



The goalkeeper's specific performance

Analysis of EURO 2020

Euro 2020

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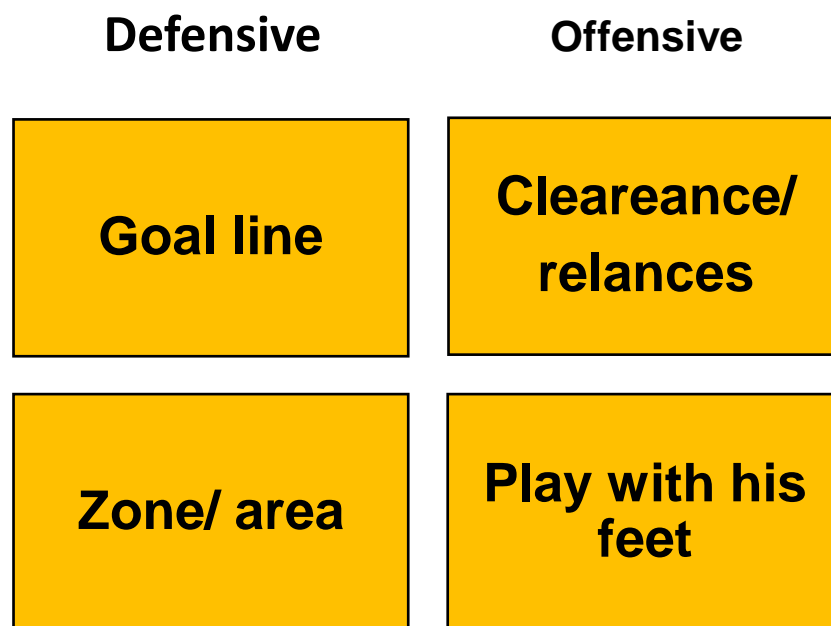


Foreword

A. Philosophy

This analysis that you will discover is based on the philosophy of Thierry Barnerat. It is important to understand the elements of this one in order to know where the data that are used in this EURO 2020 come from.

When we talk about goalkeepers, we will always observe two behaviors: one defensive, the other offensive.



1. The defensive sector

In the defensive phase, there are two situations for the goalkeeper. Either he defends a zone or he defends his goal line.

The goalkeeper defends his goal line

This is the goalkeeper in his first role: he must prevent the ball from crossing the net. We look in detail at the pure and hard interventions on his line such as his ball taking, his dives and the face to face (duels).

To this, in our philosophy we also added that a goalkeeper also defends a goal when he intervenes on this new goal line (namely the perpendicular to his first post to his small rectangle during a centerback). For us, this phase, is just as similar to an intervention of the goalkeeper on his goal line. That's why we included it in this part "I defend my goal line", we speak here of "a new goal line".

In each of his interventions when defending a goal, the goalkeeper will have various objectives in order to maximize his intervention. They will be:

- To read the cognitive referents
- To orient yourself in space: put your body in space with a posture adapted to cognitive referents
- To be on its supports during the strike
- To be in the rhythm of the action
- To take up as much space as possible
- To be in action in action

The goalkeeper defends a zone / an area.

We distinguish the other defensive situation where the goalkeeper no longer defends his goal but a space in which he can intervene (aerial balls or ball in the depth). We observe his position in space, the orientation of his body, his intention before the departure of the ball (tactics) and his quality in his decision-making (cognitive).

Thus the objectives when he defends an area will be:

- To defend according to his teammates position
- To be oriented in space according to cognitive referents (tactics)
- To have quality in his decision-making (cognitive)
- To have quality in your gestures

2. The offensive sector

In the offensive phase, when the team owns the ball, the role is to become an additional player. In the analysis, there are two main categories. The first is the one where the goalkeeper plays with his foot. The second concerns all clearances whether by hand or by foot.

The goalkeeper plays with his feet

The goalkeeper obviously has a multitude of game action where he has to use those feet.

It can be a ball conservation when his team has the ball. It can be stopped phases such as a free kick following a foul, an offside, or clearances on a goal exit.

In our analysis, we distinguished in the footgame:

1. The phases where the ball is stopped: 6 M – Free kick – Clearance without pressing
2. The phases where the ball is in motion: Ball conservation as a team.

Thus the objectives, when he plays with his feet will be:

- To take the information about the available players
- To take the information on the free spaces
- To observe the position of the opposing block
- To be complicit with his teammates
- Create passing angles
- To create numerical superiority
- To show a game intelligence.

Clearance

Here, we will analyze all the clearance of the goalkeeper. As explained above, this is a phase where the goalkeeper intercepts the ball in full play and then decides either to throw-out (by hand) or to clear it by foot. He moved from this defensive conversion to the offensive. We distinge:

1. Throw-out (by hand)
2. The clearance with the foot

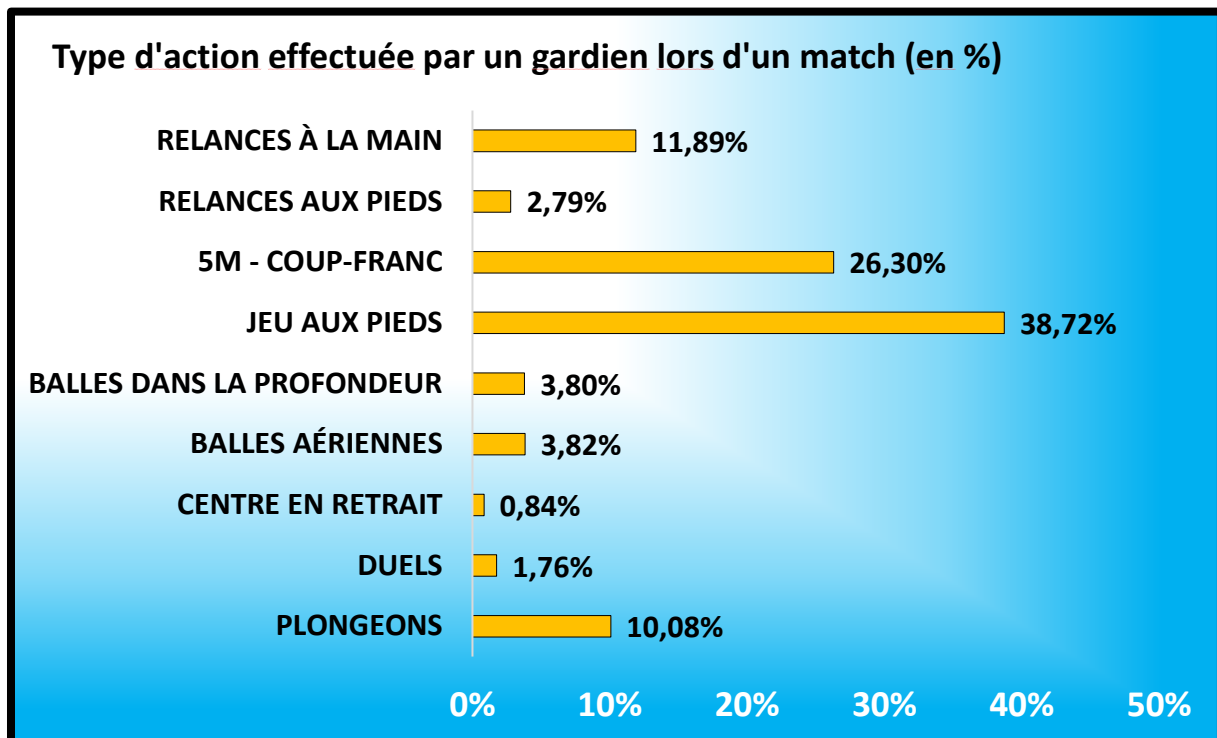
The objectives of the goalkeeper's clearance will be:

- To be complicit with his teammates
- To take the information in the defensive action
- To analyze the available players and the free space
- To be quick on decision-making
- To be quick on the transition
- To adapt his technical gesture according to the situation

B. Conclusion of philosophy

This concludes the explanation of philosophy. To conclude, it must therefore be understood that the following analyses are based on this philosophy and that every data taken and analysed throughout EURO 2020 has been recorded according to this “thought pattern”. Thus, the study stems from an in-depth reflection of the goalkeeper's function, some of whose synthesized elements are presented in this foreword. All these elements aim to improve the quality of the data entered while including only elements of the game. This gives a performance analysis based on actions of real matches. This is where Keepexpert also joins Thierry Barnerat. Together, the purpose is to analyze performances data whose source comes from the game.

Part 1: Goalkeeper action in a game :Split-up



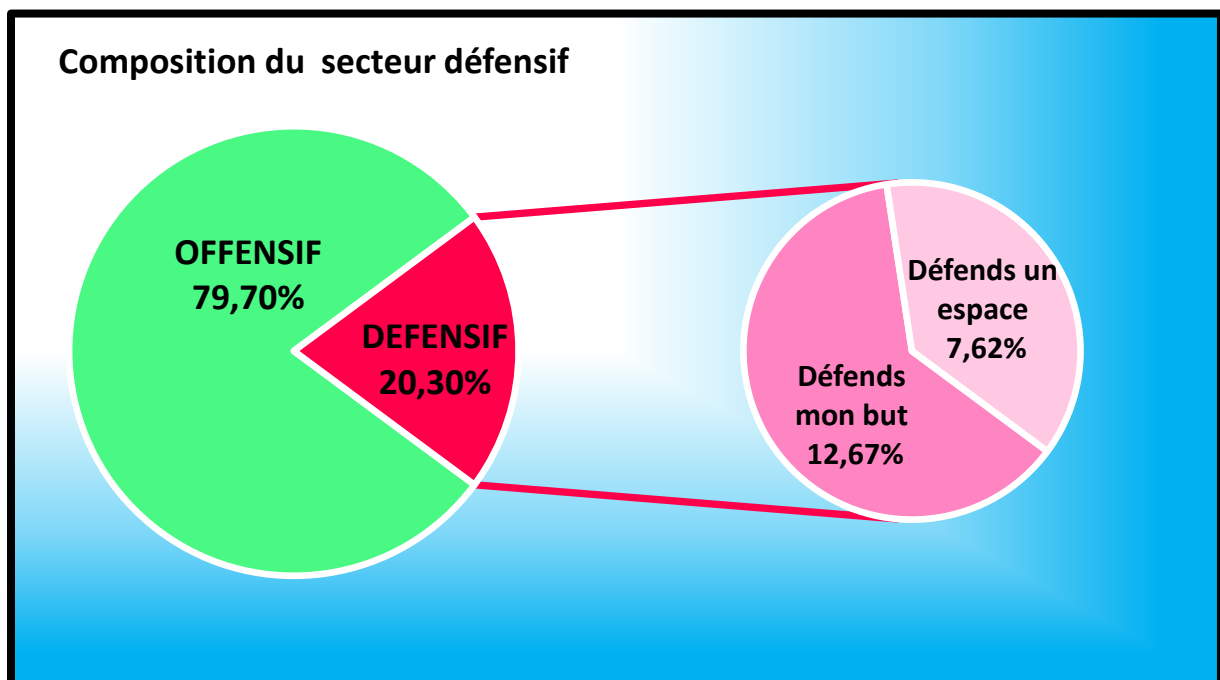
During Euro 2020, the analysis of each of the actions (3582 actions) made it possible to list several key actions. Today, we realize that playing with his foot is the most important component for a goalkeeper. Indeed, it represents more than 38% of his match actions.

The face-to-face intervention (duel) as well as defending the new goal line on a back center are the least executed interventions by a goalkeeper with less than 2%.

Dives represent about 10% in his game.

We can therefore confirm today the importance of the game with the foot of a goalkeeper (ball conservation + 5M and free kick) representing more than 65% of his playing time.

A. The defensive sector



The defensive sector accounts for 20.30% of a goalie's match actions.

We see that the goalkeeper keeps his goal or a space for only 20.30% of the game. The rest of the time, he will come to reinforce the offensive contribution of his team. This statistic also shows that football has completely evolved since the rule of the back pass to the goalkeeper. We are therefore facing a revolution in this position, where previously, the goalkeeper was only used to defend his goal.

In addition, we see that for 7.62% of the actions, the goalkeeper defends a space: that is to say, he will catch the ball in an area following a ball in the depth or make an aerial exit.

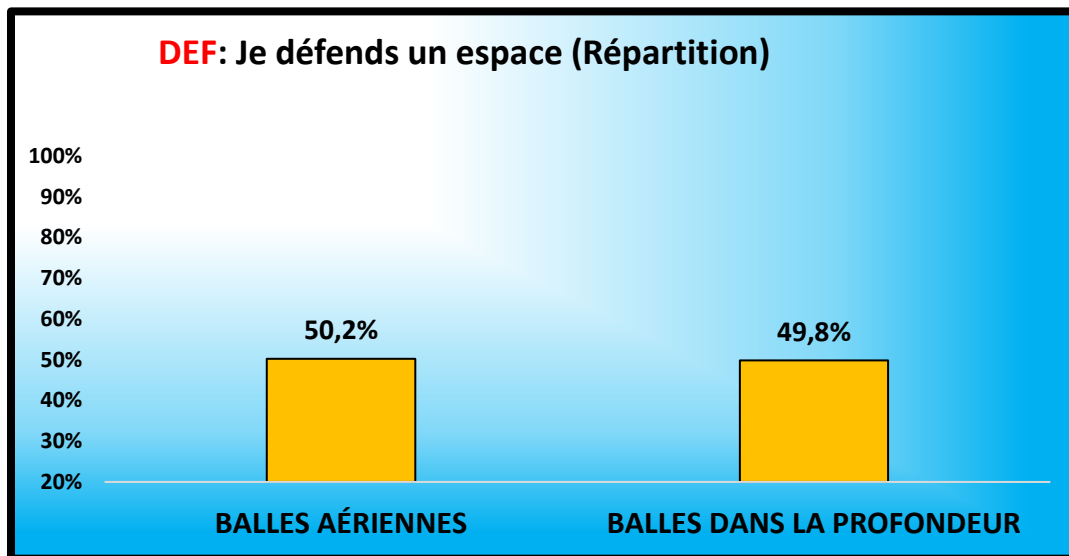
Interventions where the goalkeeper defends only his goal line represent, therefore, only 12.67% of the work of a goalkeeper.

This highlights the importance today of training the goalkeeper on the remaining 87.33%, where he does not play his role previously assigned, to simply block the balls. The consequence is already evident during specific training where the goalkeepers must also play the role of the striker. Indeed, this will allow them to realize by being in the place of the player the shooting angles they will look for, the information that the player takes before the shot,... this helps the goalkeepers to become familiar with these cognitive referents developed in these shooting positions. Thus, it will be all the better during a defensive intervention, having also, play the role of the attacker.

1. I defend a space/ an area / a zone

Before defending his goal, the goalkeeper also intervenes defensively by intervening in an area where the ball arrives. This space that the goalkeeper defends comes either from an aerial ball or from a pass in the depth.

As seen above, this represents 7.62% of the interventions of a goalie. The graph below shows the distribution of interventions where the goalkeeper intervenes in a space. We can see that this is divided almost equally between aerial interventions and interventions coming from a pass in the depth.



2. I defend my goal

The intervention of the goalkeeper in his basic role, on his line, to prevent the ball from reaching the nets, represents 12.67% of the match actions of a goalkeeper.

These are divided into 3 main categories of action;

1. Dives
2. Duels (1 vs 1)
3. Centre back (Cross the ball back from the goal line)

Dives

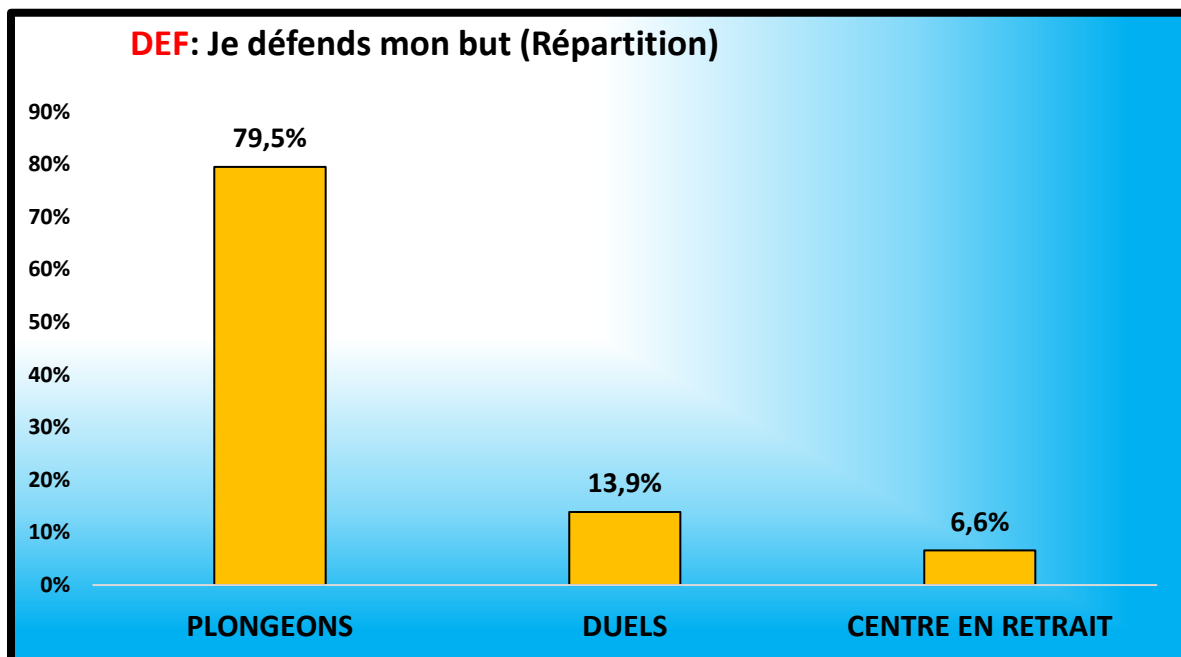
Dives are related to a strike and intervention on the goalkeeper's goal line. This represents 79.5% of the actions where the goalkeeper defends his goal. It can therefore be noted that when the goalkeeper has to intervene to defend his goal it will be mostly via a dive on his line.

Duels

Duels (1 vs 1) represent 13.9% of the action where the goalkeeper defends his goal. As a reminder, this corresponds to less than 2% of the total action of a goalkeeper. (See graph on page 3). The duel is therefore this face-to-face situation with the attacker.

The centre back - new goal line (cross the ball back from the goal line)

Finally, the center back, this action where the goalkeeper defends a new goal line to prevent the ball from reaching the attacker is equivalent to 6.6% of the actions where the goalkeeper defends his goal. This corresponds to less than one percent of all the actions of a goalkeeper.

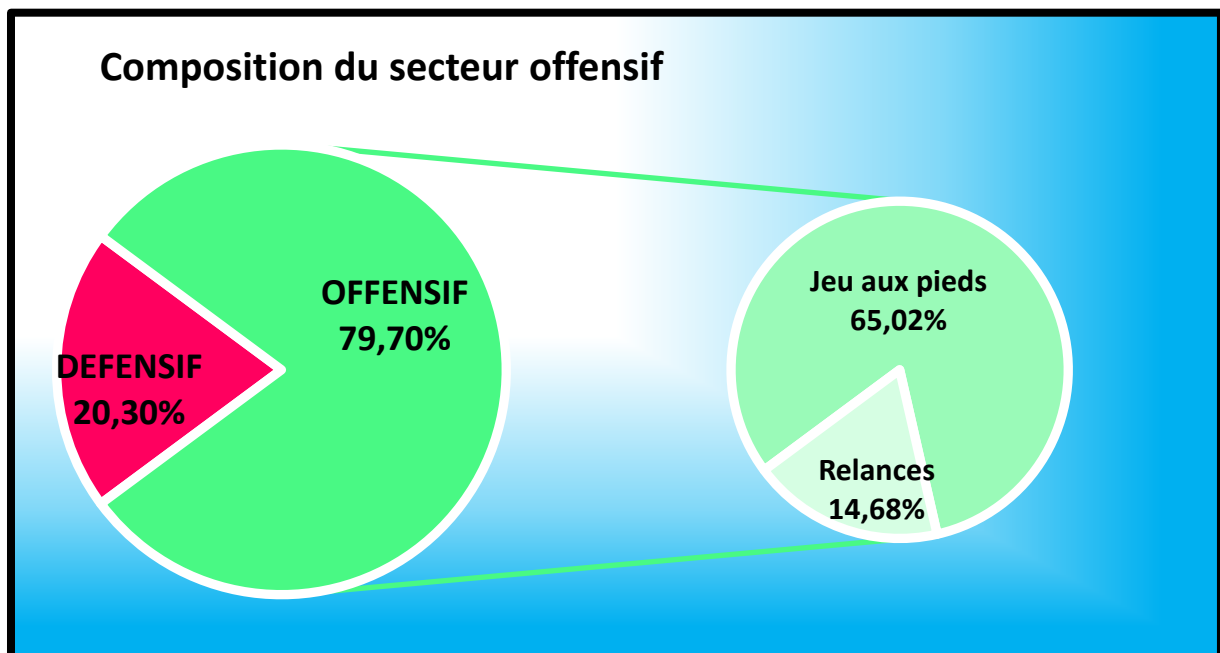


B. The offensive sector

The offensive sector reaches almost the proportion of 80% of a goalkeeper's match actions. We see today, the importance of the role of goalkeeper as first player via his number of interventions related to the ball possession.

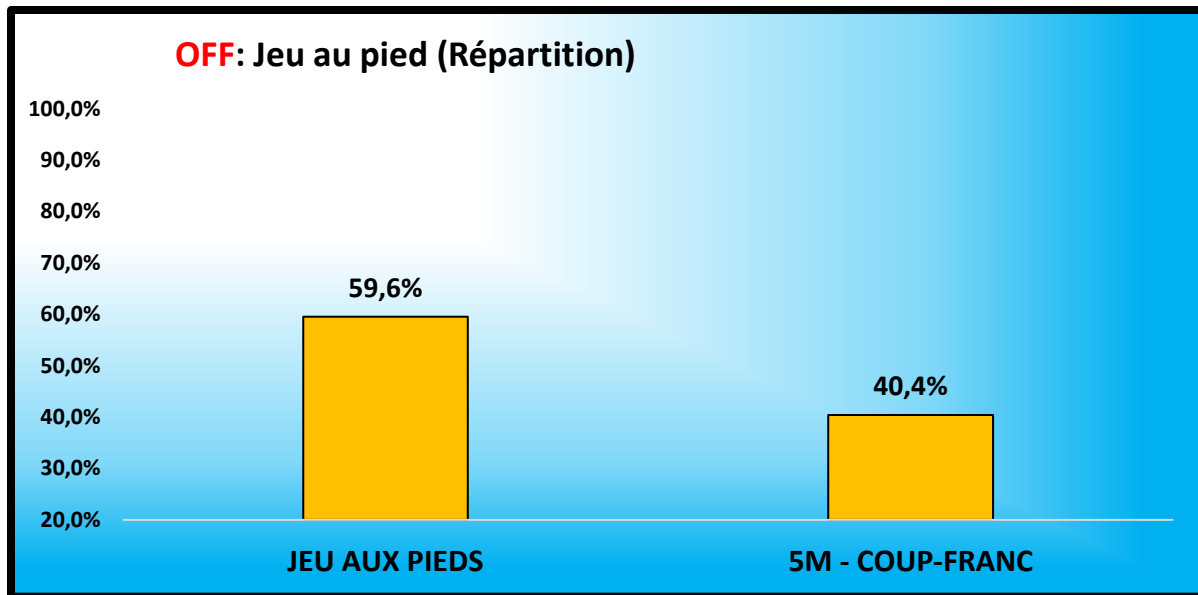
The offensive sector is divided into two broad categories:

1. The goalkeeper plays with his feet
2. The clearance both by hand and by foot.



1. The goalkeeper plays with his feet - Footwork

We see that 65.02% of the goalkeeper's actions are related to his footwork. It is divided into two categories. One the play with his feet when the ball is in motion, the other the play with his foot when the ball is stopped (free kick or ball when the opposing block very low).



The game on the feet when his team has the ball

In the offensive sector, plays with his teammates when the team has the ball predominates. In modern football, goalkeeper becomes an essential element to create numerical superiority. We see that the goalkeeper is in almost 60% of the time, involved in the circulation of the ball when his team has the ball. The placement of the goalkeeper becomes essential and allows the team to create in a sector of play, a numerical superiority in order to guarantee the good exit of defense. The ball being in motion, the goalkeeper must therefore plays both with his left foot and his right foot. We can therefore see that $23.07(59.6*38.72\%)$, that is to say almost a quarter of the goalkeeper's actions correspond to a movement of the ball in a team.

This highlights the importance of having two good feet, as this proportion of the game is so important.

5M – Free kick

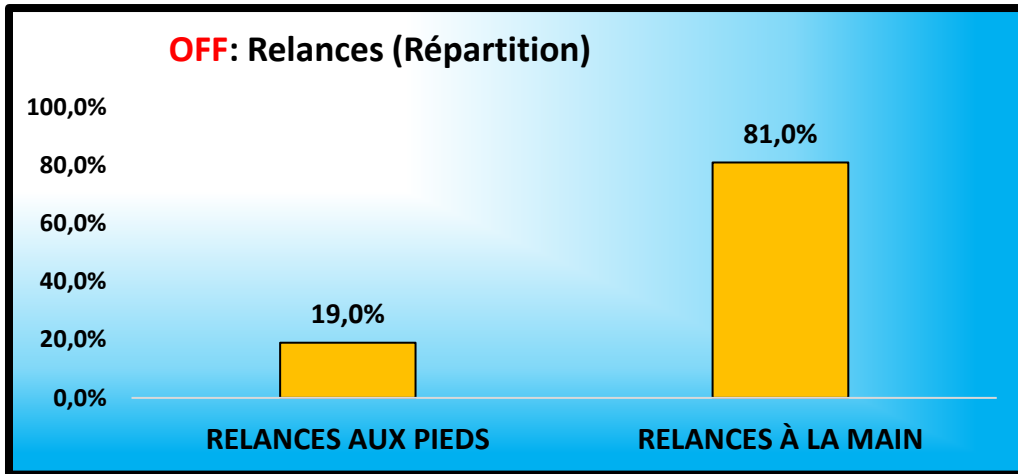
We also see that the free kicks and the 5 M that the goalkeeper ensures when the game is stopped corresponds to more than 40 percent of this play on the foot.

This shows the importance for a goalkeeper to have on free kick a quality of striking combining precision and power that can go for several areas on the field without difficulty.

2. Clearance

In the offensive sector, we see that the goalkeeper is required to make clearance following a stoppage. He therefore has the ball in hand and has the choice for his recovery between making a clearance on the foot or performing his throw-out by hand.

We note today, that the throw out by hand is often preferred by the goalie rather than a clearance with his foot. This highlights the importance of working on this throw-out reconversion gesture, which is very common at the professional level and which makes it possible to seek an even greater precision than with the foot.

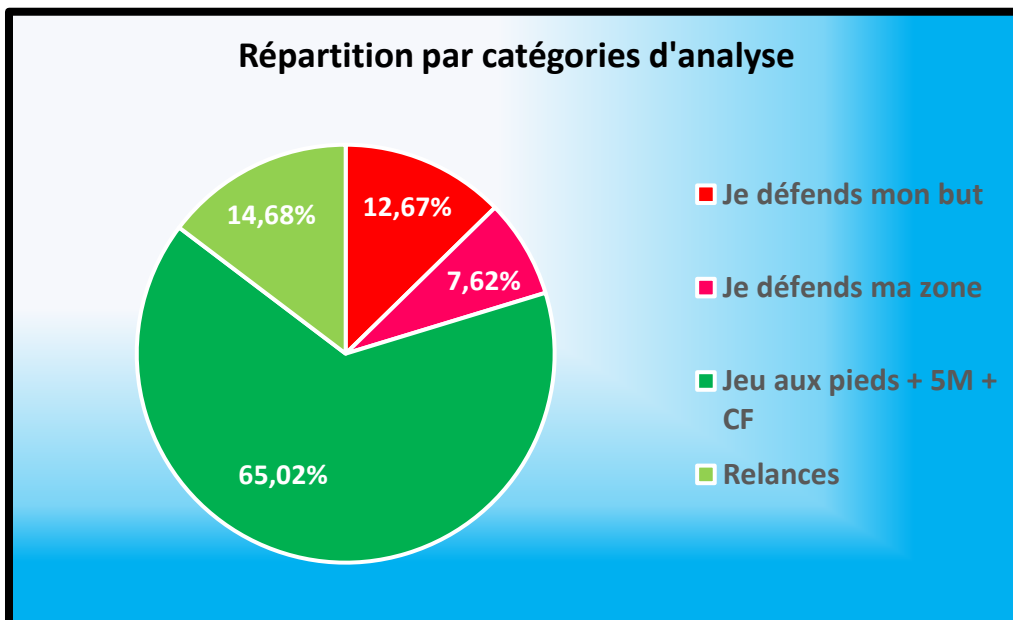


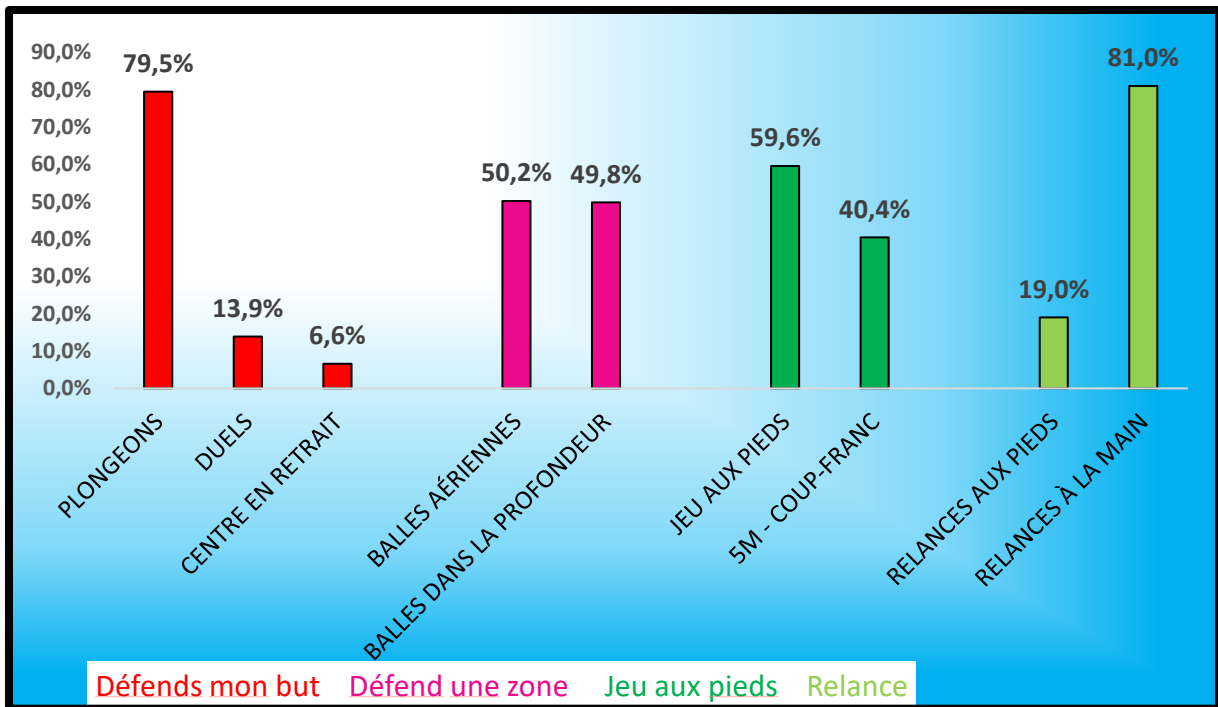
C. The split-up by category

The graph of the distribution by category allows us to observe in each of the 4 main categories of the game the different distributions between the elements that compose it.

As a reminder, the pie chart makes it possible to realize the proportion of actions that correspond to these 4 main categories:

- "I defend my goal": 12.67%
- "I defend my zone/space": 7.62%
- "Footwork": 65.02%
- "Clearance": 14.68%

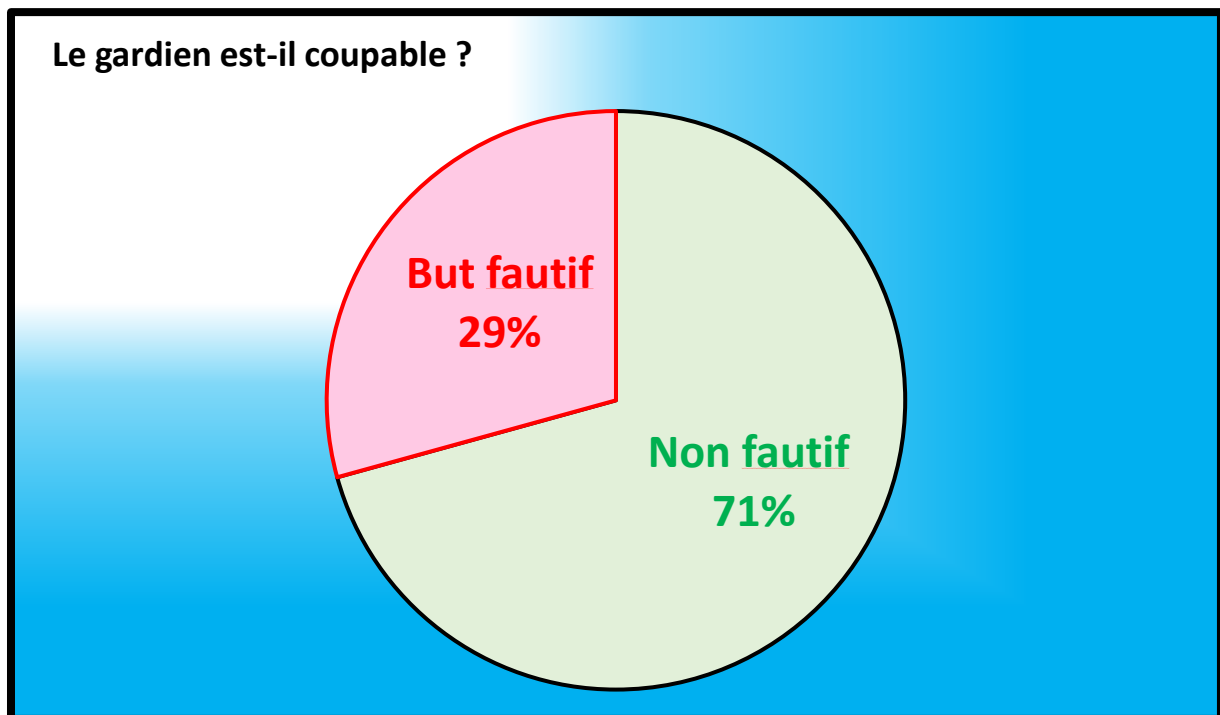




These observations close part 1 on the constitution of the match of a goalkeeper highlighting the importance today of this transition of the goalkeeper. Before, he only defended his goal. Today, the goalkeeper is the real first player of his team allowing the numerical superiority in offensive phases.

Part 2: Analysis of the goals conceded

A. Is the goalkeeper guilty?



In the analysis of the goals, we were only interested in the goals conceded where the goalkeeper was guilty. Indeed, few interesting things are to analyze on elements where the goalkeeper could not do anything as the strike was unstoppable.

We see that on all the goals of Euro 2020, the goalkeepers were guilty on almost 30%. Almost 7 out of 10 goals are not the result of a goalkeeper's mistake.

On the other hand, almost 3 goals out of 10 are a mistake of the goalkeeper and we must be able to learn lessons in order to be able to work on it.

B. Where does the keeper's mistake come from?

We have listed several types of errors. Indeed, in order to be able to focus on the remediation of this one and to be able to bring the specific elements necessary for the goalkeepers to no longer take these goals. Several categories of errors have been identified.

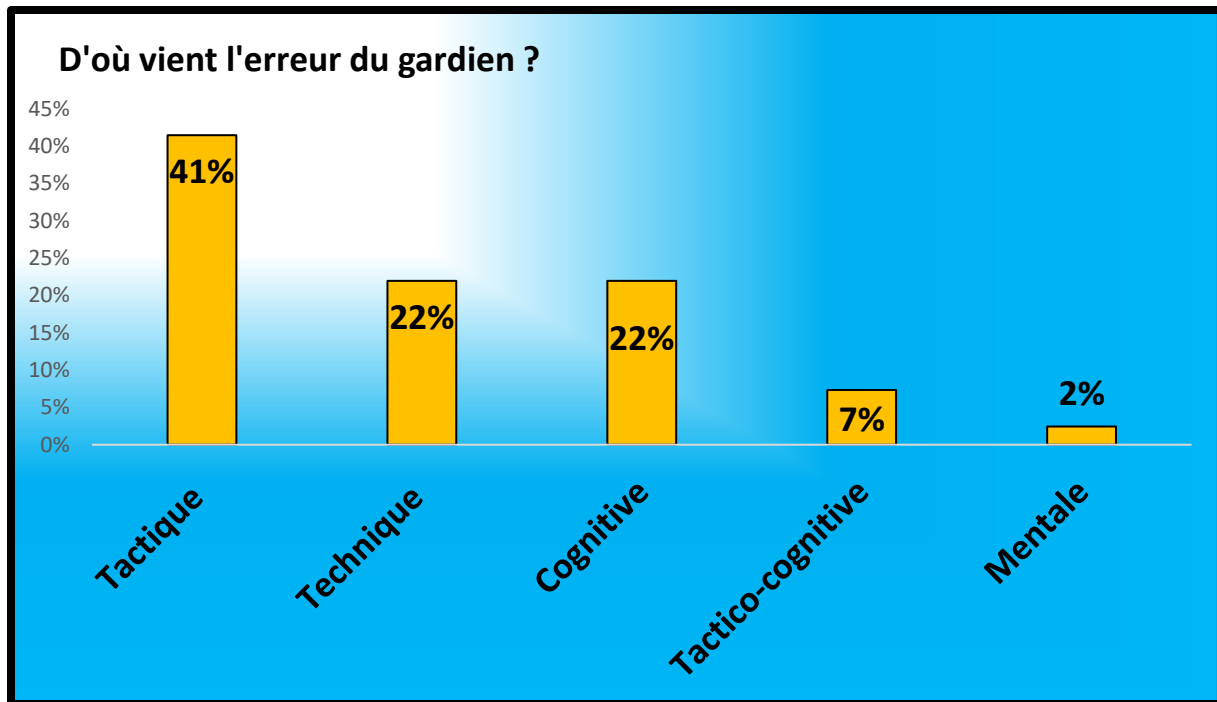
- **Tactical errors:** these are mistakes related to a bad placement in space (opens the angle of depth), the orientation of the body in space (bisector of the angle of striking) as well as the posture (height of the hands before the strike).

- **The techniques:** these are errors related to the technical mistake of the goalkeeper; they can come from a bad catch of the ball (preferential hand too dominant and causing a rotation of the upper body or release of the ball) or a non-push of the inner leg for example...

- **Cognitive errors:** these are errors:
 - Take information which is carried out only on a zone.
 - Bad clearance in a space where the goalkeeper has not observed a run of an opponent closing that space.

- **Tactico-cognitive errors:** these are errors related to a misreading of cognitive referents (which will give a wrong placement in space)

- **Mental errors:** these are related errors:
 - Either at the fear of the ball or a race of an opponent
 - Or lack of mental stability influencing decision-making
 - Or a lack of mental stability influencing the fluidity in the gesture



Thanks to this distribution, we can realize that during this Euro 2020, more than 40% of errors are related to a lack of training in tactics. Indeed, many goalkeepers could have taken better advantage of certain situations by being better placed in a bisector, better positioned in an angle.

All this highlights, that today it is necessary to work even more tactically with the goalkeeper. Indeed, it is the main cause of the goals conceded.

Then, and almost half as important as tactical errors, technical and cognitive errors account for 22% of the goals conceded where the goalkeeper is guilty. We see that there is therefore a need to work technically and cognitively.

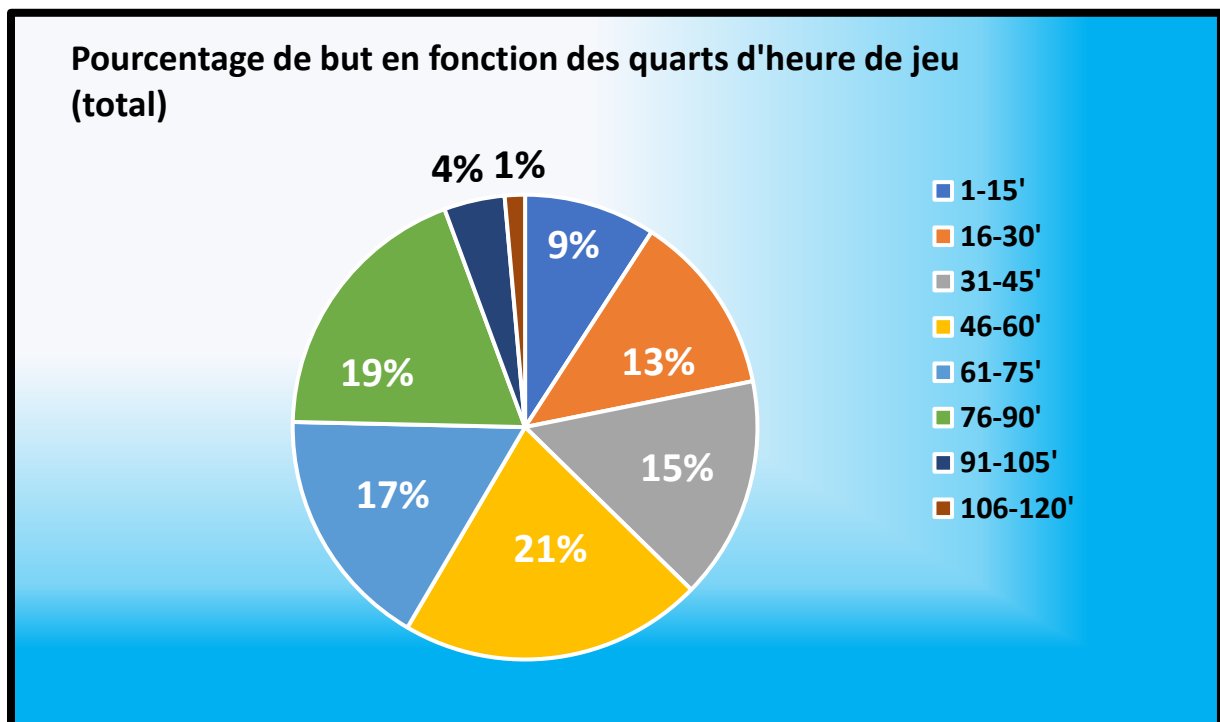
C. When do the goals arrive?

When we look at the analysis of the goals conceded per quarter of an hour of play. We see that throughout the tournament taking into account the group stage matches and the finals matches, the proportion where the goalkeepers cash the most are the 4th (45-60) and 6th (75-90) quarter.

That is, the goalkeepers take more goals on the return of the changing rooms during the break at half-time, and in the last minutes of the game.

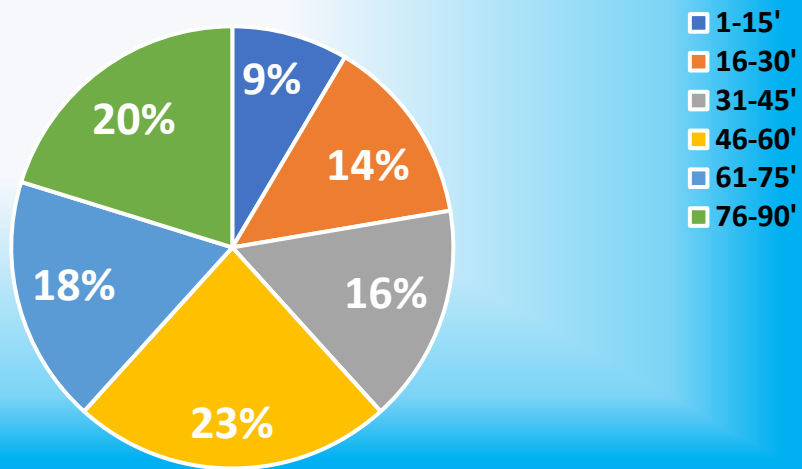
These proportions remain similar when we look at only the matches of the first round and when we look at only the matches of the final phases (from eighth to the final).

It is therefore interesting to be able to draw conclusions on these 2 periods of play in order to be able to provide the elements to overcome this problem.

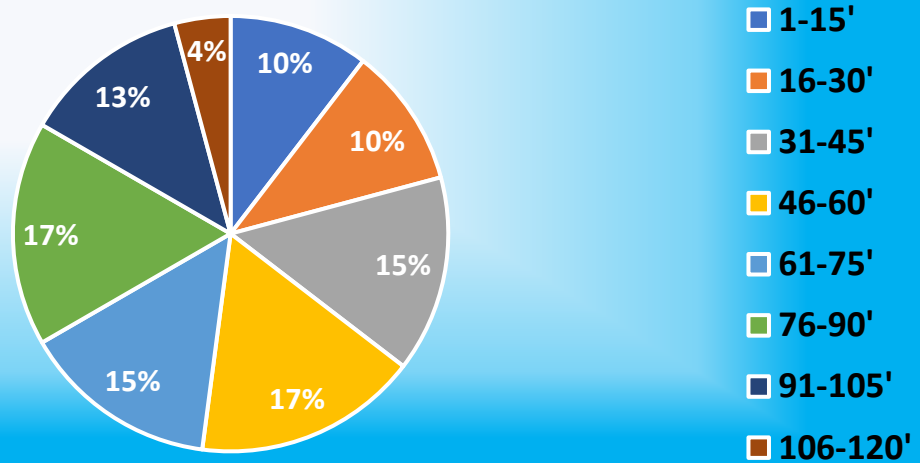


Graphs showing that most of the goals conceded come both in the final phases and in the qualification phase, between the 46' and 60' and the 75' and 90'.

**Pourcentage des but en fonction des quarts d'heure de jeu
(1er tour)**



**Pourcentage de but en fonction des quarts d'heure de jeu
(phase final)**

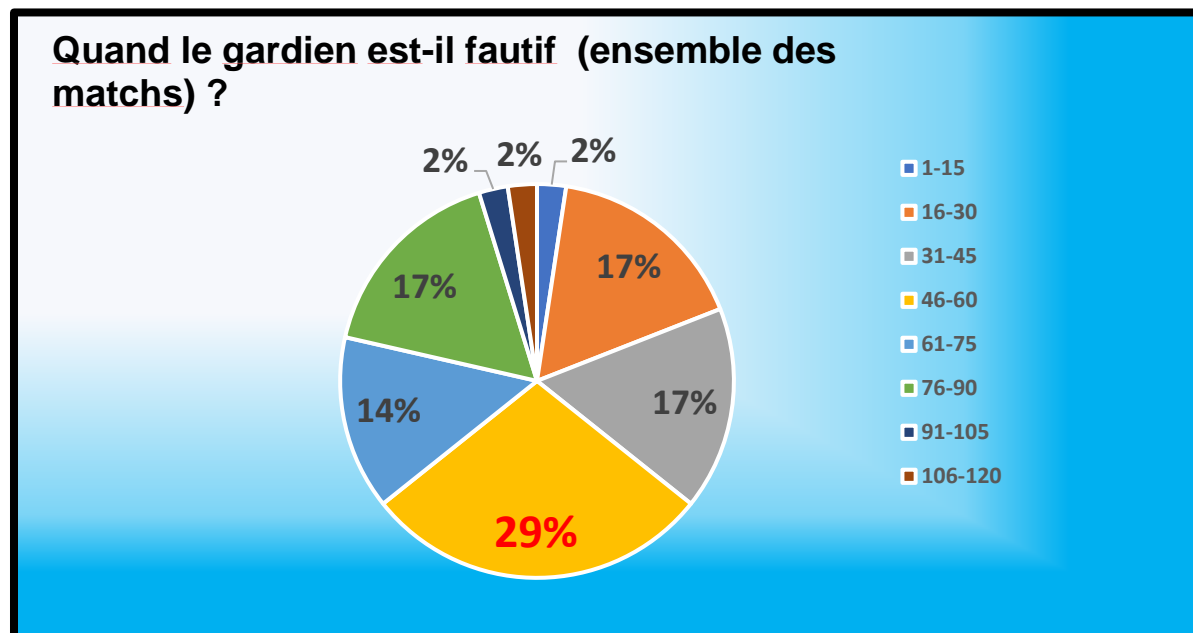


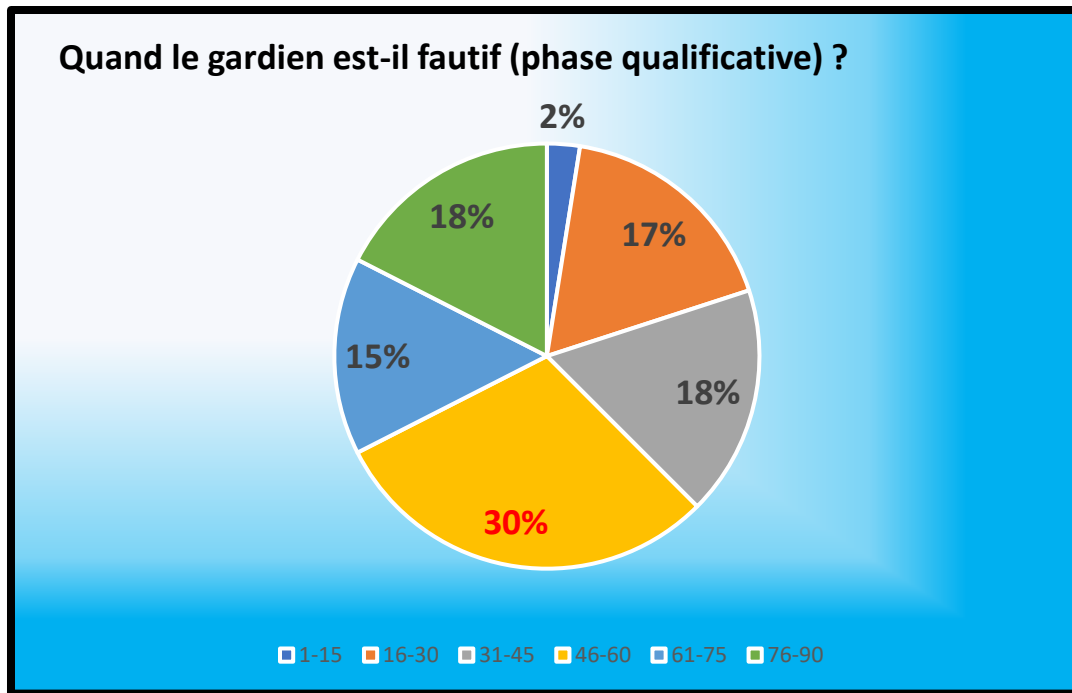
C. When do goal coming from an error of the goalkeeper come?

In general, it is interesting to know when teams are more likely to take goals. This highlights several factors related to the team. On the one hand, fatigue could be an explanation to try to understand why there is so much goal in the last quarter of an hour. On the other hand, the concentration or relaxation due to half-time could explain the high propensity to take goal in the 15 minutes following the 1st half.

However, what really seems most important for this analysis of goalkeepers is when did the goalkeeper commit these mistakes.

Indeed, of the almost 3 goals out of 10 for which the goalkeeper is responsible, we see that these are mostly committed in the period from the 45th to the 60th minutes. So it's an important observation, the goalkeeper would have a much harder time managing that quarter of an hour of recovery after the break with an error percentage of 29%.





This proportion of error is even greater on group stage matches where there was no possibility of going to overtime.

This is a relatively interesting finding, which would consist in saying that the goalkeeper has a lot of difficulty in refocusing after the break.

On the other hand, that the mistakes made by the goalkeeper in the first quarter of an hour are relatively rare.

We will therefore have to try to identify why these mistakes are made after the return to the locker room. The change of side, the supporters, a speech that does not speak to the goalkeepers at the break... there are many research elements.

This concludes part 2 on goal analysis.

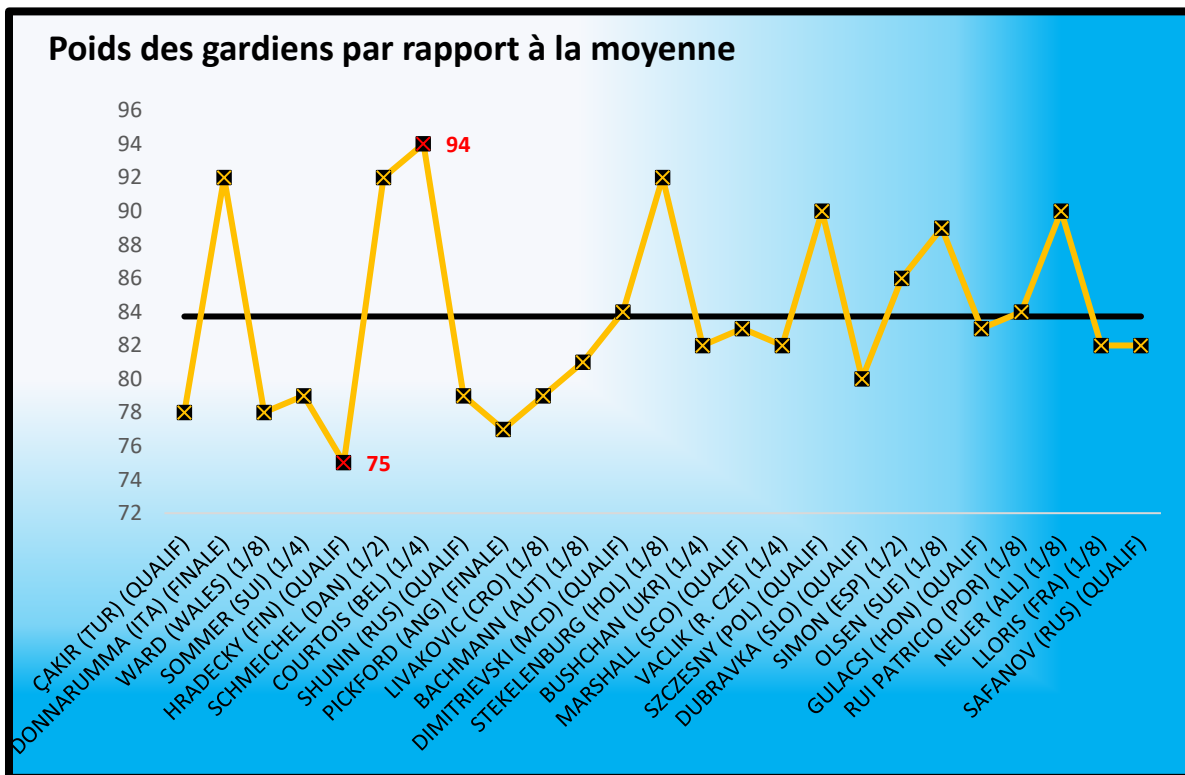
Part 3: the profile of the goalkeeper

In this section, we will observe in detail the different profiles of goalkeeper. First, we will analyse their biometric data and compare them with each other. Then we will describe their ways of playing offensively or rather defensively during this Euro 2020.

A. Biometric comparisons

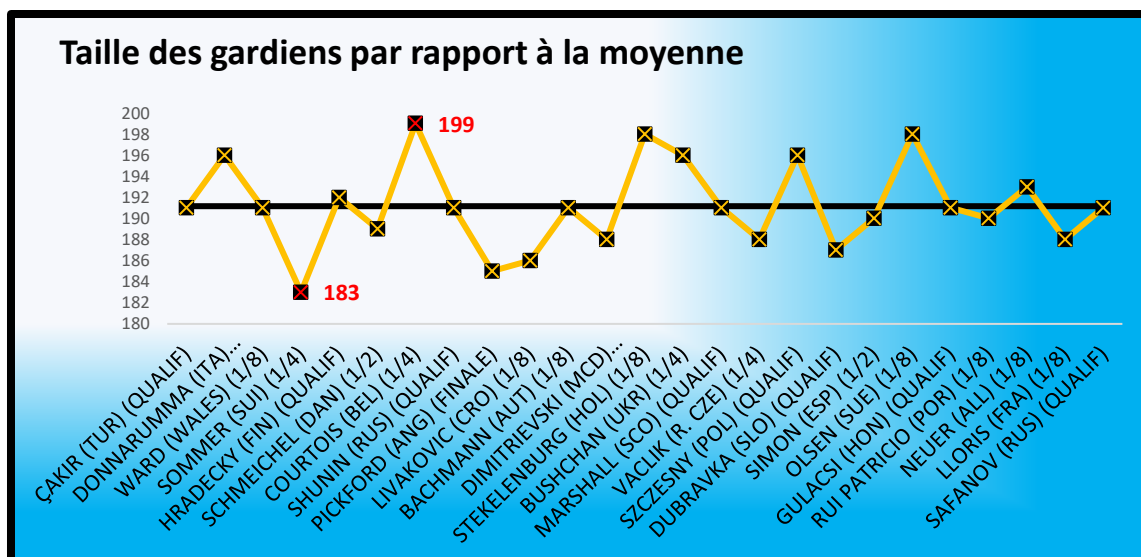
1. The weight of the goalie

We see that the all goalkeeper weigh between 75 kg and 94 kg. The Finnish Hradecky was the lightest. While Thibaut Courtois with his 94 Kg is the strongest. The average weight of the goalkeeper is 84 kg.

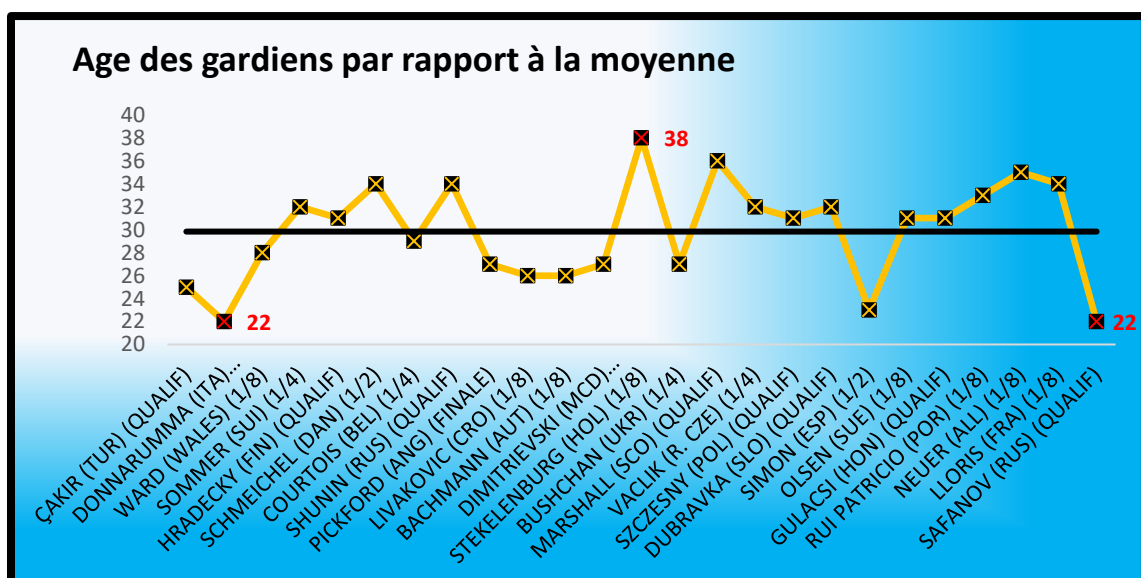


2. The size of the goalkeeper

Thibaut Courtois with 1.99 meters is the tallest goalkeeper. Sommer is meanwhile the smallest goalkeeper of Euro 2020 with 1.83 meters. The goalkeeper average is 1.91, which highlights that today it is very hard to break into professional football when you do not exceed 1.85 meters. Only Sommer is below this size.



3. The age of the goalkeeper



In terms of age, it varies between 22 years the youngest (Donnarumma and Safanov) and 38 the oldest Steckelburg. The average is 30 years.

B. Describing the activity of goalkeeper

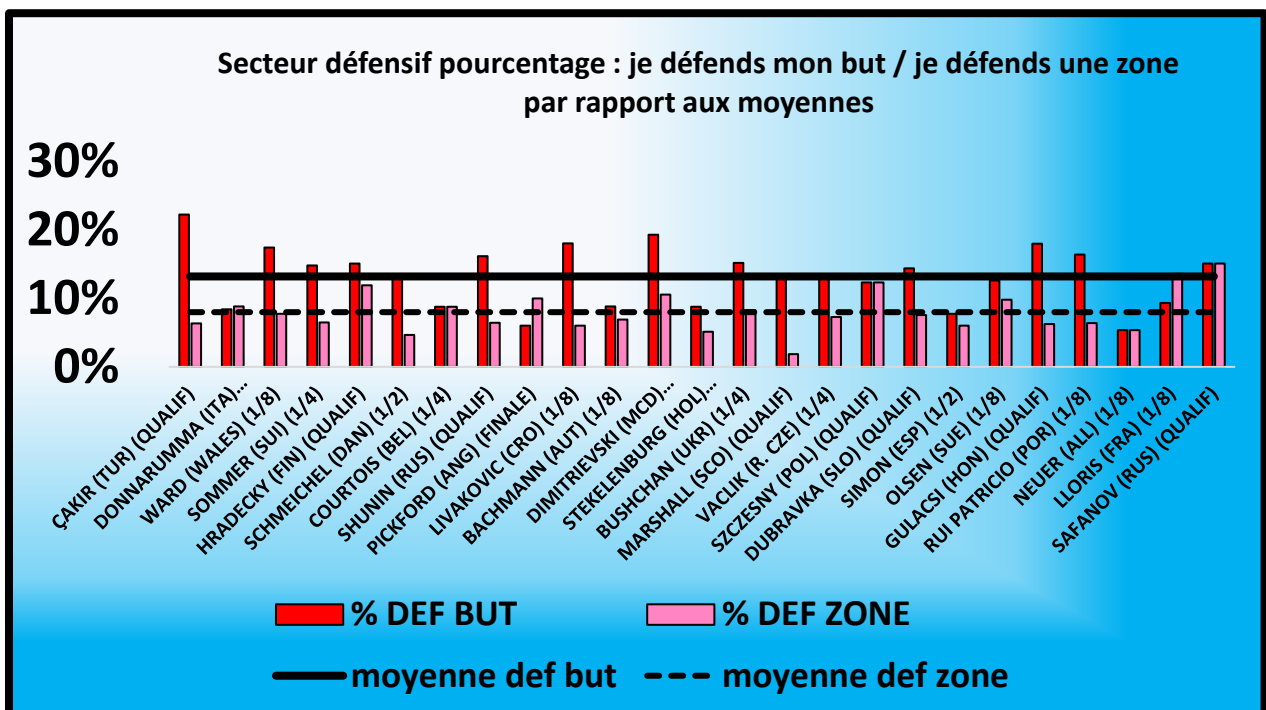
1. The defensive sector

Following our analysis, we can see that on average a goalkeeper defends for about 21% of his time. It is interesting to see that some goalkeepers have much more defensive profiles with percentages higher than 21%. The analysis of the distribution of the defensive sector between the interventions where the goalkeeper defends an area and the one where he defends his line can say a lot about the style of the goalkeepers.

So we can see on the graph that the Turkish goalkeeper generally had to defend his goal much more than the average. He is followed by the Macedonian and Hungarian goalkeeper. The explanation is related to the poor performance of these teams whose goalkeeper was often put to work on his line. All these teams were eliminated in the final phase.

On the other hand the goalkeepers with the lowest percentage of goal defence are Neuer and Pickford. On the one hand, it can come from the good performance of their teams defensively. On the other hand, these two goalkeepers have a higher percentage of defense of an area than a percentage of defense their goal line, so this implies that these goalkeepers by their tactical positioning intervene less in front of their goals, but more in an area. Lloris, Donnarumma and Courtois also have the characteristic of defending as much an area as their goals.

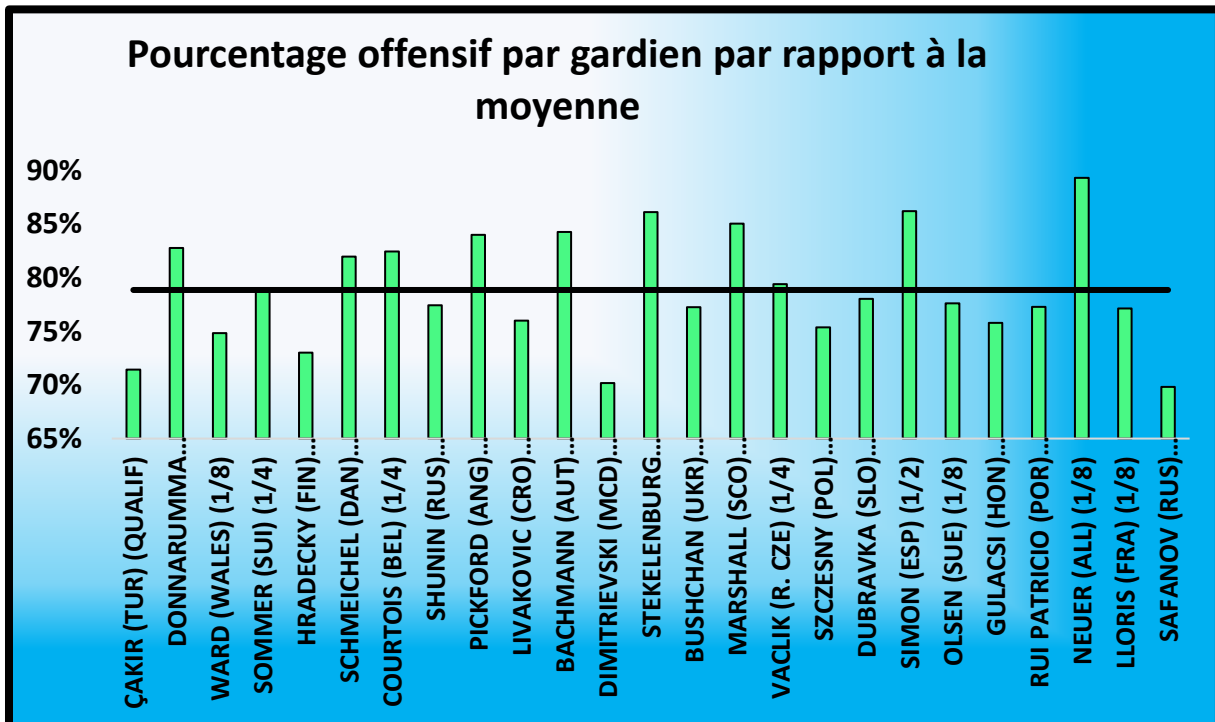
A trend shows that the farther the goalkeepers go in the competition, the more there is a balance between the distribution of "I defend my goal" and "I defend a zone".



2. The offensive sector

In terms of the offensive sector, we find that on average the proportion of play offensively is about 79%.

The goalkeeper whose greatest number of these actions concern the offensive sector is the German Neuer whose percentage reaches almost 90%. This put an emphasis on that 1 in 10 actions for Neuer concerns the fact of defending. Conversely, the Macedonian goalkeeper had to defend on almost 3 out of 10 actions. Its offensive role is one of the weakest with a percentage of 70%.

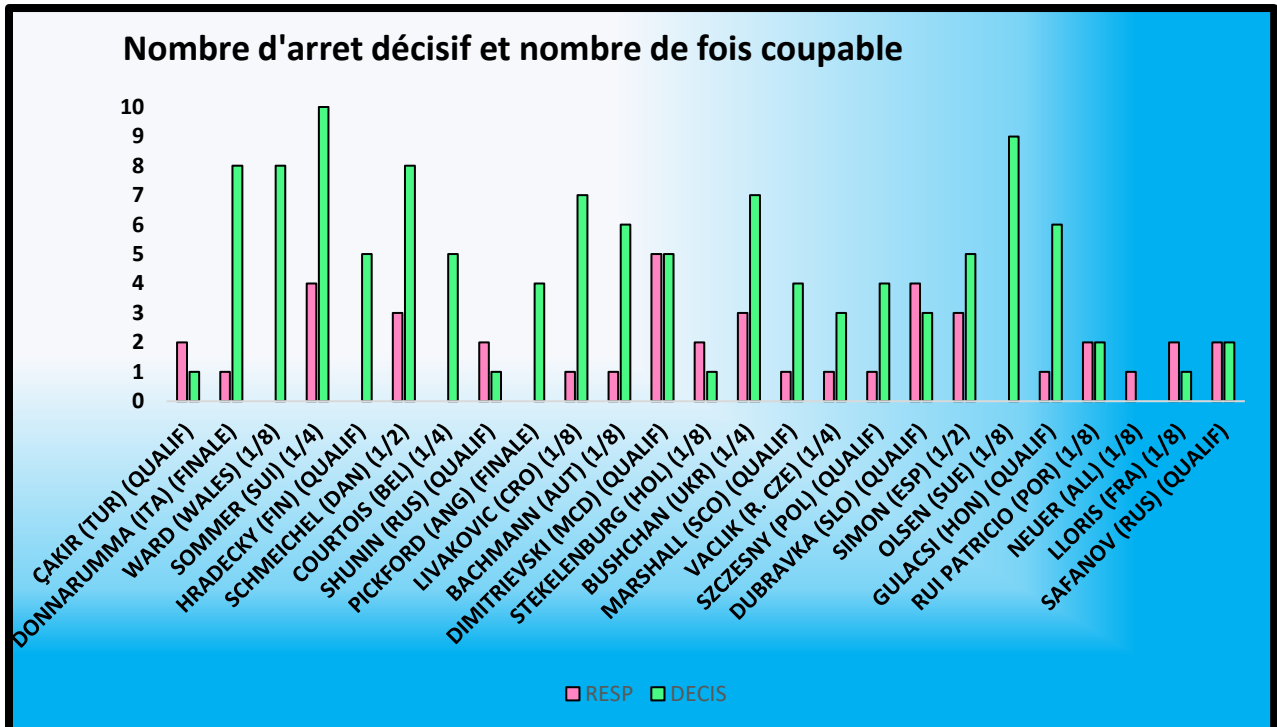


3. Performance

Here in this analysis, the objective is not to say that one goalkeeper is better than another, as one match is so different from another. One goalkeeper can be subjected to a lot of actions as a result in a very short period of time while another would have the same number of actions for a longer time. It is clear that here the environments being all different we do not seek to discriminate on who is the best, but rather, to draw an analysis highlighting some lessons on their mistakes.

In our analysis, we referenced the number of saves where a goalkeeper was decisive (that is to say, through his intervention he prevented his team from taking a goal). On the other hand, we also highlight the number of times he, via an error, has been guilty of a goal for his team. Again some mistakes are more important than others and it is not a question of drawing too quick conclusions concluding that one goalkeeper is better than the other because he made more decisive saves than another.

Moreover, on this subject, we would like to recall that a stop at the decisive base is perhaps a stoppage, certainly important for his team, but which is sometimes provoked by an error of placement of the goalkeeper himself. It is therefore obvious not to start in too hasty conclusions as the world of the goalkeeper is multidimensional.



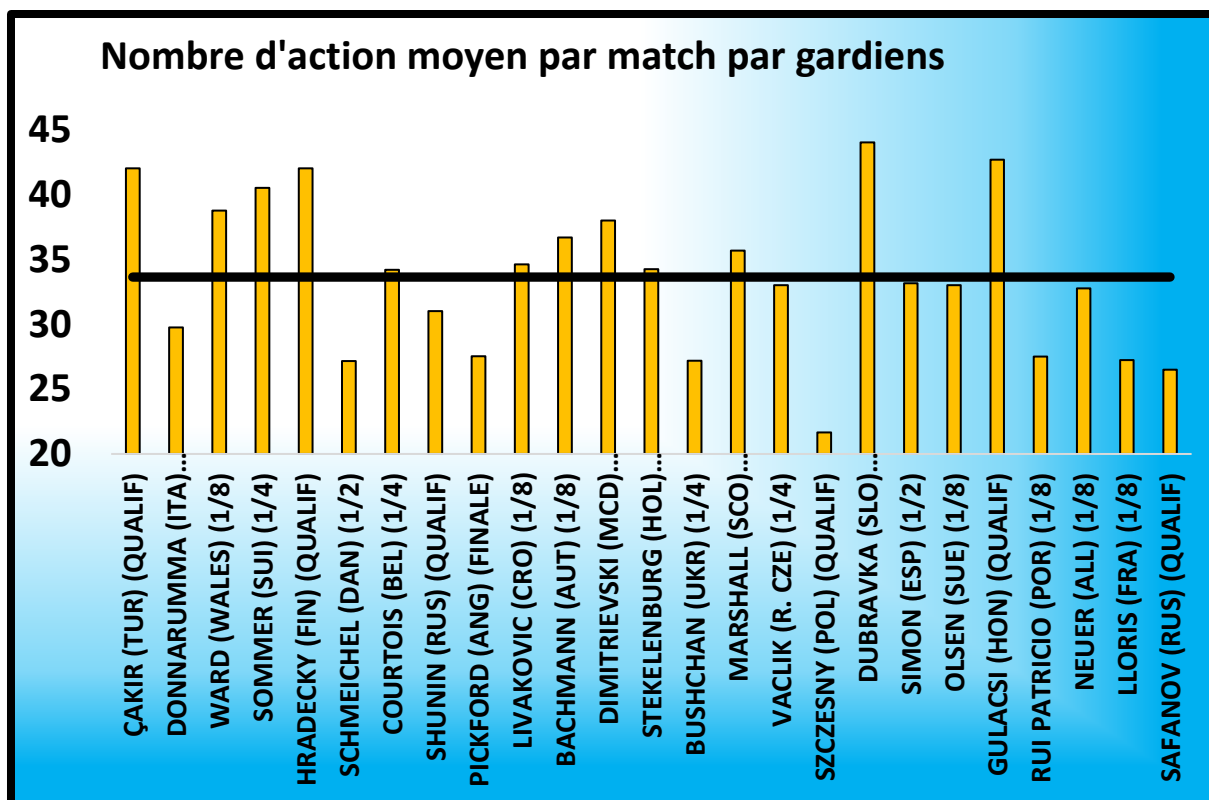
In our analysis, we observe that the Swiss goalkeeper Sommer has the highest number of decisive interventions (10), on the other hand, he holds with the Austrian goalkeeper the head of the most often guilty goalkeepers (5 for the Austrian and 4 for the Swiss).

The Slovenian goalkeeper and the French goalkeeper were, in the figures, more often responsible for a goal than for decisive interventions.

Several goalkeepers made no mistakes, they were Ward, Hradecky, Courtois, Pickford and Olsen. In those goalkeepers who made no mistakes Olsen was the one who made the most decisive interventions (9). However, it is reported that Pickford made no mistakes throughout the tournament with a much larger number of matches.

4. Solicitation

This last graph is also intended to provide this information in perspective since some goalkeeper may not have been able to make many mistakes having been only very little solicited, others, on the other hand, have committed more, but with a greater number of requests.



So we see here, that Pickford having interesting statistics was only called upon 28 times per game. Szczesny is the goalkeeper has been called only 22 times per game, below the average of all goalkeepers which is at 34.

The Slovenian goalkeeper was most often called upon 44 times per game, i.e. almost every two minutes of play.

Part 4: The conclusion

A. Conclusion of the study

1. The offensive sector

The importance of the playing with the feet - technical

Today, this study shows the importance that the play with his feet has for a goalkeeper. Indeed, more than 65% of his playing time is summed up by actions on the feet. That is the real lesson of this study at the level of the offensive sector. The role of the goalie has completely evolved and today, it is therefore an obligation to be good for years in this sector. The game goes so much faster that a goalkeeper who is not comfortable with his feet will end up making too many mistakes and costing his team too much regardless of their defensive qualities.

It is therefore necessary today to increase the technical education of the goalie. From an early age, force them to learn to hit both the right and the wrong foot. Today, it is essential for professional academies to create this ambivalence of both feet from an early age.

Game intelligence – tactics

In this offensive sector, we must also be able to develop what is called game intelligence. This is a more tactical parameter. Nevertheless, today it is crucial that the goalkeeper possesses this intelligence of play. He must become that extra player in order to create numerical superiority. This requires, certainly, a quality on his feet, but on top of that, an understanding of his position in space compared to his teammates. He is a player who must allow to create the triangularization in order to be able to get out of defense more easily. The goalkeeper must, depending on his position, constantly seek to provide a solution to his defenders. Either when the opposite side is open, offers the passing angles by a flattened position to go to the free space. Either when the opposite side is closed, be able to realize it by keeping the ball or playing long if the pressing is too important. Today, it is no longer necessary to speak about “a pass to 10” but “a circulation of the ball to 11” where the goalkeeper has a well-defined tactical positioning, guaranteeing his role as first player. He must also be able to break one/ two lines by his pass, and thus, promote the superiority of his team in this space.

2. The defensive sector

Orientation and posture – tactics

For the defensive sector, this study showed us that most of the mistakes made by goalkeepers come from a tactical error (41%). It is therefore the main source of error and one of the most important conclusion during this Euro 2020. Today, there is a need to train young people much more, on the one hand, on the orientation in space and on the other

hand, on the posture. Why should we orient ourselves in such a way according to the fact that "I defend my goal" or that "I defend a zone". Why do I have to have a low posture on some positions of the attacker and in others a higher posture? These elements must be the result of teaching from an early age allowing players to develop their information and be able to build up real patterns of cognitive referents guaranteeing good decision-making.

3. Goal analysis – the^{4th} quarter where the goalkeeper is often at fault

This study highlighted how difficult it was for a goalkeeper to manage the restart after half-time. It will therefore be interesting at first to see with the goalkeepers whose propensity to take goal in this period is high, which goes wrong at half-time in order to allow him to no longer reproduce these mistakes where he is guilty. In a second step, it will also be necessary to analyze the few goalkeepers who do not take goal in this period and identify the elements they put in place in order to succeed in this performance.

We will therefore have to be able to work on all the elements that will allow the improvement of performance at this time of the game.

4. Thierry Barnerat, Keepexpert and their methods

Today, Keepexpert with the help of Thierry Barnerat has created a testing battery to evaluate the specific performance of goalkeepers. The philosophy of these tests is that each piece of data must come from elements specifically related to goalkeepers in a typical match action.

Thus more than 80% of the actions of a goalkeeper are represented by tests from a real match action. The purpose of this method is to allow goalkeepers to improve both physically, technically and tactically receiving performance reports with key recommendations in each of its sectors.

This philosophy allows coaches to be helped on the one hand by the technology that the company provides, on the other hand, by the expertise of the movement laboratory working on the video analysis of the tests. These tests provide data, but detect the cause of the inefficiency of a movement. All this is set up on the field of the partner club and requires no movement of the player in the laboratory.

The company and the partner club develop real collaboration and monitoring of the performance of the goalkeepers throughout its evolution thus allowing to prepare it as well as possible for the high demands of the professional level or to improve certain details to increase efficiency in each action.