Danny Lennon: John you are very welcome to the podcast. Thank you so much for joining me today.

John Kiely: My pleasure Danny. Thanks for the invite.

Danny Lennon: Yes. And as I was saying before we started recording your work has made quite an impression on me over many years, and not only for some of the things you have said but also the way that you've arrived at them or at least how in my mind it appeared that you arrived at them through the way you've thought through certain ideas and I definitely want to talk a bit more about that later on. But first, maybe just to frame this conversation for those listening what is the good way to introduce them to your background. Can you maybe give us a quick overview of where you've worked, areas you've been involved in, and if someone was to ask you to introduce who John Kiely is where would you begin with that?

John Kiely: Essentially I am practitioner who is also a bit of a nerd. So, my background is predominantly – I have written quite a bit in the past few years, but I guess I am a 20 year plus practitioner lucky enough to have been involved with elite athletes since I finished sports science as by basic degree. Worked in DRA set up for a couple of years after graduating, figured out I needed to broaden my horizons. There was a very well known strength and conditioning professor in Edinburgh time Mike Stone went there and did Masters with him, back to Ireland, worked with Munster Rugby, Irish Rowing Squad couple of things like that you know

pretty nice contracts then I was over at an athletics event in Finland 2005, and I got approached and I guess just made aware of a job coming up in UK Athletics as a Head of Strength and Conditioning for the Beijing Cycle, so I applied for that and I got that job. Moved to the UK, stayed there working with the track and field until 2012. Left old story partner back here land into a job. Me over there us commuting every weekend, so got a job at the university. They knew my situation they said, "You work for us. We're a UK university you can do it from your back kitchen in rural Ireland and travel over and back periodically." So, I thought great let's do that.

So, what I do now is I work with predominantly people who do professional doctorates or conventional Ph.Ds, but they tend to be mid-career professionals so people who are working in the field. So, I would have couple of physios, few S&C, professional rugby, professional football so that kind of keeps my finger under pulse. And that's me from academic perspective and I get some time to write which I like because it helps me understand. If you want to understand something well teach yourself to explain it to somebody else, right? In the past few years one of my you know the arrangement with the university is that I can't contract out to other sports.

So, I moved to the university in 2012, 2013 I worked with Laura Massaro she won the World Squash title that year, phenomenal athlete, really enjoyed working with her. 2014-2015-2016 I worked with Ireland Rugby in camp, so obviously we won 14 and 15. Six nations went to the World Cup in 2015, worked to 2016 Six Nations, and then left and this summer I worked with Egypt at the Football World Cup. So, yes I am trying to stay as involved as I can both I guess from an intellectual perspective in writing and that and helping others it's pure questions and trying to keep my finger on the pulse from a practical perspective.

Danny Lennon: And I guess those couple of things actually are going to feed into perfectly why I wanted you specifically to talk about some of these concepts that I'm going to bring up today. Number one that massive overlap between being in the trenches as a practitioner in elite sport as well as being in academia, and in the kind of second part of that of the writing you have put out I think it's very clear to anyone that reads it that it's extremely well thought out some of these ideas and have probably been knocking around in your head for quite considerable amount of time, so I definitely want to ask

about that. So, I think to lead off one of the big overarching themes that I wanted to get into at some stage in this conversation is some issues that can arise when we are attempting to translate research into practice or more so for people who want some of their practice to at least have a grounding within scientific research. The best way to understand how to do that and that the limits of science I guess, because so often we can see where it maybe a case where someone doesn't understand why a study was set up a certain way or complains well this has no relevance to what I would do in practice or vice-versa. And I think there are probably two different goals of what we're trying to do to inform practice, and then something that's useful in a study design per se. So, just from an overview level what are the first things that tend to come up in your mind if someone was to bring up this idea of how do we go about translating research into practice, and what are the big potential pitfalls or issues that maybe commonly happen when someone is looking to science to inform in real world practice decisions?

John Kiely: Well. Okay. I'll do my best. I guess I'll start off from the perspective that all studies are flawed, and then on the other hand all interpretations of studies are also flawed. Now, that's not an argument against science obviously, but what it is suggesting to me is that we need to lean on the evidence we have but we don't switch off our critical mind. We need to analyze things critically and from a non-biased perspective. Now, what I mean by a non-biased perspective is we all have our pet views, we all have these philosophies that we think make sense or maybe we've used in working with athletes in the past. And a lot of time these become wrapped up in our ego or wrapped up in our sense of who we are, so oh we believe this. For me one of the big problems with human interpretation of science is that we tend to gravitate towards messages that we like that confirm our already existing perspectives or underlying biases.

So, as a start point for me it's just about an open mind is the most essential thing and awareness that just because I like or dislike something the first time I hear the strap-line of the study that's not really a valid way to judge something. To judge something on an emotional level you know this is the result of the study. Hey I agree with that that's what I do with these athletes, now I've confirmed that, now I've embedded that perspective a little more deeply that's not the way to do it.

I think for me it's not even so much academic thinking scientific thinking as a practitioner it's all about critical thinking and awareness that everything is flawed. All the messages we're getting are flawed. That's not a justification for us to pick any road we want that's a rationale to say I need to think deeply about what I do, I need to think deeply about what I believe, I need to not be afraid to disassemble my most dearly held beliefs and I guess it's a – there's a lovely phrase in the cognitive psychology world Cognitive Dissonance, and it's that feeling of kind of mental tension that you are trying to resolve two conflicting ideas in your head, and I think cognitive dissonance is a good thing and I try and live in that space where I am in a state of dissonance where I am always trying to resolve this with this, but if this is true then this can't be true. It's more uncomfortable state then just saying this is what I believe, end of story, no debate, no discussion. It's much more uncomfortable state but for me it's more productive state, and if you want to be as good as you can be, and as a critical thinker as you can be then that's the place you need to exist.

Now, I think just to close off on that for me in my early career what that meant is – I think I fell into a pitfall where I was wrapped with doubt because I am not 100% sure of anything, and I think if you are working with athletes that's not a good way to be. But gradually with experience you kind of learn that okay I may have some doubts in my head but I need to make what I feel is best possible decision I can now for this athlete then I need to close it off at the end of this period of time be it a phase or training cycle or whatever it is I will revisit this question, but once we've made our decision I need to be 100% behind that decision so the athlete isn't picking up any volume from me that I have doubts that I am not sure if it's the right thing for them. So, again it's a balancing act. It's a balancing act between what we consider science fact which tends to be obviously averaged ballpark answers to ballpark questions versus I am looking for what is going to work for this athlete right here, and now with this extensive training history, and this injury history and there's no study that can tell you that answer exactly.

Danny Lennon: Yeah. I think some really important things that hit me as you were saying that John. I think the first one that conviction that a coach may have when communicating with an athlete of a plan of action is obviously incredibly important, and I think we all certainly circle back on that later when we discuss some of these psycho-emotional variables that I know you've talked quite lot about as

well. And I think from another perspective that might be important for people to realize is that when we are considering what the importance of being more experienced as a coach or reading more research, and that the goal of trying to look to science to inform decisions it's exactly what you said. It's not trying to get to some magical point of knowing exactly what the right thing will be because to some extent we can never truly know that. It's just that these experiences and the more we read and try and interpret that correctly probably just hopefully approximates us closer to what's likely correct even though we still can't be sure, and I think that's a different mindset than feeling like we might need to know all the answers immediately, right?

John Kiely: Yeah and I think it's a common misconception of expertise that experts just know. For me really good decision making experts they don't have a set answer, a stock answer that's off the shelf for any kind of situation. They have a process to arrive at an answer and that's a very different thing, and I think as practitioners that's what we need it's what's my process rather than what's my go-to answer in this particular context.

So, when I say process what I mean by that is it can be something as simple as squad training environment. Athlete comes and asks you a question. It's a good question, but it's the middle of the training session what do you do? So, I think if there is an obvious sensible answer you give it if not you just push it back. For me personally I am just aware that sometimes we can be pressurized, and because we are kind of set up as experts sometimes when athletes look to us for advice we're inclined to have a kneejerk reaction where we feel I have to know the answer. I have to have the answer of the top of my head. Whereas you know as that's kind of short term process for me it will be push back a little bit, resist the urge to answer straightaway, kind of breed through your head briefly than ask yourself is this question relevant for now or do I push it through the end of the session. Do I have a good answer here that won't a) affect the athlete's confidence for the rest of the session you know that I can stand over that I am happy with if not just push it or say to the athlete what you're doing is perfect. That's really good, but then come back after circle back and go you know what that was a good question you asked maybe we need to adjust X, Y or Z for the next session.

So, you know that thing happens in a short term process. A longer term process is we all have these programs we like or exercises we like. I think a lot of the time they can become things we lean on too much perhaps, and things that we don't reevaluate often. Now, you can't obviously go around and lead training environment like a quivering jelly of indecision. So, it's when I sit down to plan in my own little room that's when I do my hard thinking then I formulate the plan. I understand that it's not 100% verifiable fact, but it's my best guess for now. I run it by people, I try it in action, I review but I guess the key thing is when you delivery it you have to deliver with confidence with a degree of assertiveness and you can't be wrapped by doubt, but there is a time for doubt it's just that time isn't during delivery. It's at the either end of it, and so I guess I am kind of rambling around here just saying that for me decision making isn't – there isn't a right way to do it. It's like what's my process if I am in this situation. I am in the middle of a gym just 30 people there. I have to make a quick decision what do I do versus what's my process if I am in a planning scenario when I am sitting back. There's no immediate onto my head from a time perspective, and then you have a different decision making attitude and stance.

I'll just pick up one other thing you said Danny you used the word experience and expertise, and I think we often think that they are equivalent that experience is expertise and vice-versa, but I don't think that's the case. There's quite a big literature on this, and what you find is if we both start off as novices and we gain experience we improve. So, let's say both of us improve at the same rates, taught experiment we're identical twins, exact same early life experiences we both learn, but then I take the attitude hey I know that now and I kind of switch off my curiosity, my inquisitive mind and my rate of learning tapers off and plateaus. Whereas, you have a different attitude and it's like well why is that the case and you are much more curious, and more inquisitive, you ask question, you observe your rate of learning continues. So, I think those people who've been there standing at the side of the track for 40 years, and they learn something in the first 5 years and then it's pretty much finished. There are also I know there are some absolutely stand-out examples of coaches who are now in the 60s or 70s and it's like talking to a teenager if you talk to them they're just full of questions, full of you know trying to think of new ways. Not want to put themselves on a pedestal and just pontificate, but wanting to hear other people's opinions and to me that's a sign of expertise. Forty years in the

gym or 40 years track side that's just the time you've clocked up it's not what you've done with that time.

Danny Lennon: Yeah. I mean that's such a powerful idea, and especially when it comes to considering what is driving a coach or practitioner in the first place to learn more. If it's that person who is constantly excited by learning things and has this attitude of being a lifelong learner because those things are exciting, and they feel they can always change them, and there is always more to know versus going in with that mindset of the learning is for some I suppose terminal point where I am going to learn this to try and arrive at this point of expertise well then everything will be okay and I can kind of coach from there and I'll know enough, and I think like you said they are just two very different attitudes to go in with quite clear implications for someone's level of expertise and I think it's really excellent that you distinguished between experience and expertise because I am sure many people listening can probably point to people who their experience level doesn't correlate with how we would view their level of expertise I guess.

John Kiely: Yeah. You know it happens both ways. So, in my world people associate expertise with Olympic medals for example or an association with a successful athlete or team, but to me that's not the standard. To me it's more about what's your process as an athlete – sorry as a coach, I know if my coach is here and success is largely – well I won't say largely, but in large part it's down to opportunity. You're in the right place at the right time, you build a relationship with the right athlete and it's a great athlete and they take the coach with them. So, it's like the athlete makes the coach often. Not always but it does happen.

Yeah, and sometimes there are some brilliant coaches out there who constantly turn for example, good young talent into seniors with huge potential, and then those seniors move onto what you might consider higher level coaches or more professional coaches. But again it's all down to how you evaluate a coaching excellence hence to me I look at the coach's processes rather than I look at their CV because I think CVs can be very distracting and what's on your CV is down to luck. You bump into the right athlete when you're a very young coach you get major success that creates a funnel of elite athletes to come to you because you've been associated with success and it becomes a self fulfilling prophecy. You get a funnel of talented athletes you get more success. Nobody goes back and looks at the graveyard, nobody goes back

and looks at well 20 elite juniors when to this coach and 19 of them retired to injury and one got success. What do we look at? Do we look at the isolated example or do we look at the people who were killed off by poor coaching practice, poor training practice.

Danny Lennon: For sure. I definitely have seen this mirrored in other areas like for example, performance nutrition you see a very similar picture emerge that once someone – often times they attribute their work to an athlete's success more than actually it should be I guess, and they overstate the role that's probably played or just people in general maybe think that it had more of an influence on the end result for an elite level genetic freak of an athlete that probably was successful in spite of what someone may have done than not. And again that's not always the case, but there are certainly cases where that is true.

John Kiely: Yeah. I mean just to add to that, and I am not trying to speak as someone who has all these figured out but what I use is my guidelines are like what do I want to be, what type of coach, practitioner do I want to be? I want to be one that's always learning. Now, you know what is kryptonized to learning is if I feel I already know the answers or what would be even worse if my ego gets out of hand and I think well I've worked with – you know I have a CV, it's a lung CV, good achievements more an athlete's perspective maybe I just have this gift. And I think a lot of people actually believe that in their very back of their heads that I just have a gift, I just know exactly what I'm doing. Whereas, with me I know that's absolutely not the case. I think I've been very lucky and I worked very hard as well, and it's just being aware that if you are associated with an athlete that had success that doesn't mean that you drove that success. And what drives me crazy is when people say well when I worked with athlete X in 2014 this is what we did, this is how I planned, and this is the success they got whereas, in 2015 the athlete didn't do this. So, if we get benefit it's down to what I do and if there's failure it's down to what somebody else did, and I think this is normal kind of human deflect self criticism type trade and it's just once we are aware of it we should be diligent in squashing it within our own minds.

Danny Lennon: Yeah, for sure and I think a lot of stuff is going to stem from that self awareness, and that is one clear example that just that initial generation of awareness around it can help mitigate some of those pitfalls. John I did want to pull back onto something you

mentioned earlier you used the term critical mind, and I also know that as I've said to you before that one of the clear things that emerges from some of your writing and publications has been on this. It was skeptical examination of conventional ideas, and so most notably for people listening who have maybe read your papers on periodization theory and some of your ideas around that trying to just view these long held conventional ideas through this skeptical lens, and I think that kind of ties into this critical mind that you mentioned earlier that's important in practice regardless of academia. So, I think maybe a question people might have is how does one go about trying to foster or develop or train a critical mind if that is at all possible or where does that come from in your view, and is it a trainable thing and if so what steps would you at least advice people to do?

John Kiely: I think it is very trainable. I think a lot of it is just driven by awareness, and I think once you're aware of some of the cognitive traps that we instinctively and habitually fall into around ego protection and deflection of criticism in our own minds, you know once we're aware of that then we can perhaps be a bit more aligned with reality. So, I don't want to give a vague answer, but my initial kind of thoughts first when you asked the question was, and I know everyone says this but humility is a great thing, and decision making and philosophical humility is a great thing especially if you work in a complex environment which we do all of us regardless of you are nutrition, you are a performance coach or S&C, you're a physio they are very complex environments. So, that humility is like a first essential building block. Curiosity I think you have to – at least for me you have to be deeply engaged in the topic, in all the little questions that come, and yes I think if have that humility and you have that curiosity, and if you get lucky, and you get the right experiences, and you take the right attitude to them. I guess the third leg of the stool that I'm leaving out is what we touched on at the start and that is there is a lot of knowledge out there but often we have to go and find it, and work to understand it and that's where we need to be fluent in the science of the areas that we're interested in.

Now, fluent doesn't mean you need to just be able to cite off reference of the top of your head to justify your favorite idea. Fluent is you understand both sides, and you understand the arguments, and you understand the – in science you very rarely know things exactly, but you have lots and lots of broad hints that enable you to come to a better conclusion. So, I think to try and

summarize that you want to be good at your job, you're working in a complex environment it takes a lot of effort and a lot of work. I think what it also takes is you know to drive that effort and work it takes a degree of passion in the task, it takes curiosity, and then it needs kind of philosophical humility. It's not that oh yeah well I figured that out ages ago or I wrote this paper or I worked with that athlete and this is what we did. It's like a constant process of reinvestigation, re-growth, regeneration, moving forward.

Danny Lennon: We have talked about this like critical thinking and kind of one part of that that people tend to discuss is being skeptical of information we come across and having a degree of skepticism when we're viewing particularly conventional ideas, and I have seen it within nutrition and training that we've had these long held myths that people tend to believe for various different reasons, and if we're being skeptical and try and look through the research we kind of see that some of them disappear. However, on the flipside what I've also seen is that there is a danger for sometimes people who are very much rooted into needing clear decisive research on something or trying to be so skeptical of any idea and needing so much validation from evidence that it almost becomes nihilistic. And I am just wondering how would you view that kind of pulling that line of being skeptical in everything we view versus nihilism I guess, for example like if someone is talking about muscle hypertrophy and someone just says well the main ting driving that is yes your training volume over time, and other things that are small little details, and then kind of forgetting all the other variables that might go into it or similarly with nutrition only worrying about someone's calorie and macro-nutrient intake and everything else it doesn't really matter because the main drivers are here? I don't know if that question makes any sense, but essentially kind of where you see that that line of someone's skepticism versus nihilism I guess?

John Kiely: Well, I mean it's a brilliant question. Obviously it's impossible to answer but I think it's a great question. And I was reminded of Talib's phrase skeptical empiricist which is how he categorizes himself. Someone who looks for evidence but is also skeptical, and it's a good example of cognitive dissonance state that I was talking about earlier in terms of you don't know what's right, you just know that there are all these innate factors that are trying to get you to make a decision that either accentuates your own self esteem or plays into your own kind of self loathing, but you have

all these emotional factors that cloud how we make clear decisions.

I can only tell you kind of what I do and that is just try and be aware of those things and be as neutral as possible when considering new ideas. I have a tendency to seek innovation. For example, you mentioned periodization work like I've been thinking about that for a long, long time but one of the things that I kind of had to force myself to do at the start was go back and revisit some of the stuff that the old great coaches talked about, and just appreciate that yes okay we can be skeptical and at this stage we can easily disassemble conventional periodization concepts. But at the same time I think there's wisdom in the past as well and we shouldn't just throw it out to chase innovation. There's an interesting – it's kind of a – I don't know if you've ever seen the curve, so it's a curve that traces how proportions of the population either seek innovation or reject innovation. So, at one end you'll have laggards so people who love tradition, love the conservativeness of tradition and feel that we don't need to branch out in anything. On the far end of the curve you have the innovators the people who are really always seeking novelty, always seeking something new. Now, kind of look at that and think well okay the innovators are – they are the people who are right, but they are not really because if you think about it the vast majority of innovations fall flat on their face like the vast majority of new businesses dolly quickly. So, for me when you look at something like that it's not about I want to be an innovator or I want to be a laggard. It's like hang on a sec this debate when I've come across a new idea I have an innate tendency to lean one way or the other. If I want to make a clearheaded decision about it I need part that kind of emotional tendency and just look at it from a clearheaded perspective. So, if I am a practitioner making a decision on whether we introduce new piece of technology or change exercise or anything like that or follow the next fight I try not to be an extreme laggard and not to be an extreme innovator. I try and move myself more into the middle. Not totally into the middle I want to be on the innovation end. I want to innovate, but I don't want to be at that very front edge when something isn't proven and I am effectively experimenting on an athlete.

Danny Lennon: It actually just reminded me of a similar thing that you see with the uptake of new technology and you see on one end of that curve early adopters who will jump in on any new innovation or a piece of tech regardless of what is going on or how much of it is

proven to work, and then at the other end people that need a critical mass of most of the population to be using that technology before ever adopting it, and then this kind of middle ground of once that kind of more and more people start to adopt it. It kind of has some similarities in terms of the curve you were talking about there of you probably don't want to be on either end. You don't want to be waiting until the whole world has some sort piece of the technology and you are the last one, and you probably don't want to be just jumping on any new piece of software technology or app regardless of if it's ever going to be useful or not. It's probably worth waiting to see if it proves itself to be useful, so that kind of struck me as you were saying that.

John Kiely: Well, actually – and thank you for reminding me of the term early adopters, once we are aware that we can decide where we want to position ourselves, and think – I know I try and position myself maybe towards the innovation early adoption curve but not close to the edge, not where I am jumping without looking.

Danny Lennon: Right. Before I let you go for people who are trying to keep up-to-date with you or any of the work that you are doing where is the best place for them to go on the social media, website anything like that where they can find you and more of your work that you've published?

John Kiely: Well, I'm on Twitter not on a very regular basis but I'm on Twitter @simplysportsci. I have an Instagram account. I have three pictures up in it, so I need to give that some love and attention when I get a chance. Other than that my email address if people have comments it's jkiely@ucla.ac.uk and I am always looking to learn and for interesting perspective, so people should feel free to give me a shout there if useful.

Danny Lennon: Perfect. And I'll link up to that in the show notes for everyone listening. John the final question I always end the podcast on can be to do with anything even completely outside of the scope of our discussion today. And again quite a broad open question, but if you could advice people to do one thing each day that would have a positive impact on any area of their life what would that one thing be?

John Kiely: Oh wow. That's a brilliant question. Yeah do something that challenges you every day, and that could be a set of chin ups or read something that expands your mind in some little bit or I

don't know be nice to someone you don't like or something, but I guess and I don't want to sound too philosophical or hippy-dippy here but if we want to grow then the only way for growth really is through challenge. So, find something that gives you those – find something that you're scared of and do it or find something that hurts a little bit and do it.

Danny Lennon: Awesome. John a great way to round this out. I want to first of all thank you for taking the time out to do this today, and also for the great conversation. I very much appreciate your time today, but also for your work in general like I mentioned at the outset it's been extremely influential I know for many, many people myself included and I want to thank you for doing that, and then also for coming in sharing some of your ideas today.

John Kiely: Well, Danny thanks very much. I thought there were really good questions and a very different podcast. And thanks for the kind words on my work and what I'd say is that you know the first time I ever wrote I think I'd read that an average of seven people read academic papers. So, it completely blindsided me when more than seven people read my work, but I wrote it to learn myself, to teach myself, to figure something out on paper and all the other stuff was peripheral but nice.