

Interview

Beyond the Horizon: Meeting Paul Cilliers

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Paul Cilliers was a philosophy professor at Stellenbosch in South Africa. Having trained originally as an electrical engineer, he shifted to philosophy after doing a PhD with Mary Hesse, now professor emerita of the philosophy of science at Cambridge University. We met in Utrecht on 14 May 2008.

Paul wrote *'Complexity and Postmodernism'* (Cilliers, 1998), which was the first book to really make the links between complexity and language, as well as pointing out that complexity points the way to a 'new science' paradigm which cannot be approached as if it were traditional science. The book is now available free through Google. The synopsis of the book says:

Complexity and Postmodernism explores the notion of complexity in the light of contemporary perspectives from philosophy and science. Paul Cilliers contributes to our general understanding of complex systems, and explores the implications of complexity theory for our understanding of biological and social systems. Postmodern theory is reinterpreted in order to argue that a postmodern perspective does not necessarily imply relativism, but that it could also be viewed as a manifestation of an inherent sensitivity to complexity. As Cilliers explains, the characterization of complexity revolves around analyses of the process of self-organization and a rejection of traditional notions of representation. The model of language developed by Saussure – and expanded by Derrida – is used to develop the notion of distributed representation, which in turn is linked with distributed modelling techniques. Connectionism (implemented in neural networks) serves as an example

of these techniques. Cilliers points out that this approach to complexity leads to models of complex systems that avoid the oversimplification that results from rule-based models.

Complexity and Postmodernism integrates insights from complexity and computational theory with the philosophical position of thinkers like Derrida and Lyotard. Cilliers takes a critical stance towards the use of the analytical method as a tool to cope with complexity, and he rejects Searle's superficial contribution to the debate. Complexity and Postmodernism is an exciting and an original book that should be read by anyone interested in gaining a fresh understanding of complexity, postmodernism and connectionism.

More recently Paul had been involved with Kurt Richardson and Michael Lissack and wrote a couple of papers for the journal *Emergence: Complexity and Organisation*, which looks at organisations and people from a complexity perspective.

About the meeting

Paul was on an extended study trip to Europe during 2008, and based himself at the Free University of Utrecht. We met at his apartment in the centre of Utrecht. We were joined by one of Paul's research students, Rika Allen, who had also joined us all for dinner the evening before. Paul is a keen cook, and the chicken curry, dall, rice and salad got us off to an excellent start. We convened around 9.30am.

Solutions Focus and complexity

Paul asked me to begin by describing SF to him. I had read his book and papers, but he had not (yet) read mine. When I showed him my usual 'Albert model' he could see the connections right away, and came up with some interesting parallels. As I described the idea of the Future Perfect and how it was not a goal, he looked at Rika and they both agreed that this had a strong sense of a 'call from the future' in the sense that Derrida

had used that phrase. A 'call from beyond the horizon' is not something which can ever (in Derrida terms) be attained, but nonetheless serves a purpose here and now by helping to clarify what is going on and connecting it to a direction.

One example from Derrida would be 'justice'. Paul told us how Derrida had often infuriated people by saying that 'there can be no justice!'. Often misunderstood, this does not mean that we cannot act more or less justly, but that a perfect notion of justice is impossible. To know what is a just act in a complex system is impossible – something may seem just now, but tomorrow who knows. . . The notion is justice is a 'quasi-transcendental concept'. However, the idea serves as a 'call from beyond the horizon', to help us talk about acting justly now, which has to be reinvented in specific conditions and will always be imperfect. I also noted in passing how Steve de Shazer could be similarly infuriating by playing a language game that most observers misunderstood.

Paul also connected the 'small steps' aspect of SF as a highly sensible way to act in an uncertain place (as complex systems invariably are). This connected with his work on the power of a 'modest position' and not-knowing, reproduced as the Classic Paper in this issue. Paul has argued that both the extreme scientists and the extreme postmodernists are seeking a kind of certainty of knowledge, with either very rigorous or very relaxed boundaries. A modest position, which says that some ideas/descriptions are more useful than others but we have to take great care about overconfidence and continually reassess such ideas, is both close to his philosophy and close to SF practice.

We also discussed the idea of the 'problem-focused past' and the 'solution-focused past' as two different descriptions, also fitting in well with ideas of deconstruction and of there being different but not inaccurate descriptions.

Paul commented that this was a first for him – he is viewed as a critical thinker and writer, and even within the complexity and knowledge fields his ideas are often seen as unwelcome and unhelpful. He had not seen a form of practice that appeared to mirror his position so closely.

Complexity, knowledge and uncertainty

We moved to discussing Paul's recent paper 'From a Restricted to a General Understanding of Complexity', which he had delivered to the recent World Knowledge Forum conference in Switzerland. Paul told me that the event was designed to foster a dialogue between natural and human sciences and had been organised in part by the Royal Society, the leading body of natural sciences. His paper had received a rough ride. At the start of the meeting Dame Professor Julia Higgins, Vice-President of the Royal Society, had put up a slide featuring the Society's motto 'nullius in verba' (nothing in words) and had stated that the meeting would use scientific rigour as it proceeded. It was clear to those present (at least those who noticed) that a 'natural science' view of knowledge trumped other views – so much for fostering dialogue. There was no doubt about the dominant discourse in this particular setting.

Paul and I mused about the Royal Society motto. When the Society was formed over 350 years ago the early scientists were fighting against domination by scholastic philosophers and theologians, who were entirely caught up in scholarly discourses about how many angels could dance on the head of a pin etc. In my view the motto could be summarised as 'don't tell me, show me' – it was about the aim to rely on experiment and observation rather than divine scripture to investigate the truth. We agreed that it was ironic that in the modern era the practice of science has become so focused on writing papers!

Paul has recently become aware of the work of French philosopher Edgar Morin. It seems that Morin has been writing along the lines that Paul espouses for at least three decades, but little of his work has been translated into English (another dominant discourse?). In Paul's paper he describes very succinctly Morin's view of the inadequacy of classical science, rejecting complexity in favour of three fundamental explanatory principles (from Morin, 2007):

1. The principle of universal determinism, illustrated by Laplace's Daemon, capable, thanks to his intelligence and

extremely developed senses, of not only knowing all past events, but also of predicting all events in the future.

2. The principle of reduction, that consists in knowing any composite from only the knowledge of its basic constituting elements.
3. The principle of disjunction, that consists in isolating and separating cognitive difficulties from one another, leading to the separation between disciplines, which have become hermetic from each other.

Paul continues:

For Morin, this tradition has led to wonderful results, but only in a limited context. In order to deal with a complex world, however, we need to acknowledge the limitations of this approach. An epistemological shift is required which replaces “reduction” with “distinction” and “disjunction” with “conjunction” .

I am struck by the way in which SF practice echoes these ideas in a practical way.

1. The idea that Laplace’s Daemon (who is said to know the position of every atom in the universe) is not capable of knowing the all past events or future events frees us from the need to go in search of certainty in these directions. If the future cannot be known with certainty by analysis, we have the possibility of acting to change it rather than being prisoners of the past. Also, both the future and the past become mutable or changeable in some way – so even if we knew the present as perfectly as possible we still could not define the past with certainty.
2. If we replace ‘reduction’ with ‘distinction’ we come to something focused on differences and changes rather than reductive analysis. SF reflects this in two ways. Firstly we have a focus on interaction rather than on the interactors (is this a new word by the way? Sounds good to me when people are involved). Secondly we focus on differences

rather than normatives – the power of positive difference rather than the poverty of an overall average.

3. The principle of conjunction – putting disciplines together rather than separating them – seems to be reflected in all kinds of ways in which scientists and others are starting to work. In my view the SOLWorld community is strong precisely because we are not fussy about who wants to join in and what their precise discipline or interest is. We are joined by a practical interest in making progress with a particular approach in a whole variety of fields – and the usefulness of the approach does not, at this stage, seem to depend crucially on what the field is.

Paul's paper is well worth a read for those interested. On the journey back I mused about starting the 'sur-royal society' for those who wish to be free from the narrow domination of scientists and yet wish to show demonstrable and reliable knowledge. Any takers?

Language, levels and grammars

The discussion moved on to the idea of different grammars being a possible focus for a new take on science. Rom Harré has written about this – the idea that if one uses the wrong grammar to ask a question then confusion results. Example – to try to research a stop sign by examining its molecular structure is trying to answer a question about meaning (why do drivers stop at a stop sign) with an answer about molecules. However good the analysis of the molecules, the answer will be confusing and not 'correct'.

Paul said that levels of hierarchy were important in looking at complex systems. Researchers in the ecology field, for example, had investigated this for some time. Philosopher Hilary Putnam (1967) wrote about how to think about a plank of wood with two holes, one square with a 1 inch side, the other round with a diameter of 1 inch. A square peg of side 15/16 inch will fit through the square hole, but not the round hole. Putnam proposes that to investigate this in molecular terms (about the

position of molecules in the piece of wood) would either be a non-explanation or a vastly inferior explanation to the original macro-level description given above. Since the macro-level description easily explains things that the micro-level can't, then reductionism is false – even though he is not claiming that the wood is composed of anything other than the molecules.

This kind of thinking and discussion is alive and well today, even in scientific circles, where the question of whether chemistry can be reduced to physics is generally answered (by thoughtful scientists anyway) as 'No'. Description at the level of chemistry allows more useful ways to work with certain phenomena than descriptions at the level of physics (see for example Scerri, 2007). Chemistry emerges from physics, even though there are no 'other' ingredients to chemistry than the physical ones (no 'vital forces' for example).

We mused about how one might develop a philosophy/science of complexity and agreed that levels had something to do with it. Paul recounted Niels Bohr's saying:

"The opposite of a trivial truth is a falsehood, but the opposite of a profound truth is another profound truth."

We moved on to discuss the self-construction of self (following Kirsten Dierolf's paper to the Karlstad Group in Vienna about Rom Harré's work). Paul said that such a position would in his view demand at least a minimal ethics. If the state of those around me involves me and is in part created by me, then I have a duty to those people to think carefully and make choices that in some way take that (and them) into account.

Critical stance

We ended up talking about possible next steps. Paul said that he was not looking for work, having too much already. However, he might be tempted to a 1–2 day multi-disciplinary session where the participants could get their teeth into some juicy questions.

Paul saw himself as taking a critical stance with his work, pointing out pitfalls and difficulties. He was not especially interested in practicalities, it seemed to me. Afterwards, I mused on the relative roles of pointing out difficulties and offering new possibilities. I remembered the conversation I had with Yvonne Oertel and Wolfgang Klier in Cologne in 2006. They were working with Peter Röhrig on the case which was written up in *Solutions Focus Working* (McKergow and Clarke, 2007). Wolfgang was talking about the realisation that they had collected lots of data about what people didn't want in their hospital, while the situation was very different when they asked about what people wanted. He said in an interview with me then;

"I thought from my history as a student activist that 'To criticise is to struggle!', but I have learned through experience that criticism makes people defensive. Talking about what is wanted, not what isn't wanted, helps dialogue."

So I have been wondering about the role of a critical stance. Is it a hangover from a simple Aristotelian viewpoint, when peeling away all that was false would reveal what is true? Anyway, it has helped me to clarify that, personally, I want to help build something better.

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