

Hi. My name's Ryan, and this blog demonstrates some of the projects I've worked on. These projects ideas mainly came about with a desire to improve my coding and statistical knowledge, but hopefully along the way some interesting conclusions can be found.

# Age ain't nothing but a statistic

October 22, 2020

I'm now safely settled into my fourth decade, my 30s, a decade seemingly defined by thinking about if nutmeg would be a good addition to porridge and washing dishes almost adequately.

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Accompanying me in this decade is the heightened awareness of the degradation of the already battered corpse that I reside in. When I now play football I can't help but excuse every error I make down to my own aged husk.

Labels

*aging  
Analysis  
Football  
Statistics*



But is it really down to living a lot on this planet? Perhaps I always committed those mistakes (I did). Perhaps I'm better now than I've ever been, with my strengthened care-free mentality - or perhaps that same care-freeness means I'm much less brave on the pitch than I was previously (and back then I was a coward).

Is the adolescent correct in loading up football manager, choosing their favourite team and selling every would-be club legend over 29 in the name of progress? Or perhaps the strategy of signing every player over 35 that played for Barcelona 20 years ago is the right way to go?

That is the question this article serves to answer: how does aging affect a player's performance statistics? Physically we are sure to find something that gets worse as players move into their mid-30s, but do we also see improvements, technically, or in those stats dictated by a stronger, wiser mind?

## Method

We're going to be using the football performance data acquired from whoscored.com, with the players coming from the top 3 leagues in europe as of April 2020.

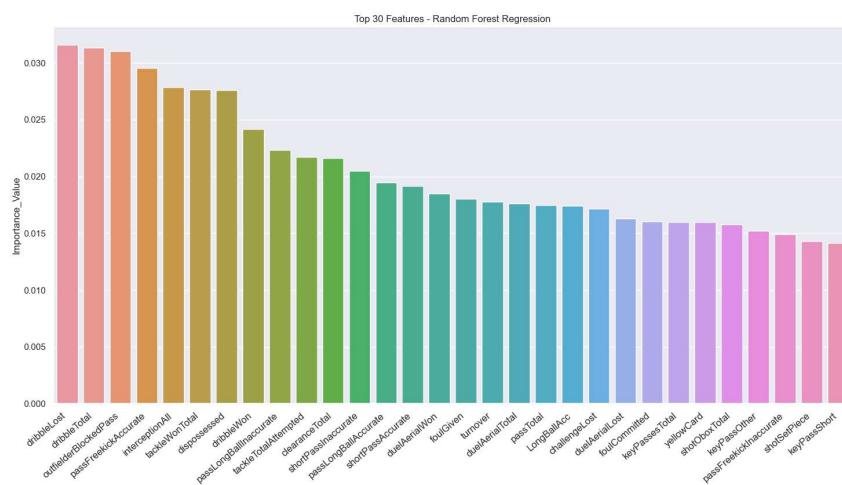
We have 1515 players and their statistics for each season of theirs - equating to 7887 observations.

We will put the statistics into a random forest to see what are the most important variables in regards to their relation with age, and we will then use a simple OLS to understand how they move with age.

For any season, each players must have played at least 3 games to qualify into the analysis.

## Results

We start with what stats are strongly related to age, using random forests.



The variables on the left have the strongest relationship with age.

Feel free to CTRL+scroll to see the variable names, blogspot won't let me make the image large.

These are the variables we will be looking into to see how they are impacted by age.

In the following analysis all variables are statistically significant with age.

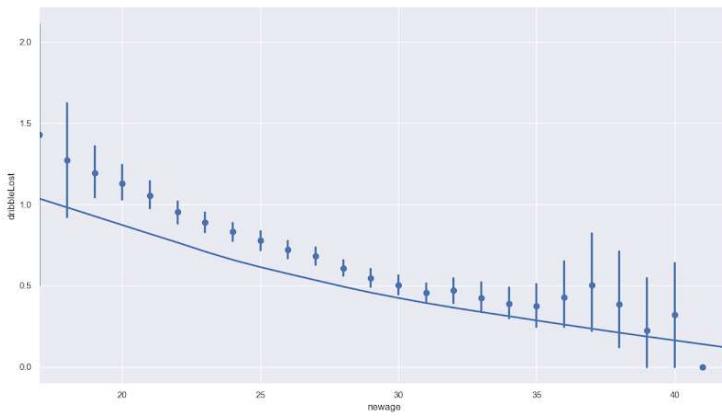
The statistics will come in two sections: how aging can be bad, and how it can be good.

## The Bad

### Dribbles

Dribbles lost per game is the most important variable, let's see how it relates to age

**Coefficient (increase in 1 year of age results in this change of stat) = -0.0530**



Each dot represents the average dribbles lost per game, and the vertical line going through the dot represents the confidence interval - basically how much the the dribbles lost per game varies. For example the first dot is at around 18 year old and the data for dribbles per game at this age varies a lot. This is probably due to lower amount of 18 year olds in the data (and same with older players)

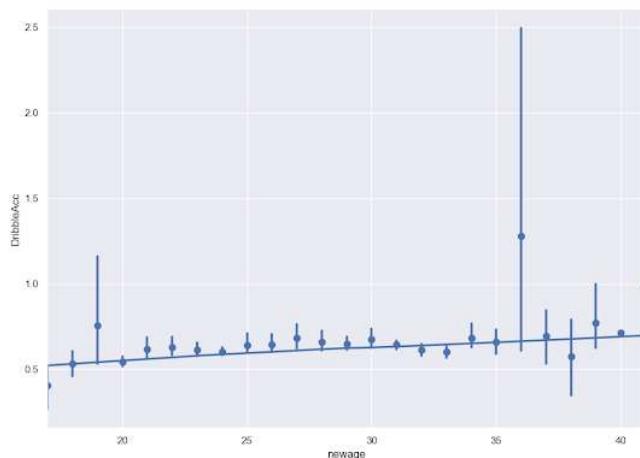
What we're seeing here is the amount of dribbles lost per game decreasing as players get older.

In fact for each year aged, the amount of dribbles lost per game decreases by 0.05 (this is the coefficient given above). A player 20 year old is on average likely to lose 1 dribble more, every 2 games, than a 30 year old.

This could be due to the amount of dribbles attempted by younger players increasing this number, so let's see dribble accuracy.

### Dribble Accuracy %

Coefficient (increase in 1 year of age results in this change of stat) = 0.0054



This I would have expected to be the opposite, with accuracy losing dribbles as you get older.

This I would say belongs in the good pile, but I'll keep it together in a dribbling section.

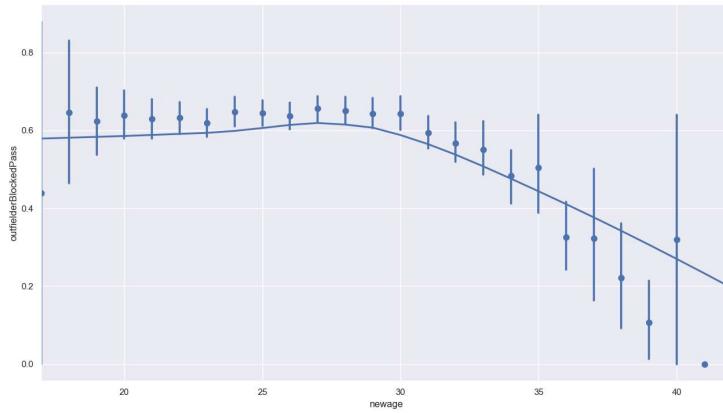
We see for dribble accuracy % increasing as players approach 30. It seems to decrease past 30 but then increases again at 34 (maybe due to retirement of poor dribblers).

The coefficient above tells us for each year of aging, dribbling accuracy increases by 0.54%.

At 30 it does seem dribbling ability goes down.

### Blocked passes

Coefficient (increase in 1 year of age results in this change of stat) = -0.0061

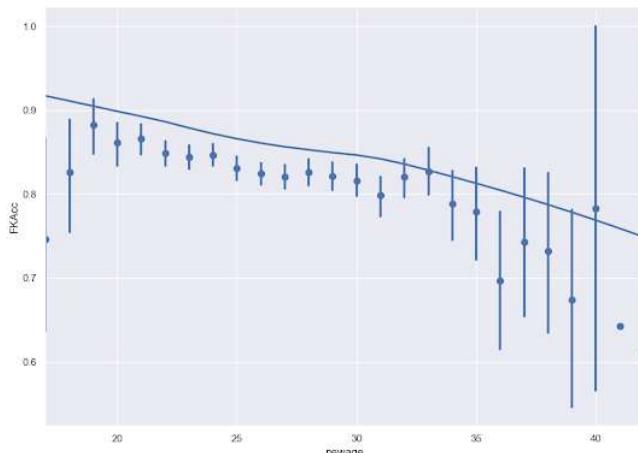


Blocked passes tends to go up at the player approaches his late 20s, but sees a gradual decrease past 30 - possible due to covering less ground at older ages, or losing some pace.

### Free kicks and long balls

#### Free kick accuracy

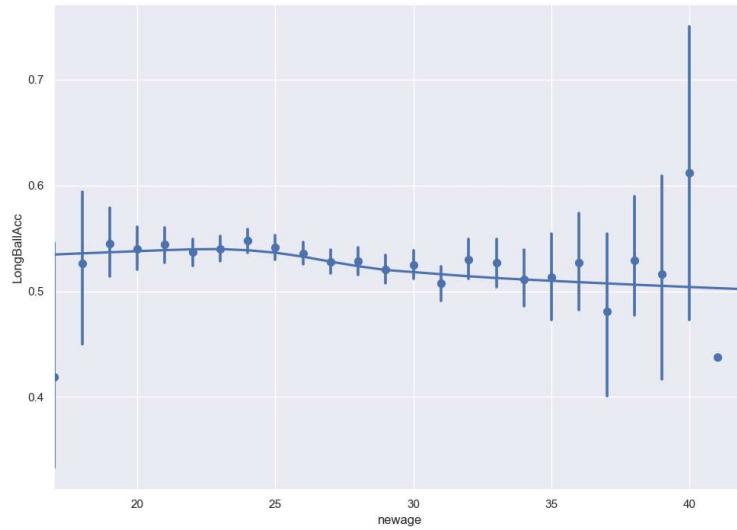
Coefficient (increase in 1 year of age results in this change of stat) = -0.0050



Free kick accuracy seems to be better in the early 20s, maybe due to the special technical players taking the freekicks at this age. Free kick accuracy plateaus and sees a decrease past the age of 34

### Long Ball Accuracy

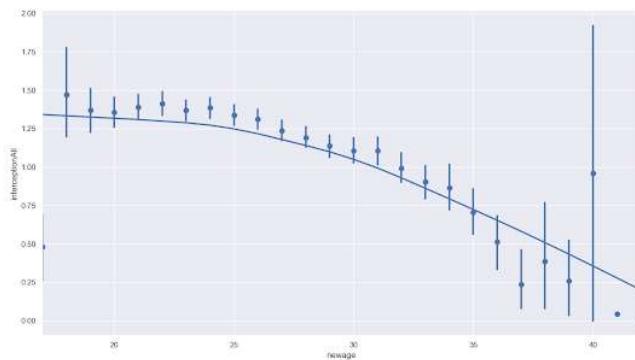
Coefficient (increase in 1 year of age results in this change of stat) = -0.0021



At just 25 years old we start seeing a decrease in long ball accuracy.

### Interceptions

Coefficient (increase in 1 year of age results in this change of stat) = -0.0395

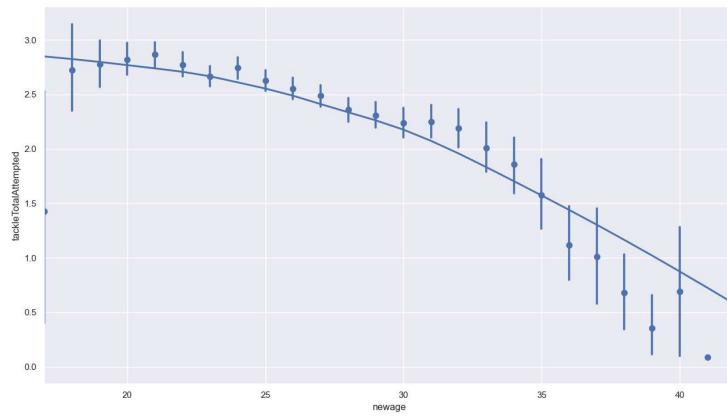


A decrease in interceptions is seen at just 25 years old. A 30 year old will make 0.3 less interceptions per game than a 20 year old on average.

### Tackle Attempted and Accuracy

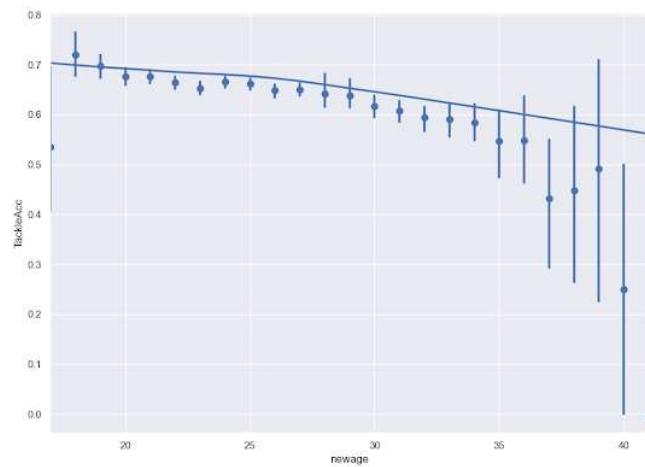
Tackles attempted decreases as a player gets older - past 25 it starts to decrease. For each year a player attempts 0.07 less tackles per game.

Coefficient (increase in 1 year of age results in this change of stat) = -0.0706



As does tackle accuracy

Coefficient (increase in 1 year of age results in this change of stat) = -0.0071

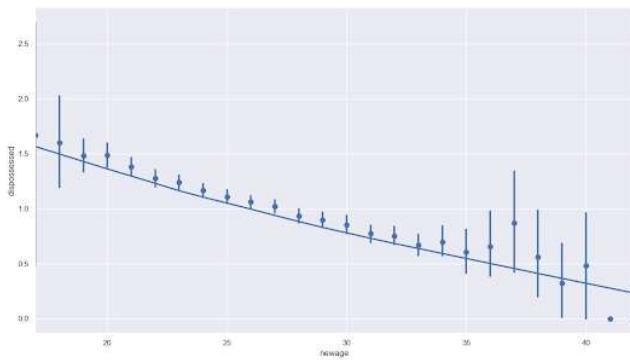


For each year a player ages, their tackle accuracy decreases by 0.7%

## The Good

### Dispossessed and bad touches

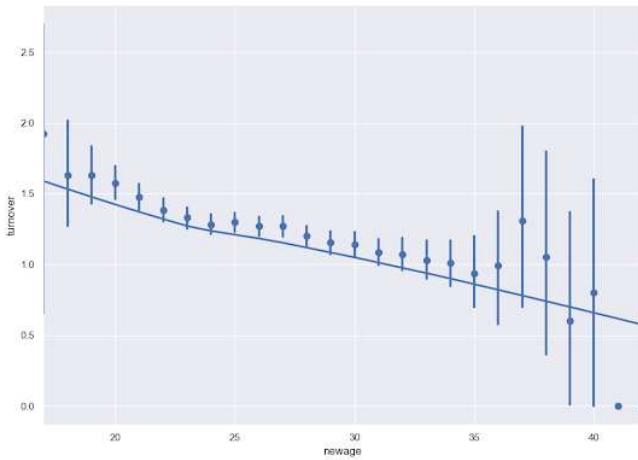
Coefficient (increase in 1 year of age results in this change of stat) = -0.057



Older players are dispossessed less. Maybe they are in less riskier positions on the pitch, or they benefit from their experience. Each year gained means they are dispossessed 0.05 less each game. That's 1 less dispossession every 20 games for every year aged.

### **Bad touches**

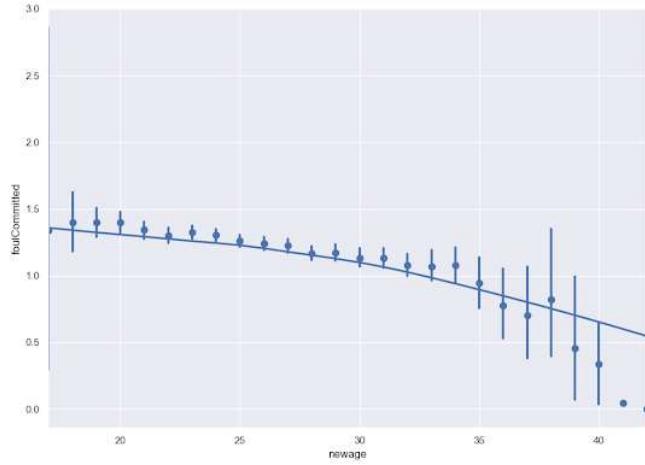
Coefficient (increase in 1 year of age results in this change of stat) = -0.0349



Dispossessions due to poor touches decrease as the player ages

### **Fouls**

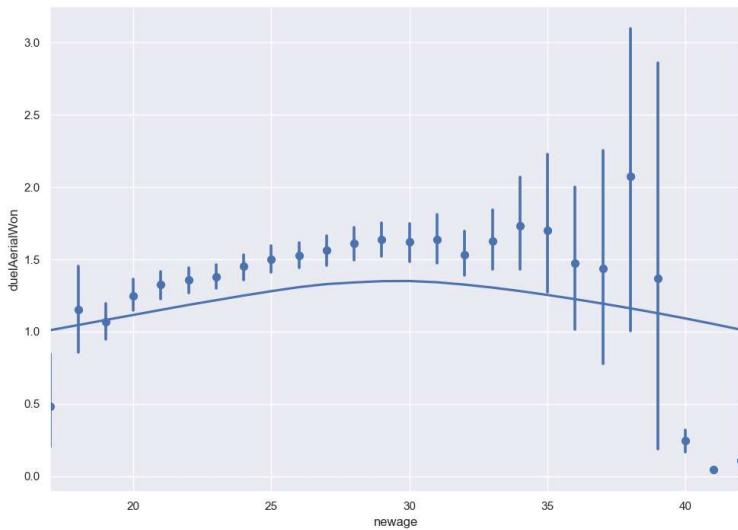
Coefficient (increase in 1 year of age results in this change of stat) = -0.0260



Less tackles attempted perhaps means less fouls committed, we see a steady decrease as the player gets older. Or perhaps older players are less reckless and aggressive.

### Aerial Duels Won

Coefficient (increase in 1 year of age results in this change of stat) = 0.0299



Aerial duels won increases with age up until after 32 when we witness less of a spring in the players' step.

### Conclusion

Older players of course degrade through time and this is seen in the statistics presented. Surprisingly, some of these statistics also decrease past the age of 25, such as long ball accuracy and tackles attempted and total interceptions.

Older footballers do lose the ball less, and have less bad touches. They also foul less.

Aging isn't all bad. Back to washing nutmeg off my dishes.

Ryan Pollard - 2020

LABELS: AGING, ANALYSIS, FOOTBALL, STATISTICS

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#### Comments



HH · October 22, 2020 at 3:51 PM

You're doing a good job of making stats more interesting Ryan. Lovely picture!

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### Ryan Pollard

BSc Mathematics. Interested in using Statistics to come to interesting conclusions.

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