



Agility for Rugby – Coaching Solutions

In last month's edition of Emerald Rugby, KG Elite Performance looked at the topic of speed and in particular strength training for speed. We also looked at some important considerations the S&C coach must make when looking to improve speed in his players. The speed component and considerations we focused on were for acceleration and linear speed, ie in a straight line. However, we know rugby is a sport involving multiple changes of direction at various speeds. Both acceleration and top end speed are important characteristics for the rugby player, in particular outside backs, so too is the ability to change direction, decelerate, moved along curved path without losing too much speed. This is in essence the ability to be agile.

What is agility?

So what have some experts in the field described agility as:

- Whole-body change of direction as well as rapid movement and direction change of the limbs (Draper & Lancaster, 1985)
- The ability to explosively brake, change direction and accelerate again (Baechle & Earle, 2000)
- The ability to change direction without loss of balance, strength, speed or body control (Pearson, 2001)
- A rapid whole body movement with change of velocity or direction in response to a stimulus (Sheppard & Young, 2006)

We can see that as the references move from 1980's to more modern times in 2006, there is a slight change in the interpretation of agility. There is a progression towards control of movement, accuracy of movement and in particular a progression towards sports specificity in the sense agility occurs as a response to an external stimulus. In rugby, this can occur from an opposing defender closing down an attacker's space forcing the attacker into a rapid change of direction to avoid being tackled.

What factors influence agility demands?

1. Sprint distances and directions

The type of movement a player performs is dependent upon the distance and direction of the movement involved. So long they have to accelerate or decelerate. How sharp a change of direction they must perform or what distance is in front of them to try and reach maximum speed.

2. Key footwork patterns

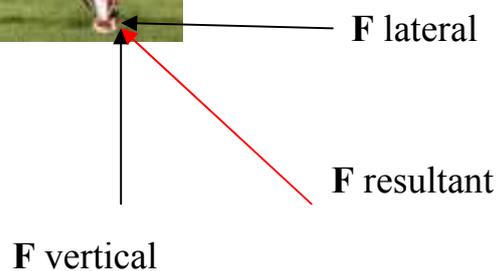
This relates to the skill sets they have available to perform an agility pattern of movement. Can they perform extravagant agility movements such as the 'goose step' which the Fijians like to do or the 'hop step' like the Samoans. Other more simpler agility patterns such as effective stopping, COD, stepping, swerving and spinning should perhaps be learnt first as these form the building blocks for agility.

3. Positional demands

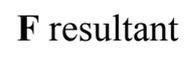
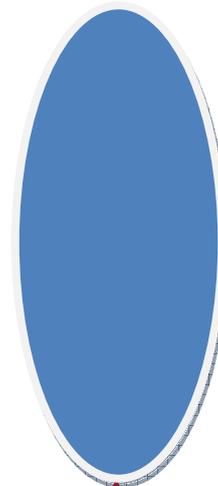
Different agility demands are based upon position of play. So we don't need to be getting our props to double leg side step or be competent performers of a step/spin complex of agility skills. A more limited range of skills is adequate here as they are never in positions of the field which require these various skills. The outside back, however, would require a larger battery of well coached agility movement skills which could be readily used at any time in the game.

What's the difference between agility and maximal speed sprinting?

Player A – Agility Movement



Player B – Straight Line Movement



As coaches we want to understand how to coach various elements of strength and conditioning, therefore, we need to have well developed technical models to do so. So when coaching the Olympic lifts, we need to know the various technical points at different stages of the lift so that our technical model is very clear and precise. This will not only enhance your coaching ability but more importantly it should positively affect your player's performance during these skills. The same goes for coaching agility. Unfortunately, there isn't a massive body of research out there telling us how an athlete can be agile. Therefore, when it comes to creating technical models for agility we must look to other forms of research telling us how athletes can display aspects of agility.

So in doing so we can see from the above diagram, there is more going on for Player A when he moves off a straight line than for Player B. Player A has to cope with expressing lateral forces as well as vertical forces. So he needs to push into the floor in a lateral motion to change direction but also with enough vertical force to overcome gravity. If he fails to provide enough vertical force, he will fall over which we often see as he did not give himself enough time to reposition his limbs to prepare for the next ground contact. If he fails to express enough lateral force, he will not change direction enough to avoid contact.

Player B doesn't have to worry about any lateral forces as they are sprinting in a straight line so all there forces are directed vertically to overcome gravity. What does this mean? Well more speed for the straight line runner!

Here is a flow diagram to explain it a little further:

The larger the change of direction or more curved the path of direction, the greater the reductions in velocity as larger amounts of our leg extension force gets used horizontally



If more leg extension force is used horizontally, then less is available vertically to overcome gravity



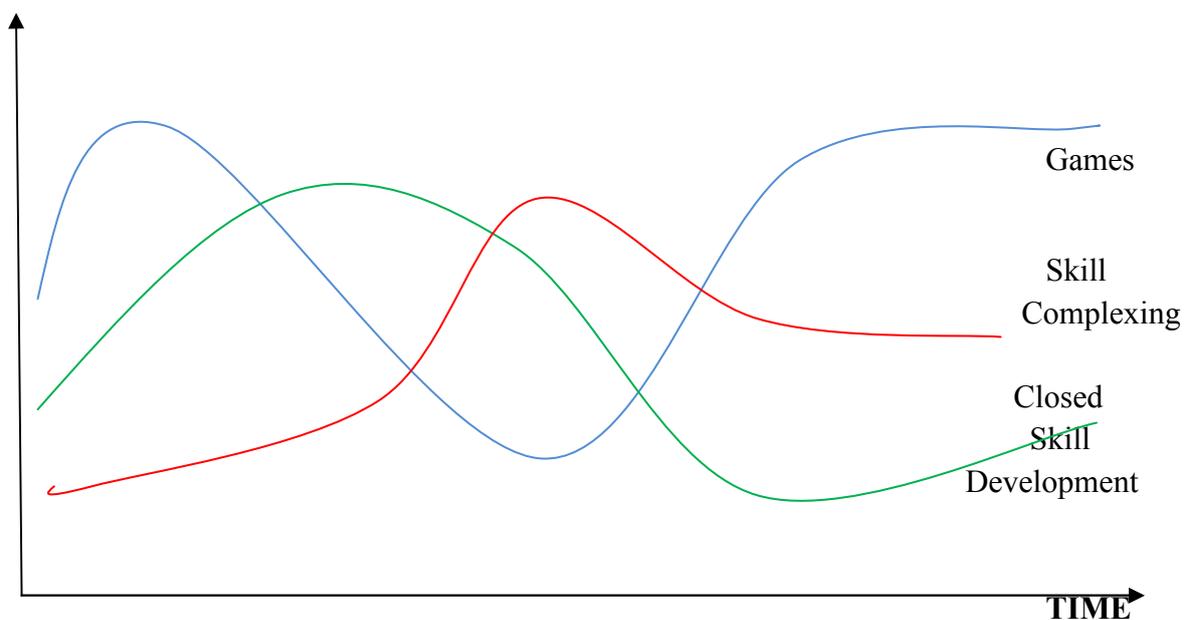
If we have less leg extension force left to overcome gravity, then we need longer contact times



If we need longer contact time to overcome the vertical and horizontal forces, we will move at slower velocities

Agility Coaching Strategy:

EMPHASIS



So what strategy do we use to build a more agile player? Well, the above diagram is something I have been using for the last while. Its an Emphasis/Time graph showing different forms of agility training. From the graph, you can see that Games are high initially in emphasis when introducing agility particularly for the younger player. During this period, players perform agility patterns in a non-formal unstructured way so that they are performing different patterns of agility without too much emphasis on how they do it. As time goes on, we place more emphasis on cherry picking different agility skills such as side-stepping and specifically coach improvements in this skill using different drills and methods. As time moves on again, after we have now worked on and effectively coached 3 or 4 different agility patterns, we can now begin bunching these skills together in a controlled setting so that the player must perform a series of agility patterns effectively.