

**Interview with Ray Deonandan, Ottawa, Ontario, Canada
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Dr. Ray Deonandan is a scientist, thinker, teacher, novelist, and explorer. Not fitting easily into any one discipline or structure, he spans the boundaries between several worlds and shares lessons between each – perhaps an archetype of the knowledge broker that is emerging as a defined role in many organizations. The conversation we had in Ottawa was profound and humorous, focused and expansive; much like Ray’s approach to his work. I think you will appreciate his grounded examples and his ability to link difficult concepts to stories. Human history is grounded in storytelling, so is knowledge exchange. Sit back and enjoy a fun ride.

Peter: I’m here in Ottawa in with Dr. Ray Deonandan. Ray why don’t you introduce yourself?

Dr. Ray Deonandan: Hi Peter. As Peter mentioned, I’m Ray Deonandan and I have several hats that I wear. Quite disparate it may appear at first but I think there’s a common thread that runs throughout all of them. First I am the owner of my own consulting firm, Deonandan Consulting which provides epidemiological health research, health policy, advice and services to a variety of clients. I’m also the co-founder of an international company; Vak International, which provides mostly program evaluation services for international development projects, as well a professor at the University of Ottawa where I teach classes in health research and in international health theory, as well I am a part time journalist and a novelist and the ways in which all of these seemingly disparate careers melts together is that they’re all ultimately about communication – communication to a variety of audiences using a variety of formats and towards a variety of different ends.

Peter: In the descriptions around knowledge exchange one of the ways that it is most commonly referred to is bringing people and evidence together to influence behavior. What does this mean to you? How do you think about knowledge exchange?

Ray: Knowledge exchange...ultimately knowledge exchange, I think you’ll agree, is just the sharing of data in its most basic form but as we know, as anyone listening to this

podcast will recognize it's a bit more than that. When I think about knowledge exchange, I think about the original exchangers of knowledge; Og, The Inventor of the Fire and when Og invented fire he had to somehow share this invention with his fellow tribe mates and he took his invention to Shmog his brother and said, "Shmog look – fire!" And Shmog said, "What fire?" and Og had to find a way to describe what fire was and that was the first instances of knowledge exchange. And then when Og wanted Shmog to recognize how to make fire, Og had to find a way to conceptualize – to communicate the actual mechanics of making a fire. That wasn't enough because then Og had to explain to Shmog why he needed to make fire. So there are three elements in play here: one is describing the *thing* that Og had invented, the second was describing how to access and create the *thing*, and the third was describing the context in which the *thing* would be valuable. And those three elements put together, I think form what we consider to be knowledge transfer/exchange/mobilization – whatever you want to call it.

Peter: So how does this relate...one thing you didn't mention is the work you are doing as a scientific advisor. How would, and why don't you talk a little bit of the context of that and what knowledge exchange means in that context?

Ray: Well it's much like the Og/Shmog example. In all kinds of science, ultimately you are trying to find a way to convince non-technicians about the value and the mechanics – the intrinsics of a technical concept – not just technical but the abstract concepts as well. If I'm dealing with a client, most of whom tend to be government policy types and I'm dealing with a very cutting edge technology such as an assisted reproduction which I do a fair bit at work, I must be able to, on the one hand fully understand the mechanics and the implications and the context of the technology myself before I can then go forth and explain it to others. Then I must not only explain it to others but then to understand how it impacts them in whatever their job description might be and in whatever their lifestyle description may be because ultimately we're not dealing just with professionals, we're dealing with people as whole human beings and that's going to taint how they receive whatever information I offer to them.

Peter: So what is the greatest challenge of dealing with people as whole human beings as opposed to their job description or the institution that they work in?

Ray: Ideology. It comes under ideology and by ideology, I don't just mean political or religious, I think it's whatever construct you originate from as a whole human being. I'll give you an example from the world of Global Health: if we are dealing with an HIV intervention, needle exchange. Ultimately these kinds of interventions are going to be tainted by one's moralistic viewpoint, regardless of what kind of evidence you're presented with. And ultimately one's moral viewpoint is going to trump evidence. I know often when I'm dealing with knowledge mobilization, we talk about the hierarchy of evidence – how different studies, different kinds of scientific endeavors, gradate various kinds of evidence – RCT is supposed to be the most perfect kinds of evidence for example. But all that is irrelevant if you're approaching the issue from a perspective that is tainted by one's moral viewpoint. Abstinence is the obvious example in the global HIV conflict. I say conflict because in many ways it's a war. I'm not saying that

abstinence does work or doesn't work but I am saying that one approaches the issue from a perspective of already having decided its worth before even looking at the data.

Peter: Let's bring this to the concept of lifelong learning and the Canadian Council on Learning is putting forward practices, ideas, methods for engaging in lifelong learning and I want to draw in your experience as a novelist. In another interview that I did, the person that I interviewed referred to literature, to reading a book in their own time – in this case it was fiction but it was fiction based on real events – that contributed significantly to his understanding of a complex set of events. How does...how do you think about lifelong learning given that you do learn – that you personally learn across a whole series of areas?

Ray: I'm going to answer that in two parts. First is that the novel is an example of a narrative. Any kind of communication we offer to an individual is an example of a narrative. Unfortunately over the last few decades, technical communication has been rendered "non-fun" – it's been made as inhuman as possible by not having a beginning, a middle, and an end – it's just straight data and I think it's important to bring it back to this organic human feel – that Og and Shmog originally communicated using when Og brought his fire to Shmog he said, "look Og – fire – fire good – fire will do this – end of day – fire make you happy". There's a story there – a narrative and I think gradually we're inching back towards that approach.

Now the second part of the answer has to do with the ways in which this embracing of narrative contributes to lifelong learning and there's no question that if you really take a step back and look at the ways in which we engage in our world, every time we interact with another human being or a piece of information, we are learning. A piece of information can be data on a page, it can be a TV show, it can be touching the surface of a table - you're learning something about that table. Any kind of interaction you have with your universe is an example of learning and it's important for you to be able to contextualize that learning in whatever sort of...the word I'm looking for is difficult – it's not the mechanism so much but it's a manner in which you can place the elements that you have learned within the context that is most appropriate for your functioning in your world.

Peter: So is lifelong learning a state of being?

Ray: Ya.

Peter: Is it a way of being in the world?

Ray: It is a state of being, in fact it's unavoidable. Everyone learns lifelong whether they like it or not. The difference is that some acknowledge this learning and others do not and the further difference being that those who acknowledge it may also be able to actually employ it more fully than those who are not acknowledging it.

Peter: Let's talk a little bit about that in terms of one of the ways I've described knowledge mobilization or the facilitation of knowledge mobilization is having incentives in place to engage in this kind of practice as well as infrastructure to support it. So if we're to look at knowledge mobilization, knowledge exchange, lifelong learning from an "incentivized" perspective or an infrastructure perspective, what does that look like? You teach students in a classroom. We all have in our mind a picture of what a classroom looks like and there's variations on a theme but that's an infrastructure that's supposedly supposed to "incentivise" or provides an infrastructure – provides a place where people are going to gather and then they get a degree out of it and that degree is supposed to lead to benefits within their lifespan. Reflect a little bit on that.

Ray: That's a difficult question. The kinds of interventions and infrastructures needed to facilitate lifelong learning; they include an appreciation for the role of example, and the role of real life experience. In a university context for example, you're learning in a classroom often you're given theory, you're given text books – rarely are examples given to the students that is pertinent to their experiences. So when I teach my students, I always try to give them hundreds of examples. I'm giving a lesson on study designs, epidemiological study designs I can talk about – if we're doing a randomized control trial comparing this migraine drug versus placebo in a double line format blah blah blah blah. Or I can talk about...*well if you wanted to date two different girls and you're thinking about which one is more appropriate and maybe I could chose...* you know you make it more relevant to their experience and that brings it home, it brings it closer and then you can expand the radius to encompass more abstract – more boring, more technical examples. I think that's a strategy of learning but that doesn't speak to infrastructure quite yet. The infrastructural components come in when we start strategizing Co-op placements for example or textbooks that aren't just the dry technical textbooks but bring in a narrative...again I think...

I'm a big fan of using novels to teach science. There's a series of novels written by Arthur C. Clarke and Larry Niven and some other people that each deal with the same challenge in different ways. The challenge is launching a payload from the surface of Mars to orbit and within a fictional context each of these authors found a similar but different way of doing so each time it involved something called an orbital tether which you build a space elevator from the surface of Mars to an equatorial orbit and each time they both encountered the same kinds of challenges. For example the moon Fobose orbits around Mars at a certain period that interferes with any sort of construct that you build from the equator. How do you solve this problem? One author decides to oscillate his elevator. Another author decides to have a shuttle going from part of the elevator to the other part of the elevator. The point being that using narrative - using fiction, a scientific problem was solved and investigated and explored in way that regular science cannot even dream about because we cannot do the experiment right now – we can't go to Mars right now to build a space tether. So we have to be open to the idea of bringing in untraditional and more organic or more human methods, approaches, contexts, constructs, into solving our problems and to communicating scientific ideas.

Peter: Part of the narrative or the conversation that's going on about knowledge exchange in that we're supposed to transfer what we know with great certainty that shows up in systematic reviews in order to get that...you know, the right information at the right time to the right people so that we're supposed to make decisions. And what you're saying, if I'm hearing this correctly, is that there is a much for fluid, organic process built on human relationships, built on conversations, built on creativity. How do you deal with this movement in the evidence based decision making, which is about limiting all of that creativity to say that *okay we actually know this for sure – that's what we're supposed to transfer.*

Ray: Well first there are two domains to be explored here. One is the domain which we have a serious decision to be answered – to be made rather or a question to be answered and that's where we enter into the realm of using the evidence pyramid to make sure we have the data that is most defensible and acceptable to take to policy makers. The other domain is the domain of idea generation and that's where we're in this fluid, dream-like state of using stories and narratives and brainstorming to think up the most obscure and abstract idea as possible but beyond that, I think it's important to always remember that everything that comes out of our mouths ultimately has some guesswork attached to it – ultimately has some fantasy attached to it. The most rigorous science that we can possibly conceptualize and make happen ultimately involve a bit of guess work and a bit of abstractness and ultimately even the most evidence based policy recommendation one can make to one's client or one's policy maker is going to be based a little bit on one's personal biases, a little bit on one's personal experiences, a little bit upon one's dreams. And so I think it does the world a disservice to always assume that all science is scientific.

Peter: You mentioned evidence. When you hear the word evidence, what do you think of?

Ray: As an epidemiologist, evidence has a certain, very strict meaning. It means certain kinds of studies that are most defensible with others that are least defensible. They roam anywhere from the least defensible, which would be a case study to the most defensible, which is randomized control trial, holistic randomized review of randomized control trials. That's the most rigorous and dry and game-show oriented response I can give.

However, evidence is more than that. Evidence is any kind of experience that informs the question. All that means is that those less rigorous experiences fall lower on the continuum in terms of rigor than do the one's that we recognize being more rigorous – this is the RCT. I think in the future, the next ten/twenty years, we're going to find that more and more research is being done on these less rigorous approaches. We're finding for example that non-traditional medicines - holistic medicines – alternative medicines etc. do not respond quite as readily to the allopathic western methods of investigation and the reasons for this that are often given is that the western methods of investigation assume an objective reality whereas the eastern methods or the holistic methods assume a more subjective reality which by the very nature cannot be investigated using objective methods. If that's the case then we have to re-conceptualize what we consider to be

evidence. I know I'm speaking airy-fairy, fantasy land kind of stuff but I think it's valuable stuff considering that we're in a world in which non-allopathic treatments are already becoming quite prevalent.

Peter: One of the elements that I've been discussing with people is around, given how complex this is and that there's an aspect of emergence – that's it's going to become what it is in the process of becoming. The concept of leadership then comes in and there's many different forms of leadership. If you were to think about leadership from the perspective of lifelong learning or leadership from evidence based practice or leadership from knowledge exchange, how do you think about leadership?

You've been identified as a leader – you know I've heard this in a different set of contexts – except that you're not a traditional leader. You don't hold a position of power in the traditional sense yet your ideas have influenced people – they influence...they're influencing a generation of young people who are studying global health right now – you're influencing you're clients through your consulting work – you're influencing a scientific process through your advice. So talk to me about leadership.

Ray: Traditionally leadership has been about one person standing in front of a group, giving orders and projecting authority and confidence but it's more than just that obviously. I think increasingly leadership is about providing inspiration and example. One can be an example leader by showing a non-traditional method of thinking, by showing and embracing organic and universal methods of absorbing various construct into one's decision making process – that's what I'm trying to do actually. I don't want to order others around – I don't want to lead other organizations – I don't want to give people orders and pass down policy to those beneath me. I don't want to have anyone beneath me. What I want is to be able to live my life and to learn through my life and so forth...and to do my job as well as I can but at the same time, if I must be a leader, I want it to be through showing that I have thought through my decisions thoroughly using whatever evidence was available and by all evidence, I've talked about already, not just talking about the evidence presented through science but the evidence presented through my senses and through the Arts and through the Humanities etc. So again to come to the question of leadership, I think increasingly society is appreciating that leadership...that leaders come in a variety of cloaks not just the heterosexual, 50 year old white man in a power suit, in front of a boardroom, but also in the younger individual in his jeans and running shoes who's having thoughts in the corner and writing them down and other people are reading them.

Peter: So is there a generational issue? Are we seeing a shift in what leadership looks like?

Ray: To some extent...to some extent. I would caution against broad strokes like that because we have a tendency to view the world through our cultural ends. We're looking only at the examples in North America, specifically in this chunk of North America, in the East etc. – English-speaking North America. But the rest of the world is still moving

along in that cult of personality methodology – that the leaders are those who shout the loudest and most eloquently.

The younger people have at their disposal new technologies – there's always the internet, which comes with it email, discussion groups, Wikis etc. that allows for faster formations of like-minded individuals into groups, it allows for faster communication, it allows for the brandishing and the publication of viewpoints through anonymity that otherwise would have been shouted down through various kinds of peer shaming. So we're into new realms there's no mistaking that – a realm in which new ideas are reaching prominence much faster and are reaching decline much faster as well because the internet and other kinds of identity-masking technologies are allowing this to happen. Having said that, I think there is an innate human tendency to gravitate toward the cult of personality. So regardless of the power of one's ideas, it's the method in which one expresses them that ultimately will win support.

Peter: Okay. Let's talk briefly about technology. You were an early blogger as was I and technology is considered important and in some instances it's described as...in terms that it's almost a panacea - it's a cure-all for what ails us. In other conversations I've had, that the formulas - technology is 10%, 90% of this is social. That the exchange process is fundamentally a social relationship and that technology can help leverage those relationships. Where do you fit on the technological piece?

Ray: I'm most definitely in the latter camp where technology is the mechanism or the device, the tool that allows us to finally discover this enormous need – this thirst for social interaction – interaction has always been there. One important thing that I want people to remember is that on your way to work today, you probably saw more people on that single commute than the average human being saw in their lifetime one thousand years ago.

We have ingrained in our DNA a desire to seek out social interaction – seek out community but all of a sudden we have orders of magnitude - more people with whom to do it with and there is as yet, no method to sort through that disparity – that disconnect. Now we do have that method if one's willing to plough through the internet to find the appropriate tools. So the internet has allowed us to form those small tribes, those small groups again that we had a one thousand years ago. So this genetic yearning we've had to form the tribes is finally being addressed through technology and I think this is going to prove to be quite a potent tool for readdressing and rediscovering a certain creative side to a spin that's been silenced for generations of crowding.

Peter: I mean that's really interesting, I hadn't thought about it in that perspective. There's an awful lot of talk about knowledge exchange, knowledge mobilization – in your opinion, what's the greatest benefit for engaging in this in a conscious way?

Ray: The greatest benefit is that we strip away the misdirection. I think if we speak, we communicate without thinking about that which we are trying to communicate; we run the risk of miscommunicating falsehoods.

Sometimes we communicate...miscommunicate falsehoods intentionally – I guess it's not miscommunication, its intentional communication but ultimately we are seeking truth. Truth in reality and truth in construct as well as truth in deliverance and by that I mean science has always sought truth or claims to have sought truth. Only with the advent of quantum mechanics have we realized that truth will always be one step beyond us.

Now with the advent of serious thinking about knowledge exchange, we suddenly realize that not only is truth always one step ahead of us, but the communication of truth is two steps ahead of us. So recognition that there exist these filters between us and reality allows us to better correct for those filters...or to better cache or to phrase our policy decisions or our pronouncements more forgivingly in recognition that truth isn't fully appreciated.

Peter: In ten years, we've seen a growth especially in health; of the practice, the evidence, the methods for knowledge exchange and we've come a long way in the last ten years. In ten years into the future, and don't limit yourself just to health, where's the field of knowledge exchange or knowledge mobilization going to be?

Ray: Well my understanding is that knowledge mobilization is relatively new – I know it's been around for decades but only now it's reaching the kind of prominence that it's automatically built into people's grants for example – you must have a knowledge exchange strategy built in. Given its earliness and given the growing appreciation for its importance, undoubtedly it's going to explode in ten years in terms of importance, in terms of complexity, in terms of maturity. By maturity I mean...most people still don't realize what it is. Go to any kind of policy meeting and people will talk about the knowledge exchange strategy - they just think they mean...publish some papers or have a talk afterwards. Rarely is it fully appreciated that knowledge exchange or translation or mobilization means uptake as much as broadcast.

Not just to publish but to be able to understand and I think what we're going to see in 10, 15, 20 years one hopes is that people more fully appreciate the importance of being an active listener or an active reader or an active recipient of information. Not just being someone who publishes some stuff and walks away. Everyone has to play an equal role in being a part of a complicated, interactive society that stresses the importance of sharing accurate information that appreciates this two-steps-from-reality construct for a lack of a better word.

Peter: Ray, thank you, it's always a pleasure.

Ray: Thank you.