Can family planning increase your selection chances?

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Season-of-birth bias in Association Football

It is remarkable to think that two children, born one day apart, might be either disadvantaged for being the youngest in the year for age group team sports or alternatively, enjoy the benefits that may be available to them by chance of birth. Recruitment into football for the potential professional player is the critical element in identifying talent in today's highly competitive player development environment.

Craig Simmons, Player Development Advisor to The Football Association looks at the possibility of biased recruitment and selection towards older players in the current climate. If this feature is indeed the case, then the selection of the oldest players will dominate recruitment and selection, whilst the numbers of youngest players selected within a year group will be reduced. Should this be the current trend, then the recruitment and selection imbalance needs addressing.

Subsequently, if being older is a benefit in terms of increased opportunity for recruitment/selection, then is this factor simply an age related benefit? The recent study by (Simmons and Paull 2001) compared data from a five year period and concluded there is indeed a bias towards selecting older children in professional football dubs. Furthermore, analysis of separate data reveals a shift of bias when comparing two different start dates, namely September compared with January. Additional findings show that the youngest children from the January start date, (born September to December) contribute a significantly increased percentage to selection when compared to the youngest from the September start date, (born May to August).

Introduction

In the mid nineties The Football Association felt the need to review its selection criteria for junior squads. This was based on experiences of a large number of players identified at young ages as potential professional and international players, subsequently failing to make the expected progress into adult international playing status. Historically, the majority of youth international players were found to be older within their year and appeared physically mature for their age.

The season-of-birth bias was also observed in other levels of football competition. In England, statistics for players in centres of excellence show an obvious bias towards birthdays in the September to December third of the year. These players were recruited to professional clubs and regarded as the best 9 to 16 year old players in England. Given that these data sets represent a good cross section of potentially elite players, why should an age bias exist in football selection, particularly as general population births (table 1), show no evidence of age bias for any given period?

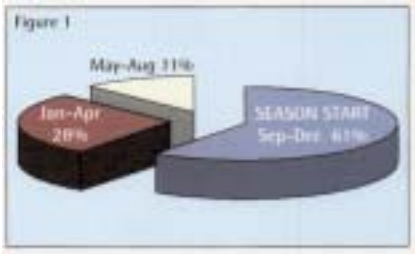

Figure 1 Birth date distribution of 9 to 16 year old players.

Birth statistics for 656,034 live males born in England and Wales 1977 to 1982 and averaged monthly from figures supplied by the Office for National Statistics, Fertility Statistics Unit Population Census.

The figures (table 1) would seem to indicate that the general population of monthly birth distributions is not the cause of selection age bias in football. Further support for the older age season-of-birth bias comes from a four-nation survey (Musch and Hay 1999). Table 2 shows the overrepresentation of footballers born in the first quarter of the competition year in Germany, Brazil, Japan and Australia.

These countries represent different continents and varied seasonal selection start dates. In addition, they offer a global perspective to the subject of season-of-birth bias in football. These data exclude foreign-born athletes, and were derived mostly from the 1995/96 season, with the addition of the further data set from the 1998/99 season for the Australian competition.

Of particular interest in all the studies cited previously is the alignment of the bias with the age-band period. The seasonal bias is not simply calendar based, but relates to the start date of the relevant age-bands of competition. Therefore, the selection bias towards the oldest performers appears as the first three to four months into any competition year. In the United Kingdom, with a September 1st start date for school and the football season, the majority of 'talented' players come from the September-December period. Japan's competition year begins on April 1st and the bias is observed in May-July.

Germany and Brazil produce similar distributions with the August 1st start date. Interestingly, the Australian data from Musch

Table 1	**Males born in England and Wales 1977-1982**		
	Jan-Apr	**May-Aug**	**Sep-Dec**
Population births	**33.3%**	**34.4%**	**32.3%**

Percentage of players by Quarter of the Competition year				
Quarter	**1st**	**2nd**	**3rd**	**4th**
Germany (Aug)	**30.5**	**24.5**	**22**	**23**
Brazil (Aug)	**30.5**	**26.5**	**25**	**18**
Japan (Apr)	**37**	**30**	**17**	**17**
Australia (Aug)	**38**	**21**	**20**	**21**
Australia (Jan 1998/99)	**30**	**26**	**25**	**19**

Table 2 Birthdate proportions across the quarters of the 1995/96 playing year and Australia in 7998/99 (adapted from Musch and Hay, 1999)

and Hay (1999) includes cut-off dates of August 1st (1995/96) and January 1st (1998/99) due to realignment of the FIFA world international qualifying date requirements. In each case, the season-of-birth bias aligns with whichever quarter is the earliest in the competition year. The age bias in sport would not be so problematic if all children selected into leagues eventually emerge as capable adult athletes.

However, if elite sporting children do not emerge in elite adulthood, two important questions emerge; (1) why do the older talented child athletes not necessarily continue into adulthood as the most skilful among their peers. (2) are there excluded younger players, perhaps later maturing, who may have the ability to develop into elite performers but who are not identified for enriched coaching and competition in their early years of sport? Studies of Mexican soccer players have shown a trend for boys advanced in sexual maturity to be more successfully recruited (Pena Reyes et al., 1994).

Similarly, data on Italian youth soccer players suggest a similar selection tendency for advanced sexual development (Cacciari etal, 1990). Season-of-birth bias effects are not exclusive to sport. School examination results provide the most convincing statistics of beneficial age-bias results within each academic year group. The eldest children achieve better results within a year group when compared to the youngest children (Bell and Daniels 1990; Huack and Finch 1993; Sharp et al 1994; Sharp and Benefield 1995; Sharp 1995).

The reasons for this bias are thought to include chronological age, length of schooling and seasonal influences particularly in primary schooling. Interestingly, Giles (1993) argued that the bias appears to reduce in key stage 4 school populations. Whilst this study was limited to one school, the implications if supported by further research may be fundamental to this whole subject area.

The "inclusion" approach to late developers in academic learning which is demonstrated by examination results, may have supported the learning environment and contributed to reducing the age bias influence. This approach is in marked contrast to the "exclusion" effect found in selection for sport and often based on short-term requirements. In fact, the support needed by late developers particularly in age defined team games, is contrary to the commonly held belief that winning is all important.

The exclusion of the immature children who may have developed given equal opportunity is a concern for future talent identification and recruitment. Whilst age bias appears to influence both education and sport, the questions remain as to; 1 does age bias affect elite players? 2 does the bias affect selection? 3 what is the effect on bias when the selection date shifts? Research demonstrates a bias exists as previously shown in Figure 1 further demonstrated in Figures 2, 3, and 4.

A feature to the age bias emerging from these data sets is the difference in the selection contributions from the youngest groups of players in each of the two start dates. The September (English schools) start date demonstrated a contribution of 6.0 % from the youngest players who are born in the four months May to August (Figure 3).

These players do not form school or football peer groups based on selection in England. The January (UEFA) start date demonstrated a contribution of 36.0 % from the youngest players who are born in the four months September to December, (Figure 4),

Summary

The findings within this study demonstrate season-of-birth bias exists in the selection of elite youth football players in England, the bias of older players enjoying early recognition is in support of existing research. Additional

support for existing research is found in varied populations in football who still produce older age bias in selection.

Furthermore, the "cascade effect" of selecting from such pools of talent can be seen in the increased season-of-birth bias observed as the level of competition increased when selected for The Football Association National School from club teams. That is, being selected at an early age increases the chance of selection in later years by the processes of recognition, advanced training, and experience in higher competition Dudink(1994).

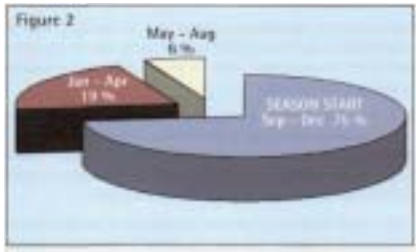

Figure 2 Birth date distribution of 79 players at The Football Association National School

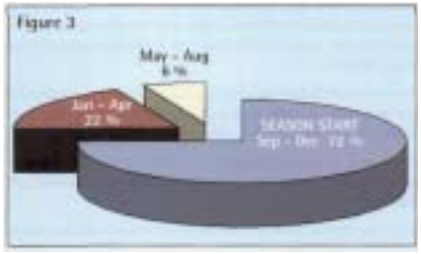

Figure 3 Birth date distributions of 78 England schools youth players for September start date

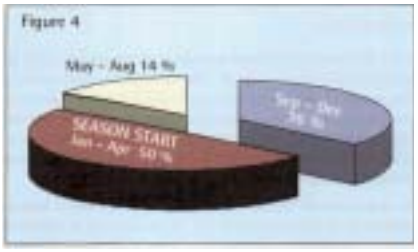

Figure 4 Birth date distributions of 64 England youth players for January UEFA season start dates

The results from the third and fourth data set from the English Schools' Football Association, and The Football Association National youth teams, (Figures 3 and 4) demonstrated two interesting features. The first was the obvious shift in over-representation from the September to December period to the January to April period. The change in start date now affords greater opportunities to players born in the new first quarter period of the competition year as predicted by the maturation argument as presented by Musch and Hay (1999).

The second feature in the 1997, 1998, and 1999 groups, when the start date was January, (Figure 4) was the continued contribution of the youngest players with birthdays in the September to December third of the year. When compared to the September start date, (Figure 3) the contribution from the youngest group born May to August is markedly different. One explanation may be that many of the September to December birth players may have enjoyed a dominant role over previous years among their peers in both

Male births in football 1992 to 1997				
Group	**Start date**	**Oldest 4 months**	**Middle 4 months**	**Youngest 4 months**
Centres of Excellence Fig 1	September	61%	28%	11%
F.A. National School Fig 2	September	75%	19%	6%
England schools Fig 3	September	72%	22%	6%
UEFA Fig 4	January	50%	14%	36%

Table 2 Summary of charts showing birth bias in football selection

football and school. Therefore, their self-esteem and efficacy expectations would be high despite the presence of 'older' players in the new selection age-band. With this positive psychological state built from previous success, the most powerful form of efficacy support Bandura (1977), they may continue to achieve against the odds - at least in the early years of the change when they may not have experienced age-related skill deficits within their immediate peer group. An additional factor could also be considered with regard to an interaction between cognitive and physical performance.

If it is believed that self-esteem and confidence can be global and not simply specific attributes in achievement domains, then we might expect that children who are used to success in the playground through physical superiority have a strong self-concept, better time management and confidence in classrooms composed of the same year group. An interesting phenomenon arises for sports coaches in that if we accept this physical superiority premise, then why has the older age-bias in school academic achievement diminished in secondary school? Giles (1993). This is most likely due to the involuntary structure of education in that school children cannot usually drop out and disappear from achievement statistics. In fact, weaker students are deliberately included, (systematic inclusion) and may be directed to enriched instruction until they catch up!

This approach would appear to be the direct opposite to sport, where the general exclusion of the perceived less able young team player occurs, (personal exclusion based on the opinion of the player, coach or influential others) particularly when these players are contesting selection into national, regional or club teams.

Strategies to keep these excluded children in the sports system are required, together with investigations to establish the exact ages at which this exclusion begins in team sports. Selection criteria for age category team games may be based on either, a priority of winning (almost at any cost), or on a long term development strategy based on potential for the future. Both policies are possible given that all the underlying issues are allowed for wherever necessary If there can be great maturational variation in children (Malina et al., 1982), how do we know what an unknown player's potential is when they are selected on a simple comparison of on-field performance against a peer group with similarly unknown developmental characteristics?

Are we doomed to minimal accuracy levels of early prediction in attempting to identify the eventual top class players through:

1 Exclusion of younger or later maturing child athletes who would eventually achieve at the highest level given enriched coaching and competition?

2 Inclusion of mainly older or early maturing players who are approaching their final physical status. They may not go on to the highest level when their cognitive abilities, physiological attributes and age ratios (which were in balance and equipped them for notice early in their career) are now matched?

The over-re presentation of older players in an age-banded cohort would appear to be a combination of chronological age, physical and cognitive maturation, seasonal selection start date, schooling start date or developmental circumstances as shown by many research studies (Bar Or 1985; Bell and Daniels 1990; Cacciari et al, 1990; Huack and Finch 1993; Pena Reyes et al, 1994; Sharp et al. 1994; Baxter Jones et al, 1995; Sharp and Benefield 1995; Sharp 1995; Simmons and Paull 2001; Musch and Hay 1999).

Are there other considerations in discussing this selection dilemma? One key factor lies in achieving a high level of experienced subjective opinion, supported by objective evidence, in any selection procedure that seeks to overcome the causes of age bias.

This process has to be effective in detecting 'potential' as well as 'current' performance as powerful predictors of eventual ability.

Researchers must prepare for longitudinal examination of young athletes in order to understand which selection characteristics are the most effective, furthermore, they must be powerful predictors of effective future development and high level performance.

The youngest male players, when they are born September to December, infiltrate the older group in a way that those youngest when born.