

1: Proactive Progressive Populism: Complexity and Postmodernism

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.

I have now read through this book three times. Every reading was enjoyable and informative. I make these comments at the beginning of this review because when I saw this book announced, I dreaded reading it. The title suggested that the reader might be in for a trudge through a turgid and unintelligible assertion of the absolute relativism of knowledge with the general postmodernist programme reinforced by a turn to chaos and complexity. That is pretty well exactly what the text is not. It is clearly, indeed beautifully, written and although it seeks to reconcile poststructuralist perspectives and complexity, Cilliers is adamant in dismissing the notion that such a reconciliation provides a license for absolute relativism. This is an important book with a substantial argument to make. It is full of good things. At the end of this process I want to make some general remarks about the significance of the book in relation to simulation of the social. There I will note the resonance of much that Cilliers says with recent claims about the desirability of a relational sociology. Cilliers begins in his preface, an important part of this text, and in his first chapter by defining complexity and locating our capacity to approach complex systems. His definition is quite usual in that he describes complexity in terms of emergence. However, he goes further. First he places very considerable emphasis on the specificity of complex systems, whilst still allowing for the possibility of a general programme of understanding and for the practice of modelling: If something really is complex, it cannot be adequately described by means of a simple theory. Engaging with complexity entails engaging with specific complex systems. Despite this we can, at a very basic level, make general remarks concerning the conditions for complex behaviour and the dynamics of complex systems. Furthermore, I suggest that complex systems can be modelled. For Cilliers, emergence arises both from the complexity of internal interactions in systems and from the interactions of systems with their external environment. Indeed, given the open character of complex systems, the construction of boundaries between the system and its environment is essentially a product of the process of observation. He considers that the complexity programme is in no way dependent on chaotic dynamics as a source, making the point that the mathematical programme of chaos deals with the non-linear interaction of relatively small numbers of equations in contrast to the huge number of interacting components in any real complex system. Cilliers claims that we can manage our understanding of phase shifts, sharp transitions between different states of a system, by using the idea of self-organised criticality rather than the metaphorical apparatus of chaos. This is an important point and one which has very much clarified my thinking but I would be very reluctant to lose the ideas of bifurcation and attractor states which derive from the chaos account. I will return to this point later with particular reference to the idea of control parameters. The basis of our capacity to address complex systems, says Cilliers, lies in the capacities of electronic computers which essentially extend the cognitive range of science. However, they do so in a way which is absolutely antithetical to the reductionist programme which has underpinned science as a practice since Newton. He puts it like this: We can do with technology what we cannot do with science. Later in Chapter One, the object of science is defined in terms of prediction in contrast to the object of philosophy which is cast in terms of understanding. In the latter usage, Cilliers is treating science as the equivalent of engineering as defined by Crutchfield: As long as a representation is effective for a task, an engineer does not care what it implies about underlying mechanisms; to the scientist though the implication makes all the difference in the world. The engineer is certainly concerned with minimizing implementation cost. The engineering view of science is that it is mere data compression; scientists seem to be motivated by more than this. He argues that for complex systems, it is all we can achieve, although he does not necessarily think we aspire to predictive power. For Cilliers, representation is always distributed. We cannot generate algorithms to describe significant natural complex systems. We might however be able to create models which work in the same way. His theory of representation is, I think, essentially one of heterologous analogy as that term is defined by Khalil. Representation is distributed and based on connectionism - the core argument of the second chapter of this book. They are themselves part of the general

class of complex systems. Throughout the text Cilliers has two referent systems for his account of complexity. These are the mammalian brain and natural language. The connectionist account of representation, presented against the rule based approach of strong representation, is primarily developed in relation to the debates surrounding the possibility and nature of artificial intelligence. This is an interesting and persuasive approach. What Cilliers does is take two fundamental areas where scientific and philosophical debate intersect, the nature of language and the nature of mind, and argue for the objects of both intellectual projects as being far from equilibrium systems founded on distributed connections and working through the differences among the components of the systems. In other words, the account is absolutely relational. Explicitly this is a programme of analogy, but I think there is more to it than that. Certainly in implicit terms, and perhaps explicitly as well, Cilliers is saying that the two great basics of understanding, mind and language, can only be comprehended as complex far from equilibrium systems and that this is fundamental a word with a different content from foundational to our capacities for engaging with the world. Following arguments seeing off John Searle in Chapter Four, Cilliers turns to the basic question of representation. For Baudrillard, and it seems Cilliers although I am less sure about this, the real is something that can be copied. Here, we come to one of the significant absences in this book. Certainly we can consider a simulated neural network as being the same kind of thing in terms of system character as a constructed neural network, but both do share a reality exactly founded on their essential connectionism - an argument for a non-reductionist essentialism. This turn to hyperreal simulation has its problems because of the emphasis on meaning itself as an emergent property in the process of interpretation, instead of some causal process inherent in the system being observed. At one level, the postmodernist account seems to deny the possibility of any representation but Cilliers is always arguing that a distributed holistic analogy is possible. It is merely an argument against a particular scientific strategy that assumes complexity can be reduced to specific features and then represented in a machine. Again there is much that is interesting and important here, but this discussion contains an appropriately postmodern mode of expression two of the crucial absences in the text. The first is that there is no sense of the nested character of complex systems. Words and neurones can perhaps be properly considered as atomic nodes. However, the social is always nested. Individual selves, which may not be much after Derrida, but they are something, are themselves complex systems with their own evolutionary trajectories. Even the individual, the macro-actor, may have effects on social systems if powerful enough. Certainly collectivities of individuals, collective actors with their own emergent properties, form part of a social order. If we think about a purely structural representation of this nesting, the discussions of localities within regions within a global economic and cultural system, then we can see the issue. The urban is one of the few domains of significant social simulation and work on simulating urban processes demonstrates absolutely the need to conceptualise systems as nested Batty, Batty and Xie. The other absence, essentially a deliberate deletion by Cilliers, is the idea of control parameters. Because of the mechanisms by which complex systems structure themselves, single principles provide inadequate descriptions. We should rather be sensitive to complex and self-organizing interactions and appreciate the play of patterns that perpetually transforms the system itself as well as the environment in which it operates. I have argued Byrne that the polarised form of cities is something that can be understood in terms of the transformation of parameters to do with economic engagement and power. It seems to me that abandoning the idea of control parameters, however complex may be the interactive processes through which the control of these parameters are expressed, is also an abandonment of the possibility of effective agency based on understanding. I think this is fascinating. Cilliers argues that the postmodern programme cannot be understood in purely relativist terms but is instead to be understood as an assertion of the local validity of accounts rather than their universal validity. I have absolutely no problem with this but it is an unusual version of the postmodernist position, although Cilliers marshals a good number of citations, particularly from Derrida, in support of this positions. The chapter includes some interesting ideas on understanding society in connectionist and complex terms although here the absence of a sense of nested systems again is a weakness, a fascinating discussion of language and some important preliminary statements about the ethical implications of the general argument. The element which I want to focus on is Cilliers discussion of the nature of the scientific project. Again, there is a great deal to agree with and some things I

would want to argue about. Certainly the notion that the complexity programme is fundamentally antithetical to disciplinary boundaries in science is absolutely correct. However, I think Cilliers is hung up on, and moreover knows that he is hung up on, the distinction between the postmodernist programme as a general deconstruction of science and the possibility of using complexity as the basis of a coherent and acceptable postmodern science. The first is the usual story. The second is the interesting one. There is a lot in this book to help us get going with that project. As he says, his work could be accused of the performative fallacy - attempting to do what he claims is not possible: Well yes, that is what he is doing but it is not fallacious. If we think of complexity, of his distributed connectionism, not as a law but as a metalaw, here understood as a general statement about the complex character of dissipative far from equilibrium systems, then we have something which allows for the local but is general. This is entirely compatible with the realist account. So what does this all have to say to those interested in simulating societies? Well let me try to explain that by citation of resonances. The imageries most often employed in speaking of transactions are accordingly those of complex joint activity in which it makes no sense to envision constituent elements apart from the flows within which they are involved and vice versa. Game theory will not get us very far because it is ignorant, except in the most general terms, of a serious concern with structure and with complex temporal effects. But simulations may help us understand the limits and possibilities of certain kinds of interactional fields, and that would be profoundly sociological knowledge. Of course Cilliers proscribes some approaches to simulation, essentially all hard representations, and prescribes others, those based on distributed connectionism. He has persuaded me, not that I needed much persuading. I liked this book and learned from it. In this long review I have tried to give a reasonable representation of the book, based on a sampling strategy. Of course in the nature of the thing, appropriately enough, it needs to be taken as a whole. Implications for Modelling Sustainability. Chaotic Places or Complex Places: Cities in a Postindustrial Era. Williams, editors, Imagining Cities, Routledge, London, Social Theory and Naturalism.

2: Complexity And Postmodernism | Download eBook PDF/EPUB

Cilliers thinks that 'complexity' is a fundamental property of the world we are living in and that traditional methods of science and analytical philosophy are not sensitive enough to complexity.

The traditional philosophical expectations in question, which are connected to some programmes in the philosophy of science and in scientific research, are paradigmatically modern conceptions of the nature of language, rationality and thought. These include the notion that meaningful signs are tokens of some sort which "have" a meaning of the form of a positive content, the related view that thought is essentially representational, and the idea that rationality is essentially algorithmic or computational. Parallel to this line of enquiry, and partly independently, Cilliers argues that at least some "postmodern" philosophy especially Derrida and Lyotard, although Baudrillard also features shows itself to be especially sensitive to complexity, and to have already moved away from the problematic notions of meaning, representation and rationality, and towards conceptions which are much closer to those suggested by the study of complex systems. The overall thesis of Complexity and postmodernism is thus that there are possibilities for mutually enlightening conversations between postmodern philosophers and researchers into complexity, an opportunity which Cilliers both defends and exercises. Cilliers explains that complex systems have certain important characteristics, including being constituted by a large number of elements interacting richly, locally and non-linearly, containing feedback loops and being "far from equilibrium" CP: For research purposes a popular type of complex system is a "neural network" where a collection of nodes are linked up in various ways, and the network then processes "synapses" according to a distribution of weights for the connections between the neurons and transfer functions for each individual neuron. There are various types of neural network, and Cilliers discusses some of their differences and similarities CP: A short discussion of one type will illustrate what is at stake. A "back propagation" network is one designed in such a way that, given an input at one end, having some intermediate layer s of neurons, and then having the correct output "forced" at the other end, will internally adjust the weights and transfer functions between input and output so as to make the forced output a normal response for the network. By means of presenting a variety of inputs and forcing the appropriate outputs, such networks can be "trained" to perform a very wide variety of tasks. One of the examples Cilliers discusses CP: As long as the networks are sufficiently rich i. A crucial point is that when the distribution of weights and transfer functions is analysed after training what is found is that there is nothing in the network which counts as a representation of that kind of thing which is processed, and no rigorous way to describe its processing terms of rule-following. Cilliers notes that Rumelhart and McClelland concluded that the notion of grammatical rules seemed to have only descriptive application CP: As is well known, rather than focusing on a notion of language where meaning was regarded as the positive content of the meaningful sign, Saussure emphasised the role played by differences and relationships between signs, and saw meaning as distributed through a system rather than located in the individual tokens. Although Saussure himself tended to regard developed systems of signs as relatively stable and unchanging, Cilliers explains how Derrida has contested this view CP: Cilliers observes that the connectionist and post-structuralist programmes have arrived at a position where meaning or content is both distributed through a system, and also the consequence of networks of difference and relationship, and where the notion of representations as being the main currency of thought has been powerfully contested. Cilliers is careful not to draw the radical and probably premature conclusion that representation has been thrown out as such CP: In what follows, therefore, I begin by suggesting a few areas of detailed disagreement which I think are worth discussing part II , and then move on to address a number of wider questions in areas raised by the book part III. II 2 My first specific point of disagreement concerns chaos theory. I am not likely to be the only reader who is surprised, on reading the preface, to find Cilliers stating his relative disinterest in chaos theory. Noting that the field was, at least for a while, surrounded by "hype" he contends that the possible contribution of chaos theory to study of complexity would be "extremely limited". The justification for this view is that the sensitivity to initial conditions characteristic of chaotic systems is "not such an important issue" for complex systems, with respect to which the property of

being robust, i. Before explaining why it must be noted that Cilliers is careful to point out that he does not want to sound "too dismissive", and formulates his position as the claim that "chaos theory, and especially the notion of deterministic chaos and universality, does not really help us to understand the dynamics of complex systems. For a start, at various points in his argument Cilliers makes use of concepts and vocabulary which are central to chaos theory, most strikingly in his chapter 6 on "Self-organisation in complex systems" CP: But this should not be surprising if we bear in mind that the study of complex systems and the study of deterministic systems which exhibit stochastic behaviour are connected in various ways. Both are parts of the contemporary process of rethinking classical dynamics and recognising new kinds of dynamical systems and new relationships between determinism and predictability e. Both rely massively on computer models for research purposes. The phenomenon of robustness is central to both fields as well, since research in chaos theory is at least as concerned with stability and structure, for example the long-term coherence of the Red Spot on Jupiter Marcus , as with instability and disintegration, and especially with the transitions between these regimes. And there are some research problems which seem to belong equally to both areas, such as the study of cellular automata which can be seen as dynamical experiments, fractal generators, exercises in self-organisation or formally equivalent to neural networks, and in some cases all of these Pines , Stein Indeed there is at least one sense in which fractal geometry and non-linear dynamics are inseparable in principle, since the phase portraits of non-linear dynamical systems such as the function now known as the "Lorenz attractor" are themselves fractal objects. Cilliers point out, quite correctly it seems, that not all things which are complicated, in the sense of having a large number of parts, say, are in virtue of that also complex CP: In this context, of course, "complex" is a term of art specifically referring to systems which have certain specified characteristics, some of them noted above. Since a Jumbo jet, for example, does not have those characteristics it follows that a Jumbo jet may well be complicated but can not be complex. What concerns me here is not that Jumbo jets fail to be complex "by definition". There is nothing wrong with setting up a contentful set of parameters for calling something "complex" and then using that to point out differences between things which are complex and others which might seem similar but are relevantly different. In any event Cilliers makes clear that whether a given system counts as complex or not depends partly on how we mark off the limits of the part of the world we call the "system" and also on the level of detail at which we consider the area so marked out CP: This, though, is precisely what does concern me. Consider the antiquated laptop on which I am typing this article. It seems to be a clear enough example of a merely complicated system which is not also complex. It has a large number of parts performing different functions, but its components interact linearly. The "feedback" loops which occur in it are not of the right kind for complexity since they are neither significantly enhancing nor inhibiting. Partly in consequence of this, even though it has "storage" capacities, it does not have what deserves to be called a history. And it is completely and routinely rule-based to the extent that it could be modelled on a Universal Turing Machine. For all that, though, it is capable of running software simulating chaotic weather systems or neural networks. In the first case we would have a deterministic simulation of a deterministic system that had unusual dynamical properties. This can show why in real systems with the relevant properties prediction is impossible. But the "chaotic" simulation itself is supposed to be deterministic. In the second case, though, that of the neural network, the result seems somewhat more perplexing, because we end up with a complex system which is in some sense "inside" a merely complicated one. The reason I think that there is a problem is that it seems to me as though there is a real question about whether a given system, even if we allow, as we must, that how the boundary and level of detail for the "system" are to be specified by us, is simple, complicated or complex. But this notion appears to be undercut by the apparent implication that at least some systems which are considered complex for some purposes are at other levels of description or explanation merely complicated. I return to this question in the discussion of post-modern philosophy of science in section 7 below. They concern some of the references to matters in the history of philosophy which occur from time to time in the course of Complexity and Postmodernism. Thus, for example, Heraclitus is held up for approval in virtue of the fact that unlike Thales and Anaximenes, who can be seen as "privileging a specific element," he emphasises "strife" CP: Having said that, he was also of the view that the element of Fire was the "archetypical form of matter" Kirk and Raven Even at the level of

illustrative metaphor, what we know of the historical Heraclitus puts him a long way from being a likely ally of post-modern agonistics. Kepler, in contrast, apparently said "to measure is to know" CP: Again there is no reference to a primary text or source. This claim, though, is just impossible to square with the facts. Kepler, after all, said that "Geometrical reasons are co-eternal with God" Kepler At a different scale entirely are some of the assertions made about philosophy as a whole. There are a number of these dotted through Complexity and postmodernism, but one example suffices for illustration. The notion of a "unifying metanarrative" is, we are told, a "dream central to the History of Western metaphysics" CP: In some philosophies it is admittedly quite simple and diverting sport to find and tag metanarratives. Marx, Hegel and Comte, say, are easy starters, with most philosophy tied to the Christian narrative of creation, fall, incarnation, sacrifice and second coming thrown in for free. But does it really make any sense beyond name-calling to attribute a metanarrative to Descartes, Montaigne, Ockham or Hume even with his narratives concerning the natural state, and his genealogy of the ethical. What about Aristotle with his never-ending cosmos? Or, for that matter, Parmenides? And does it really help us to understand the historical particularity of what is being defended complexity, post-modernism by projecting a broadly nineteenth century notion of historical coherence and linear development although there are surely exceptions even there onto the entire history of philosophy? Perhaps it does in some cases, since the suggested motivation for resisting post-modernity is "nostalgia" e. If Western metaphysics has merits beyond its capacity to inspire nostalgia they are not mentioned. Now it must certainly be the case that nostalgia could play a role sometimes. This gesture has the same unfortunate effect as the common ploy by many contemporary analytic philosophers of saying "post-modernist" when they mean "the most idiotic kind of relativist". And the effect in both cases is to reduce the likelihood of open and useful exchange before the other side has even had a chance to speak. Nor, for that matter, are they called upon to carry a significant argumentative load. Given both of these considerations, though, it seems that they could have been omitted without loss. There are a number of key areas where I either do not share his optimism, or think that there are serious and interesting questions and concerns not directly covered in the argument of Complexity and postmodernism. None of what follows is direct criticism of Complexity and postmodernism. Rather all of it is suggested by that work and offered in the spirit of an ongoing philosophical conversation. In section 5 below I discuss the question of evolutionary explanations of ethics, and some related questions concerning post-modern ethics. In 6 the problem of poorly executed references to natural science by post-modern writers other than Cilliers is raised, which leads in 7 to a discussion of the relationship between post-modern thought and the philosophy of science. He makes some brief remarks on this point at the end of chapter 6, referring to the work of Axelrod , and suggesting that he can see the a way to answer a "traditional criticism of evolution" CP: Cilliers suggests that such a line of criticism is "only possible on the basis of some metaphysical commitments" and that it is "closely related to the position that there is no such thing as postmodern ethics. One can surely maintain that metanarratives have collapsed, post-modernity dawned, and valence gone poly quite independently of holding any particular views about evolution. Indeed it is prima facie plausible to think of evolution as being one of the collapsed metanarratives. Consider the ways in which medical and social factors have so undermined the purchase of natural selection in developed countries. There it is increasingly the case that life expectancy and prospects of reproductive success have more to do with wealth and less to do with favourable adaptation. Not only that, genetic engineering promises more tricks and fixes by the hour, even further reducing the direct pressure for genetic adaptation by natural selection. Conversely, it seems as though the view that post-modernism is not congenial to serious treatment of ethics could arise in a person quite confident of the validity of evolution, but either concerned that the imperative to respect local differences of discourse undermines any attempt at non-parochial moral evaluation, or distressed that the notion that the "dropping out of the real" similarly undercuts principled resistance to crimes or atrocities which must be admitted as real for the criticism to be significant. The objection to the view that opposition to evolutionary ethics is much the same thing as the contention that there can be no post-modern ethics is more than a quibble over details. It is always important precisely to identify the target of an argument or criticism. In this case the lumping together of two separable views does not help the argument, and the additional contention that both are "only possible on the basis of some metaphysical commitments" CP: It

seems clear that even from a broadly naturalist perspective which eschews any attempt at moral metaphysics there are reasons to be cautious about the promises made on behalf of "evolutionary ethics". Let us consider, then, the suggestion that evolutionary models can show the way to a respectably non-metaphysical account of at least some ethical phenomena. The first notes that some research into the question of "selfishness" and "altruism" my words and scare quotes has shown that "purely selfish behaviour by members of a system is detrimental not only to the system, but also to the particular individuals. The second example draws a lesson from attempts at centralised control and notes that distributed and decentralised control are preferable from the point of view of systemic efficiency and flexibility. So, if this is correct, evolutionary analyses of various behavioural strategies show, in the words of Groucho Marx, that "time wounds all heels". Not only that, it seems reasonable to think that this fact may be of some use in attempting to show those behaving in ways we might normally call "selfish" or "dictatorial" that they are not acting rationally, or even wisely from the narrow point of view of their own optimal self interest. We need to be extremely careful about what we accept here, and about where we might want to draw a line.

3: Postmodern architecture - Wikipedia

explores the notion of complexity in the light of contemporary perspectives from philosophy and science. The book integrates insights from complexity and computational theory with the philosophical position of thinkers including Derrida and Lyotard. Paul Cilliers takes a critical stance towards the.

Formerly Proactive Progressive Propagation. 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. 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 rulebased models. The hype created by chaos theory has abated somewhat, but the perception that it has an important role to play in the study of complex systems is still widespread. Although I would not deny that chaos theory could contribute to the study of complexity, I do feel that its contribution would be extremely limited. When analysing complex systems, a sensitivity to initial conditions, for example, is not such an important issue. As a matter of fact, it is exactly the robust nature of complex systems, i. In complex systems, however, there are always a huge number of interacting components. Despite the claims made about aspects of the functioning of the olfactory system, or of the heart in fibrillation, I am unsure whether any behaviour found in nature could be described as truly chaotic in the technical sense. Where sharp transitions between different states of a system are required, I find the notion of self-organised criticality see Chapter 6 more appropriate than metaphors drawn from chaos. This might sound too dismissive, and I certainly do not want to claim that aspects of chaos theory or fractal mathematics cannot be used effectively in the process of modelling nature. My claim is rather that chaos theory, and especially the notions of deterministic chaos and universality, does not really help us to understand the dynamics of complex systems. That showpiece of fractal mathematics, the Mandelbrot set is sometimes referred to as the most complex mathematical object we know is in the final analysis complicated, not complex. Within the framework of the present study, chaos theory is still part of the modern paradigm, and will not receive detailed attention. This book admittedly explores the connectionist model. Still, it has some important tales to tell. Ongoing discussion at the IPS forum here.

4: Download [PDF] just postmodernism

Complexity and Postmodernism is an exciting and an original book that should be read by anyone interested in gaining a fresh understanding of complexity.

Quotes[edit] The view from complexity claims that we cannot know complex things completely We can increase the knowledge we have of a certain [complex] system, but this knowledge is limited The fact that our knowledge is limited is not a disaster, it is a condition for knowledge. Vikki Bell Culture and Performance: This is a circumstance with which I am normally perfectly content. The truth is that I actually do not think about it too much, just as I do not think about it too much that I have a liver. The current flutterings about Afrikaans, however, I find disturbing. It is not doing the image of Afrikaners, and hence also of Afrikaans, any good. We are being called up by certain parties to mobilise for Afrikaans, to fight for the survival of Afrikaans, and for minority rights. The problem is, however, that I do not see myself currently as part of a minority. When, in the s and s, as an Afrikaner, I resisted apartheid and not in the s when it became fashionable then I felt myself part of a minority. At present I mainly find myself with an enormous feeling of moral relief. I would now like to carry on with my life and make a constructive contribution at the level of content. I do not wish to have to write letters like this one. A letter to The Burger, 10 October ; Cited in: Chris Brink No Lesser Place: The Taaldebat at Stellenbosch. The acknowledgement of complexity, however, certainly does not lead to the conclusion that anything goes. If something really is complex, it cannot be adequately described by means of a simple theory. Engaging with complexity entails engaging with specific complex systems. Despite this we can, at a very basic level, make general remarks concerning the conditions for complex behaviour and the dynamics of complex systems. Furthermore, I suggest that complex systems can be modelled. We can do with technology what we cannot do with science. Equilibrium is another word for death. It is merely an argument against a particular scientific strategy that assumes complexity can be reduced to specific features and then represented in a machine. Because of the mechanisms by which complex systems structure themselves, single principles provide inadequate descriptions. We should rather be sensitive to complex and self-organizing interactions and appreciate the play of patterns that perpetually transforms the system itself as well as the environment in which it operates. One of the popular newspaper columns he wrote for Die Burger was a letter to John Stuart Mill in which he described how he made the eating of an egg a quality event. This wish was fulfilled: Philosopher " in: I had the privilege of knowing him for close on thirty years as friend, colleague and soul mate with a shared love of ideas, music, food, social interaction and a burning interest in complexity and complex systems.

5: Paul Cilliers - Wikiquote

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. Reviews 'Clearly, indeed beautifully written this is an important book with a substantial argument to make.

Applications of complexity theory to something other than charting shorelines or tracking blood flow are often only alluded to. In a relatively short, readable work Cilliers manages to fit not only an introduction to complexity theory in general but also an explanation of neural networks, approaches to linguistic representation theory, and branches of philosophy – and it all fits together very nicely. Cilliers first makes clear that his discussion centers around complexity itself, which is in his mind quite separate from the older science of chaos. The fundamental model of a complex system presented here is, appropriately enough, is the neural network; Cilliers provides an excellent explanation which even the non-computer-literate can easily comprehend. From this groundwork he immediately addresses differences in models of language structure and understanding. Most of the thoughts here are based upon the work of Saussure, later embellished by Derrida. Here, as in other areas of the book, Cilliers excellently illustrates how complexity theory re-frames, supports, and furthers independent lines of thought across several disciplines. Saussure claims that words in themselves carry no meanings, but that meaning is communicated by how words as signs differ from others in the language or system. As soon as a word is used in the system in a particular context, that use slightly modifies any meaning found in the system, both for the word being used and for other signs in the system. These thoughts by Saussure and Derrida are very much part of a specific area of thought pertaining to the philosophy of meaning and representation in language. After Cilliers is finished with his explanation, it seems quite obvious how complex systems apply: There is a very real analogy to how connectionist systems i. Signs then do not take on any particular meaning⁸², but rather represent meanings through their use in the system, at the same time changing whatever meaning is being generated by the very usage of these signs. The signs in a system therefore encode no actual meaning – there is no true global representation. Similarly, history is important but elusive in complex systems. Two similar systems placed in identical conditions may respond in vastly different ways if they have different histories. To be more precise, the history of a system is not merely important in the understanding of the system, it co-determines the structure of the system" The same arguments hold for memory in the context of the brain. Memories are not stored in the brain as discrete units that can be recalled as if from a filing cabinet" While there may be actual events that happened in the past, they can never be accurately reconstructed from the contents of the network, because what are left are only traces. The formation of the system interacts with the actual history reflexively, each altering the other. Throughout these discussions, Cilliers advances deep into philosophical territory, yet explains all the concepts as if one were completely unfamiliar with the subject. If complexity invades thought, memories, history, and meaning, it is not a large stretch to assume that it might affect ideas of morality as well. Cilliers, following logically from his analysis of neural networks and philosophy of representation, makes some startling conclusions about ethics, following ideas of Cornell: We therefore do follow principles as if they were universal rules Cornell and Derrida use the term "quasi-transcendental", but we have to remotivate the legitimacy of the rule each time we use it. To behave ethically means not to follow rules blindly – to merely calculate – but to follow them responsibly, which may imply that the rules must be broken. Of course, complexity and postmodernism having similarities in the areas stated above, they have similar problems of explanation: Cilliers is aware of this, and does not attempt to meet every criticism that might be offered to his approach; instead, he tries to share "the spirit in which this book is offered: There are many introductory works on complexity theory, but few that strike a balance between algorithmic explanations and postmodern philosophy as does Complexity and Postmodernism. Cilliers does a fine job of bringing together two areas of thought, mathematics and philosophy, into one coherent holistic to use a term important to complexity theory itself pictures. It would be a loss for someone from either field to miss this well-discussed work. This work was read over a period of many months as part of research on my MA dissertation. General notes on the book

are included below. Cilliers finds it necessary to separate chaos theory from complexity theory, and in fact almost ignore chaos in the discussion of the complex: Cilliers mentions the position of the viewer in forming a description of the system. Once we have a better understanding of the dynamics of complexity, we can start looking for the similarities and differences between complex systems and thereby develop a clearer understanding of the strengths and limitations of different models" There is no place outside of language from where meaning can be generated. Where there is meaning, there is already language. We cannot separate language from the world it describes" It is an attempt to explain how the words of our language or the structures in our brain become meaningful, by trying to define relationships between these words or structures and the world. Since it would not only deny the limitations of the specific angle, but also prevent further explorations, this spell must be broken by relentlessly showing the contradictions that result from fixing the boundaries from one perspective. The macroscopic behaviour emerges from microscopic interactions that by themselves have very meagre information content only traces " The dynamic nature of self-organisation In point of fact, self-organisation provides the mechanism whereby complex structure can evolve without first having to postulate first beginnings or transcendental interventions. It is exactly in this sense that postmodern theory contributes to our understanding of complex, self-organising systems" Lyotard describes consensus as being "a horizon that is never reached" , and this might shed some light on free-market economics. While Marx analyzed the economical system as if it were a perfect capitalist system, the fact that such a pure system cannot ever be reached may change the perspective of the benefits of such a system. When referring to a book by Rouse, Cilliers switches from his objective explanation, to a very clear subjective opinion:

6: Paul Cilliers, Complexity and Postmodernism: Understanding Complex Systems - PhilPapers

Department of Sociology and Social Policy, University of Durham, Durham, DH1 3JT. I have now read through this book three times. Every reading was enjoyable and informative. I make these comments at the beginning of this review because when I saw this book announced, I dreaded reading it. The title.

In Robert Venturi completed the Sainsbury Wing of the National Gallery in London, which was modern but harmonized with the neoclassical architecture in and around Trafalgar Square. The German-born architect Helmut Jahn constructed the Messeturm skyscraper in Frankfurt, Germany, a skyscraper adorned with the pointed spire of a medieval tower. He was a first critic of modernist architecture, blaming modernism for the destruction of British cities in the years after World War II. He designed colorful public housing projects in the postmodern style, as well as the Neue Staatsgalerie in Stuttgart, Germany and the Kammertheater in Stuttgart, as well as the Arthur M. Rossi was the first Italian to win the most prestigious award in architecture, the Pritzker Prize, in He was noted for combining rigorous and pure forms with evocative and symbolic elements taken from classical architecture. The works of Austrian architect Friedensreich Hundertwasser are occasionally considered a special expression of postmodern architecture. Before opening his studio in Osaka in , Ando traveled widely in North America, Africa and Europe, absorbing European and American styles, and had no formal architectural education, though he taught later at Yale University, Columbia University and Harvard University Most of his buildings were constructed of raw concrete in cubic forms, but had wide openings which brought in light and views of the nature outside. Beginning in the s, he began using wood as a building material, and introduced elements of traditional Japanese architecture, particularly in his design of the Museum of Wood Culture His Benesse House in Naoshima, Kagama, has elements of classic Japanese architecture and a plan which subtly integrates the house into the natural landscape, He won the Pritzker Prize, the most prestigious award in architecture, in His Museum of Contemporary Art in Nagi artfully combined wood, stone and metal, and joined together three geometric forms, a cylinder, a half-cylinder and an extended block, to present three different artists in different settings. His Art Tower in Mito, Japan featured a postmodernist aluminum tower that rotated upon its own axis. Construction began in but it was not completed until due to difficult engineering problems and growing costs. The giant shells of concrete soar over the platforms which form the roof of the hall itself. The architect resigned before the structure was completed, and the interior was designed largely after he left the project. The influence of the Sydney Opera House, can be seen in later concert halls with soaring roofs made of undulating stainless steel. The exterior, with its sloping roofs and glided facade, was a distinct break from the earlier, more austere modernist concert halls. The real revolution was inside, where Scharoun placed the orchestra in the center, with the audience seated on terraces around it. He described it this way: Around it on all sides rise the terraces, like vineyards. Corresponding to an earthly landscape, the ceiling above appears like a sky.

7: Paul Cilliers - Wikipedia

This work 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.

8: Complexity and Postmodernism: Understanding Complex Systems, 1st Edition (Hardback) - Routledge

The overall thesis of Complexity and postmodernism is thus that there are possibilities for mutually enlightening conversations between postmodern philosophers and researchers into complexity, an opportunity which Cilliers both defends and exercises.

9: Review Article of Cilliers, P. 'Complexity and Postmodernism' (Routledge)

COMPLEXITY AND POSTMODERNISM pdf

Postmodern architecture is a style or movement which emerged in the s as a reaction against the austerity, formality, and lack of variety of modern architecture, particularly in the international style advocated by Le Corbusier and Ludwig Mies van der Rohe.

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