

It's a Marathon, Not a Sprint











*Make that multiple marathons (and some sprinting)

With only four days until the final between France and Morocco, every day of rest is critical, especially for Lionel Messi, who - at 35 years of age - may be playing in his final world cup. It's not just Messi who is likely feeling the strain of this year's tight schedule. Over the past 21 days, each team has played 6 games each. To a basketball or baseball fan, maybe this doesn't sound like a lot, but the difference comes down to the distance.

The average NBA player runs ~ 2.5 miles (~4km) per game and the average MLB player runs only a half of a mile per game. How far of the players of team France and team Argentina run?

Using PFF FC event tracking data, player movement is captured at a rate of 29.97 frames per second and using those x, y coordinates the distance a player moves over the course of a game can be calculated.

Top 10 Total Distances Run in the FIFA World Cup

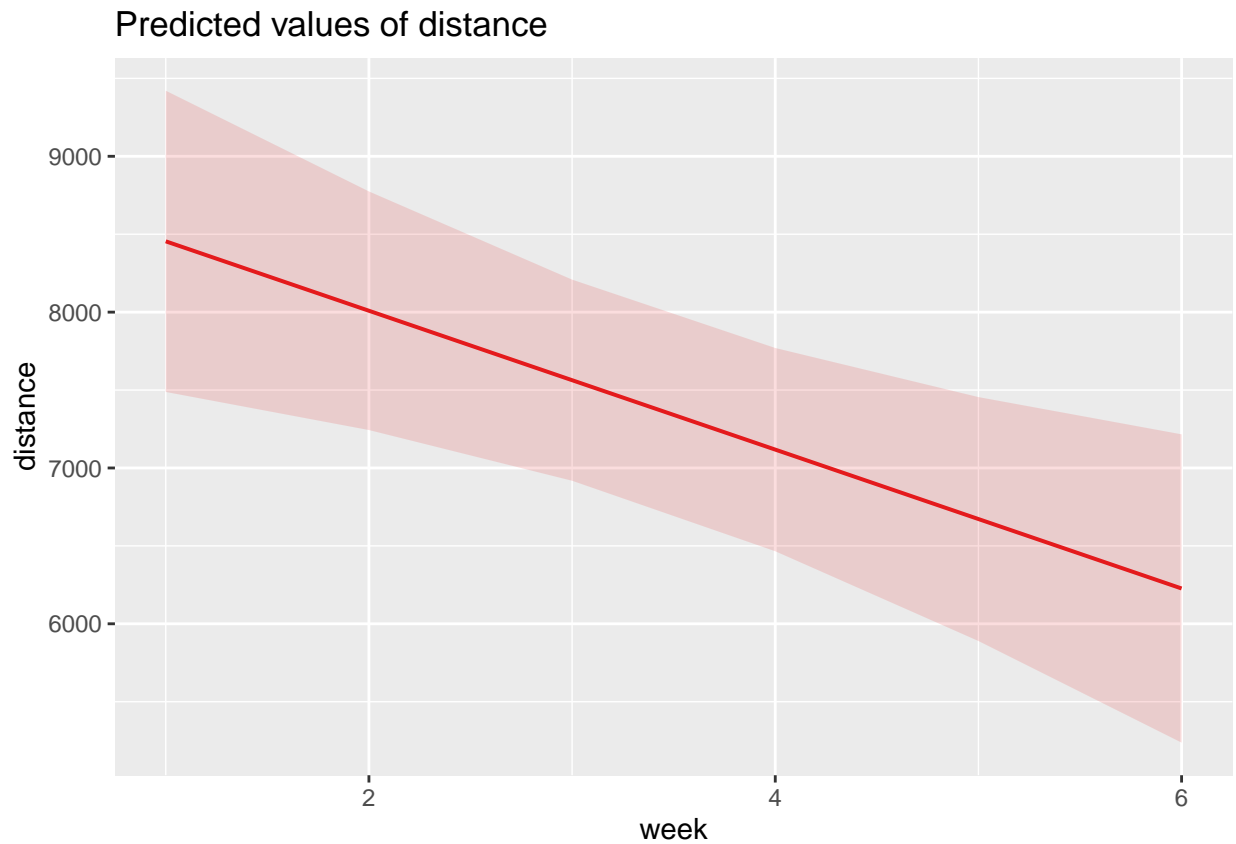
Player	Team	Distance (km)	Avg Distance per Game (km)	Age
Aurélien Tchouaméni		64.32	10.72	22
Lionel Messi		59.06	9.84	35
Theo Hernandez		52.26	10.45	25
Antoine Griezmann		51.08	8.51	31
Kylian Mbappé		49.29	8.21	23
Rodrigo de Paul		47.53	9.51	28
Raphael Varane		45.73	9.15	29
Adrien Rabiot		43.25	10.81	27
Olivier Giroud		43.07	8.61	36
Alexis MacAllister		41.57	8.31	23

For reference, a marathon is 42.195km and 9 players have exceeded that distance. That being said, sometimes we assume that athletes are super-human and though these numbers may seem daunting to those of us who don't make a living from our athleticism, one might argue that these guys are used to it. Are they?

Total game distance was predicted¹ for each player/game using only the week of competition to see if per-game distance is declining over the course of the competition.

¹a linear mixed effects model nesting games within players

On average, the expected distance per game declined by -445.57 km each week.



This suggests fatigue might be an issue. Age, on the other hand had a negligible effect on distance, expected distance per game reducing by only -6.61 for every extra birthday. In other words, Messi has nothing to worry about, age isn't an issue.

With only another few days to go, these teams will run their last 1/4 marathon (no, really) and a champion will be crowned.