

The Science Behind the Football Boot – part 4

Audience member: “What was your favourite drill skill and why?”

Johnston: “Well, I called it ‘The Georgie Best’ because whenever you watch football, what’s the bits you love the most? I hope that, you’re probably the same as me, lots of people will say it’s the bending free kick, but I love when a player gets the ball and he beats one and then he beats two and he knows exactly where he is and he knows where the ball is and he knows what he has to do next and it’s magic. And that’s what Georgie Best used to do.

“So I had this drill where I would get these, originally it was garbage cans and then I would put one, two, three, four like that and I would dribble around. But what I used to say was, ‘Every time my foot moves, I have to touch the ball.’ Do you know what I mean? So just to show you, this is a quick one. One, two, three and if you turn you’d have to turn like this. And every time you took a step, you’d have to touch the ball. So my thinking was that now the ball would never be out of your touch.

“Next time you see a footballer, watch that every third or fourth step he will touch a ball. And that’s always when he loses control. Watch Thierry Henry, when he steps round people, he takes two steps for every touch. And again, my favourite skill drill was trying to be Maradona or Georgie Best or one of those guys. I highly recommend it.”

Audience member: “Two questions. One, I’ve heard that Ronan O’Gara, when he gets his boots made for matches, he gets them a size too small so that he can have better feel for the touch and I wonder do soccer players do that and what you, how would you react to that? The second question, my son asked me to ask you, why do Adidas only make narrow boots? Because he can’t fit into The Predators.”

Johnston: “Well the two questions are linked. First of all, and I think I’ve said this tonight, a footballer’s touch is fundamental. You can talk about all the science in the world and it will go in here [one ear] and out there [the other ear]. But if they feel they like something, that’s what they’ll go with. When I was an apprentice, even when I moved to Liverpool and I had apprentices cleaning my boots, it was a done thing that you would give your new boots to the apprentices who had bigger feet than yours. You would give them your boots so that they could wear them in for you so that they’d get the blisters and not you. Honestly, honestly, honestly.

“And the other thing you’d do when you got new boots, you’d go and sit in the bath with them. You’d put your pair of boots on, with a pair of socks, maybe two pairs of socks and you’d sit in the bath. And that’s because they love that feeling. And that’s why kangaroo leather has been the preferred material for years

and years because it's the softest kid leather. I personally have a thing against it because I'm Australian – killing those kangaroos!

"And the second thing is because if you've got a wide last, it's called, the boot moves around on the foot and that's what it is. And I've often said the same thing. Ladies' feet are smaller and there's an even skinnier last for ladies' feet. But I've often said to Adidas, 'You need to get a wider last.' That's the two answers."

Audience member: "Going back to the thing about the studs, would you think that studs are better than blades or mouldies or just wear mouldies sometimes or what would think?"

Johnston: "You're a soccer player, right? What would you think is the best?"

Audience member: "I don't know that's why I'm asking you. You're the expert."

Johnston: "You're not getting off that easily. Honestly what do you think is the best?"

Audience member: "I think it depends on what boot you wear."

Johnston: "Yes. Well, are you talking about the winter time or the summer, because there's a big difference."

Audience member: "Would you say to wear mouldies in the summer and blades in the winter or what?"

Johnston: "That's what most people do. But what do you do?"

Audience member: "I would do that usually."

Johnston: "You do that usually. Well, that's what I mean. So in the wet, you've got to have a stud or a blade but you can't have a mouldy, because a mouldy is basically for summer. Then beyond that, the blades are the traction sole that I actually invented, but these days what's happening is that they're too deep and they're causing more problems than they solve and it's gone away from the original concept.

"And I feel more and more that FIFA should actually go back to the old rounded studs and make them to a certain length, and beyond that you can't go. Because I think, we can talk about Beckham and Rooney's broken metatarsals, but we've also got kids up and down the country, change of season, are actually having injuries all the time on their ligaments and their cartilages because the studs are wrong. So I think the whole thing needs a real look at. I think the old steel stud that you used to get is probably the best way, you know the studs I'm talking about, even better than the blades or the traction, which I actually invented, and I'll say that most honestly."

Gilroy: "The story about the steel studs is actually really interesting. It was Adi Dassler, who formed Adidas in Germany, who invented them for the 1954 World Cup final when West Germany beat Ferenc Puskás's Hungary. And people credit that with being the difference between the two. It lashed rain in Berne the day of the final and they came back from two-nil down, no they were two-nil up and they actually sustained their effort in the last ten minutes when the Hungarians were completely exhausted.

"And the thing about that was Adidas built those shoes specifically for the German team. I was kind of interested in that. If you had given your Predator exclusively to Man United say, or Arsenal, or Real Madrid, or Germany, or England, or Australia it could have been the difference between one country winning the World Cup or one team being dominant, but you kind of decided that it was OK to share it with everybody."

Johnston: "Well actually it was suggested that Bayern Munich get them before anyone else. And that story about Adi Dassler is quite famous, to be honest, and it did make the difference. He did invent the screw-in studs and when it poured rain the German team had them and the other team didn't, they had moulded studs, exactly what you said, the right studs for the right conditions and they won the game. And the Adidas company was formed on the back of that. It was quite clever.

"I always remember the first time we had, I had spent years and a lot of money developing the Predator, and then Adidas, two or three years with them, a lot of money, a lot of hype. And we're all sitting in the canteen one night working back late and the news comes in: the first Predator goal has ever been scored. And we all start jumping up, 'Yay, the first Predator goal. Fantastic.' Then the news came through about ten minutes later and they actually said it was a header. Back to the drawing board. We were so excited, you know. Anyway..."

Gilroy: "Can I ask you now, with all this information and knowledge and love of football and obsession with the sport itself, what do you actually do with the information? Do you ever actually switch off from thinking, 'I can improve the football boot,' or 'I can improve the football' or..."

Johnston: "No. I know it sounds sad, but the answer is no. Women love shopping and love buying shoes, I love thinking about footballs and football boots. And I love taking photographs. I love coaching kids football because the lessons I learnt are so relevant. So I've tried to design and invent a whole bunch of stuff that matches the story but actually puts it in a really clever way, you know; here's the story. That's fine, we've heard the story, but here's how you get better on a daily basis. I did something really, really, I thought, clever and I divided the penalty box, which is eighteen yards by forty-four yards, a six yard box and a twelve yard... I turned it into a mathematical grid and then I looked at kids in an hour doing ten drills and, you know, one of these acronyms I developed, was distance-accuracy-time analysis for ten drills. Any kids know what that spells? Distance-accuracy-time analysis?"

Audience member: "DATA."

Johnston: "DATA, good man, good man. So that's what you actually do as you dribble. And again my friend over here said, I would do the Georgie Best, OK, eighteen yards long, nine poles, remember what I told you about garbage cans? Well, you use poles or cones and then you go left foot, right foot and you measure your... Distance is standardised. Accuracy: every time you hit a pole, you get five seconds more on your time. The analysis is 'How many mistakes did I make?' and 'How quickly did I do it?' So by running eighteen yards and swerving nine bollards, you've actually created your DATA for that particular skill, which is dribbling. Then you do it left foot, right foot.

"Now the interesting thing is that, then you get Wayne Rooney's DATA for exactly the same thing, or Beckham's or whoever, Ronaldo, Christian Ronaldo, and that was my big brainchild. When you're passing, shooting, dribbling, that's what I did at Middlesbrough. So believe it or not, I spent, I'd say much more than two million dollars on that project, which is called Super Skills. And for whatever reason, the FA, the Premier League, chose to not go ahead with it. And that actually was a DATA driver, because then a kid from the cradle to the grave, much like a golf handicap, you're playing against the course, and next weekend you want to beat yourself which is the thing I did years ago in Middlesbrough.

"You know, the interesting thing, that's why I'm a bit jaded. And yes, I've had some pretty successful products. I actually want to say on the record that I've had some products, projects, that have failed. And that one's failed and I don't know why. I'm not going to give in, I'm just letting it go quiet for a while. So to answer the question Ger, I wake up in the middle of the night; I have great ideas for football shoes and have to stop myself from going over to Germany and saying 'Look, here's this idea mate.'"

Gilroy: "But I think that's also really good advice, not to be afraid of making mistakes, not to be afraid of failing at any point, because you get back up, dust yourself down and go again."

Johnston: "Yes. Sometimes it hurts though. Sometimes it costs a lot of money."

Audience member: "Would you think that having the new studs is better than having no studs?"

Johnston: "Than having no studs? Definitely. Especially if you want to stand up on a wet pitch."

Audience member: "During the World Cup Jens Lehmann was complaining about his boots and he said he was going to maybe sue Adidas because of them, because Germany made him wear them instead of his normal Nike boots. Why was that?"

Johnston: "Because football is full of politics, and vested interests, and people being too greedy, and there's far too much money in the game. And it's one of the reasons I've sort of chosen not to be in it for a while. As I say, you know, it's strange when you can't wear your own football boots. I mean, what's the world coming to? Somebody says, 'You have to wear these boots.' It's sad. So did he wear them?"

Audience member: "He said he got injured and he missed the first few games of the season because of it."

Johnston: "Is that right? I didn't read that but it's typical."

Gilroy: "And now he's lost his place. And he's not getting it back any time soon."

Audience member: "How much does it actually cost to patent an invention?"

Johnston: "How much? You know, it costs a lot of money. It costs a lot of money and the lawyers are very clever because they say, 'Well, just do this bit' and when you've done that bit they say, 'Well, just do that bit' and 'If you just do this bit well blah, blah, blah.' So it starts off very small but before you know it you're up around one hundred thousand pounds or something. So you have to be very careful when you patent something. And the good thing about being online is that you can check what everyone else has patented that's done similar things. So before you do a patent, you do all of your homework and your research and you make sure you've got something brand new that nobody's ever done before. Otherwise it could be very expensive."

Gilroy: "I think we have time for one more final question. No pressure, this is the final question of the evening, make sure it's a good one."

Audience member: "What team did you originally support?"

Johnston: "What teams?"

Audience member: "No, what team did you originally support?"

Johnston: "Good question. Good question. I'm just about to alienate most of the audience here. Thanks for that mate. I was getting on well as well. Because I have to be honest. And apart from Brazil, the team when I was really young, we're talking about twelve, thirteen, fourteen, who was actually the best team in England, was actually Leeds United. I know, I know, I didn't ask the question. But I loved Johnny Giles and Billy Bremner, and Sniffer Clarke, and Peter Lorimer because he kicked the ball at seventy miles per hour, you know, he was my favourite because that was like, scientific. Seventy miles an hour. And Jack Charlton, funny enough, was a centre half. And they were my favourite team."

"A funny postscript to all that stuff I was saying before when Brian Clough and Bob Paisley called in the same week, so did Leeds United. So in fact, twelve Premier League clubs phoned or spoke to Middlesbrough and said, 'We want to buy the kangaroo.' And I've got that headline, there was a headline in the paper. Actually the headline was 'Take Your Pick: Twelve Clubs Want to Sign the Aussie.' So you've got one of my secrets from me there. I don't admit that very often. Especially in public.

"But can I just say again, I told you I lived here [in Ireland] for four and a half years. I had four and a half of the most creative years of my life and I loved it here. I loved the Irish way of life. I call you the 'European Aussies'. There's a definite connect there, going back to Ned Kelly and what have you. And again thanks to Discover Science & Engineering and Forfás and everybody for actually bringing me here. We had to fly from the States to be here. And like I said, probably now I know why I don't do any public speaking because it all comes back in a rush and it's difficult to do and I won't be doing it again in a hurry let me tell you. But I'm glad it was here in Dublin. By the way there's two people in the audience that worked with me here when I lived here, Gerry McGovern and Niall O'Sullivan, can you just tell me where you are guys? Just so I know. Two brilliant guys, with brilliant minds, who helped me with the football boot products and the butler, the minibar system. So thanks for turning up guys, I'd love to take you for a beer now if you're up for it. And I just wanted to say thanks to you as well Ger."

Gilroy: "I think we should probably show our appreciation. Guys that's great. Thanks very much. I hope you enjoy the rest of Science Week."

Johnston: "There's one last thing. There's a prize. This football. Even though it's not mine, I'm going to give it away. Sorry, this icosahedron, for the person that asked the best question. And the best question, she must have been listening because it was 'What's your favourite skill drill?' And that was that lovely lady over there."