted Version

Article:

Westby, M. and Wilson, J.P. (2022) Historical firsts and superlatives : public engagement versus historical accuracy in association football. Soccer & Society. ISSN 1466-0970

https://doi.org/10.1080/14660970.2022.2113136

This is an Accepted Manuscript of an article published by Taylor & Francis in Soccer & Society on 22nd August 2022, available online: http://www.tandfonline.com/10.1080/14660970.2022.2113136.

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



Historical Firsts and Superlatives: Public engagement versus historical accuracy in association football

Martin Westby¹ and John P. Wilson

Abstract

Statistics, data, fun facts, trivia, miscellanies, firsts, lasts, onlys, nevers and other superlatives are almost indispensable ingredients in football media and are consumed voraciously by the general public. In this paper, we examine how firsts and other superlatives enable the bounded rationality of humans to make greater sense of the large and growing volume of football data. This perspective is contrasted with that of 'professional' historians who describe the complexity of history yet at the same time, within the context of historiography, frequently make use of narratives and beginnings. Parallel instances to these football dilemmas are identified in scientific arenas, museums, social identity and historical significance. It is argued that this division between popular 'amateur' historians and 'professional' historians is inevitable but that there is potential to engage people more deeply within football history thereby increasing their understanding and enjoyment of the game.

Key words

Historical firsts, historiography, football, superlatives, sport

¹ This paper was originally conceived jointly with Martin Westby who sadly died in 2020. It is dedicated to his memory and interest in football history and chronology.

Introduction

Historical firsts and superlatives matter to people in many sports such as: football;¹ golf;² cricket;³ baseball;⁴ etc. So why should this be? One answer is that competition, whether against others or oneself, is a fundamental component of many sports hence the motto of the Olympics: 'citius, altius, forties' - faster, higher, stronger. In what is often a zero-sum game,⁵ the victor(s) receives the attention, acclaim and financial reward while the loser(s) receives very little. This competitive element and focus on the 'first' often results in comments such as that by Bobby Unser, the US Indy Car Champion, who exclaimed: 'Nobody remembers who finished second'.

We might remember, perhaps, that the first person to run a sub four-minute mile was Roger Bannister; the first people to climb Mount Everest were Edmund Hillary and Tenzing Norgay; and Jackie Robinson was the first African-American to play in Major League Baseball. But recalling which people were second is more problematic because subsequent rankings tend to command less interest and attention. This was clearly illustrated during the 1968 Mexico Olympics when Britain only won one gold athletics medal with David Hemery the victor in a world-record time of 48.12 seconds for the 400 metre hurdles. During the excitement of the final stages of the race, BBC commentator David Coleman exclaimed: 'And David Hemery is going to take the gold. David Hemery wins for Britain! Hemery takes the gold, in second place Hennige and who cares who's third? It doesn't matter'.⁶ In fact, third place was noteworthy for Britain being taken by John Sherwood a Physical Education teacher from Sheffield, and Coleman subsequently made up for this oversight by paying him a warm tribute.

This focus on first place is not just observed in sport but is also found in other areas of society.⁷ Twelve people have walked on the moon but most people usually only remember the first - Neil Armstrong, who was second? - Buzz Aldrin. Firsts are considered significant such that they have been catalogued e.g. art⁸; computing⁹; science¹⁰; technology¹¹ etc. In addition to firsts, other superlative terms appear to command attention such as: lasts, onlys, mosts and nevers.¹²

Firsts are also noteworthy in academia, during an address to celebrate the first 25 years of the American Psychological Association (APA) Cattell identified a number of firsts: American Chemical Society; first APA secretary; his first professional colleague; first student; first two presidents; first members first research undertaken as a pure profession.¹³ Subsequently, Cattell described 'Early Psychological Laboratories' which included: first experiment, first paper published, first laboratory assistant etc.¹⁴ This attention to firsts was noted by Taylor who expressed: 'Clearly the question to ask in this case is not who founded the first lab, but why is the claim of first so important to the person making such a claim?'¹⁵ Taylor did not answer his question and few academic articles have been identified which examine 'historical firsts' which is in marked contrast to the proliferation of those in the media, particularly in football, and sport in general.

Identifying historical firsts in sport can be problematic and Syson explored the 'chimera of origins' in early Australian association football.¹⁶ He explained that there was a general understanding that association football began in Sydney in 1880; however, he pointed out, more recent studies have identified games being played in the 1850s. Syson explained that he contested the hegemonic narrative, 'not in order to establish an earlier point of origin but to challenge the very idea of origins'.¹⁷ His concern centred around two distinct perspectives of history: the 'professional' view that history is complex and that of 'amateur' historians which

wanted simple discrete stories often centred around heroes. He continued, 'Yet the dilemma for football historians lies in the necessity of engagement with the established origins that lie at the heart of the professional and amateur historiography of all major sports, origins that both orient and limit debate'.¹⁸

This paper, therefore, will attempt to explore why historical firsts and other superlatives are so significant to those who produce and consume them in association football. It will also contrast this with the nuanced perspectives of professional historians and examine how the two perspectives appear to co-exist. The paper will continue with a discussion of the growth and consumption of football data; the challenges of historiography; scientific firsts; avoiding the f-word; adumbration; memory limitations and bounded rationality; historical significance; and categorising firsts.

Making Sense of and Mining Football Data

On a typical weekend during a football season there are thousands of games played in Britain at the eleven levels of the National League System football pyramid; those outside the NLS; and others such as school and impromptu games held among friends. In addition to these, there are many other professional and amateur games played in countries across the globe. This large number of games will be repeated weekly across a season resulting in a dense list of statistics i.e. the total number of games played in a season: Premier League - 380; Championship - 552; League 1 - 552; League 2 - 552 = 2,036 games. The results of games provide only the headline figures, beneath them lie even larger volumes of data including: points; wins, draws, losses; goals for and against, goal difference, players, percentage possession; pass success, interceptions, assists, header, tackle, shots, heat maps, touch maps, fouls, yellow cards, red cards, dribbles, throw-ins etc. etc. Each of these discrete areas provides the potential for producing a vast number of firsts, mosts, leasts, quickests, etc.

It would appear that there have always been people collecting football data in various forms, e.g. Alcock's football annuals or Nathaniel Creswick's (the co-founder of Sheffield FC) 1857 diary, which contained details of games and sometimes those who played in them. There are also those who collect memorabilia,¹⁹ or ground-hopping.²⁰ In order to check past details the club administrators or historians had to work their way through their archives to find information which may not always have been correctly recorded or which was sometimes lost.

The Football Association Challenge Cup was first competed for in the 1871-72 season by fifteen clubs and since then more than 73,000 matches have been played by 3,240 clubs which have scored more than 250,000 goals.²¹ Annets²² used Microsoft Excel to compile records from the earliest games building on Brown's *Complete FA Cup Results*;²³ Rundle's *Football Club History Database*;²⁴ and Collett's *The Complete Record of the FA Cup*,²⁵ and others. He explained that this data could then be cut and sliced in different ways depending on ideas he had about interesting facts and superlatives.

The first complete database of English Football League results was begun in 1985 by Tony Brown.²⁶ At first a single season's set of results was used as a benchmark, whereby the time taken to compile the end-of-season tables was used to help tune the software needed to access the disc drives. An early version of dBase 3 was used for the database, running on Intel 8086 development computers. Around the same time, Michael Joyce began to compile player details, with season by season appearances and goals taken from the yearbooks. To complete this project, Joyce needed to identify each individual 'Smith', some 600 of them. By combining the two databases, Brown and Joyce were able to build the database used by the English National

Football Archive. The database begins in 1888 with the establishment of the Football League and there are now more than five million items of over 200,000 games and c45,000 players. When asked why statistics are so important Brown replied: 'People tend to collect things - stamps, programmes, I collect data'.²⁷

Compiling these details from a variety of sources is very time consuming particularly so in earlier times when newspaper reports were often incomplete and contained discrepancies. As a result, Annets conceded that, 'When recording data and creating charts on a large scale errors are bound to creep in, no matter how much proof-reading is undertaken'.²⁸ He identified four main sources of errors; failure in the past to keep records; human error; deliberate incorrect information; and unclarified club histories with clubs stopping or reforming resulting in a lack of clarity about whether it is a new club or not. Even club historians may have incorrect data due to faulty records or even the loss of archive material - Blyth Spartans' historian conceded to Annets, 'If I'm going to be corrected then who better than the FA Cup oracle'.²⁹

Data, once compiled, is relatively easy to duplicate in other sources and Brown commented that he was able to date when this had occurred in other compilations because of updated corrections to his database.³⁰ To mitigate against this some compilers of information in other areas have intentionally incorporated incorrect data into their records as a form of copyright trap. These fictitious entries have been used in a variety of circumstances and are sometimes known as Mountweasels or trap streets where cartographers insert false streets or even towns. One of the authors discovered this when ground hopping and using postcodes listed in *Rothmans Football Yearbook*; one was found to be incorrect for a Scottish League 2 team postcode although all the other details were accurately stated.

The volume of data for some leagues has increased with numerous companies providing the data including, Opta, whoscored, iSports API, ESPN API, Sportradar Sports Data API [Application Programming Interface], Stats Perform, and Wyscout. The data provided by these companies is used in a variety of ways by: agents, betting companies, coaches, footballers, gamblers, journalists, media, scouts, and referees. Wyscout stated that they have data and video coverage of 600+ worldwide competitions; video analysis of 210,000+ full matches; 550,000+ teams and players; and upload 2,000 games/week.³¹

In general, three Opta football analysts use software to capture data from live games which are superimposed onto a pitch graphic. One analyst will focus on one team, the second analyst on the opposing team and the third checks the data by rewinding the video, particularly when there are doubts about what happened or conflicts of records keeping. Opta captures approximately 1,600-2,000 discrete pieces of data for each match.³² Data is also captured after games have finished using video and fully video-recorded World Cup games since 1966 have been analysed enabling the comparison of players such as Pele and Messi.³³ Opta's Beesley described how: 'From the database we have experts who pick out the really interesting stats which we think will appeal to fans all over the world. We then combine the live data with historical data and that is how we get the stats which are then used by Sky Sports and the BBC'.³⁴

In addition to the above, each of the twenty Premier League stadiums have 8-10 cameras which enable Prozone's optical motion tracking system to capture more than a million data points for each game. These are then coded by analysts to describe passes, shots, tackles etc.³⁵ In addition to these data, clubs use GPS trackers and physiological monitors attached to players and can use this to make in-game decisions about which players to substitute etc.

Football Data and its Use in the Media

On BBC television's *Match of the Day* (11 September 2021), two screen banners popped up during the games announcing: 'First goal scored by a Korean on their Premier League debut' - Wolverhampton Wanderer's Hwang Hee-Chan; and, Crystal Palace's Odsonne Édouard's - fastest goal scored by a player on their Premier League debut - twenty-eight seconds beating the previous record of 36 seconds set by Thievy for West Bromwich Albion in February 2014. This latter fact was also cited the following day in *The Observer*.³⁶ The original source of this information was a Twitter account @OptaJoe (2021), which provides key statistics and has 1.2 million followers. This growth of interest and demand for football statistics would appear to come from two main sources: firstly, there is the 'Moneyball' effect which describes how Oakland Athletics baseball team used sabermetrics to identify undervalued players and construct a team which competed successfully against teams which had greater financial resources.³⁷

The statistics enable data-driven decisions to be made in a more objective way than intuitive interpretations of performance.³⁸ Teams, players, coaches, scouts, agents, leagues, competing teams, media organisations, betting companies etc. are using detailed performance statistics to identify competitive advantages and apply their resources to better effect. This is increasingly observed across professional football and is particularly evident at Brentford FC where the owner, Matthew Benham, a professional gambler who used statistics to become financially successful, applied 'Moneyball' strategies to enable the team to operate successfully in the Premier League.³⁹

A second reason, is that followers of football have also become increasingly interested in more details about the game which is illustrated by the 1.2 million followers of @OptaJoe. The success of @OptaJoe has encouraged more detailed analysis with @OptaAnalyst and similar offerings in other countries @OptaJuan in Spain and OptaFranz in Germany. Statistics have long interested football fans and there are numerous books and other publications detailing results, facts, quirks, etc. Another factor has been the growth of fantasy football and Football Manager which have also stimulated the use of football statistics by fans.⁴⁰

But what is it that makes firsts, onlys, fastests, lasts, i.e. superlatives about football, of such great interest? Annets suggested that 'The facts make a good soundbite'.⁴¹ Deeley, Opta's marketing manager, explained that there had been a marked increase in fans' interest in statistics with them seeking more detailed information rather than just superficial observations, and that: 'Those bite-sized stats that we generate are pub ammo'.⁴² Deeley described how fans often wanted to share these facts socially and also demonstrate their superior knowledge with other fans. This superior knowledge increases social capital and signals greater engagement with one's club or the wider game. Tony Brown stated, 'Knowing some fact enables a person to gain Brownie Points or perhaps win a pint off someone'.⁴³

The demand for football data, particularly by media, has driven real-time minute-by-minute reporting of goals, corners etc. Not all of this is covered by Opta and Prozone, the Press Association provide information from many other games to outlets such as the BBC, Sky Sports etc. Journalists not only consume statistics they also produce their own; Alan Biggs explained how he might have a hunch about a particular theme and then do his own homework because all the information is not available.⁴⁴ Instincts such as these are then used to interrogate the data to identify significant patterns. For example, it was noticed that both Chelsea and Liverpool had recorded the same scores in the first five games of the 2021-22 Premier League season: 3-0; 2-0; 1-1; 3-0 ; 3-0. Bill Edgar, *The Times* football journalist,⁴⁵ asked Tony

Brown to see whether this had happened before in the top tier and it was discovered that Nottingham Forest (1900-01) and Derby County (1947-48) had matching sequences.⁴⁶ Similarly, Cardiff City (1925-26) and Bolton Wanderers (1995-96) had the same scores but neither pairs occurred in the same season - Chelsea and Liverpool were the first in the same season. Joyce calculated that the chance of two teams recording the same scores was likely to happen only once in 212 years.

It is not just superlatives which attract attention, 'intriguing oddities and mind-bending quirks' (Edgar, 2021c) are also appealing.⁴⁷ Edgar regularly applies interesting facts and statistics to provide the foundations for his newspaper articles and quizzes and he has also compiled a book with 1,000 questions about football.⁴⁸ Brown explained that he was once asked to produce 200 questions about Scottish football and found it demanding. A balance needed to be achieved between questions which were too easy or too obscure and instead design questions which would be enlightening and considered of interest while at the same time being somewhat challenging.

Materials and Methods and Historiography

Statistics, data, fun facts, trivia, miscellanies, firsts, lasts, onlys, nevers and other superlatives are almost indispensable ingredients in sports media and are consumed voraciously by the general public. So what is it that makes them so appealing? Firsts would appear to garner particular attention and this was the starting point for research into the subject; however, a search of Scopus and Google Scholar for the term 'historical first(s)' in the title, abstract and key words produced few relevant results. Expanding the search for 'historical beginnings' and 'historical origins' in the title revealed descriptive studies but, again, few which appeared to explicitly address the conceptual underpinnings of beginnings or origins.

The epistemology, what we know and how we know it, of the histories of sports, is an area which is often avoided by historians. Douglas Booth described how there were many approaches to sport history but few were described by the historians and 'challenging questions about empiricist notions of certainty and veracity rarely surface'.⁴⁹ However, some historians do and in the Introduction we briefly discussed Syson's 'chimera of origins' around association football in Australia and how he contested 'the very idea of origins'.⁵⁰ In particular, he identified a stark division between the perspectives of professional historians and those of amateurs in sports historiography.

A similar perspective about origins in history and historiography was explored by Booth in relation to the first swimmer at Bondi Beach. He argued that origins were a core element in narrative structure and that 'Historians typically present their work as narratives'; yet, they often avoid discussing their 'authorial choices'.⁵¹ Booth continued, 'On the one hand, origins are prominent features of historical narratives. On the other hand, history is ill-suited to studying firsts'.⁵²

The concept of a narrative requires that there be a starting point and this would appear to be a basic human condition. Edward Said explored the concept of beginnings and discussed: 'the primordial need for certainty at the beginning' while acknowledging that:

Without at least a sense of a beginning nothing can really be done. This is as true for the literary critic as it is for the philosopher, the scientist, or the novelist. And the more crowded and confused a field appears, the more a beginning, whether fictional or not, seems imperative. A beginning gives us the chance to do work that consoles us for the tumbling disorder of brute reality, the exquisite environment of fact, that will not settle down. 53

This perspective has also been discussed by Stephen Jay Gould who stated:

We yearn to know about origins, and we readily construct myths when we do not have data (or we suppress data in favour of legend when a truth strikes us as too commonplace). The hankering after an origin myth has always been especially strong for the closest subject of all - the human race.⁵⁴

These simple narratives and genesis myths are to be found across many sports: Webb Ellis and rugby;⁵⁵ Doubleday and baseball;⁵⁶ Wills and Australian Rules football;⁵⁷ Duke Kahanamoku and surfing;⁵⁸ and Naismith and basketball.⁵⁹ Although these origins have been challenged by professional historians they have found such a fertile reception in the public consciousness that they have been cast in bronze.⁶⁰ Although professional historians have their reservations about simple explanations for sporting origins, current administrators use anniversaries of these events to generate interest and publicity.⁶¹

There would appear to be a disconnect between what have been termed 'professional' and popular 'amateur' historians.⁶² Adopting an interdisciplinary approach, we will examine these differences in parallel areas in order to help discern some insights into this dichotomy.

Firsts and Scientific Discovery

Firsts are particularly important in the area of scientific discovery where the filing of patent applications may have a financial impact e.g. the dispute between Alexander Graham Bell and Elisha Gray about the invention of the telephone.⁶³ The American sociologist, Robert K. Merton, investigated the sociology of scientific discoveries and how they occurred,⁶⁴ building upon Francis Bacon's *Advancement of Learning*.⁶⁵ Bacon argued that invention didn't result from divine intervention but largely emerged by following a path of empirical investigation. In its early stages, the pursuit of knowledge would be sporadic and accidental but as the base grew knowledge advances would occur more regularly. This 'accumulative cultural base', Merton maintained, enabled science to increasingly contribute to the advancement of knowledge and discovery.⁶⁶

Another of Bacon's propositions was that scientific researchers working alone were likely to discover things relatively slowly and in small ways. These 'Eureka' moments often support the concept of the lone genius working in a shed or workshop,⁶⁷ with Kerr stating, 'In the main, however, the achievements listed in this book have come as a result of one person's bloody-minded determination to see something through to its conclusion'.⁶⁸ However, the lone genius is less common than some of these popular compilations suggest.

A further point made by Bacon was that scientific and social innovations 'are the births of time', and that 'Time is the greatest innovator'.⁶⁹ This is because the 'accumulative cultural base' of antecedent knowledge enabled people to build on that which had already been discovered. Research conducted by Ogburn and Thomas identified 148 discoveries and inventions of 'multiple but independent origins', e.g. sunspots, oxygen, logarithms and photography.⁷⁰ This, they explained was the result of two main causes: firstly, a researcher with a higher level of intelligence in order to search for and draw upon existing knowledge. And, secondly, a cultural environment which contains the constituent elements needed to make new discoveries. These discoveries then become almost inevitable occurring independently in different countries and

suggesting a form of scientific determinism. These observations were built upon by Merton who proposed that individual discoveries in science, what he termed 'singletons', were in the minority and that multiple discoveries (multiples) were the predominant pattern.⁷¹

Being the first researcher to discover or invent something enhances personal status: 'the culture of science puts a premium not only on originality but on chronological firsts in discovery'.⁷² Being first is no less important in academia and Hsu observed, '...priority is a high stakes game. Being 'first' is for most academic scientists their primary form of professional currency. Priority results in publicity and increased credibility in the form of publications, which translate into tenure, grant funding, awards and accolades'.⁷³

A favourable cultural environment is not only beneficial to new scientific discoveries it can also provide a fertile milieu for social innovations with Ogburn and Thomas asking, 'Is not social evolution inherent in the nature of culture?'.⁷⁴ Their thesis might be transferred to the origins of football and the possibility that it emerged in multiple places at similar times.⁷⁵

Avoiding the F-Word

The disparity between the public appetite for football firsts and superlatives, and the limited attention and articles by professional historians is illustrated by the hard practical experiences at the Computer History Museum in California which has to balance both demands. The Curator, Spicer, described how staff at the Center were frequently asked 'what or who was first', with the result that he 'instructed all History Center staff to never use the 'f-word' (or, in fact, any superlatives) as a matter of Museum policy'.⁷⁶ In spite of this prohibition, sixteen years later, Hsu, an historian and sociologist at the Museum, explained that although professional historians may not be interested in firsts, it was almost impossible to avoid them and stated, 'Bad history makes false claims about firsts. Good history makes true claims about firsts. Great history, however, doesn't primarily concern itself with firsts at all (though it may necessarily deal with them as part of the subject matter), but redirects us to ask deeper, more meaningful questions'.⁷⁷

History is challenging for a number of reasons explained Shustek, chair of the Computer History Museum, and he identified four main reasons: firstly, computers were contemporary and therefore people are still alive to challenge what had been written and this was not the case for Civil War historians. Also, the memories of people are fallible and he cited the Chinese proverb, 'The palest ink is better than the best memory'. Secondly, he stated that 'there are no simple answers' to questions such as: 'Who invented the computer?' Thirdly, he stated: 'Any 'first' is problematical' and that 'What 'first' means depends on precise definitions of fuzzy concepts'. Finally, history 'isn't static' with new discoveries such as the Greek Antikythera mechanism displacing Blaise Pascal's Pascaline calculator as a precursor to modern computers and, thus, requiring that history be re-written.⁷⁸

Generally, the search for firsts is predominantly from a legal or journalistic perspective and Spicer, responding to questions about which was the first computer, commented that: 'Often the reasons a particular question is being asked will tell you more than any putative answer'. This response tends to echo the comment by Taylor (2011: 171) who expressed: 'why is the claim of first so important to the person making such a claim?'.⁷⁹

Firsts attract attention and that is why they are often used in public relations campaigns even when they are not always correct, Laird explained.⁸⁰ She admitted to incorrectly being 'seduced by a '"first" ' about telegraph messages of the Titanic disaster and had not properly checked the

precise details for a front cover of Antenna magazine. She conceded that: 'I guess that now I will have to be kinder to students who succumb to the temptation to apply superlatives like 'first', 'biggest," and so on'.⁸¹ This use of first for marketing purposes is visible in Sheffield FC's badge which states: 'The world's first football club'. Professional historians will be keen to respond that there were other clubs in existence before Sheffield FC's foundation in 1857, notably John Hope's football club in Edinburgh John Hope's football club 1824-1841.⁸² Football's genealogy and position within it confer status and authenticity,⁸³ compared to clubs with little history which are sometimes disparaged as 'plastic clubs'.

Adumbration

With some inventions such as computing it was possible to anticipate their evolution because of the need for scientific advancements in related areas. This foreshadowing or adumbration of inventions was described by Merton who acknowledged that rediscovery does happen but not as frequently as may be perceived.⁸⁴ Merton also discussed adumbrationism which he defined as: 'the scholar's unscholarly sin of adumbrationism: taking "the faintest shadow of resemblance between earlier and later ideas as virtual identity" '.⁸⁵ He challenged the adumbrationist's view that there is nothing new and stated: 'In effect, both adumbrationism and the full denial of rediscovery are faulty doctrines; the truth is, in this reconstructed judgment of Bacon, that rediscovery occurs but not as often as the adumbrationists suppose'.⁸⁶

Adumbration and adumbrationism can also be observed within football history and the stories and narratives around the early manifestations of the game, e.g. calcio di Fiorentina (Italy), cuju (China), episkyros (Greece), and kemari (Japan) etc. The contested debate around the origins of the modern game, which tend to focus on public school and local football origins, takes a different complexion when it is considered from the perspective of inventive multiples.⁸⁷

Firsts, Lasts and Memory Limitations

We discussed previously the vast amount of data which is produced around football but humans possess a limited capacity to memorise, process and recall information. These memory constraints were described by Simon as 'bounded rationality',⁸⁸ and this has a number of consequences, e.g. when people were asked to remember a list of items, the position in the list impacted on the brain's recall ability and is called 'serial position effect'.⁸⁹ Items positioned first or early in a list were more easily recalled due to fewer demands on limited memory capacity,⁹⁰ and this is known as the primacy effect.⁹¹ Items in the middle of the pack tended to be recalled less, and those items last or at the end of the list (anterior) were more likely to be remembered in short-term memory.⁹²

It is appropriate, here, to turn to the field of information science and knowledge management to provide some insights into how these football data sets might be interpreted. Knowledge management uses a framework known as the knowledge pyramid or hierarchy which consists of four main levels: data, information, knowledge, and wisdom. Beginning at the base, Ackoff defined that: 'Data are symbols that represent properties of objects, events and their environments'.⁹³ Essentially these are the raw figures or even the binary zeros and ones used to encode the data. In the context of football, data might be represented by an individual Opta or Prozone record of where a player was on the field.

Ascending to the next level in the pyramid is information which is extracted from the raw data and is compiled into categories which answer questions such as 'who, what, when, where, how many'.⁹⁴ Ackoff explained that: 'Information systems generate, store, retrieve, and process

data...information is inferred from data'.⁹⁵ We might consider that information about football is visible in the league tables which categorise position, points etc.

The next level in the hierarchy is knowledge which is the application of information.⁹⁶ For example, Carpita *et al* described how the objective was to identify from hundreds of covariates the ones which had the highest impact on winning a football game.⁹⁷ Finally, wisdom is the smart application of knowledge such as changing the formation of a team during a game and is based on experience. Bounded rationality results in people selecting higher level knowledge facts and superlatives to represent deeper data trends.

Firsts as Beginnings: Historical Significance

In the Introduction we discussed how Cattell had reflected on the first twenty-five years of the American Psychological Association and had identified numerous firsts in U.S. scientific research.⁹⁸ Similarly, Smith (2017: 19) observed: 'News outlets and history textbooks seem unable to resist a good story of *firstness*.'⁹⁹ This notion of being first relates to historical beginnings and significance which are important in historical narratives. In *Parables of Possibility: The American Need for Beginnings*, Martin described how many U.S. historians and writers have tended to disregard European precursors and, instead, identify firsts and originality which served to 'wipe the slate clean of European history and institutions and thus establish the conditions for a national identity'.¹⁰⁰

The importance of firsts is also significant for ethnic groups which wish to establish or reassert their identity and contribution to society and challenge historical colonisation. Smith compiled 4,000 'ground-breaking and pioneering' 'black firsts' across a wide range of areas and professions and included: Jesse Owens, Jackie Robinson, Tiger Woods, Venus and Serena Williams, Usain Bolt, Condoleezza Rice, and Barack Obama.¹⁰¹ More recently, Kamala Rice became the first Black American woman and first person of South Asian descent to become vice-president of the United States. These achievements are noteworthy and Miller maintained that 'People celebrate firsts because they are momentous, and they signal progress and representation for people who have not had power before'. However, it is the fact of their singularity which makes them 'momentous' and change will only have been achieved when others follow and 'the facts of their identities [are] no longer notable in the first place'.¹⁰²

In an example of locations chronicling key historical moments and building their identities, Hawaii's state statistician Schmitt compiled a list of *Firsts and Almost Firsts in Hawaii*.¹⁰³ This book built upon research conducted from 1965 by the Hawaiian Historical Society and which was recorded in their publications including the Hawaiian Journal of History. The book contained such nuggets as the 'first marshmallow' (1878); and first football 'around 1875, when Amasa Pratt bought a football for the boys at Punahou and taught them "a form of Association football" '.¹⁰⁴ Almost inevitably, given the wide range of subjects not all the firsts were indeed firsts. Schmitt demonstrated academic integrity by making additional contributions to the Journal correct.¹⁰⁵ In an article, 'More 'firsts' that weren't', he described the corrections as a 'rueful exercise in self-abasement'.¹⁰⁶

Accuracy of firsts is important to historians which explains Schmitt's chagrin, but historians continue to bow 'good-humouredly to the public demand for historical firsts'.¹⁰⁷ This public demand for firsts presents a dilemma for historians and Ludlum observed that 'Those who have the temerity to state historical 'firsts' must develop a defensive hide, equally as tough as that worn by those who have the courage to attempt a daily weather forecast. The public considers

both fair game for immediate attack'.¹⁰⁸ Annets, who compiled FA Cup facts, encouraged challenges as a process through which greater accuracy might be achieved.¹⁰⁹ The challenge for historians is the extent to which they are personally wedded to positions and whether they are willing to concede to new information.

Significance and Local Heros

In an editorial titled: '"Firsts", "Exclusives", and "Incomparables" ', in the *Wisconsin Magazine of History*, Schafer explained that local historians often displayed a parochial focus:

'Just as the cities of ancient Greece contended for the honour of being the birthplace of Homer, so most modern towns, through their historian spokesmen, try to lay claim to some unique distinction, something in which they are exclusive, if not exclusive then first, and if not first at least incomparable'.¹¹⁰

Schafer admitted that he was unaware of any local history writings which did not contain these unique distinctions,¹¹¹ and this was evident in the 1922-23 index which contained many firsts including: 'first schoolhouse of Baraboo'; 'first white settler in Richland County'; 'first voyage on Fox-Wisconsin waterway'; 'first electric light plant at Appleton'.¹¹² Schafer advised that because many firsts lacked knowledge of other locations they should be carefully checked in order to remove a large class of errors. The benefits of carefully checking details was revisited a decade later by Shafer and McMurtrie who described how McMurtrie's research had identified early evidence of printing and that 'first printings recorded by others' were incorrect.¹¹³

It is not only towns which describe their unique distinction, the same would appear to apply many football clubs, players, managers etc. These can be used in both positive and negative ways, e.g. a google search for 'Oldham Athletic FC' (at the bottom of League 2 in September 2021) and 'first club to' revealed that it might be the first former Premier League club to fall out of the Football League.¹¹⁴ A search for Jose Mourinho revealed that he was the first manager to spend £1 billion on transfer fees,¹¹⁵ and was also the only manager to be sacked by a European Super League club (Tottenham Hotspur).¹¹⁶

Defining and Sub-Categorising Firsts

Since Hillary and Norgay first reached the summit in 1953, a further 5,786 people have climbed Mount Everest up to April 2021.¹¹⁷ This is a substantial figure and as the numbers rise the significance tends to diminish. As a result, and in order to differentiate achievements, people have begun to create sub-classifications with Hansen describing eleven historical firsts for climbing Everest which included: first teen with Down's syndrome; oldest person at seventy-six years; first under nine hours; first woman to summit; first amputees; first blind person and so on.¹¹⁸

There would appear to be the potential for an almost infinite number of firsts and Computer History Museum chief, Michael Williams maintained that: 'anything can be a first if you put enough adjectives before the noun'.¹¹⁹ In a discussion centred around the problems of clearly identifying firsts and the confusion caused because of a lack of clarity, Smith advised that: 'it is often important to qualify the claim by a simple statement, such as 'first woman to finish the gentleman's course', the first black architect in modern times', the 'first black architect with a college degree', or the 'first in fifty years'.¹²⁰ Consistently, in my reporting I found it necessary

to add a qualifier and then to list several people with similar claims - all first and all noteworthy'.

Firsts, as Shustek explained are problematic,¹²¹ and Hsu stated: 'Historical facts are not as selfevident as they seem. Claims to 'firsts' are claims over the meanings of terms and the concepts they refer to. They are debates about language. For example, the question of the 'first' computer really depends on what one means by "computer" '.¹²² Adjectives for these include: automatic, binary, electronic, general-purpose, stored programme

Moreover, during the process of compiling three editions of *Black Firsts*, Smith invited feedback as a means of checking the accuracy of the items and she also encouraged contributions and used this approach to manage and capture further firsts.¹²³ Annets also adopted a similar approach to checking the details of his facts about the FA Cup.¹²⁴

Discussion

In this paper, we have examined how firsts and other superlatives bring a sense of identity and uniqueness to football clubs. We have also identified that 'professional' historians and sociologists have acknowledged the historical complexity of identifying firsts etc. and this might explain why there are few articles about firsts and superlatives in academic literature. However, many historical explorations are narratives which contain a teleological perspective which almost inevitably incorporates beginnings and origins and firsts.

This position contrasts with 'amateur' historians who may be more inclined to reduce overwhelming data and complexity, and simplify this into consumable information and knowledge nuggets which may involve a lone hero or inventor. And it is simplifications such as these which are often more attractive to the public and the media.

This professional/amateur tension may be inevitable as a result of complexity and basic human sense making; however, it also needs to be finessed in places such as museums which need to reduce complexity but also avoid simplistic soundbites. In a discussion about the nature of historical significance within school education, Seixas explained that students are often fed historical events without an explanation of why they might be considered important. Seixas stated: 'the meaning of "history" itself - hinge[s] on the question of significance' and that students should engage and explore what they consider significant.¹²⁵ This grappling with the complexities of football history might lead football fans to greater understanding and enjoyment of the game.

Acknowledgements

The authors wish to thank Institute of Work Psychology colleagues for contributing article ideas in a workshop. Thanks are also due to Phil Annets, Alan Biggs and Tony Brown for their insights into the use of football statistics.

References

Aarons, Ed. 'Édouard's debut double knocks Spurs off the top'. The Observer Sport, 12 September 2021, 7.

Ackoff, Russell L. 'From data to wisdom'. Journal of Applied Systems Analysis 16, no. 1 (1989): 3-9.

Adler, Robert. *Science Firsts: From the creation of science to the science of Creation*. London: John Wiley and Sons, 2002.

Anderson, Norman Henry and Stephen Hubert. 'Effects of concomitant verbal recall on order effects in personality impression formation'. *Journal of Verbal Learning and Verbal Behavior*, 2, 5-6 (1963): 379-391.

Annets, Phil. FA Cup 150: An unofficial compendium of FA Cup facts and stats from FACupFactfile celebrating 150 years of the original and best knock-out competition. Oxon: FACupFactfile, 2021a.

Annets, Phil. (2021b) interview with the author.

Bagchi, Rob. 50 stunning Olympic moments No. 25: David Hemery storms to gold in Mexico, The Guardian, 27 April 2012, <u>https://www.theguardian.com/sport/london-2012-olympics-blog/2012/apr/27/stunning-olympic-moments-david-hemery</u>. Accessed 13 October 2012.

Baker, William J. 'William Webb Ellis and the origins of Rugby Football: The life and death of a Victorian myth'. *Albion*, 13, 2 (1981): 117-130.

Barkow, Al. Golf's All-time Firsts, Mosts, Leasts, and a few Nevers. Plymouth: Taylor Trade Publishing, 2012.

BBC Sport. 'Football Scores and Fixtures'. 2021, <u>https://www.bbc.co.uk/sport/football/scores-fixtures/2021-09-</u> 18. Accessed 18 September 2021.

Berg, Adam. 'The compatibility of zero-sum logic and mutualism in sport'. *Journal of the Philosophy of Sport*, 4, 3 (2018): 259-278.

Booth, Douglas. The Field: Truth and fiction in sport history. Abingdon: Routledge, 2007.

Booth, Douglas. 'Origins in History and Historiography: A Case Study of the First Swimmer at Bondi Beach'. *Journal of Sport History*, 43, 1 (2016): 21-36.

Brown, Tony. The FA Challenge Cup: Complete Results: 2020 Edition, Nottingham: Tony Brown, 2020.

Brown, Tony. Interview with the author, 20 September 2021.

Bruno, Leonard. Science and Technology Firsts, Boston, MA: Cengage Gale, 1996.

Bushnel, Amy T. The Florida Historical Quarterly. 69, 3 (Jan., 1991): 365-367.

Carling, Christopher, Jonathan Bloomfield, Lee Nelsen, and Thomas Reilly. 'The role of motion analysis in elite soccer'. *Sports Medicine*, 38, 10 (2008): 839-862.

Carpita, Maurizio, Marco Sandri, Anna Simonetto, and Paola Zuccolotto. 'Discovering the drivers of football match outcomes with data mining'. *Quality Technology & Quantitative Management*, 12, 4 (2015): 561-577.,

Casey, Wilson. Firsts: origins of everyday things that changed the world. London: Penguin, 2009.

Castellano, Julen, David Alvarez-Pastor, and Paul S. Bradley. 'Evaluation of research using computerised tracking systems (Amisco® and Prozone®) to analyse physical performance in elite soccer: A systematic review'. *Sports Medicine*, 44, 5 (2014): 701-712.

Cattell, James McKeen. 'Our psychological association and research'. Science, 45, 1160 (1917): 275-284.

Cattell, James McKeen. 'Early Psychological Laboratories'. Science, 67, 1744 (1928): 543-548,

Clevenger, Samuel M. 'Transtemporal sport histories; or, rethinking the "invention" of American basketball'. *Sport in Society*, 23, 5 (2020): 959-974.

Collett, Mike. The Complete Record of the FA Cup. York: SportsBooks Ltd., 2003.

Connell, John. 'Groundhopping: nostalgia, emotion and the small places of football'. *Leisure Studies*, 36, 4 (2017): 553-564.

Creswick, Nathaniel. (1857) Personal diary held in Sheffield Archives.

Cunningham, Jack. 'Behind the stats: An inside look at Opta Stats'. 2018, <u>https://sportsgazette.co.uk/behind-the-stats-an-inside-look-at-opta-stats/</u>. Accessed 19 September 2021

Donnelley, Paul. Firsts, Lasts & Onlys of Football: Presents the most amazing football facts from the last 150 years. London: Hamlyn, 2010.

Donnelley, Paul. Firsts, Lasts & Onlys of Cricket: Presenting the most amazing cricket facts from the last 500 years. London, Bounty Books, 2012.

Dwyer, Brendan, Rebecca M. Achen, and Joshua M. Lupinek. 'Fantasy vs. reality: Exploring the BIRGing and CORFing behavior of fantasy football participants'. *Sport Marketing Quarterly*, 25, 3 (2016): 152.

Edgar, Bill. 'Game in Numbers: Chelsea and Liverpool complete historic five-match run'. *The Times*, 20 September 2021a, <u>https://www.thetimes.co.uk/article/game-in-numbers-chelsea-and-liverpool-complete-historic-five-match-run-0bjx9lk7x</u>. Accessed 20 September 2021.

Edgar, Bill. Bill Edgar's Quirky Football Quiz Book, London: Robinson Publishing, 2021b.

Edgar, Bill. 'Test your knowledge with 25 sample questions from Bill Edgar's quirky football book quiz book'. *The Times*, 3 September 2021c, <u>https://www.thetimes.co.uk/article/bill-edgars-quirky-football-quiz-book-jq8mbkcsv</u>. Accessed 26 September 2021.

Football365. 'Mourinho becomes first manager to spend £1 billion'. 7 August 2017, <u>https://www.football365.com/news/mourinho-becomes-first-manager-to-spend-1bn</u>. Accessed 29 September 2021.

Grant, Mary Khazak. The Book of Firsts. Morrisville, NC: Lulu Press, Inc., 2016.

Greig, Finlay. 'Dexterity, accuracy and FIFA skills - the people behind Opta's football data'. 2017, *iNews*, <u>https://inews.co.uk/sport/football/opta-data-analyst-stats-football-62568</u>. Accessed 19 September 2021.

Hansen, Lauren. '11 Historical firsts on Mount Everest', 2015, *The Week*, <u>https://theweek.com/articles/466024/11-historical-firsts-mount-everest</u>. Accessed 28 September 2021.

High Adventure Expeditions. 'Full List of Mount Everest Climbers'. 2021, <u>https://haexpeditions.com/advice/list-of-mount-everest-climbers/</u>. Accessed 28 September 2021.

Hocking, Jenny and Neil Reidy. 'Marngrook, Tom Wills and the continuing denial of indigenous history: On the origins of Australian football'. *Meanjin*, 75, 2 (2016): 83-93.

Hsu, Hansen. 'The neverending quest for 'firsts'. *Computer History Museum*, 29 June 2016, <u>https://computerhistory.org/blog/the-neverending-quest-for-firsts/</u>. Accessed 29 July 2021.

Hutchinson, John and Andy Mitchell. 'John Hope, the Foot-Ball Club of 1824 and its sporting legacy'. Soccer & Society, 19, 1 (2018): 75-88.

Johnson, Lloyd. Baseball's Book of Firsts. East Bridgewater, MA: JG Press, 2006.

Kerr, Gordon. *Book of Firsts: First time almost everything happened*. London: R.W. Press, 2013. Kiernan, Michael (Ed.). *The Oxford Francis Bacon, Vol. 4: The Advancement of Learning*. Oxford: Oxford University Press, 2000.

Laird, Pam. 'Seduced by a 'First'. Antenna, 12, 1, November 1999, <u>https://mercurians.org/antenna-newsletter/editorial-seduced-by-a-first/</u>. Accessed 28 September 2021.

Lewis, Michael. Moneyball: The art of winning an unfair game. WW Norton & Company, 2004.

Lorblanchet, Michel and Paul Bahn. *The First Artists: In Search of the World's Oldest Art.* London: Thames & Hudson, 2017.

Ludlum, David McWilliams. 'New York's First Weatherman'. Weatherwise, 12, 3 (1959): 95-97.

Marr, Bernard. 'How big data and analytics are changing soccer'. 2015, <u>https://www.linkedin.com/pulse/how-big-data-analytics-changing-soccer-bernard-marr</u>. Accessed 22 September 2021.

Martin, Terence. *Parables of Possibility: The American Need for Beginnings*. New York: Columbia University Press, 1995.

Merton, Robert King. 'Singletons and multiples in scientific discovery: A chapter in the sociology of science'. *Proceedings of the American Philosophical Society*, 105, 5 (1961): 470-486.

Merton, Robert King. On the Shoulders of Giants: A Shandean Perspective. Chicago: University of Chicago Press, 1993.

Miller, Claire Cain. 'Why Kamala Harris and 'firsts' matter, and where they fall short'. 2021, *New York Times*, <u>https://www.nytimes.com/2021/01/21/upshot/kamala-harris-power-firsts.html</u>. Accessed 27 September 2021.

Montuori, Alfonso and Ronald E Purser. 'Deconstructing the lone genius myth: Toward a contextual view of creativity'. *Journal of Humanistic psychology*, 35, 3 (1995): 69-112.

Moore, Kevin. 'Football and Heritage', pp. 90-101. Hughson, John, Kevin Moore, Ramon Spaaij and Joseph Maguire (Eds.). *Routledge Handbook of Football Studies*. Abingdon: Taylor and Francis, 2016.

Murdock, Bennet Bronson, Jr. 'The serial position effect of free recall'. *Journal of Experimental Psychology*, 64(5), (1962): 482–488.

Ogburn, William Fielding and Dorothy Thomas. 'Are inventions inevitable? A note on social evolution'. *Political Science Quarterly*, 37, 1 (1922): 83-98.

Ogden, David C. 'Major league baseball and myth making: Roland Barthes's semiology and the maintenance of image'. *NINE: A Journal of Baseball History and Culture*, 15, 2 (2007): 66-78.

OptaJoe. 2021. <u>https://twitter.com/optajoe/status/1436687836019929090?lang=en</u>, Accessed 24 September 2021.

Osmond, Gary. 'Myth-making in Australian Sport History: Re-evaluating Duke Kahanamoku's Contribution to Surfing'. *Australian Historical Studies*, 42, 2 (2011): 260-276,

Rundle, Richard. 'Football Club History Database'. 2021, https://fchd.info/. Accessed 24 September 2021.

Said, Edward. 'Beginnings', Salmagundi, 2, 4 (1968): 36-55.

Schafer, Joseph. 'Historical "Firsts," "Exclusives," and "Incomparables" '. *The Wisconsin Magazine of History*, 6, 1, (1922): 102-104.

Schafer, Joseph. 'Volume Information'. The Wisconsin Magazine of History, 6, 4 (June 1923): I-XXVII.

Schafer, Joseph and Douglas Crawford McMurtrie. 'A Question of "Firsts" Again'. *The Wisconsin Magazine of History*, (September 1932): 102-104.

Schmitt, Robert C. 'Some "Firsts" That Weren't'. *Hawaiian Journal of History*, 21, (1987): 156-57. https://evols.library.manoa.hawaii.edu/handle/10524/265?mode=full. Accessed 28 September 2021. Schmitt, Robert C. 'More "Firsts" That Weren't'. *Hawaiian Journal of History*, 27 (1993): 239-244. https://evols.library.manoa.hawaii.edu/handle/10524/421. Accessed, 28 September 2021.

Schmitt, Robert C. and Ronn Ronck. *Firsts and Almost Firsts in Hawaii*. Hawaii: University of Hawaii Press, 1995.

Seixas, Peter. 'Mapping the Terrain of Historical Significance'. Social Education, 61, 1 (1997): 22-27.

Shustek, Leonard Jay. 'Programming the ENIAC: An example of why computer history is hard'. 2016, <u>https://computerhistory.org/blog/programming-the-eniac-an-example-of-why-computer-history-is-hard/</u>, Accessed 28 September 2021.

Simon, Herbert Alexander. Models of Man, New York: John Wiley, 1957.

Smith, Jessie Carney. *Black Firsts: 4,000 ground-breaking and pioneering historical events*, 3rd edition. Canton Charter Township, MI: Visible Ink Press, 2012.

Smith, William, L. 'Why do we focus on firsts: Problems and possibilities for teaching black history', *Social Education*, 81, 1 (2017): 19-22.

Spicer, Dag. Not the first word on 'firsts'. *Antenna*, 12, 2, April 2000, <u>https://mercurians.org/antenna-newsletter/not-the-first-word-on-firsts/</u> Accessed 2 August 2021.

Sporting Statues Project. 'From Pitch to Plinth: The Sporting Statues Project'. 2021, <u>http://offbeat.group.shef.ac.uk/statues/</u>. Accessed 26 September 2021.

Swain, Peter and Adrian Harvey. 'On Bosworth Field or the playing fields of Eton and Rugby? Who really invented modern football?' *The International Journal of the History of Sport*, 29, 10 (2012): 1425-1445.

Syson, Ian. The 'chimera' of origins: Association football in Australia before 1880'. *The International Journal of the History of Sport*, 30, 5 (2013): 453-468.

Taylor, Eugene. *William James on Consciousness beyond the Margin*. Princeton, NJ, Princeton University Press, 2011.

Vasili, Phil. The First Black Footballer: Arthur Wharton 1865-1930: An Absence of Memory, Abingdon, Frank Cass, 1998.

Walker, Amy. 'Tennis balls and flares thrown onto pitch as Oldham Athletic fans protest against club's ownership'. *Manchester Evening News*, 25 August 2021, <u>https://www.manchestereveningnews.co.uk/news/greater-manchester-news/tennis-balls-flares-thrown-onto-21393435</u>. Accessed 29 September 2021.

Waugh, Nancy. C. and Donald Arthur Norman. 'Primary memory'. Psychological Review, 72, 2 (1965): 89-104.

Weimar, Daniel and Pamela Wicker. 'Moneyball revisited: Effort and team performance in professional soccer'. *Journal of Sports Economics*, 18, 2 (2017): 140-161.

Westby, Martin. England's Oldest Football Clubs 1815-1889: A new chronological classification of early football (Folk, School, Military, County, Rugby, and Association), Bournemouth: England's Oldest Football Clubs, 2019.

Wiggins, Tom. 'The inner beauty of the beautiful game: How Opta analyses football'. 2014, <u>https://www.stuff.tv/features/inner-beauty-beautiful-game-how-opta-analyses-football</u>, Accessed 19 September 2021.

Wigmore, Tim. 'Brentford's Moneyball way to beat football teams with huge budgets'. *Bleacher Report*, 2017, <u>https://bleacherreport.com/articles/2718752-brentfords-moneyball-way-to-beat-football-teams-with-huge-budgets</u>. Accessed 25 September 2021.

Wilson, John Peter. and Larry Campbell. 'Developing a knowledge management policy for ISO 9001'. 2015. *Journal of Knowledge Management*. 20, 4 (2016): 829-844.

Wright, Chris. 'Mourinho 'first Super League manager to lose job'. 2021, ESPN Football, <u>https://www.espn.co.uk/football/blog-the-toe-poke/story/4364579/mourinho-first-super-league-manager-to-lose-their-job-social-media-reacts-to-tottenham-firing-jose</u>. Accessed 29 September 2021.

Wyscout. 2021, https://wyscout.com/, Accessed 19 September 2021.

Notes

- ¹³ Cattell, 'Our psychological association and research'.
- ¹⁴ Cattell, 'Early Psychological Laboratories'.
- ¹⁵ Taylor, William James on Consciousness beyond the Margin, 171.
- ¹⁶ Syson, 'The 'chimera' of origins: Association football in Australia before 1880'.
- ¹⁷ Syson, The 'chimera' of origins: Association football in Australia before 1880', 453.
- ¹⁸ Syson, The 'chimera' of origins: Association football in Australia before 1880', 465.
- ¹⁹ Moore, 'Football and Heritage'
- ²⁰ Connell, 'Groundhopping: nostalgia, emotion and the small places of football'.
- ²¹ Annets, FA Cup 150.
- ²² Annets, interview with the author.
- ²³ Brown, The FA Challenge Cup: Complete Results.
- ²⁴ Rundle, 'Football Club History Database'.
- ²⁵ Collett, *The Complete Record of the FA Cup*.
- ²⁶ Brown, Interview with the author.
- ²⁷ Brown, Interview with the author.
- ²⁸ Annets, FA Cup 150, 8.
- ²⁹ Annets, FA Cup 150, 255.
- ³⁰ Brown, Interview with the author)
- ³¹ Wyscout, website description of the data they collect.
- ³² Wiggins, 'The inner beauty of the beautiful game: How Opta analyses football'.
- ³³ Wiggins, 'The inner beauty of the beautiful game: How Opta analyses football'.
- ³⁴ Cunningham, 'Behind the stats: An inside look at Opta Stats'.
- ³⁵ Castellano et al, 'Evaluation of research using computerised tracking systems (Amisco® and Prozone®) to analyse physical performance in elite soccer'.; Marr, 'How big data and analytics are changing soccer'.
- ³⁶ Aarons, 'Édouard's debut double knocks Spurs off the top'.
- ³⁷ Lewis, *Moneyball: The art of winning an unfair game*; Weimar and Wicker 'Moneyball revisited: Effort and team performance in professional soccer')
- ³⁸ Carling et al, 'The role of motion analysis in elite soccer')
- ³⁹ Wigmore, 'Brentford's Moneyball way to beat football teams with huge budgets')

⁴⁰ Dwyer *et al*, . 'Fantasy vs. reality: Exploring the BIRGing and CORFing behavior of fantasy football participants')

^{1.} Vasili, The First Black Footballer: Arthur Wharton 1865-1930; Donnelley, Firsts, Lasts & Onlys of Football.

² Barkow, Golf's All-time Firsts, Mosts, Leasts, and a few Nevers.

³ Donnelley, *Firsts, Lasts & Onlys of Cricket*.

⁴ Johnson, Baseball's Book of Firsts.

⁵ Berg, 'The compatibility of zero-sum logic and mutualism in sport'.

⁶ Bagchi, '50 stunning Olympic moments No. 25: David Hemery storms to gold in Mexico'.

⁷ Casey, Firsts: origins of everyday things that changed the world; Grant, The Book of Firsts; Kerr, Book of

Firsts: First time almost everything happened. ⁸ Lorblanchet and Bahn, *The First Artists.*

⁹ Hsu, 'The neverending quest for 'firsts'.

¹⁰ Adler, *Science Firsts*)

¹¹ Bruno, Science and Technology Firsts)

¹² Donnelley, Firsts, Lasts & Onlys of Football; Barkow, Golf's All-time Firsts, Mosts, Leasts, and a few Nevers; Donnelley, Firsts, Lasts & Onlys of Cricket; Johnson, Baseball's Book of Firsts)

- ⁴² Greig, 'Dexterity, accuracy and FIFA skills the people behind Opta's football data')
- ⁴³ Tony Brown (interview with the author)
- ⁴⁴ Alan Biggs (interview with the author)
- ⁴⁵ Bill Edgar ('Game in Numbers: Chelsea and Liverpool complete historic five-match run')
- ⁴⁶ Tony Brown (2021)
- ⁴⁷ Edgar. Test your knowledge with 25 sample questions from Bill Edgar's quirky football book quiz book'.
-) ⁴⁸ Edgar (*Bill Edgar's Quirky Football Quiz Book*)
- ⁴⁹ Douglas Booth, ('Origins in History and Historiography: 2)
- ⁵⁰ Syson's (The 'chimera' of origins: Association football in Australia before 1880': 453)
- ⁵¹ Booth, 'Origins in History and Historiography: 23)
- ⁵² Booth ('Origins in History and Historiography: 22)
- ⁵³ Edward Said ('Beginnings': 45)
- ⁵⁴ Stephen Jay Gould (cited in Booth, 'Origins in History and Historiography: 22)
- ⁵⁵ Baker, 'William Webb Ellis and the origins of Rugby Football)
- ⁵⁶ Ogden, 'Major league baseball and myth making)
- ⁵⁷ Hocking and Reidy, 'Marngrook, Tom Wills and the continuing denial of indigenous history: On the origins of Australian football')
- ⁵⁸ Booth, 'Origins in History and Historiography)
- ⁵⁹ Clevenger, 'Transtemporal sport histories; or, rethinking the "invention" of American basketball'.
- ⁶⁰ The Sporting Statues Project at the University of Sheffield is a database of including the sports of baseball, cricket and football.
- ⁶¹ Syson, The 'chimera' of origins: Association football in Australia before 1880')
- ⁶² Syson, The 'chimera' of origins: Association football in Australia before 1880')
- ⁶³ Spicer, Not the first word on 'firsts')
- ⁶⁴ Merton 'Singletons and multiples in scientific discovery: A chapter in the sociology of science'.
- ⁶⁵ Francis Bacon's (Kiernan, Michael (Ed.). *The Oxford Francis Bacon*)
- ⁶⁶ Merton 'Singletons and multiples in scientific discovery: A chapter in the sociology of science': 472.
- ⁶⁷ Adler, *Science Firsts*)
- ⁶⁸ Kerr, Book of Firsts: First time almost everything happened: 2.
- ⁶⁹ cited in Merton, 'Singletons and multiples in scientific discovery: A chapter in the sociology of science': 473)
- ⁷⁰ Ogburn and Thomas, 'Are inventions inevitable? A note on social evolution': 84.
- ⁷¹ Merton 'Singletons and multiples in scientific discovery: A chapter in the sociology of science'
- ⁷² Merton, 'Singletons and multiples in scientific discovery: A chapter in the sociology of science': 480)
- ⁷³ Hsu 'The neverending quest for 'firsts'.
- ⁷⁴ Ogburn and Thomas, 'Are inventions inevitable? A note on social evolution': 86)
- ⁷⁵ Swain and Harvey, 'On Bosworth Field or the playing fields of Eton and Rugby? Who really invented modern football?'.
- ⁷⁶ Spicer, Not the first word on 'firsts'.
- ⁷⁷ Hsu 'The neverending quest for 'firsts'.
- ⁷⁸ Shustek 'Programming the ENIAC: An example of why computer history is hard'.
- ⁷⁹ Spicer, Not the first word on 'firsts'.
- ⁸⁰ Laird, 'Seduced by a 'First'
- ⁸¹ Laird, 'Seduced by a 'First'
- ⁸² Hutchinson and Mitchell, 'John Hope, the Foot-Ball Club of 1824 and its sporting legacy'.
- ⁸³ Westby, England's Oldest Football Clubs 1815-1889: A new chronological classification of early football.
- ⁸⁴ Merton, 'Singletons and multiples in scientific discovery: A chapter in the sociology of science'.
- ⁸⁵ Merton, On the Shoulders of Giants, 317.
- ⁸⁶ Merton, 'Singletons and multiples in scientific discovery: A chapter in the sociology of science', 474.

⁸⁷ Swain and Harvey, 'On Bosworth Field or the playing fields of Eton and Rugby? Who really invented modern football?'.

⁸⁸ Simon, Models of Man, 198.

- ⁸⁹ Murdock, 'The serial position effect of free recall'.
- ⁹⁰ Waugh and Norman, 'Primary memory'.
- ⁹¹ Anderson and Hubert, 'Effects of concomitant verbal recall on order effects in personality impression formation'.
- ⁹² Murdock, 'The serial position effect of free recall'.
- ⁹³ Ackoff, 'From data to wisdom', 3.

⁴¹ Annets (interview with the author)

- ⁹⁴ Ackoff, 'From data to wisdom', 3.
- ⁹⁵ Ackoff, 'From data to wisdom', 3.
- ⁹⁶ Wilson and Campbell, 'Developing a knowledge management policy for ISO 9001'.
- ⁹⁷ Carpita et al, 'Discovering the drivers of football match outcomes with data mining'.
- ⁹⁸ Cattell, 'Our psychological association and research'; 'Early Psychological Laboratories'.
- ⁹⁹ Smith, 'Why do we focus on firsts: Problems and possibilities for teaching black history', 19.
- ¹⁰⁰ Martin, Parables of Possibility: The American Need for Beginnings, x.
- ¹⁰¹ Smith, Black Firsts: 4,000 ground-breaking and pioneering historical events.
- ¹⁰² Miller, 'Why Kamala Harris and 'firsts' matter, and where they fall short'.
- ¹⁰³ Schmitt and Ronck. Firsts and Almost Firsts in Hawaii.
- ¹⁰⁴ Schmitt and Ronck, Firsts and Almost Firsts in Hawaii, 217.
- ¹⁰⁵ Schmitt 'Some "Firsts" That Weren't'; 'More "Firsts" That Weren't'.
- ¹⁰⁶ Schmitt, 'More "Firsts" That Weren't': 239.
- ¹⁰⁷ Bushnel, *The Florida Historical Quarterly*: 366)
- ¹⁰⁸ Ludlum, 'New York's First Weatherman', 95.
- ¹⁰⁹ Annets, interview with the author.
- ¹¹⁰ Schafer, 'Historical "Firsts," "Exclusives," and "Incomparables" ', 103. ¹¹¹ Schafer, 'Historical "Firsts," "Exclusives," and "Incomparables" '.
- ¹¹² Schafer, 'Volume Information'. The Wisconsin Magazine of History: I XXVII.
- ¹¹³ Shafer and McMurtrie, 'A Question of "Firsts" Again'. 102.
- ¹¹⁴ Walker, 'Tennis balls and flares thrown onto pitch as Oldham Athletic fans protest against club's ownership'.
- ¹¹⁵ Football365, 'Mourinho becomes first manager to spend £1 billion'.
- ¹¹⁶ Wright, 'Mourinho 'first Super League manager to lose job'.
- ¹¹⁷ High Adventure Expeditions, 'Full List of Mount Everest Climbers', 2021.
- ¹¹⁸ Hansen '11 Historical firsts on Mount Everest'.
- ¹¹⁹ Shustek, 'Programming the ENIAC: An example of why computer history is hard'.
- ¹²⁰ Smith, Black Firsts: 4,000 ground-breaking and pioneering historical events, xi and xii.
- ¹²¹ Shustek 'Programming the ENIAC: An example of why computer history is hard'.
- ¹²² Hsu, 'The neverending quest for 'firsts'.
- ¹²³ Smith, Black Firsts: 4,000 ground-breaking and pioneering historical events.
- ¹²⁴ Annets, FA Cup 150.
- ¹²⁵ Seixas, 'Mapping the Terrain of Historical Significance', 27.