

# Transcript of Development Drums

## Episode 43 – Complexity

Host: Owen Barder. Guests: Stefan Dercon and Ben Ramalingam

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### Owen Barder

Thanks for downloading Development Drums. My name is Owen Barder from the Center for Global Development. Our topic today is Complexity. And to discuss that, I am joined here in the CGD office in Europe by two very brilliant people.

Ben Ramalingam is the author of 'Aid on the Edge of Chaos', a book published last year which looks at how complexity ideas are being brought into the mainstream of aid. Ben is affiliated in various ways to the Overseas Development Institute, to the Institute of Development Studies, to the London School of Economics as well as working with various aid agencies to help them improve the way they manage aid projects. Ben is also in the middle of writing his next book. Ben, welcome to Development Drums.

### Ben Ramalingam

Thank you. Great to be here.

### Owen Barder

And my second guest is Stefan Dercon, a development economist, who is both a Professor of Economics at Oxford University and also the Chief Economist at the British Department for International Development. Stefan somehow manages to remain active in research at the same time as being a bureaucrat, and he works on a diverse range of subjects such as risk and poverty, the foundations of growth, agriculture, childhood poverty, micro insurance and so on.

Stefan, it's great to have you on Development Drums.

### Stefan Dercon

Yes, thank you for having me.

### Owen Barder

Okay. So we're going to split this discussion into three parts. In the first part, we're going to do our best to explain to an audience that isn't steeped in this what complexity means. In the second part, we're going to take a bit of a skeptical look, I think, at whether this adds anything to what we already knew. And then in the third part, we will

explore the practical implications for managing aid, for managing development cooperation and we'll talk about the challenges involved in aid agencies adjusting the way they work.

So the first part, Ben, I think it would help listeners to understand what we mean by complexity and in particular, to understand whether it means something more than just this is a very complicated problem. So perhaps you want to start by telling us about simple, complicated, and complex, around that idea.

### **Ben Ramalingam**

Yeah. I think that's the best way to understand complexity from a science and public policy perspective is to think about the problem we face. And in the book, I set out three distinct kinds of problems. The first kind, which I call simple problems, are those which consist of one or two variables where you can break them down into simple equations, which are always followed in these phenomena. So the best example is Newtonian mechanics. But not just physical processes, there are a number of energetic processes that follow this model, so in public health processes, like the results of vaccination programs, and certain aspects of sanitation. So these are simple problems. And there are all kinds of methods and tools that we can use to analyze and understand and respond to these problems.

Now at the other extreme, you have problems which are made up of many different kinds of variables which are interacting randomly. So from the physical side you've got the motion of atoms, of thermodynamics. In social science, you could think about the death rate in human populations. And the key to these problems is to apply statistics to identify averages and generate insights. So the kinds of things that actuarial scientists do to understand the risks of various kinds of things in populations and create profiles and therefore generate profits for insurance companies.

Now, the challenges the complexity scientists grapple with are the problems in between these two. So these are problems of a certain number of variables that interact in an intricate fashion. They can't be easily broken down using equations which say these are the one or two most important variables, nor can you meaningfully apply statistics to these. And so examples of these would be changes in commodity prices, the growth of cities, social movements or mass movements generally, the spread of disease...

### **Owen Barder**

So that's what you mean when you say "on the Edge of Chaos." This isn't just a doomsayer view that it's random. This is a specific mathematical term, isn't it, the Edge of Chaos?

### **Ben Ramalingam**

Absolutely. And it's one which – and I will talk a little bit about methods. It is one which appears in many different ways in the methods that we have to understand the

problems of that third kind. So these are problems which are described in a number of ways as being interdependent. They change over time, they are interrelated with a number of different factors. And they often push back against simple fixes. And this was a framing which came really from the 1940s which has proved quite influential. It was used by Herb Simon in his work on the foundations of behavioral economics and understanding bounded rationality. It was used by Jane Jacobs when she was talking about urban development and the growth of cities. It was used by Hayek in talking about the limits of knowledge, the whole idea of wicked problems which was developed by urban social planners actually came from this approach through Jane Jacobs. So there is quite a rich tradition of using this to understand the limits of traditional scientific and political approaches.

### **Owen Barder**

[5:17] One of the things that I have learned as we have talked more about complexity is that in the physical sciences especially in biology and physics and chemistry and meteorology and so on is that these ideas, these models in this space on the Edge of Chaos, this complexity space, are widely used in lots of different applications, and that complex and adverse systems are described all kinds of different natural phenomena. But that in economics we haven't borrowed as much from the natural sciences as perhaps we might have, is that a fair characterization?

### **Ben Ramalingam**

I'll let Stefan talk more about the limitations of the economics when it comes to dealing with these kinds of problems. I guess it seems to be quite well understood that there is a heterodox school in economics, which does borrow from these approaches, evolutionary economists, behavioral economists and so on. If you look at the kinds of economists that have been leading on this kind of work like Herb, Simon, Hayek and so on, there are Nobel laureates amongst them. The challenge is why has that school of economics still failed to influence public policy and the way that public policy operates to a substantive degree. And I think that's the challenge which Eric Beinhocker talks about in *The Origin of Wealth*, for example.

### **Owen Barder**

Can you tell us a bit more about the characteristics of these complex adaptor systems? What – how would we know if we were in the space between well-ordered, simple, linear systems and just random, this Edge of Chaos space? What does it look like there?

### **Ben Ramalingam**

So maybe just to give you a very practical example based on where we are. We are in the center of London. If you try to understand the problem of traffic, and traffic flow through the center of London has become a major headache and a challenge for urban planners. How would you actually go about doing it? Could you apply an equation to show this is how to predict the traffic jam? You probably couldn't. Could you try and understand the average behavior of traffic through the city? Well, actually, what we

know is the average speed of traffic through London hasn't really increased in well over two centuries.

So there is something more going on here. If you try to understand traffic, you can understand it as a group of agents, individual cars moving through them. And the most significant thing for any traffic planner is to think about the rate at which cars are moving through. And traffic, if you look at the map of London, you would be able to see how traffic jams build up. They don't happen in a predictable fashion. They might occur in certain places on a road and then slightly move down the road. They might emerge in a certain place unpredictably. You might have tailbacks, which are created by certain interactions in one place which then leads to blockages elsewhere.

So if you just take that very simple example, complex systems analysis on the whole can be used – can be explained by talking about examples like that. So you have multiple agents interacting. They are competing for a scarce resource, in this case, roads, but it doesn't have to be, it could be money, or whatever. They have certain behaviors or rules that govern how they operate. And the overall properties of that system cannot be easily understood just by understanding how a car works or how an individual drives. You have to step back and look at the properties of the system as a whole. You need to understand those patterns and then try and respond to those patterns.

### **Owen Barder**

So the one thing that interested me when I looked at this, is that the way, for example, you model traffic jams is quite similar to the way you model a thunderstorm or the way you model consciousness of the human brain or the way you model a whirlpool in a river, that this notion of having individual parts of the system that interact with each other and evolve in response to each other gives you a common set of system dynamics across all these different fields. Is that – you are frowning at me as I have got that wrong. So tell me why that is wrong.

### **Ben Ramalingam**

Slightly, because in a traffic – in the situation of traffic, you have individuals, which you don't have in thunderstorm, which you don't have in a whirlpool. You have individuals who are making decisions, who have beliefs about what could happen, and those beliefs can have an influence on whether or not a traffic jam is going to happen. If everyone puts their brakes on, we have all seen this, everyone puts their brakes on at the same time anticipating that things – traffic is going to slow down, and it can actually create a jam.

So you have got, I would say, the whirlpool and the thunderstorm examples are slightly different because those are complex systems in a different sense to the way that social systems are complex.

### **Owen Barder**

But in the case of a thunderstorm, each molecule is responding to the other molecules around it, even though it's not consciously making the decision. I mean there are things like ant colonies or starlings in flight.

### **Ben Ramalingam**

Yeah, that would be a better example. But there is very few biological examples that can give us the whole sweep of approaches or the behavioral approach which complex adaptive systems focus on as opposed to just a purely complex system.

### **Owen Barder**

[10:11] Okay. I would like to bring in Stefan now, to test whether this is really adding anything to what we already knew. I certainly felt as an economist reading about non-linear systems, I started my professional career doing macro economic modeling in the Treasury. And we had a vast non-linear model, and I didn't need a biologist to tell me that its results were unpredictable and it was subject to small shocks, would give you very different answers. So I felt this – and it felt to me like we already have this stuff covered. Stefan, is it fair so say you feel like we've already got this stuff covered.

### **Stefan Dercon**

To a large extent yes. I think we should be very careful always when we try to generalize about economics does this, or this is what the practice is. There are certain phenomenon and the recent experience with bringing some elements of chaos theory and complexity analysis from other fields in little bits of economics have proved quite, quite useful. But actually, there was already a huge amount of work that actually talks to that. We mentioned earlier evolutionary biologists, of course, they have always interacted very closely with game theory and strategic behavior. And then in fact, where we may have certain worries about certain elements of assumptions that game theorists would make on rational decision making, biologists have found it extremely useful to talk to economists in terms of properly understanding the strategic behavior of lots of species, and so on. And indeed, there is a huge wealth of work that actually talks about the inter-dependencies of strategic behavior and so on.

But actually even further in basic modeling and not least in development, is poverty traps is a very old idea. That is a non-linear system. Rosenstein wrote them, in the 1940s he was writing about it, and all the big push ideas, they are fundamentally based on a simple mathematical model of complementarities that leads to interdependence, that leads to trap type of behavior. And we have a lot of work in the 1980s similarly on these equilibrium models, how models are behaving in the 1980s. In fact, when I was in graduate school, that's what we were doing, these equilibrium models. These things are there. Tipping points are very popular now but multiple equilibrium models have been around in economics for a very long time. And indeed in poverty especially, one of the things that I have always used in my modeling on developing countries is to actually think are there these kind of multiple equilibrium outcomes that actually would get us,

the same with interdependence in the forms of network analysis and multiple equilibriums in models of how do norms come about.

There's quite a lot of that. There is quite a lot.

**Owen Barder**

Go on, Ben.

**Ben Ramalingam**

This is really interesting because I – Stefan, I mean you have used network analysis to show how aid distributions go to those people that are most closely connected to the people in power. And you've used non-linear dynamics to look at exactly that issue of multiple equilibrium, poverty traps. But in that work, you highlight that the fact that these things would have profound policy implications if they were taken on by aid agencies or development agencies. And I think there's a challenge that development research may well be ahead of where development practice is. And so we need to do two things. I think we need more investment in development research which looks at these things. So I don't think it happens as a matter of course, and I have done a lot of work on peer reviewed articles. I have referenced over 1,600 things in my book, and there is not huge amount of research either in development. That's point number one, my challenge.

Point number two is if it is being done by people like yourself who are ahead of the curve, I don't think it's been utilized enough in policy in practice.

**Owen Barder**

So I want to come to how aid agencies use this idea in the third section. But I just want to get – I want to stick to the conceptual framework.

**Stefan Dercon**

Right. Because I think that's exactly also there that I wanted to make a distinction. When we think about what is the practice in the aid, although I think I could highlight a few surprising examples that actually fundamentally drive the narratives that are driven from some of these kinds of physical equilibrium and multiple equilibrium type of models, big ones, but I'll come back to that later. In terms of the conceptualization, it is actually quite standard practice to do quite a lot of these elements of modeling. I mean I think there is another misunderstanding that I want to quickly get out of the way here, which is the following: While the world is pretty complicated, it doesn't mean that all research that looks at the world has to start treating the world as one complex entity. It's been a long established practice in research, and that's also why most of the research in the world including in all the fields that you were quoting outside economics, will not be of the variety that you look at because there is a – it's one of the big areas of progress I would say since medieval times. And if we only look at, say, astronomy, it had to be explained as a whole, it had to be holistic in its understanding. If

we start cutting problems into pieces, we are conscious that we do need to build them up again, but we are – we do need. That's how progress is being in lots of bits and pieces. So if we have an awful lot of research that seems to look at a small problem, it is not right to actually say all that actually shows that they are doing the wrong thing.

The whole thing, even some of the heroes that you quote in your book, one that I have some history with, Prigogine, you were quoting, going back to order out of chaos, the early '80s, the book that had quite a big impact. I actually did my undergraduate dissertation on that book, and actually looking at the economic implications of it. But actually people like that, most of the analysis is not of that nature as you described. But at some point I say now, here I have a problem, if I do want to understand the totality, I have to bring it together. So we have to understand it is – we shouldn't just simply say economics should all the time do this. There are –

**Owen Barder**

Ben.

**Ben Ramalingam**

Okay, Stefan, I am – I would not disagree with anything you're saying. I am not saying for a second that we should be discarding all of those things, all of those methods, all of those approaches, which have since medieval times, as you say, have progressed things. If you were to do a list of all the things that have been solved using Newtonian style mechanics and equations thereupon, you would have a very long list indeed as I joked about in the book. It's a bit like the Life of Brian scene, what did the Romans ever do for us, what did Newtonian thinking ever do for us? It's done a tremendous amount.

But now if you look at the kinds of problems that we now face in the world, where we're looking at climate change, urbanization, migration, these are all problems, governance, how you bring about democracy, how you ensure sustainable growth within limits of resources, how you ensure that you can navigate through conflict in a world of water scarcity, these are all problems that are fundamentally different to the ones that we have faced. And so my argument isn't we should discard that other stuff. It's just that we should be bringing those scientific approaches of the heroes that you talked about in the book. Utilize them to take the – some of their conclusions about the world. Not only that, but there are increasingly people that are applying those techniques and tools. And so if ecologists that need to understand why fishing stocks are depleting, cannot look at a single species of fish, they have to step back, and they have to look at how those species officially are interacting with each other. Someone that wants to understand the financial instruments that were utilized in the financial crisis can't simply look at one instrument. It is performance, they have to look at how it works in a network of interdependent factors, the overall financial system.

If you want to understand poverty, arguably you can't just look at poverty. You know this as well or better than I do. You can't just look at poverty, you need to look at

conflict, you need to look at politics, you need to look at water availability. All I am talking about is that there are groups of scientists who now search for the data and try to assemble it based on a good, rigorous understanding of the components of that system, but actually say we're not just going to boil it down, we have to look at the whole and the different ways in which they can look at the whole. And my only argument is that there is value to that in aid, and we should be bringing in more of that in.

### **Owen Barder**

[18:30] I want to give you a stronger challenge than Ben is giving you, Stefan, which I recently had Jim Robinson and Daron Acemoğlu on Development Drums. And if you had to write their book in one sentence, it would be – it's the politics, stupid. The politics determines institutions and policies and behaviors and that in turn affects savings and capital and growth and all these other things that matter. And I thought it's very plausible and sensible to say that people are making choices based on elite power, the elite is trying to garner resources for themselves. But I wanted them to say that the politics are themselves indigenous, that the politics emerge from a system, that they emerge from economic behavior and technology and accumulation and communications and all these other things affect the politics just as politics affect them.

And it felt to me again like yet another economics book by one economist and one recovering economist, as he calls himself, that was looking for some reductionist answer to a system problem. And as system – as reductionist answers go, it wasn't a bad one. But it felt to me like it would have benefited from closing the loop from saying actually you have to think about all of these as a system rather than what I felt to me the part that was missing was that if it is the politics, what are we supposed to do about it. And I think the book is very weak in that.

So the challenge to you, isn't it true that as economists, we still do look for a reduction that says the thing that's missing is capital. The thing that's missing is policies. The thing that's missing is information. The thing that's missing is a technology or an institution or the politics or something. Rather than saying, well actually how do we understand how all these things evolved with each other?

### **Stefan Dercon**

I will definitely not try to now answer for Jim and Daron. So I have seen it from their point of view, they do what they do. But if I want to think of how research takes place and how you do research, because you are asking for more sometimes than what research can deliver in a sensible way. And what researchers have to understand and what they – when they do it well, they do look – they look – they explore either a particular hypothesis like why nations fail, and definitely the research beforehand was trying to do and actually going around and keep on working with that particular hypothesis. And they identify a particular factor and so other researchers will incrementally also start to try to uncover. What is already quite interesting and in fact, if



you think of what is already almost getting a bit closer to what Ben wants is that what they do very well is to actually try to then make the process interdependent, where from the past dependence of process really come out. But they clearly are going for a particular route in one particular way. I think that's by the nature of doing good research.

What Ben is asking for is actually something that they will not be able to start from an evidence base that you can actually have enough confidence of putting the pieces together. Now, me now in a policy environment, I have more sympathy on this. This is also why we need to come back to it.

In a policy environment, we do need to answer the big question. That's the exam question put to me. I need to now use aid and advice on using aid to actually alleviate poverty in the world. So now I actually have to start weighing all these different parts. But when I am, as a researcher, I need to get as rigorous and as careful an answer on a particular part, preferably with complementarities built in, but at the moment I simply want to take everything. I will take lots of leaps of faith and there are multiple possible. And this is actually one of the weaknesses I always think with elements of system research.

Going back to medieval times, they had a really good system to explain how the universe works. It was beautiful, it had all the agents including all the angels and God and everybody had their role in it, their place. It is almost a perfect agent based model. But it actually – and it used the best possible evidence that it had, which was very little. And it was plausible. It's a bit like a policy-maker could do. This is a plausible take on the evidence available and can actually describe the way the universe worked, and was totally wrong. And this is where we can- I can, in my position, describe in multiple ways, in fact, many of these articles are the examples that you have. I could have thought of several other ways that describe the systems, given the available information, and come out with different answers. You need the evidence, you need the minute analysis, the very careful analysis that people do on little bits and pieces to get the sensible links in that analysis to possibly build up, for a policy-maker, that bigger picture.

But as a research tool, I am actually much more skeptical. We should be a bit more careful in terms of making that research method as the way of doing it rather than actually something that can help us think through policy, think through imperfect information starting to put the thing together. I mean you used the example of, say, the financial crisis earlier. That's a very interesting thing. Because all the elements, all the information was in, you could have argued, it was available to actually say that challenge the view that potentially the system could break down, it was there. And people were sometimes saying this. But in all the balance of probabilities, it could also not have broken down. It's very easy to say, oh, if only we've done complexity analysis, we would have seen that this would come out. This is one possible world. It's very good to describe also expose how things have come about as a research tool. To have any

form of predictive or analytical power, you have to be a bit more careful how far you will go with it. And so this is where I am – we must make some of these distinctions there and also clearly see the complementarities between the standard way of doing research and some of this thinking, the systems thinking that we get.

**Ben Ramalingam**

I guess I would take exception to the fact that it's not a set of research tools. There are clearly research tools, some of them have long history of 50 years or longer. And if you look at things like network analysis, for example, which has been used ex-post to understand the financial crisis and it's been used by people at the Bank of England, Director of Financial Stability and so on working with ecologists like Bob May.

**Stefan Dercon**

Can I interrupt you, astrology has been used with that – in that way as well for many, many years, centuries.

**Ben Ramalingam**

You're absolutely right. What you seem to be arguing for is that researchers shouldn't be stepping back to look at the whole. And I think that there are increasingly problems where we do have to do it exactly that way – let me finish. There is... recently Esther Duflo talked about the value of randomized control trials, is that they help you build up a systemic picture of the issue at concern by understanding in detail the intricacies of, of cause and effect in particular situations. The challenge is obviously, that as Angus Deayton talked about on this program, and we talked about previously, there is a limit to the generalized ability that you can get. And if a systemic issue is what you need to, if the systemic lens is what you need, if you need to be able to step back, there are methods out there and there are credible research methods that... The EPSRC here in the UK has four doctoral training centers in complexity science, and they are investing millions of pounds, the EU is investing millions of pounds. They are using legitimate research techniques as well as policy influencing techniques.

My argument is that those are increasingly being utilized in development. One of the best examples of it being used for predictive purposes is the work led by Ricardo Hausmann on the wealth of nations and that applies network analysis techniques to trade data to generate a useful insight into how nations can grow, and it's been shown to be a more accurate predictor of growth than many of the tools we already use.

**Stefan Dercon**

[26:59] Okay. I want to comment now because I want to actually – there is a few things that you have raised, and I do want to comment on them. So the first step is that you say we want researchers to look at the whole and not at the specifics.

**Ben Ramalingam**

Not just – I am not saying just at the whole. I am saying you need to do both.

**Stefan Dercon**

No, no, this is the important thing that I have – I am in total agreement and specifically for where I am sitting now in DFID, is important that we keep on trying to put this world together. This world of imperfect knowledge about lots of phenomenon that we need to put this together. And indeed, if I need to design working with a government and design, say, in public spending or a public investment program, I would better try to piece together everything I get. So there is no discrete. What I would disagree with and there is a little bit of one leads to that conclusion, therefore, all research that doesn't do it, it must be bad. I think it's actually one of the biggest mistakes.

**Owen Barder**

I don't think anybody is saying that.

**Ben Ramalingam**

I am not saying at all.

**Stefan Dercon**

No, no, but I – there is sometimes a bit of a tendency to actually say research has to – each bits of this research has to have this direct relevance on the intervention and the policy implication. And I think one of the problems we have a little bit in development research more than in other fields is to always look for the direct implication of it.

**Ben Ramalingam**

I think we're on the same side.

**Stefan Dercon**

Yeah. And that's also indeed where some of the problems emerge, because then, we get sometimes very specific things that with actually quite a bit of insight are put suddenly on to the level of. And this needs to be acted upon in a policy space because it misses all kinds of the complementarities and in fact it may be a bad idea. It may have some of the impact.

**Ben Ramalingam**

So just to clarify it may be – for example, a randomized control trial, it says deworming tablets work in a certain place. Therefore, let's do them everywhere, is that the kind of thing where there can -

**Stefan Dercon**

Well, I wasn't here trying to use it as – to try and to comment on what it is.

**Ben Ramalingam**

No. I am just saying, for examples. For examples.

**Stefan Dercon**

Oh, I think actually a good one that goes much longer back when I was a graduate student where there was a particular seminar series, where the first question that always a chair asked were what are the policy implications and I think it was the wrong question. There should be pieces of research, quite a lot of them that should be careful with it. So in the same way with RCT, look, I don't need to go here through the debates on the generalized ability, or not of course. We need to see whether we can do it, the scalability similarly, even in the setting. And indeed, what the meaning of causality in these kind of settings, the heterogeneity and so on.

So it illuminates something. It provides some bits of evidence, pieces.

**Ben Ramalingam**

But, Stefan – so I am completely with you with in the idea that it makes sense for researchers to dig into, in a sense, partial equilibrium problems where you are really trying to understand particular drivers of a particular case. In what circumstances would deworming tablets mean more kids go to school and really trying to understand that. I do worry, though, that it's a bit like a biologist who doesn't understand evolution. Yes, you can do good bits of biology. Yes, you can really try and understand how the esophagus works, but if you didn't understand evolution, if you didn't understand how complex animals evolved, you wouldn't really understand what exactly those different organs in an animal were doing and why they were there. You wouldn't understand why you had bits of redundancy, you wouldn't understand. You could describe how the human eye works as a biologist, but I think we would think that a biologist who didn't understand evolution, probably only had part of the story in their research. If they didn't have it at the back of their mind that the eye evolved in a particular way for particular reasons, then their understanding of the thing they were looking at in detail would be incomplete. It would be – it might be fantastically detailed and accurate about the individual thing they are looking at. But it would, in effect, be useless, it seems to me, if they didn't also understand biology. And I sometimes feel in economics that that's the position we're in, that economists ignore the idea that they are working in an evolving, complex, adaptive system and just focus in on a particular part of it, but ignore this bigger picture. And I feel the same way about economists who don't understand complexity as I feel about biologists who don't understand evolution.

**Stefan Dercon**

Yeah, I can't speak for biologists and I don't know whether there would be biologists listening to this thinking there's...

**Ben Ramalingam**

They're talking rubbish!

**Stefan Dercon**

Exactly. There is a real use to actually simply understand the human eye.

**Ben Ramalingam**

No, there is. I am saying there is, but it isn't complete.

**Stefan Dercon**

Sure. And that's – and there wouldn't – I wouldn't deny that. But I actually would want to say there is a body of evidence, the body of science, the body of economics should hopefully be talking about the whole. And so there should be hopefully people who bring up the micro things up to a more macro level. There would be people who have started from a macro lens to a more micro lens and more dynamic of growth, a more long term historical to a very minute micro level. I think that on the balance of things, if that's the criticism, I think there is actually quite a lot going on. Do we do enough to stay ahead of the curve to actually be enough forward looking of what are the problems of today, it's a typical joke about the scientist being excellent about explaining the problems of yesterday. And definitely the economist in his methods is actually more tempted to go for the safe ground and actually trying to understand what is the problems of yesterday, do we encourage our researchers enough to actually try to think forward what the implications are of what they are doing, what has it come from? No, I don't think so. And if there was a cultural problem, maybe in economics, it is that there is often not enough spaces where really top level economists actually end up talking “Look, this is what I think it means.” Although I must say given that almost every other economist of any repute these days has to write a best-seller, I think it's actually quite an interesting thing, is that you now get actually – get people to actually putting much more the sum of their vision together and I think that's actually really something. So, yes, as a profession, are we narrow? Maybe at times several are, but I don't think it's as gloomy as you would like to describe.

**Ben Ramalingam**

But I guess my argument isn't about the economics – I don't spend time focusing on the economic profession in the book per sé. I think there is an issue around the institutions within which aid operate and which are shaped by many of the ideas in economics.

**Owen Barder**

And that's what we're going to come to next.

You're listening to Development Drums, with me, Owen Barder, at the Center for Global Development. My guests are Ben Ramalingam, the author of *Aid on the Edge of Chaos*; and Stefan Dercon, current DFID Chief Economist and all-round smart thinker about development economics. If you enjoy Development Drums, you might also like the Global Prosperity Wonkcast, CGD's other podcast, in which Lawrence Macdonald explores a topical issue with a CGD fellow. And let me also plug the monthly podcast from the Overseas Development Institute and the Guardian Monthly Development Podcast. You will find all these on iTunes and Stitcher, and everywhere else that

podcasts are found. Or if you Google my blog, Owen Barder, you will find a list of development podcasts, listing those and some others that you might find interesting.

[34:45] So we've talked about complexity and what it means and we've talked about whether economists do a good enough job of including complexity in their thinking. Now, we're going to turn to this key question of whether we should be making more use than we are of complexity ideas in the way we do development cooperation.

Ben, your book begins with a pretty damning critique of the aid industry and it starts with that and then it moves onto talk about complexity and it talks about the so what section about what we should do. But, this first section on how aid works today, I thought was a bit of a caricature, it was full of all these straw men that were – it's all linear thinking, it's all mechanical, it's all log frames, it's all – it felt monolithic, planned all the criticisms that we're used to.

Do you think, in retrospect, that that's a fair caricature of the aid system or where is the aid system today relative to where you think it should be with complexity?

### **Ben Ramalingam**

I think – I actually felt like I pulled my punches a little bit in that first part, after getting feedback from the peer reviewers and so on. So, my own view is actually built up on evidence from evaluations, from studies, and so on; it wasn't just me pulling ideas out of a hat. I want to look at the challenges within aid, the institutions where the rules of the game that shape how aid operates and I looked at four different areas. I looked at how aid agencies learn, how they assess their performance, how they organize themselves and how they plan.

And across those areas, I identified that indeed these very strong, powerful, overwhelming in some cases, tendencies towards treating the world in certain ways, and that's tied up intimately with the politics of aid. What do we need to tell our funders and our donors about what we're doing in aid and how do we navigate that.

So, I'm quite careful not to say people in aid believe these things or that they support them wholeheartedly, but what I'm saying is actually a subtler point that they're the institutions within which aid operates. It means large amounts of the money has to be programmed according to these principles.

### **Owen Barder**

So, say in a sentence what those principles are, what are the ways in which aid is...

### **Ben Ramalingam**

It takes me back to my very first point that you can essentially assume there's a problem X which you can apply solution Y to and if you've got enough money to buy enough of or

deliver enough of Y, then you'll eventually eradicate problem X and there are large amounts of the development system, that are based exactly on this issue.

When the Millennium Development goals were created and forged, one of their challenges of the Millennium Challenge group that Jeffrey Sachs led was about getting low cost solutions to each of those problems and that mentality is still very much there, it has underpinned so much of aid expenditure, what aid agencies have to deal with and that's problematic and that's...

### **Owen Barder**

So, Rosalind Eyben (37:48) had that interesting paper saying that there's a way of describing the aid system that we have to do when we report to headquarters, we have to fill in the log frame and fill in the business cases, if everything's mechanical because that's what our politicians or our – the national order office or somebody needs. But in reality most people on the ground know that it's much more complex than that that it's about relationships and networks and testing ideas and evolving and so on, is what you're criticizing as it were the form that we're all required to fill in or is it the actual behavior on the ground?

### **Ben Ramalingam**

I think it's a bit of both because I think the form that you have to fill in or the approach of the institution because the form is only a representation of the institution shapes the way that we behave in lots of settings so people end up doing things under the wire, despite the settings, they do things as a, kind of, silent guerrilla warfare within their own institutions and many of them the most successful innovations have come about despite the system rather because of it. And it comes about at, I would say, quite a high personal, professional cost.

You've got lots of people who are running at high levels of exhaustion; they're stressed out with their institute because they're not being supported to be an innovator. They're being asked to tow the line in a variety of different ways. There are exceptions to this but is are large parts of the system where this kind of culture of bureaucratic oversight and control is just getting worse and worse and worse. And Andrew Natsios famously wrote about in the kind of counter bureaucracy critique that he faced...

### **Owen Barder**

In a paper published by the Centre for Global Development.

### **Ben Ramalingam**

Indeed, indeed, which is a great paper and I'd recommend everyone read it, it should be part of development 101, I think. I think that's the kind of fundamental problem is that it's very easy to turn around and say – oh well this criticism has been made before, it's an old critique. Therefore, it doesn't have any – hold any water. I think what we have to ask ourselves is why is every generation of aid researchers coming up with this critique,

from the 1960s, when you had people like Albert Hirschman talking about it, Robert Chambers in the 1980s and Andrew Natsios and more recent efforts in looking at the need for rigour in evaluation, rigour in design, rigour in implementation, all talk about this need for more scientific approaches in development.

**Owen Barder**

So, Stefan, is Ben pulling his punches? Is he erecting a straw man; is he about right?

**Stefan Dercon**

It's mostly about straw men, isn't it?

**Ben Ramalingam**

That was predictable.

**Stefan Dercon**

They're very predictable. I mean when I was reading this, is that – there was a couple of thoughts that came up my head is that when you write about the fundamental problem of policy making on development and the way we do development in – we do aid, how different would your critique be if you had to write it about a local government in any country, public policy in a way the kind of the real problems of public policy design of what can you think of benefit policy or prison reform, where you are dealing with political objectives, to deal with a particular audience that actually is far removed from that reality where you start acting and so on.

So, when I was reading that, there were actually many examples and that's why I'm sometimes troubled is that presenting development, some of the problems of development as fundamentally different from what they are, in more general public policy problem, actually tends to give us sometimes somehow slightly different outcomes. To put a slightly different slant to that is we often in the way we like to talk about what we're doing in these countries with Millennium Development Goals and so on. We're going to turn all these countries into Finland or Sweden, as if there is a global consensus that that is the perfect model, with incredible systems with norms of behavior and incredible systems that actually everything will do.

So, there is clearly a kind of a slightly made up world that we're living in, and I agree with that and it's creating certain problems. But still the disjoint that there would be between a lot of actual public policy making and what's happening on the ground in counties everywhere is a little bit – is there. So, that's the thing. So, to what extent do you make a difference.

Another one that I – so the historical thing, the kind of – why are we then all the time harking back to something that'd actually say, well, can we build up a slightly more objective way, a way kind of a more evidence-based way to actually doing this thing. Now, that's also an extremely long thing. I'm just reading recently an excellent book



that's going to be published in English very soon on Congo by David Van Reybrouck and it's just an excellent account of basically 1910, roughly 1910 when Leopold, the II, handed over the colony to the Belgian State. The Belgian State basically said let's do a scientific approach, but realize that the context is totally different.

So, what's the first thing that the Belgians do, sent 50 anthropologists into Congo to do a detailed study of all the ways of things working, a craving, you know where that ended. So, the craving into actually finding alternative ways. Now, even though it may seem, looking at that example, a wrong thing to do; it is actually part of our attempts to try to actually see within the kind of messy world of policy making anywhere in the world to actually see can we design something that gives us a little bit of a fallback positions sometime an island of transparency, maybe with some illusion around it but something that we can actually do better.

Yes, and so there's a caricature there, it's always a fundamental problem of public policy, can we actually do the right thing without having to be derailed by political objectives locally and internationally and being driven by them. Yes, it is kind of an issue.

#### **Owen Barder**

[44:02] I'd like to bring in a question that actually came from a listener to Development Drums and she posted it on Facebook. It's from Millie Begovic [ph] and it's a question for you, Ben. What principles from complexity science can we borrow and apply to the concept of scaling up in development projects? In other words, if through prototyping, quick interventions that probe the system, we learn a bit more about how the system works, the sense part, what conditions can we put in place that will allow the non-working prototypes, those that don't work, to die out and the successful ones to flourish. Can we look at the evolutionary biology for lessons here and if so what would those lessons be? And she says she's looking for very practical suggestions that a project manager, working in a field, could readily apply.

#### **Ben Ramalingam**

Let me talk about what I think is one of the most significant innovations in the aid world in the last 15 years or so, which is the delivery of therapeutic feeding, community based therapeutic feeding approaches.

About 15 years ago, the standard approach, when you had malnutrition amongst under 5s was that you built a big tent somewhere, usually in a dusty part, a rural part of Ethiopia or wherever and you essentially set up a production line. You let people know that you have this tent there you staffed with doctors and nurses and you had skinny babies coming in at one end and nice plump happy babies going out the other end. They were weighed and they were given all kinds of therapeutic treatments and so on. This was problematic for a number of reasons and the reasons why it's problematic, you can understand by taking a wide angle lens and that's what system dynamics helps you do.

You take a wide angle lens on the problem and say, actually people are coming there. There's all kinds of diseases that are happening. The rates of mortality are high through these things that cost a lot of money, cost a lot of resources. Parents have to take their children away from their families quite often to take their babies as I say, is there a different way of doing this? And this is exactly the question that was posed by one of the leading exponents of this approach in the 1990s, a guy called Steve Collins. And by taking a systems view of that challenge, identified that actually by better understanding the nature of that problem, malnutrition, where it occurs, the points at which it occurs, better understand the motivations and the behaviors of the parents involved and indeed the aid agencies, understanding the kinds of networks of relationships that enable people to support children or not. And the dynamics of malnutrition and those are the four key things that I talk about in my book that you can actually change the way in which you do this thing.

What he proposed was actually a home-based treatment, called Plumpy'Nut, that was the hardware, and the software was a community-based approach and network-based approach that would enable mothers and fathers to treat their own children at home whilst also reporting into the aid agencies. The aid agency stops being the grand tent, the provider on high, and it becomes the facilitator, the enabler of that innovation. And it required all kinds of changes to happen through the system. When it was first suggested, the UNICEF, MSF, the World Health Organization had big problems with it because it went in the face of 40 years of child nutrition work and the challenge was people were essentially turning around and saying, are you telling us everything we've done for the last 40 years is wrong? And the people involved got huge amounts of abuse, huge amounts of quite personal criticism actually for suggesting that things should be done differently. And it all came to a head when the aid – classic aid distribution which was seen to be unsustainable, not effective, was banned by Ethiopia in 2002. So, they had an ethical basis on which they could trial this new approach and they trialed it and turned that to be much more effective.

And that tipping point, if you like, enabled them to maximize the effort that they put into understanding the system, understanding those relationships, understanding the networks, understanding the dynamics of malnutrition and 10 years later, it became approved by the WHO.

### **Owen Barder**

So, tell us a bit more about what the network analysis brought to this, because it sounds to me, I could describe this as, we were doing something in an ineffective way, far away from the possibility frontier and someone looked at it and said blimey we could do this better in the following way and they moved closer to the efficiency frontier. What is it about networks?

### **Ben Ramalingam**

Well, I think the thing that's most useful there which is most useful for scale up of innovations on a whole is stepping back and looking at the system as a whole. So, you don't just look at the aspects of the problem that you're most focused on. So, it's malnutrition, we provide therapeutic feeding and that solves the problem. You need to try and understand the dynamics of the society, the behaviors that people are operating, the relationships between each other and the relationships that you create. And by doing that, it's only by understanding all of these contextual factors that you can actually provide a solution.

**Owen Barder**

So, now, Stefan, there's something in this, isn't there, because you were earlier making the case for researchers looking at a particular of the problem. And there is a danger when you do that, you can say, yes, people coming into the tent come out better nourished and you're missing these bigger social broader impacts.

**Stefan Dercon**

I have and I absolutely agree that trying to – there will be problems looking at a bigger picture, of course, in the whole system, that will make sense. But, there is a real danger in the way you present us here. This kind of the fail-proof of something that can function here. By taking a systems approach we discovered this. They are the kind of statements you're making, the information that you'll get on that.

So, it's good that you asked the right questions. So, I think as any good researcher, you're asking, am I now asking the right questions here? But have to careful, the information said we would have about people's behaviors, about what's really the norm in society, how this will be changing, how quickly, what it would be responsive to and so on, is a lot of imperfect information here. You need a lot of careful research from all kinds of disciplines to properly understand that, plus the approach could have just as well failed, because...

**Owen Barder**

Right.

**Stefan Dercon**

... taking a punt in a world of incomplete information of how the systems work. And so I think we just should be careful, is that actually – there will be examples where we have successes with this. I would love to meet a few given though of the appeal you make about failure and so on. I would have loved to read a few failures of taking this approach where you're actually getting the wrong thing, because I think, we just should be conscious. The world is messy, whatever approach you're using here, you're not necessarily going to get the right answer and the successes that you'll get.

**Ben Ramalingam**

I agree 100%. Owen asked me for something which gave a kind of practical example of scale up and that was one which was...

**Owen Barder**

But what I thought you were going to say...

**Ben Ramalingam**

...but I guess the point I want to kind of make in relation to this is – and it goes back to my opening point. I'm not saying that we should avoid looking at complex problems means not being careful. We need to be careful, we need to be systematic, we need to make sure we weigh up the evidence. All I'm arguing for is that there is a family of tools and approaches which are out there which enable us understand the problems, understand the relationships, behaviors, dynamics which we should be using more.

**Owen Barder**

That's...

**Ben Ramalingam**

That's my only point.

**Owen Barder**

[51:20] I was very influenced by reading Tim Harford's book, *Adapt*, which is all about this idea of testing and learning in iteration and he doesn't quite say it but I took from his book, the idea that every solution to a complex problem is the result of iteration and adaptation. And what struck me about your example was that it felt like a planning solution, right, that it's just better planning.

It was planning by looking at a bigger data set. We need to think about relationships, we need to think about people, we need to think about the effects on disease and effects on the families, so more data and then we can plan a better answer. What I didn't hear in your example was we tried this and it didn't work. So, we abandoned that. We found this was working, so we did more of that. I didn't hear about the iteration part that I was expecting to hear in how you solve complex problems.

**Ben Ramalingam**

Well, the key is the external aid agency actually supports the community's own iterative processes in dealing with malnutrition, so the adaptation in that situation doesn't need to happen amongst the aid agencies. They need to find ways of enabling that to happen amongst communities, because of the idea being that poor people can actually manage malnutrition, given the right inputs, given the right resources and right tools. You don't need to have an external agency.

So, that's where I would say the iterative adaptation happened, in that particular context.

**Stefan Dercon**

Related to this, my worry also with some of the approaches, by contrast in saying an approach that looks at a particular piece of the jigsaw and tries to really pin them down, which I would say is a normal scientific approach, compared to what you describe take a look at the whole system. There's a real issue here as how far do I need to go to look at the whole? And one of the worries I also have reading your book is to try to make that a trivial question. I can look at a whole of everything I need to do for urban planning. Now, clearly, that's the real art of this approach. I don't say it's science here. The real art of this approach will actually know how far up do you need to go to actually get something and this is actually where again I think it's likely to be a scientific approach with actually being largely looking for how complex do I need to make, how complicated do I need to make to still get meaningful answers.

So, we should be very careful in applying to development, simply saying, surely, you must look at everything, you know I see this in DFID some of this theory of change where there is basically an arrow in any direction between anything and everything. Of course, everything hangs together. But the real issue is here to really understand what are the key relationships between it. That's also a real part of network analysis, being very careful...

**Ben Ramalingam**

Yes, absolutely.

**Stefan Dercon**

...to identify what are the real ones and that needs to be done very carefully. So, looking at a whole, that's not quite what we're saying and we should be very clear...

**Ben Ramalingam**

No, I think stepping back to take a look at the problem in the round, as it were, is not everything. The fundamental interconnectedness of all things means that you could say that poverty is linked to the performance of a particular company in the FTSE 100, you could probably correlate it, but actually it doesn't necessarily mean it's meaningful, nor is it something you should include in the analysis and where you set the level of zoom for these different approaches is really important.

But where I would disagree with you is the saying that simply because the scope of what you're looking at, the variables that you're looking at are greater, that is not scientific. This is still a set of scientific tools and approaches. It's just that we're looking at the – to say otherwise would be to invalidate evolutionary biology, systems ecology...

**Stefan Dercon**

You don't have to misunderstand me here and I know I've put it up there but it's a bit like the real art of science is asking the right questions.

**Ben Ramalingam**

Exactly.

**Stefan Dercon**

And this again we should not underestimate...

**Ben Ramalingam**

But before we can ask the right questions, we have to know that we have to be able to make sure we understand the kinds of problems we're facing. And my argument in a sense is to say many of the problems we face in development, we find ourselves with a limited repertoire of tools and techniques, rulers, thermometers and so on. We find ourselves having to measure something which is not length or temperature or whatever and all I'm saying is that there is a set of things that help us understand – like weather modeling – help us understand these problems in the round and we should be using them more. And doing so is valuable.

**Stefan Dercon**

Because I think, this is maybe again where fundamentally – this is part of what I actually quite agree with you. Using all these approaches where you try to think about the implementation and management. I'm quite sympathetic to that. When we're talking about this is has to be the base of understanding the reality and the analysis, I've more problems with. But coming back to that latter, refers to the point of Tim Harford makes on the Adapt, the real key with all these things, whether we do it in a fairly linear way or in a very complicated way, where we're doing it. It's always about the information that you can use to adjust, to learn, to change.

**Owen Barder**

And there's a real problem with that, isn't there? I spent some time in DFID in my own career and it is very difficult, partly because the transaction costs involved in setting up any project are so great that setting up small projects and learning from them and growing is very – if you're not wanting to spend 20 million pounds, nobody is interested in your project. So, you have to have a project that spends 20 million pounds and to do that, you have to have a grand plan for who you're going to spend which is very difficult then to adapt and learn and iterate within the framework of an aid agency. Are you grappling with that?

**Stefan Dercon**

Are we grappling with this? I would not reduce it simply to the size of the amount of money that is dispersed. I think in general, and I think that is really and I think I would say that's where the real challenge is for any organizing – I would say for any public organization, any government department on anything with relatively few people having to set up systems that actually can be – that can adapt, that learn, that can fail,

that can change within the process. Because the real challenge with all these things is are always about information, feedback loops and then the incentives to act on it.

And it's these two parts that actually are, for anyone, really always very hard. If we talk about bureaucratization, ultimately it always comes back, we don't think they have the incentives necessarily always at our disposal to make things work or they have an incentives to change something and secondly do they have the incentives to actually take information, process it and do it.

With any of these approaches and not least with more complicated governance issues and so on, it's a real-real challenge. So...

**Owen Barder**

[58:10] But what's weird in this case is that the individuals who are out actually implementing aid projects and programs on the whole generalizing a bit, do have an incentive to test ideas, to adapt, to learn, to iterate, but are constrained by dysfunctional systems from doing so. So, this isn't a problem of the difficulty of the center transmitting the right incentive down; the problem is trying to stop the center from transmitting ineffective incentives down the system.

**Stefan Dercon**

I hope very much we're not talking about DFID now!

**Ben Ramalingam**

There's some innovations, you go into programs and you ask their really successful things, and they say well we'll tell you this but we don't want to tell this to our donors because they'll come down on us like a ton of bricks. So there is actually some unseen innovations that happen and I'm not saying DFID is – but I think the more fundamental thing and where we seem to agree is we need good science, we need good research, we need to be – make sure that we're not making kind of moving away from a reductionist view of the world, we're not making huge sweeping assumptions, I'm totally with you there.

But, I think we both agree that we do need new kinds of aid programs that are designed to adapt, that are designed to be able to change according to context. So...

**Owen Barder**

Can you give us an example of what that would look like, that DFID isn't doing, or that DFID is doing that you particularly want to highlight and celebrate?

**Ben Ramalingam**

So, I would say let's move away from DFID, so a good example of a need for this kind of system is in dealing with measles in West Africa. So, measles, as we know, vaccination has helped deal with measles in large parts of the world but in certain parts of Sub-

Saharan Africa and Southeast Asia is still a major killer amongst under 5s, if you look at the data on measles in countries like Niger, actually when an outbreak happens, when it doesn't happen, and so on. What you find, if you just look at aggregate data for the country over a year, you get a certain kind of pattern that looks fairly predictable.

But then when you get down to more micro level data, say you'd look at Niamey, and you'd look at it over the course – broken down into months which is what MSF did recently there, they essentially identified that there's an unpredictability to the measles outbreaks and they only ever respond after the event and when they do respond, they can have a few cases one year, a few cases one year and suddenly 11,000 cases in Niamey, seemingly out of nowhere. And then they respond with the WHO and this was what happened in 2003, they respond through the WHO but actually the response doesn't really help very much.

So, what you're talking about here is an international aid system that's designed for a certain kind of predictability, public health generally – a nod to Stefan, it's not just public administration but the challenge that I see is how it manifests itself in development. You've got a system that's geared towards a certain kind of predictability, reliability and so on, that's dealing with something that is very unpredictable. And what MSF in there and the government of Niger were kind of partners in this. They brought researchers in, complexity scientists in to actually look at the data over a 17-year period, look at the thresholds and try and correlate these to other things that they're going on. And they identified unsurprisingly there's a high degree of seasonality to the measles outbreaks. They always happen at the start of the dry season in November and stop around March when the rainy season starts. It's to do with population swelling, it's to do with – and they correlate to that as well.

So, at the end of – when the agricultural opportunities end around October, people will start flooding in. And the dry season also makes, the dry air also makes it easier for pathogens to be transmitted. So, they mapped all of this stuff and I actually said and they wrote an article about it and said Sahel is a poster child for non-linear epidemiology, and it made Nature magazine. In terms of the science of epidemiology, it was a significant thing. What they then tried to do was influence – and it's a process that's ongoing – to say we need to have a more scientific approach to surveillance that's real-time, that's geared towards the vaccination program which enables an aid agency to actually have some funding, not just in a responsive mode when a crisis happens, but enables them to gather the data, see what's going on and apply things and to learn real-time and that required a few things. It required more operational research, not just research which was around theories of change and then evaluation but nothing in the middle with that monitoring but we need more investment in operational research that actually showed how an aid agency's work was evolving over time, bringing a rigor, not just to the evaluation, but to the implementation process which they identified wasn't there at all and enabling better relationships between these scientists and the



practitioners and they identified a bit of a distrust really among practitioners of scientists and of research.

And I think that that kind of relationships of trust and candor are really important. But if you don't have those things, you can't possibly hope to have a program that fits the problem. You'll only have best practices, you won't have best fit.

### **Stefan Dercon**

I would think there's an awful lot of what happens actually in development is informally designing, trying to design itself around some of these principles that you have. We don't necessarily have to bring in complexity tools or whatever. These are – to me, the way you talk about it, like the measles example, is a case of a very careful identification of having a clear objective there and where the incentives of the different actors seem to be aligned.

There's no one that actually would like that measles epidemic and in a way everybody would like that problem to go away, which is already something. A lot of problems in development we don't even have that. We may want to do it but it's always going to be interested parties. So, that's the first thing.

The second thing is there, is just a very good diagnostic. To me, that sounds like just good research and if that's sold as complexity theory, non-linear epidemiology that's just good research, getting these patterns done, that is just a good careful research and a good diagnostic which requires information and requires data for an awful lot of problems in development, we don't have that.

And then finally, thirdly, it's having clear information loops, so that you can act on it, and incentives to act. And then coming back to actually there's the earlier question having, do we have systems that are flexible enough to do this? I don't think we do in general in development, we don't have it in public administration but it also has a lot to do, you have to have a basis of to change your action. The information loops, you know that it's not just – you like to say it's not just like monitoring, but just having this kind of flow of information that allows you to respond.

So, think of a governance intervention. Your information is very patchy and do we really need to change this. Think of a poor advisor sitting in DRC having to do political advice on the fragility or not in Kivu at the moment, how stable it is. So, you have to just be conscious of that.

### **Ben Ramalingam**

[65:25] I mean monitoring just to pick up on that point is I think one of the biggest weaknesses in development at the moment in terms of the quality of that information, how it's utilized. If you look at any evaluation report of a program, DFID-funded or otherwise, you could put a standard sentence in, monitoring data was not good enough

for us to actually utilize it. But I want to come back to another point which is around operational research and this is actually through my experience of working with DFID, quite interestingly, there's a government network which brings together operational researchers in different government departments across Whitehall, so DEFRA, Home Office and so on, department of health. And these are the people that traditionally use system dynamics network analysis, agent-based modeling. This is the home of this stuff in government. And when I heard about this meeting, I asked could I be invited as part of the work I was doing and they said we didn't anyone from DFID because they don't have any operational researchers.

And this is a really interesting thing, say, so I kind of got in, but there's at least this assumption that DFID doesn't do this kind of work. So, that in itself is quite a question...

**Owen Barder**

Let me segue into I think our last question, from Sorren Jarnvig also given to us through Facebook, and he says he's somebody we all know from Twitter, I think.

**Ben Ramalingam**

Yes.

**Owen Barder**

And Ben spends a big part of the book portraying what Andrews, Pritchett and Woolcock have neatly summarized as the paradox that in aid land, nobody and everyone believes in the modernization theory. A bit ironically, part of the book tends to leave the impression that complexity is something identified in the field whereas the problematic behavior of donor agencies is the outcome of a non-complex system or at least neglected as being equally complex.

So, my question is what could be learned from applying complexity thinking to our analysis of donor behavior and what would that entail for the effort to make donors engage with complexity thinking or indeed uptake of research more generally?

**Stefan Dercon**

I'll have a go.

**Owen Barder**

Do you want to have a go?

**Stefan Dercon**

I'll have a go definitely on the last point. It's that, yes, surely, whether we call it complexity of systems or whatever research, we should be all acting in this space, be just much more conscious of what are the stated objectives, the true objectives, the true incentives of the different actors in this kind of environment...

**Owen Barder**

Including the donors.

**Stefan Dercon**

...including the donors. Especially in the whole international system, the whole thing, it would help us to – one of the things that you make a bit of a straw man of in the beginning of your book is this kind of, you know, what are the objectives and the whole thing and we just should be willing and of course we can't quite fully publically share always that analysis. It's quite a thing. Of course we do it and it's something that you quite obviously would do, like what is a true incentive of a particular part of the international system to reform, even if the stated objective is something else, what is the true incentive for another organization to actually get quality of something improved while actually they have may be an incentive to just to turn over.

We should just understand it and actually act in it. This is still international policy making, it's international politics as well and it's the politics of all these institutions and we should deal with it.

**Ben Ramalingam**

Yes, I guess again, a good example from the work I've been doing with DFID where as part of the end-to-end review which is looking at DFID's own internal program management processes; we applied systems thinking tools to essentially show how the program management process was in a number of ways sub-optimal. There were all kinds of decisions being made ex ante about design, about what would be done if it's going to be more effective and how that would then leads to successful programs. And we went in, we did a – ran a of series of workshops, we worked system dynamics folks, did a lot of work with the MOD on systemic issues in procurement and we did analysis which I think resulted in a series of explanations of that particular problem as a complex systemic issue and identified different entry points taking that forward and...

**Owen Barder**

And did it make a difference?

**Ben Ramalingam**

Well, the feedback we got from the people involved is it enabled them to get a much more robust analysis, much more quickly than they would otherwise have been able to through that method, whether or not they have been able to utilize that into – and we're still having ongoing conversation with them. And it was a relatively small piece – 20 researcher days. It was relatively small pilot piece of work. But Stefan can say more about it.

**Stefan Dercon**

So, I'm quite happy to actually say something about it. So, as you correctly named it as the end-to-end review and something that we definitely in DFID are very conscious of, is

that there was a lot of almost – a lot of design work that you end up doing that actually never will see the day of light because things may already be changing before you can start implementing and it's trying to find the right balance between good high quality design accounting but good at making the right choices early on because you do lock yourself into all these things with design and actually creating some processes of flexibility and maybe some forms of feedback loops throughout the process.

It's also in a context of all the way up to control systems where you say, where do you want to have most of your control systems in a lot of aid organizations that is simply at a decision point of spending the money. Do you actually want to actually see where the control points should be better placed across the board in doing implementation and so and so on learning.

So, we have a process and it's quite an important piece of work, the Secretary of State takes a lot of interest in it and the vision has to be is that whether it's all going to be from that complexity theory or not, it is still going to be trying to have a leaner set of processes that build in some more flexibility, that build in empowerment at the right levels of authority and...

**Owen Barder**

But will it build in this iteration, will it build in this ability to adapt...

**Stefan Dercon**

...no, and build in ways is a core part of actually say building in a minimal sense the ability to stop and start again which is already one thing being able to find a way of saying stop early enough, you now this is a real problem I think in general, in public administration is the sunk cost problem, this kind of idea, I've put already so much in it, so let me therefore continue while actually making the wrong decision. So...

**Owen Barder**

Right, right. I'm going to look an idiot if it turns out within three weeks that it isn't going to work. So, I may as well just continue...

**Stefan Dercon**

Exactly, and so that actually making it easier to stop things to reallocate your resources to be more flexible. There are all kinds of challenges, what is the information system you need to be able in real-time to actually adjust and adapt and to change.

**Owen Barder**

Are you grappling with that right now?

**Stefan Dercon**

Absolutely.

**Owen Barder**

And is there an end point to this review or is this an ongoing process of change?

**Stefan Dercon**

No, no, we're pretty sure that there will be concrete and practical outcome and in the next six months we will definitely try to get elements of that and then definitely it will become quite public. But it's a real sense of to try to make sure that during implementation, there is a process of learning and some form of adaptability within the constraints of systems, within a kind of a real design world, not some kind of fictitious design but something that can actually then deliver throughout.

**Owen Barder**

Final word to Ben Ramalingam.

**Ben Ramalingam**

Stefan, I think we actually agree on the need for good research and the need for rigor and approaches in that and I think your – I kind of take some of the critiques of the straw man and so on, but actually I think the value of this stuff, I think that you actually see it and there's a – it's like a grudging kind of point that you're making actually some of this stuff can be really useful and is really important and for me the question is can we get it from research into the way that aid agencies do it and you seem to suggest that actually we don't need to have researchers focusing on it. I think that's actually what we do need. We need more of that and we need to bring it into aid agencies.

**Owen Barder**

I lied. Last word, Stefan Dercon.

**Stefan Dercon**

Well, I think you kind of summarized my position. I think we created straw men and we risk in the research endeavor to trying to say it's all there and so on. From a practical point of view, there is a lot of value to these approaches; it's not for nothing, management theory and so on, elements of complexity theory; there is definitely a lot of shared ground, but I would be a bit more cautious on the research side.

**Owen Barder**

Ben Ramalingam, thanks for coming on Development Drums.

**Ben Ramalingam**

Thank you very much for having me, Owen.

**Owen Barder**

And, Stefan Dercon, thanks for being on Development Drums.

**Stefan Dercon**

Well, thank you, very much.

**Owen Barder**

Thank you, both. You have been listening to Development Drums with Ben Ramalingam, author of *Aid on the Edge of Chaos*, available in all good book shops; and Stefan Dercon, Professor of Economics at Oxford University and Chief Economist at DFID. I'm Owen Barder. Thank you for listening.