

<b>Title</b>	How "Relative Age" or "Matthew" Effect impacts upon sport & individuals.
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<b>Audience</b>	Coaches, Junior Athletes, Parents, Teachers, Sports Development Officials
<b>Background</b>	This document is based upon the author's personal opinion and is not a scientific study. Hopefully it stimulates some debate and internal reflection amongst readers.

### The Relative Age or Matthew Effect

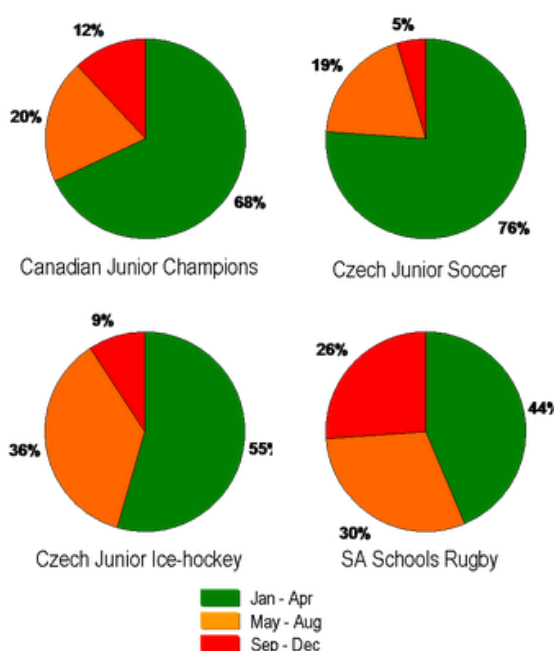
The Relative Age Effect was reportedly first discovered in 1985 by a Canadian academic called Roger Barnsley and has been covered more recently in the book *Outliers* by Malcolm Gladwell where it was described as The Matthew Effect.

Barnsley found a pattern amongst Canadian Ice Hockey players whereby four times as many players in 3 Major Leagues including the National Hockey League were likely to have been born in the first 3 months of the year (Jan-Mar) than the last 3 months of the year (Oct-Dec). Barnsley looked into the causes of the pattern and traced it all of the way back to when the players were Juniors.

As happens in most countries, he found that players were grouped together by chronological age group rather than by development age or maturity. Because of the varying growth rates of children, each group had players with often widely differing abilities and physical attributes. The faster, stronger, bigger players shone and the smaller, slower, weaker players didn't.

The players that shone were treated differently to the players that didn't. They were given representative honours, access to better coaches, more game time and generally encouraged to continue in the sport. The weaker players received much less focus and support and as a result, many "dropped out" or didn't achieve the same success as their peers.

The same effect has now been proven in many sports in many countries as illustrated in this diagram by Ross Tucker PhD and Jonathan Dugas PhD on their web site [www.sportsscientists.com](http://www.sportsscientists.com).



Of course, there are exceptions and these exceptions generate new conversations about how they avoided becoming 'victim' to "natural selection". Perhaps they received greater encouragement from their parents, or stumbled across a particularly good coach who recognised their skills despite their lack of physical development, or perhaps they had the attitude to overcome whatever barriers stood in their way.

The debate goes on. However, from my initial reading on the subject you can be sure that...

- Possible future stars are being lost to sport
- Coaches and selectors have a huge role to play in countering Relative Age Effect
- Parents and athletes need to be aware of the issue and persevere when they are affected

### **What should be done?**

The 'victims' that persevere when they aren't selected for the team or don't get the same amount of game time will eventually catch up physically, but the effect of not being given the same opportunities to train effectively or play regularly will mean that their skills development still lags behind the 'beneficiaries' of the effect.

To counter this, **parents** and **athletes** should find ways of continuously developing skills. Perhaps they need to join an independent club if they are not getting picked for the school team or perhaps they need to find a way to play for 2 different teams at the weekend if one coach is leaving them on the subs bench.

**Parents** and **athletes** also need to react in a different way to winning or losing. Winners should rightly celebrate success but both winners and losers should focus on the performance and consider what worked and what didn't. This encourages continuous development and gives the athlete something to work on in training. (*Further reading: 10,000 hour rule & Right Time, Right Place*)

Besides having just outcome related goals such as "win the national schools championship", athletes need to also have skills related goals such as "increase Long jump approach speed by 10%" this ensures that regardless of results, longer term progress is being considered and delivered.

**Coaches, Teachers** and **Sports Development Officials** need to do some internal analysis first and ask "What is my goal?" Is it short term or long term and what is the outcome desired? Do I want to coach a team of 11 players that wins the cup this season or do I want to develop a squad of 15 players that *all* go on to play football to a good standard?

For paid coaches, choice is somewhat limited as results are usually the key criteria for the job, but for amateur, volunteer coaches the decision is a difficult one.

Some sports have introduced awards for participants that are based on skill development rather than results. These awards provide an opportunity for participants to gain recognition out of competition, perhaps even attain higher awards than peers that are currently out doing them in competition. For example, a Judo competitor could have lost their last 3 bouts but still develop the skills to achieve a Brown Belt. These awards encourage continued participation in sport and recognise progression but they may provide additional administration overhead for coaches.

**Coaches** also need to rethink their competition strategy. Do they always play to win or do they arrange fixtures to analyse and test the development of all of their athletes? Perhaps they should arrange some friendly fixtures for the athletes that wouldn't normally be selected?

**Sports Governing Bodies** have a huge part to play. I believe that competition is an important part of sport as it is such a vital part of life and I have always argued against non-competitive sports days in schools etc. However, a better balance between results and development needs to be achieved. Losing competitors shouldn't be dismissed and they need to be encouraged to continue their development. Winning competitors should be congratulated; but also analysed and developed further.

**Governing bodies** can do much more to reduce Relative Age Effect by reducing the grouping windows in the sport or by regularly changing the cut off dates for groups. In UK Athletics, junior age groups leap 2 years at a time meaning that competitors are regularly 23 months apart. This is a huge gap in a power event such as jumping, sprinting or throwing and many "losers" leave the sport because they class themselves as no hopers. In UK swimming competitions, the eligibility date is the actual day of the competition, meaning that every competitor has the opportunity to be the oldest swimmer at some point during the year. For finals, the eligibility date is the date of the last league meeting meaning that a competitor doesn't miss the final because they had a birthday since qualifying.

Where differences in physical size don't pose a safety risk, perhaps **governing bodies** from technical sports could also provide competition at Junior level for athletes with similar abilities rather than similar ages?

### **What happens to the Beneficiaries of Relative Age Effect**

Some obviously go on to be world class sportspeople. However, many more may become secondary victims of the effect.

If early maturing athletes are not coached and guided effectively they could neglect the skills needed to keep them at the top of the tree. For example, I played rugby against a boy at school that was significantly bigger, stronger and more developed than the rest of us. At the time, he seemed destined for great things and behaved as such on the pitch. However, 10 years on I met him in the street. I was now several inches taller, had played rugby for longer and at a higher level than he had. Perhaps I was a victim that persevered, but perhaps also, he was a beneficiary that got lazy and relied too much on his size advantage at the neglect of skill development?

Successful athletes can also become one dimensional as a result of success in one discipline or sport. For example, a 13 year old female performs well in Junior Endurance Races so their coach advises them to drop the other event and "specialise" in distance running. They get special training and perform well at regional and perhaps national level. They then develop and their body shape changes considerably. They are no longer the tallest, slimmest of athletes and results start to suffer. By the time realisation dawns, many of these athletes struggle to rediscover their enjoyment or skills in other sports and simply drop out of sport altogether. Many others are over exposed to one discipline and get injured due to repetitive strain on muscles, bones and ligaments that aren't yet fully grown.

## **The wider impact to society**

In the USA, parents are much more aware of Relative Age Effect and a phenomenon known as “Red-Shirting” has been created in schools and in sport. This involves someone being “held-back” before entering an age group and then placed in the next one as the oldest member. It is felt that they then get the benefits of the Relative Age Effect and are more likely to be successful in school or sport. The New York Times recently published a Blog on the rights and wrongs of Redshirting and it stimulated a lot of debate both for and against the practice.

<http://parenting.blogs.nytimes.com/2011/09/26/the-redshirting-debate-continues/>

## **Further Reading / References**

<http://www.bepress.com/jqas/vol6/iss4/9/>

<http://www.sportsscientists.com/2009/01/matthew-effect.html>

Outliers by Malcolm Gladwell

Bounce by Matthew Syed

The Talent Code by Daniel Coyle

There are many more white papers and studies that can be accessed on Google Scholar by searching for “Age Bias in Sport”

