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ile I was in New York for the tennis tournament at Flushing Meadows in August 2005, as part of my work with tennis professionals, I decided to take time out to go up to Amherst to visit Ernst and engage him in more conversations about how radical constructivism can be useful. In this case on how it might help me in my work with the tennis players’ usual range of problems with their performance during the tournament. These problems include attentional control where the player needs to be able to manage selective attention effectively (the ability to keep focused on what is most important while screening out all else) and also to manage concentration (the ability to sustain focused attention for long periods of time). Failure to manage these and to fall into “distraction” of one type or another results in unforced errors.

One of the main “distractions” is “over-thinking.” During the learning process, it is obviously necessary to consciously analyse new techniques, new strokes and so on, but the same kind of cognitive attention in a real match situation can be fatal to one’s chances of winning. The correct form of focus in the tennis game is non-conscious.

I call these problems ones of “self-interruption” in that the player interferes with their own performance by allowing their attention to focus on something which ought to remain “invisible.” One young female player was showing an extremely erratic service; sometimes hitting a series of aces in her game, sometimes a series of double-faults. I thought I noticed something too “focused” in her way of making the habitual “test-bouncing” of the ball on the court before launching it in the air for the service. When I inquired with her about what she was so focused on, she admitted, embarrassedly, that her five “test-bounces” were done in such a way that the first four bounces of the ball marked the four corners of a perfect square. As if this form of “square designing” on the floor of the clay court was not bad enough, she explained that the fifth bounce had to land dead centre in this square. She felt that if she managed to bounce the fifth ball perfectly centred – a “bull’s eye” – then she would hit a great service. If not, then she would probably make a poor service, or even a double-fault.

Now it is clear that all of this incredible tension and “superstitious behaviour” is no way to be planning your service game, but nonetheless many players have idiosyncratic “tics” and ritualistic habits embedded in their game. This is OK until it reaches the level of self-interruption that this young player showed. My friend and colleague Corrado Barazzutti who is a previous world-class tennis player (who was in the top seven at the time when ahead of him were Borg, Connors, McEnroe, Vilas, Gerulaitis, Edberg, Lendl and other all-time greats) had his own paralysing experience in a tournament in the 1980s when he was unable to stop the preliminary ball-bouncing. It was not that he bounced the ball 5, 7 or even 15 times – he was simply caught in the preliminary winding up action for the service which had become a loop in itself, and he was not able to bring the preliminary ball-bouncing to a stop. In the end he had to serve under-arm as children have to do at the beginning.

So I brought these types of problems to Ernst, ever insisting that RC shows itself to be useful and not just a model of knowing. With great patience Ernst always agrees to humour me in these conversations (many of which will in the end form a part of the book that he and I have been writing over the past three years or more) and what follows below is a transcription of some passages of the resulting conversations which I recorded on videotape at his home.

Vincent Kenny: In a certain sense, what I am dealing with here is a “mind-body” conflict on the part of the tennis player. His “mind” interferes with the otherwise smooth performance of his “body.” This is what I call “self-interruption.” What is a sensible view of the mind-body issue from the radical constructivism point of view?

Ernst von Glasersfeld: No less! (laughs) Well, I have no proper model for that. Because the mind in a way is conscious, and I accept consciousness as an experiential fact, but I’ve no idea how it works. I don’t think anyone has. There have been several books written about this in the past 5 or 6 years – I looked at some of them – they are all … it’s a playing with metaphors, there is no handle on it. I’ve always said that to me it is part of the mystical, and there is nothing I can say about that. Except that I know certain ways in which it works – that’s the wrong way of putting it – rather I know certain effects it can produce, but how it does that I don’t know.

So when you ask about mind-body relation in terms of psychosomatic influences, well I don’t know how they work. One has to accept them experimentally, as you say with the tennis players. But if you play golf it is much worse, because in golf you have 5 minutes between each shot, where you can imagine what you want to do, and what you could do that would be bad, so that by the time that you go to hit that ball, if you let that go on, you see that its not going to work. It is like meditation, you have to let your mind go altogether if you want to play golf.

How much patience does it take to be a constructivist?
In tennis as well!

EVG: Yes, but in tennis at least it is a constant thing, you are active all the time. In golf you are not because the walking in between the shots doesn’t keep you busy. So I don’t know what to tell you…

You have written about a radical constructivist frame of mind, where you talk of the need to rebuild a number of concepts from a radical constructivism point of view – concepts like “knowledge,” “truth,” “communication,” “understanding” and so on. That from a radical constructivism point of view these have to be redefined. Would you say something about this task, about this frame of mind?

EVG: I think that one starting point is the realisation that whatever reality is like, we cannot find out. We can make – not even hypothetical models because hypothetical models are models that you think you will be able to verify at some point –… with reality you cannot do that, they are fictions. Kant I think had a very good expression he called “heuristic fictions,” and that is what reality is. He said that of the “thing in itself” which most readers of Kant don’t take in, that is a fiction. They think that Kant has anchored himself in reality with the “thing-as-such” or the “thing-in-itself.” But this is nonsense, he didn’t. He considered it a useful heuristic fiction.

So if you start with the notion that you cannot find out what reality is like, you automatically have to modify your concept of truth, because traditionally truth is an exact replica of reality. What is correct is if it is “like reality.” You can’t have that anymore. So what is truth? Truth becomes what I call viability – it is what you have found to be working, to be successful.

Now how do you establish what is successful? That’s rather complicated because there are several dimensions on which it can be successful. It can be successful in that it just works this time – but you don’t know if it will work tomorrow again or not. So viability – in the sense that you apply it to action patterns or thought patterns – is built up in time. As they are successful on more than one occasion they become more reliable.

You see that’s the one thing that Popper, who was a great man, never realised that. He had such a thing about inductive inference – that it didn’t give truth – he didn’t see that whatever we do is based on inductive inference. Meaning that we look back and we ask ourselves “what has worked,” and in this sense you establish a number of action and thought patterns that you consider reliable, but there again you mustn’t think that they are absolutely reliable. The moment may come when they are no longer reliable. So that does away with truth.

Talking about viability…

EVG: It is very complex because viability also has a subjective component. Who decides what is viable?

You decide. And I think that becomes very clear if you take the example of people in prison – some people have been in prison for years, and manage perfectly well to live. They may have regretted all sorts of things but they did not lose their sanity, they didn’t become fundamentally damaged by it. Whereas others can’t manage to find a viable way of living in prison. So, it is subjective too in that sense that it is you who decides what is viable.

There must be a lot of different bases for deciding what is viable. One obvious one is “bodily sensations.” If I feel good then that’s good enough. I probably then I have a choice…. I can adapt to it, or I can lower my criteria. I can decide. It is how I see most people living, by accepting and adapting to things that they really shouldn’t accept.

EVG: They have reduced their expectations and everything.

So reducing expectations is one way of deciding if something is viable – you “settle for less.” There must be several different criteria you could specify that people use habitually for deciding viability?

EVG: Well I’m sure there are many ways of doing it. For me perhaps the most important was learning to focus my attention where I want it to be. That you don’t allow your attention to focus on things that you don’t want. If you have a twisted ankle, you stop focusing attention on the ankle. It is part of relaxation. When I was quite young and skiing much more than I do now, I met a chap who was one of the coaches. There was an avalanche accident somewhere fairly close to us. Four people were dug out 36 hours later. All alive, but two of them had very bad frostbite and lost toes and whatnot. But the other two didn’t. And the coach said that the two who didn’t have the frostbite damage were the two who had practised autogenic relaxation – that kept their circulation going while being buried under the snow. That impressed all of us enormously because avalanches were something that were very close to us always. So we learned a little bit of that.

…of the autogenic training!

EVG: Yes. It is very primitive really, there’s nothing mysterious to it. You just learn to relax bit by bit, your fingers and toes etc, until you lie quite flat and nothing moves. If you do that seriously for 3 or 4 weeks, you can manage to go asleep whenever you want to, which is an enormous advantage. I don’t know that I would survive an avalanche, but it serves your purpose when you go to the dentist for instance. You just relax completely and you take your mind off your teeth. It doesn’t kill the pain but it makes it much more bearable. I think that’s an important thing – it should be given to people when they are children. This is something which some of the oriental philosophy implies, the Buddhist notion of cutting out the self, and all that. That’s a form of freeing your attention.

It is what I try to do with the tennis players – to redirect their attention away from negative thoughts, from being impatient with themselves etc… How much patience does it take to be a constructivist?

EVG: Well it takes a long time to be consistent. It’s very easy I think to pick up the first ideas of constructivism, but then to apply them to your daily thinking that takes a long time. But they say it takes seven years to play golf, it takes longer to be a constructivist.
How much longer?

**EVG:** I think that’s individual, I still find myself occasionally saying things — (laughs) — I laugh at the moment I say them (“how could you say that?” “I ask myself”) — well that’s after 40 years! I remember Ceccato who had been at it for a long time in his own way — he didn’t call it constructivism — but taking the notion that you can’t talk about “reality,” he sometimes after a lecture came and said “how could I have said that” (having talked of “reality”). Because you see the habits of speech, the habits of expression that you have grown into before you ever thought of epistemology or anything like that, they are very strong. You deal with tennis players, if you tell a player who is fairly good but not good enough to change the grip on his racket, how long does it take for him to really get into that, to do it automatically?

A long time.

**EVG:** With tennis I would say at least several weeks.

Oh yeah. This is a good example because in the last few years I have seen a number of players who have had to try to change their service because their way of doing it was not effective, with too low a percentage of first service balls effectively in play. What he has effective, with too low a percentage of first service game. They freeze when they see they cannot win it. He also has to see himself drop in the world rankings — losing his ATP points and so on. A lot of players get too nervous, watching their rankings slip, watching the sponsors get nervous about renewing contracts etc. Many players never manage to stick it out long enough to develop the new service game. They freeze when they see they are getting worse, that their game is disintegrating, and there is little sign of the light at the end of the tunnel.

So here we have a very general question about human learning. How do you change your human living in some way — and be able to sustain the disintegration of performance that must necessarily be lived. All learning has this problem.

**EVG:** Well … all learning except for the very young. The very young have very little habitual acting. So it is easy. But that’s why children can be taught a sport much more easily than adults.

My mother grew up with telemark and so did I. Then at the end of the 1920’s she starting seeing the other style and she wanted to do that because it was much faster, much better. She literally broke down and cried because she couldn’t do it. It took her years longer than me, but I could adapt to the new style without too much difficulty. But with her, it was much harder — every movement on skis has got to be automatic you know. She fell you know, falling for a good skier is just the end you know, you feel like giving up. It is very real tangible suffering.

How old was she when she tried to make that change?

**EVG:** She must have been in her late 30s. And she was very good you see.

Yes, and that’s a big suffering — to undo non-conscious habits. And the immediate consequence is that his game gets much worse. So he plays much worse because he now has no service game at all. In order to change his service, the player has to re-learn the new service in the real game context — in the actual tournament situation. This means that the player has to turn up in the various countries following the ATP programme to sign up for the tournament knowing that he cannot win it. He also has to see himself drop in the world rankings — losing his ATP points and so on. A lot of players get too nervous, watching their rankings slip, watching the sponsors get nervous about renewing contracts etc. Many players never manage to stick it out long enough to develop the new service game. They freeze when they see they are getting worse, that their game is disintegrating, and there is little sign of the light at the end of the tunnel.

You have something that works for you very reliably, and of course you think that that is the way things really are.

Then there is the other problem that one can’t do change on your own — you need judicious feedback from others. For example, the tennis player needs to see himself on video …

**EVG:** … and when he sees himself he is horrified! When I saw the first movie of myself skiing I was absolutely horrified. You do a lot of things that you aren’t aware of.

But in more general terms of human learning and communications, what other ingredients apart from feedback and disintegration of performance habits are needed to make an effective constructivist communication network? One with reflexive criticism etc. What other constructivist ingredients would we need to make it work, … to make a research project work constructively? …

**EVG:** In order to make it work, and I speak from a certain amount of experience because I’ve run a research project you know, you need an enormous amount of patience, and the knowledge that it is very difficult to change your own ways of seeing. If you don’t, you get irritable and that doesn’t help. In one research project we had a computer programmer who was a genius, but to get on with him I had to learn that you know, and it wasn’t easy at all. He was brilliant and accepted the constructivist notion absolutely, but when we came to something that I thought was worth doing but he didn’t, then it was very difficult to phrase that in some way that was compatible. But in the end I succeeded with a lot of patience, of rewarding, different examples, … and above all never thinking that he was stupid! Because he wasn’t you see. You had to accept that this was an intelligent person’s reaction, and cope with it. Which is difficult.

Because the first thing that people react with is that the other is “stupid.” It is clear that getting irritated with children is the wrong thing to do. We often hear exasperated parents saying “Are you stupid or something…?” It’s the most common reaction to someone who doesn’t share your point of view — why should this be the case?

**EVG:** Because you have something that works for you very reliably, and of course you think
that that is the way things really are. We should remember what Montessori said about children so many years ago: “Help them to do what they want to do, but don’t force them to do what you do.” She said that over 100 years ago.

Unfortunately one often goes back to a non reflexive way of acting. This is a very difficult problem. Ultimately, what it boils down to is that it is all very well to be aware that you are operating within constraints and the models that you make are only the ones that fit into the constraints. But if the constraints get very tight it is very difficult to maintain that notion — the notion that it is you who constructs your world.

A person does not consciously construct the world in which his wife gets a terrible disease. So is that his construction? Of course not. But it is his construction in the sense that he is operating within extremely tight constraints. It is like being in prison if you like. Your constraints have suddenly shrunk. And you begin to blame the constraints.

Is that reasonable?

EVG: It’s the only thing you can blame. You don’t know why, you don’t know where they come from; you don’t know what’s going on. In your experience there is extremely little to work with. And that’s very hard. I find myself getting irritated sometimes … so how can I blame other people?

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