

Plotting Actions: Jorginho (CM), Italy

Men's Euros 2020 QF and SF matches looking at Italy's passing-related metrics

Data used for this study:

Italy had an easy passage through group stage. It is a well-accepted notion that the QF and SF are the best matches in any knockout phase of a big tournament given the additional stakes associated with a final and the nature of uneven draws. Even though Italy won both these matches, the style in which they played was completely contrasting and hence we take a deep-dive look at the numbers and plots pertaining to the influence of Jorginho at the center of Italy's midfield to test our hypotheses.

- First, we look at the evenly contested yet comfortable win over Belgium (53% possession, 486/546 passes completed with an 89% completion rate) in the QF. Out of which, Jorginho had 72/73 completed passes with a staggering 99% completion rate.
- Second, we look at the low block Italy used after a very early lead against Spain (31% possession, 321/425 passes completed with an 75% completion rate) in the SF. Out of which, Jorginho had 28/34 completed passes with a relatively modest 82% completion rate.

Pre-meditated hypotheses:

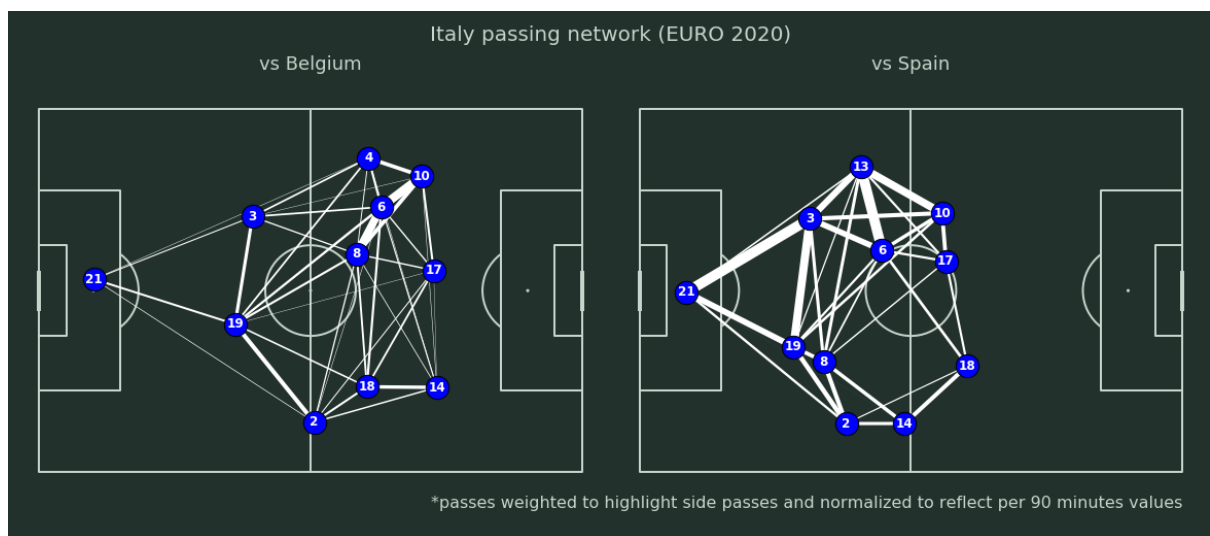
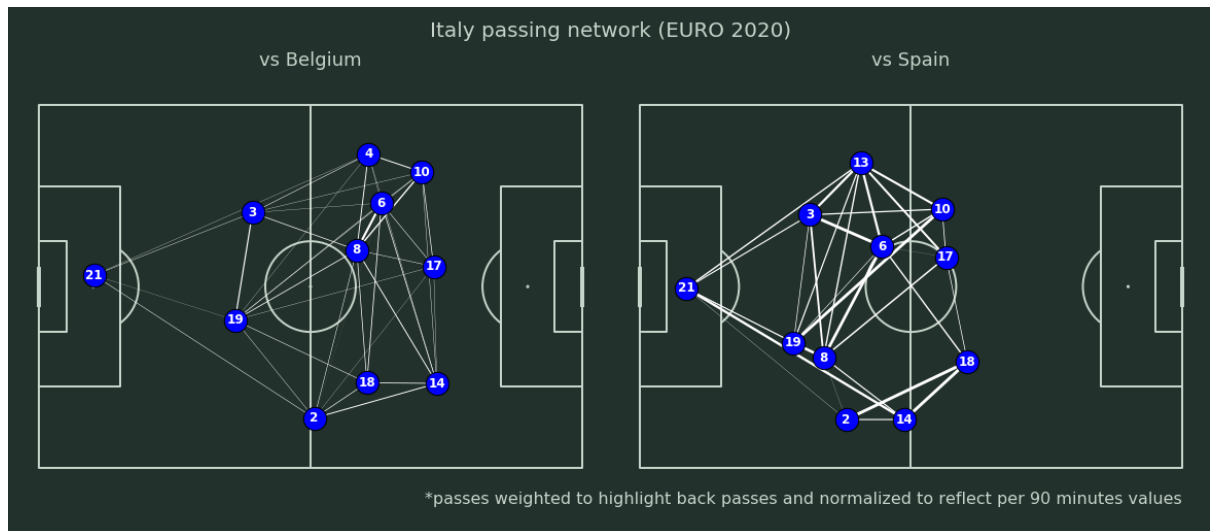
- Jorginho is often seen as the central pivot (compared with "Regista" Pirlo playing for the Azzurri) and is best when he keeps it ticking and controls the passing tempo
- He plays simple sideways and backward passes (counterintuitive but has the potential to open up spaces for teammates to progress – there's a metric developed for "pass before progression").

Data caveats:

- Passes that were recorded till the 1st substitution for Italy have been used
- Node sizes have been kept constant to highlight the significance of pass count and weights
- Passes weighted to highlight back passes and side passes:
 - o First, all angles have been converted from radians to degrees. An angle of 0 means the pass was made in a horizontal line towards the opposition goal while an angle of 180 corresponds to a backward pass.
 - o Next, for the 1st plot, we take the negative cosine of the angle, which gives us [-1 for forward passes, 0 for passes to either side, and 1 for backward passes] thereby highlighting edges that made a lot of backward passes.
 - o Similarly, for the 2nd plot, we take the squared sine of the angle so that forward (0 deg) and backward (180 deg) passes will result in a 0 weight while left (90 deg) and right (270 deg) will result in a weight of 1 highlighting connections with sideways passing.
- Different thresholds have been used for passing counts for the two games given the difference in volume of total completed passes by Italy.
- player_jersey_number_map = {Donnarumma: 21, Di Lorenzo: 2, Bonucci: 19, Chiellini: 3, Spinazzola: 4, Emerson: 13, Barella: 18, Jorginho: 8, Verratti: 6, Chiesa: 14, Insigne: 10, Immobile: 17} going from left to right and bottom to up in the plots below.

Key observations:

- Centralization index against Belgium (0.11) dropped against Spain (0.09). This is quite evident from the shape of the passing networks where a clear line can be drawn to separate Italy's left half and right half of the formation for the one against Spain. This goes to show that having a higher centralization index isn't necessarily a bad thing and can mean good stability in the midfield areas.
- Difference in sheer volume of passes are there to be seen. He had a flourishing partnership with Verratti in the QF against Belgium whereas they rarely found each other in the SF against Spain. Same can be said about his other partner Barella in the midfield three where there's no link.
- On average, Italy managed to push higher up the pitch against Belgium with success coming down the left flank where we can see strong lateral passing links between Jorginho and Verratti, Spinazzola and Insigne. On the other hand, Spain managed to keep Jorginho relatively disconnected from the threatening partnerships.



Jorginho's pass involvements:

The table below shows passing statistics for most frequent passing pairings across both these matches. Please refer the table below to add more context to the observations listed above.

Opponent	Teammate	Passes (per 90')	Back pass Weight	Side pass Weight
Belgium	Verratti	51	0.14	0.52
	Insigne	26	0.18	0.51
	Bonucci	16	-0.17	0.46
	Barella	13	-0.18	0.49
	Spinazzola	10	-0.32	0.33
Spain	Bonucci	9	0.36	0.52
	Di Lorenzo	7	-0.03	0.69
	Chiellini	6	0.38	0.64
	Chiesa	6	-0.24	0.72
	Verratti	6	0.57	0.36

References:

1. Passing networks with weighted edges based on pass angle:
<https://karun.in/blog/interactive-passing-networks.html>
2. Pass before progression metric:
<https://analyticsfc.co.uk/blog/2022/03/31/measuring-the-art-of-backward-passing/>