

Chapter 13

Unpacking the Ethics of Complexity: Concluding Reflections

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I can only describe my feeling by the metaphor, that, if a man could write a book on Ethics which really was a book on Ethics, this book would, with an explosion, destroy all the other books in the world.

Wittgenstein, "Lecture on Ethics"

Writing Ethics

Wittgenstein's reflections on writing about ethics serve as a serious warning to all who attempt it. In order to write *the* book on ethics, one would have to fully understand life, the universe and everything, now and forever. If the author acknowledges the limitations of her own understanding – an acknowledgement which happens less often than one would think – she is faced with a dilemma. She could either restrict herself to practical moral advice on the contingent matters we face every day, or she could try to construct some meta-ethical perspective which is more general, despite the limitations. Since ethics involves more than everyday morality, the challenge of actually writing something about it remains a daunting one.

In this book the challenge is taken up in various ways. Whilst acknowledging that the final word on ethics cannot be spoken, there is an attempt to tackle the problem of what ethics should be in a complex world. The necessity of carefully reflecting on the necessary theoretical frameworks is acknowledged, without attempting to present them as something universal. The inevitable provisionality of such attempts should be respected. In what follows we will unpack the ethics of complexity in a little more detail, and spell out some implications for the way in which we deal with organisations. This may come as a disappointment to some, but there will be no recipes, there will be arguments and challenges.

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Changing Paradigms

The collection of chapters in this book fall somewhat outside the scope and style of the traditional ways of writing about Business Ethics. When browsing through the vast array of literature available in the field, one finds broadly two categories of texts: collections of case studies and texts which are more general and theoretical. They address issues ranging from reflection on familiar unresolved dilemmas and problems, which include questions on “individual freedom versus the need for order; relationships of members of multinational enterprises to each other, to their nation states, and to supranational institutions; sovereignty and autonomy” (Donaldson 1992: 22), to more conceptual issues such as corruption, corporate versus individual responsibility, agency, implementing codes of ethics, leadership, values and goal orientated business behaviour (Duska 2007, Moon and Bonny et al. 2001). Although many of these issues are addressed in this book, the central concern is with establishing a meaningful point of departure from where they can be interrogated systematically. That point of departure is the acknowledgement that we deal with complex phenomena. The main implication of this acknowledgement is that conventional ethics, be it deontological, consequential or based on virtue, does not provide points of departure which can be followed blindly. We have to rethink the framework of ethics itself before we can start to talk about business ethics. The chapters in this volume, whether they are of a more theoretical nature or based on concrete case studies, are bound together by this acknowledgement, and the result is a different kind of discourse. Let us look at the characteristics of this discourse.

Complexity is not something that can be pinned down by analysing the properties of a certain part of the system or by taking the components of the system apart and seeking for traces of complexity within the isolated parts. We are challenged to describe properties that emerge as a result of the interactions amongst the components (Cilliers 2008: 44). The interrelations between different “levels” (e.g. the agent, organization and society) are also not easily discernable. Our methods of inquiry and observations of the system are complicated even more due to the fact that the structure of the complex system we are aiming to describe, is not the result of an a priori design, nor is it determined by directly external conditions, but exists as being the result of interaction between the system and its environment. In order to detect the complexity in a system, one has to keep track of variables such as “patterns of organisation, structure, life processes, diverse interacting agents, environmental interdependence” (Lawrimore 2005: 126) and non-linear feedback processes. Because there is no objective point of view from which to define the complexity of say an organisation, our observations and descriptions of complex systems will always involve being understood through interpretations and a pluralist methodology that remains sensitive to the interrelatedness of the subjects under investigation.

One can thus say that complexity is a combination of the attributes of the system (ontological complexity) and simultaneously also a “function of our present understanding of the system” (epistemological complexity) (Cilliers 2008: 44). Hence, the style and methodology one uses when investigating complex systems change

from analysing the system as something which already exists beforehand with easy definable borders, goals and attributes, to analysing the not so visible connections between components' interactions through which the system as such comes into being and whose boundaries are not easily defined in terms of the environment in which it operates. Richardson (2005: 5–6) hints that “(w)hat is different about the ‘complexity revolution’ is that some of the results from complexity research suggest that all is not how it appears. The boundaries that mark the edges of objects are emergent, temporary, fluid, critically organised, provisional etc”. Due to the nature of complex systems, the methods of inquiry are thus more heuristic than predetermined. Explicit knowledge of the organisation is substituted by tacit knowledge. As Painter-Morland (2006: 92) explains, “(t)acit knowledge is not something that an agent can put his/her finger on. The possession of tacit knowledge allows an agent only the more modest claim that they know ‘how’. It is an embodied form of knowing” that aims to capture the unseen structures and relations that govern and shape the “unwritten rules” of engagement in organisations.

For the reader who is not knowledgeable about the vagaries of complexity and thus not familiar with its terminology, it might seem that the chapters in this book do not address the various issues in a systematic manner. The conventional business ethics reader, who is used to texts that treat organisations as easily definable, unambiguous realities that are defined and measured by their organisational character, their assets, values, the nature of their business plans, the effectiveness of the implementations of their business goals and what share of the market belongs to their stockholders, may also feel uncomfortable. We resist a modelling approach which accepts that organisations are systems that adhere to rule-based interactions governed by agents who follow specified rules. From such an almost computational interpretation of organisations, ethical guidelines are defined in terms of how the organisation chooses its value-linked activities and ethical behaviour is measured in terms of how effective it adheres to the organisation's routines of its rule-based logic. When the purpose and motives of the business have been established in this manner, ethical guidelines and codes of conducts are drawn up in a teleological manner to support and ensure that the business behaviour of the organisation are congruent with its goals and purposes (Duska 2007: xix). Ethics is thus something that follows as a wagon being pulled behind the locomotive of organisational goals and should ensure that the adopted values inform and mediate behaviour internally (between the individual employees of the company and its owners or shareholders) and externally (between the organisation and its customers or the public). Once ethical guidelines have been established notions of accountability, agency and responsibility are defined and worked out accordingly.

Viewing organisations as complex living systems departs wholly from this more traditional or mechanistic approach. A complex system is not something that exists independently from the parts that constitute it. In fact, its existence is constituted by means of the interactions that take place between the components. Therefore, notions of identity and organisational culture only emerge due to these interactions. Goals and purposes are thus not described in terms of the organisational culture or market branding, but they are influenced by the manner in which the components

interact in a non-linear fashion with one another. From such a perspective, it is clear that the notion of difference is inextricably linked with the notion of identity formation. The concepts of complexity, difference, identity and ethics are not assembled together because they sound trendy or because they enjoy the attention of strategists and human resource practitioners who use them to sound more politically correct, but because these concepts are inscribed into the fibre and being of a complex system. Denying this interwovenness is not just a technical error, but an ethical error.

A complex systems perspective regards ethics not as something that can be programmatically institutionalised, charted down in compliance programmes or to secure a best practice handbook (Moon and Bonny et al. 2001), but it actually shifts to become the locomotive that pulls the organisation through its passage in time. “Ethics” is also not something that gets integrated into organisational or corporate culture, but lies at the heart of establishing and envisioning a culture to begin with; it is part of all the different levels of activities in an organisation. The ethical stance is not something imposed on an organisation, or something that is expected of it. It is an inevitable result of the inability of a theory of complexity to provide a complete description of all aspects of the system. (see Cilliers 2005b: 16, 17).

The contributions in this book all strive to unpack and expose this understanding of ethics as linked to the notions of difference and identity that characterise the discourse and methodology of observing and speaking about complex systems. The diverse collection of chapters does not represent a unified theory of complexity or a “complexity based Business Ethics management manual”. As mentioned earlier, it rather represents a pluralistic and integrated approach on the subject matter that is “inherent in complexity thinking” which “undermines the whole notion of a unified theory of complexity, i.e. theoretical monism” (Richardson 2005: 112). The various examinations of a complexity based view of difference and identity, and the ethical implications thereof, form a coherent conversation between authors who would not have typically collaborated before due to the nature of their specialised fields of study. The specific lessons we learn about the ethical implications for viewing complexity, identity and difference as inextricably linked to one another, is highlighted in each chapter in such a way that it can be applied to organisational theory and the field of business ethics in general. Before discussing a number of themes which link the different contributions, a general understanding of the ethics of complexity should be described in a little more detail.

A Provisional Ethics of Complexity

Complexity, Limits and Knowledge

The argument that our understanding of complex systems is problematic in principle can be summarised in the following way: to *fully* understand a complex system, we need to understand it in all its complexity. Furthermore, because complex systems are open systems, we need to understand the system’s complete environment before

we can understand the system, and, of course, the environment is complex in itself. There is no human way of doing this. The knowledge we have of complex systems is based on the models we make of these systems, but in order to function as models – and not merely as a *repetition* of the system – they have to *reduce* the complexity of the system. This means that some aspects of the system are always left out of consideration. The problem is compounded by the fact that that which is left out, interacts with the rest of the system in a non-linear way and we cannot, therefore, predict what the effects of our reduction of the complexity will be, especially not as the system and its environment develop and transform in time.¹³⁴

We cannot have complete knowledge of complex systems; we can only have knowledge in terms of a certain framework. There is no stepping outside of complexity (we are finite beings), thus there is no framework for frameworks. We *choose* our frameworks. This choice need not be arbitrary in any way, but it does mean that the status of the framework (and the framework itself) cannot be used as the basis for objective knowledge. The generation of knowledge of complex systems is an exploratory process. As the context in which this knowledge is to be useful changes, we will have to continually revise the framework which generates this knowledge. Our knowledge of complex systems is thus always provisional. We have to be modest about the claims we make about such knowledge.

An understanding of knowledge as constituted within a complex system of interactions would, on the one hand, deny that knowledge can be seen as atomised “facts” that have objective meaning. Knowledge comes to be in a dynamic network of interactions, a network that does not have distinctive borders. On the other hand, this perspective would also deny that knowledge is something purely subjective, mainly because one cannot conceive of the subject as something prior to the “network of knowledge”, but rather as something constituted *within* that network. The argument from complexity thus wants to move beyond the objective/subjective dichotomy, as Morin (2007) also argues. The dialectical relationship between knowledge and the system within which it is constituted has to be acknowledged. The two do not exist independently, thus making it impossible to first sort out the system (or context), and then to identify the knowledge within the system. This co-determination also means that knowledge, and the system within which it is constituted, is in constant transformation. What appears to be uncontroversial at one point may not remain so for long.

One should also be careful not to interpret this state of affairs as somehow inadequate, as something to be improved upon. There is a necessary relationship between the imposition of a limiting framework and the generation of knowledge. One cannot have knowledge without a framework. Despite the fact that our knowledge is of necessity limited, these limits are enabling, they allow us to make claims which are neither relativistic nor vague (see Cilliers 2005a). At the same time, however, such knowledge is not the result of free-floating truths; it is contextualised in time and space. Because it is not objective, and because we know that, we cannot *use* this

¹³⁴These ideas are elaborated upon in Cilliers (2000, 2001).

knowledge as if it is objective. There is always a normative dimension to the claims we make, and we have to stand in for them. We cannot shift the responsibility for the effects of our claims onto some process we call “scientific”.

The Problem of Action

If the central insight from complexity – that our decisions will always have to be based on an incomplete understanding and thus will always have to be provisional – is valid, then it is clearly very difficult to use this insight to guide our actions. We can neither form a complete picture of the current situation and what it means, nor can we formulate an exact goal for which we should aim. We *know* that we cannot get it right.

Where does this leave us? Does it imply that we can do no more than slump into a dejected resignation? We think not. Yet to generate a more positive framework for action, without violating the insights from complexity, is not easy. Let me make some preliminary remarks.

In the first place, slumping into a dejected resignation is much better than to act with the self-confident arrogance of someone who thinks he knows what is right. There is a certain sense in which we should be knocked speechless by our ignorance, and by the mess we have created by acting on that ignorance. This is the essence of a truly critical position and a vital first step towards responsible action. We do *not* have to have an alternative *before* we can realise something is wrong or before we denounce it. We should not let ourselves be forced by instrumental rationality, nor by the demands of a performance culture, to relinquish our critique. Nevertheless, this should not lead to inaction.

In the second place we should realize that our decisions and actions do not only have effects on the world and on others, but also on ourselves. We are *constituted* through our decisions and actions, or more precisely, we mutually constitute each other in a rich, non-linear network of interactions. In a sense, we are simply the result of our decisions. If I choose a position of power and dominance, or a position which values material wealth over aesthetic value, that is simply the kind of person I am. Therefore, when I make a specific decision or perform a specific act, I do not do so from a fresh platform. I do so from a web of previous acts by myself and by those with whom I interact, a web in which I have already established a certain identity. And, at the same time, I am busy constituting and transforming that web. We are not atomistic individuals with a duty to act, however that duty is conceived (rationally, transcendently or religiously), we are constituting our humanity by the way in which we do battle with what is before us, by the way in which we enter into the “agonistics of the network”. “Tomorrow in the battle think on me” says Javier Marias.¹³⁵

¹³⁵He uses this quote from Shakespeare (Richard III) as the title for an extraordinary novel. Characters caught in the contingency of life, struggling with its moral implications, are central to his work.

The acknowledgement of complexity, thirdly, thus has an effect on our *attitude* towards action. The lack of complete knowledge does not mean that we should not act, but it does mean that we should do so with modesty (see Cilliers 2005a). Every decision should be the result of careful and critical reflection (which is why we will always need Philosophy) and should unfold in time, neither too quickly nor too slowly.¹³⁶ The principle of modesty does not determine the content of our actions, but it does affect the way in which we make them. Nevertheless, if care and provisionality determine the *framework* of our actions, it will also affect the *content* of our actions. Walking through a minefield carefully does not mean that you will not step on one, but you will attend to every detail around you and you *will* have a better chance than one who just stomps through. Moreover, you will be extremely sensitive to, as well as critical of, any advice others with a different perspective may give.

Taking these considerations into account places one in a difficult position but, as acknowledged from the start, not a uniquely new one. The dilemma has been recognised by critical thinkers repeatedly, Nietzsche and The Frankfurt School being prime examples. One contemporary form of critical philosophy, namely, deconstruction, can be shown to share many of the insights and problems generated by acknowledging complexity. Before returning to the problems of action and ethics, this can be examined briefly.

Complexity and Deconstruction

The characterisation of complexity developed here, and the subsequent implications for the status of our knowledge of complex matters, resonates in many ways with some of the central insights of post-structural philosophy, specifically with deconstruction. In *Complexity and Postmodernism* (Cilliers 1998), the structural similarities between a relational and distributed understanding of complexity on the one hand, and the post-structural understanding of textuality and language (in the most general sense of the word) on the other, have been elaborated in detail. The central argument is that there is a striking similarity between complex systems, understood as a network of non-linear interactions with lots of feedback paths, and two theoretical positions foundational to structuralism and post-structuralism: the characterisation of language as an interrelated system of signs of Ferdinand de Saussure and the neurological model of the brain developed by the early Freud. Both Saussure and Freud were “read” in some detail by Derrida and a transformation of their ideas form a central part of his position.¹³⁷ Relating these arguments with complexity theory allows, on the one hand, an enrichment of complexity thinking

¹³⁶See Cilliers (2007) for a discussion of the temporal aspects of complex systems. The argument is that we should not allow notions of efficiency and success to force us to act too quickly.

¹³⁷Derrida dealt with Saussure in *Of Grammatology* (Derrida 1976) and with Freud in several places, including *Freud and the Scene of Writing*, collected in *Writing and Difference* (Derrida 1978).

(by e.g. incorporating notions like *différance*) and, on the other, a more systematic and rigorous reading of deconstruction.

One should remember that to deconstruct a position is not to dismiss it, but to take it rather seriously. Derrida's deconstruction of Saussure, therefore, acknowledges the importance of his central argument, but shows how he does not follow his argument all the way through. Saussure shows that the meaning of a sign is not a result of an essential characteristic of the sign itself, but of its relationships with other signs. Nevertheless, Saussure believes that by tracing all the relationships in the system of signs, one can eventually reconstruct the correct meaning of the sign.¹³⁸ Derrida argues that this is not possible since the very use of a sign already "disturbs" the meaning of the sign, a disturbance which percolates through the network of relationships, also back to the sign itself, thereby altering the meaning of all the elements in the system. The meaning of a sign is thus continually deferred, it cannot be resolved in any final way. This does not mean that meaning does not exist, it always already exists, but it is also constantly transformed.

It is clear that Derrida's argument is based on the fact that meaning is constituted through complex interaction. Although he did not elaborate on a theory of complexity explicitly, a sensitivity to complexity permeates his thinking. We think that there are still many fruitful insights to be gained from a sustained interaction between deconstruction and complexity theory. This work is still to be done, but some initial insights can be gained from comparing some of Morin's arguments with deconstruction.

The first important insight follows from his description of a "restricted" understanding of complexity. This understanding is clearly related to the Saussurian position. It acknowledges the basic structure of complexity, but baulks before the more radical consequences. In Morin's terms, it opens up the understanding towards relational thinking, but it cannot get rid of the reductive apparatus that should qualify this work as "science". As a result, this approach to complexity – and I would put most of the work done under the umbrella of the so-called Santa Fè School in this category – reverts to an instrumental strategy in the hope of making purely objective claims in the same way as Saussure's claim that we can get at the correct meaning of the sign. It is precisely this denial of a normative element in our dealing with complexity which makes this position "restricted". In developing a deeper understanding of what a "general" understanding of complexity could be, something for which Morin thinks we do not yet have a language, insights from deconstruction could play a vital role.

One such insight could be the idea of the "double movement". Derrida argues that the strategy of deconstruction involves a "double" activity. In deconstructing a system, one has to make use of the resources provided by the system itself. One is thus simultaneously confirming and undermining central elements of the system. This simultaneous give and take is a much more complex process than simply replacing something with something else. It implies that one transforms something

¹³⁸It is this possibility which inspired the "structuralist" projects of, for example Levi-Strauss.

by using the thing itself in novel ways. Deconstruction is thus not a critique from the outside, a critique which knows where it stands and what it wants to do. It is a critique which acknowledges that it is in transformation itself because it cannot depart from a perfect understanding, neither of itself, nor of that which it is transforming.

In his book *On Complexity* (2008), Morin describes the way in which he thinks we should deal with complexity in very similar terms to that of deconstruction. He argues that when dealing with complexity, we cannot escape contradiction, and that we should not mask this contradiction with a “euphoric vision of the world” (42).

[The order/disorder/organization relationship] is a typically complex idea in the sense that we have to bring together two notions – order and disorder – that logically seem to exclude each other. In addition, we might think that the complexity of this idea is even more fundamental. . . . We arrive by entirely rational means at ideas that carry a fundamental contradiction (41).

He continues:

In the classical view, when a contradiction appears in reasoning, it is a sign of error. You have to back up and take a different line of reasoning. However, in a complex view, when one arrives via empirical rational means at contradictions, this points not to an error but rather to the fact that we have reached a deep layer of reality that, precisely because of its depth, cannot be translated into our logic (45).

The point he wants to emphasize is that we cannot deal with complexity without employing a self-critical rationality, that is, a rationality which makes no claim for objectivity, or for any special status for the grounds from which the claim was made.

Humanity has two types of madness. One is obviously very visible, it's the madness of absolute incoherence, of onomatopoeia, of words spoken randomly. The other is much less visible: it is the madness of absolute coherence. Against this second madness, the resource is self-critical rationality and recourse to experience (48).

In order to maintain this self-critical rationality, he argues “that there are three principles that can help us to think complexity”. The first he calls “dialogic”. “The dialogic principle allows us to maintain the duality at the heart of unity. It associates two terms that are at the same time complementary and antagonistic” (49).

The second principle is that of “organised recursion”. This principle argues for an understanding which “has broken away from the linear idea of cause and effect, of product/producer or structure/superstructure, because everything that is product comes back on what produces it in a cycle that is itself self-constitutive, self-organizing, and self-producing” (49–50).

The third is the “holographic principle”. This principle argues that the characteristics of a system is distributed, not localised. The activities of the parts *and* the occurrences on the macro-level participate in producing the system (see above). “The idea of the hologram surpasses both reductionism, which can see only the parts, and holism, which sees only the whole” (50).

These three principles are clearly interlinked. The holographic principle is an effect of the recursive principle which is linked to the dialogic principle. This constellation of ideas thus argues for a kind of double movement, an acknowledgment

of the play of *différance*, very similar to that of deconstruction. There is a coupling between the *what* is being observed and *how* it is being observed; they are folded into each other. Despite our bravest attempts, we cannot extract ourselves from these folds cleanly. Nevertheless, this is what we do, and, in a contradictory way, *have* to do when we do science.

... every system of thought is open and contains a breach, a gap in the opening itself. But we have the possibility to hold meta-points of view. The meta-point of view is only possible if the observer-conceiver integrates himself or herself into the observation and the conception. This is why complex thought requires the integration of the observer and the conceiver in its observation and conception (51).

The kind of understanding of complexity proposed here certainly does not produce a clear “method” which can be followed in any automatic way. Morin is also clear on this: “I can’t pretend to pull a paradigm of complexity out of my pocket” (51). Nevertheless, one can announce the implications of this position without proclaiming a new orthodoxy. In his words, “one can be the Saint John the Baptist of the paradigm of complexity and announce its coming without being its Messiah” (52).

The kind of language used here clearly indicates the presence of a normative dimension, something ethical, in our attempts to think and act when confronted with complexity. Perhaps something can be said about this “ethics of complexity”.

The Provisional Imperative

The argument for the inevitability of an ethical position when dealing with complexity can be made in the following way: Since we cannot have complete knowledge of complex things we cannot “calculate” their behaviour in any deterministic way. We have to interpret and evaluate. Our decisions always involve an element of choice which cannot be justified objectively. What is more, no matter how careful our actions are considered, they may turn out to have been a mistake. Thus, acknowledging that values and choice are involved does not provide any guarantee that good will come of what we do. Complexity tells us that ethics will be involved, but does not tell us what that ethics actually entails. The ethics of complexity is thus radically or perpetually ethical. There is no a priori principle we can follow nor utility we can compute. We do not escape the realm of choice.

It is clear that, beyond the realisation that we are always in trouble, this position does not generate any substantial guidelines. It constitutes a radically critical position, the main component of which is self-critique. The question is, can it be made more substantial? A first response would be that it is better to make the value judgements explicit than to claim a false objectivity. In this way the complexity of the problem can be opened up and the differences respected. But perhaps the critical position itself constitutes a kind of ethical strategy, similar to Kant’s categorical imperative.

The logic by which Kant deduces the categorical imperative can roughly be described as follows¹³⁹: for a moral principle to be universally valid, it has to be purely abstract and formal. It cannot be constructed empirically, or take contingent matters into account. The only rule which conforms to this specification has to be something like “follow this rule”. But since the moral rule Kant is looking for has to be universally valid, he can reformulate this abstract rule to something like “follow only rules which are universal”, or “follow only those rules which you would always also want others to follow”. By combining the purely formal principle with the notion of universalisability, Kant can generate a formulation which actually does say something about ethics.

There are many problems with the categorical imperative (see e.g. Kant/Paton 1948). The main one is the result of the very attempt to be universal: the categorical imperative itself cannot generate contingent ethical principles; it can only be used as a kind of test for principles which already exist. In this way, Kant’s position is a critical one. He does not actually know what the right or the good is, but he knows which strategy of thinking to follow in order to attempt to produce it. The categorical imperative thus does not provide us with a substantive ethics, but it does urge us to adopt a certain attitude.

One can try to apply the same logic Kant uses to the problem of complexity and its ethical implications. The central characteristics of complex systems we have to consider are the following:

1. our knowledge of complex things is radically contingent in both time and space,
2. any decision we make concerning something complex has to be irreducibly provisional, yet
3. we have to act in a way which distinguishes the action from its alternatives otherwise we are not acting at all,¹⁴⁰
4. meaning emerges through the mutual interaction (both constraining and enabling) amongst components in the system, not through some pre-defined essence. Thus, as subjects we are constituted through interactions with others (both human and non-human) around us. My state depends on the state of others.

These characteristics can be used to formulate a kind of imperative, albeit an imperative of provisionality which turns the Kantian logic upside down. The following are possible ways of doing it:

1. justify your actions only in ways which do not preclude the possibility of revising that justification,

¹³⁹The development of the categorical imperative is done in *Groundwork of the Metaphysics of Morals*. See for example the translation and discussion by Paton (Kant/Paton 1948).

¹⁴⁰These characteristics resonate with what Derrida, in *The Force of Law*, calls the *aporia* of justice. This similarity, and the similarity with Morin’s idea of a general complexity, still needs careful elaboration. (see Cornell 1992, Derrida 1992, and Morin 2007, 2008). The idea of the provisional imperative can also be used to explore Derrida’s notion of the “quasi-transcendental”.

2. make only those choices which keep the possibility of choice open,
3. your actions should show a fundamental respect for difference, even as those actions reduce it,
4. act only in ways which will allow the constraining and enabling interactions between the components in the system to flourish.

These imperatives suffer from exactly the same shortcomings as Kant's categorical imperative. Nevertheless, they are not empty and can prepare the ground for a more detailed development of an ethics of complexity, an ethics which would be, like that of Kant, a critical one. In developing this ethics, the notion of boundaries will play a crucial role. The making of a decision is the drawing of a boundary. This is on the one hand an enabling act. We have to introduce distinctions in order to say or do anything at all. Nevertheless, the boundaries are not "perimeters", they are dynamic, "living" things. They have to be affirmed, and simultaneously they have to be transformed through critical reflection.

Business Ethics and the Place of Complexity

Engaging with issues such as identity, difference and ethics from a complex systems approach implies that one should acknowledge that social and organisational systems have the characteristics of such systems (cf. Chapters 1, 2, 7, and 9 this volume). As stated above, employing such a strategy necessitates following different and new ways of framing and thinking about familiar issues. Studies which acknowledge that systems and organisations are complex are often transdisciplinary in nature. Furthermore, building on the notion of a provisional ethics of complexity, such studies also do not come up with "problem-solving tools and solution kits", but rather tend to expose, challenge and problematise the underlying assumptions that inform conventional theories and practices. This kind of exploration also "enables us to ask new and different questions about what forms of intervention we should pursue" (Midgley 2003: 93), including questions about what the focus of our research should be.

This volume takes the form of a critical transdisciplinary exploration into the nature and ethical implications of the interconnectedness of the notions "complexity, identity and difference". The notion "transdisciplinarity" is situated within the larger paradigm of complexity theory as proposed by Morin (1992, 2008) and Cilliers (1998). Following the "logic of complexity" (Morin 2008: 20) the term "transdisciplinary" refers to a methodology which gives us a "conceptual tool to think together" (115) those fields of study that seem to be situated in opposing positions within the broader scientific context. The following areas are central and distinguish transdisciplinary inquiry from inter-disciplinary and disciplinary approaches. According to Montuori (2005: 154), transdisciplinarity can be summarised as being a methodology that is:

1. Inquiry-driven rather than exclusively discipline-driven
2. Meta-paradigmatic rather than exclusively intra-paradigmatic
3. Informed by a kind of thinking that is creative, contextualising, and connective (Morin's "complex thinking")
4. (and views) inquiry as a creative process that combines rigor and imagination.

This project displays that by combining different strategies and methods of collecting and interpreting knowledge, disciplines could be enriched by these differences in ways that could change and enrich the knowledge claims that they make. Such a process would involve "the recognition of a *plurality of epistemologies* or positions, each expressing knowledge in different times and space, each in different ways" (Morin 2008: 22).

Literature (Richardson and Cilliers 2001, Urry 2005, Walby 2003) offering an overview of the development of complexity theory all suggest that what emerged out of all the different discoveries within disciplines, and out of what we call "complexity theory" today, is the argument that "complexity theory offers a new set of conceptual tools to help explain" (Walby 2003: 1) the way in which we investigate and understand nature and the world we live in. The contribution made by the present volume to the field of business ethics, lies in the fact that systems theory offers a theory of knowledge that can count with greater range and power for the complex interactions of human beings in what Bruno Latour (1993) calls the "hybrid networks" of social systems in which we find ourselves enmeshed in.

Developing Tools for Systemic Reflection

The "economy of concepts that are on offer" (Thrift 1999: 46) to business ethics from a complex systems perspective provide practitioners and academics a way of surpassing the entrenched dichotomies of familiar dilemmas with new conceptual strategies. The contributions in this book serve as examples of how conventional discourses can be challenged by critical attitudes and practices that embrace the underlying principles of the logic of "complex thinking" (Cilliers 1998, Morin 2008) and the thinking together of different disciplines.

There are a number of strategies that form a line linking all the authors in this volume. These strategies can be seen as conceptual tools that might assist the business ethicist in her cause to engage with conventional theories and analytical methods in new and critical ways. The following section highlights a number of these strategies.

Anti-reductionist Forms of Inquiry and Theory Building

As mentioned earlier, the acknowledgement of complexity implies that we cannot have complete knowledge of complex systems, and thus of the world we live in. Hence it is incorrect to assume that our models can objectively capture our

reality. The systems perspective resists mechanistic descriptions which result from oversimplified reductive and analytic processes.

In many ways one can argue that we are dealing with an epistemological crisis in contemporary theory. It is generally acknowledged that simple reductive thinking is not adequate, but there is also a fundamental fear that abandoning it may lead to relativism. If this was merely a theoretical problem, we could let the philosophers argue about it. Unfortunately different strategies of thinking lead to different forms of action in the world. The disastrous effects of reductive thinking are evident in many spheres; including the social, the political, the economical and the environmental. The epistemological shift Morin talks about is, therefore, not merely a theoretical issue, but one with practical and ethical implications.

Although the complex systems approach is utilised in many different areas of study these days and put forward as the “method of methods” when dealing with complex living systems, it is ultimately not a strategy that aims at finding perfect solutions for unsolvable questions. Rather, it proposes a conceptual strategy that “helps us in coming to terms with the ethical problems associated with complex (social) systems” (Richardson and Cilliers 2001: 22). Each of the contributions in this volume stands for such a counter-position to traditional discourses in their specific fields of study. The ways in which they unlock new definitions and re-conceptualise the notions of difference, identity and ethics, offer an analogy and serve as examples of how studies in Business Ethics can tackle the process of remaining a vibrant and dynamic field of study.

More specifically, the Chapters 9 and 10 by Woermann and Müller address traditional business ethics issues directly. Woermann’s in depth analysis of corporate identity and responsibility informed by a complex systems perspective offers a refreshing way of looking at and challenging entrenched ways of thinking about these concepts. The limitations of traditional Business Ethics models are discussed in light of an understanding that exposes social and business systems as being complex in nature. A critical assessment of the state of contemporary Business Ethics theory and practice is offered and a more transformational and dynamic understanding of Business Ethics is suggested.

Müller discusses how notions of turbulence, organisational strategy and trust are re-defined when organisations allow for more diversity and complexity, especially when delineating their values and organisational goals. Departing from traditional management theories that implement strategy development and implementation as a practice to contain and manage cultural complexity and turbulence in an organisation, Müller suggests that organisational culture and strategy formulation should be informed by the cultural values of the people working for and served by the organisation, and not the other way around. Apart from this valuable argument and suggested change of paradigm, the chapter also offers a wide overview of traditional and alternative literature in the field of organisational management.

The contribution by Allen et al. explores the consequences complex thinking holds for our understanding of the emergence and evolution of identity and diversity in ecologies and human social systems. By comparing examples of evolution and co-evolution in Darwin’s Finches, in economic markets and organizational forms and in

social entities, the chapter offers a view of evolution in human systems which challenges traditional and reductionist theories of biological determinism. Allen et al. suggest that identities are created and co-evolve in an on-going evolutionary process. They argue that even though one cannot understand what exactly creates the micro-diversity underlying a system, it can be established that all the underlying phenomena obey the same kind of behaviour – that of evolving complex systems. By allowing ourselves to be “evolvers” and by exploring our own diversity, a richer set of possibilities are created on which the collective system can thrive. The chapter links to the work of De Villiers-Botha & Cilliers’ notion of the “complex I” and explains how our different identities and personalities fit into the messy process of evolutionary complexity.

The business ethicist can draw on these examples to redefine the conditions and limitations under which organisational change, sustainable governance and corporate social responsibility could be instigated and sustained. By providing a challenge to traditional paradigms of thought and methodology, the landscape in which business ethics studies operate is allowed to occupy a dynamic space in which new definitions and processes of understanding familiar terms and problems can emerge.

The Systems Approach Extends the Boundaries of Rational Explanation

The second strategy which connects the contributions in this book is closely related to the first theme, and it relates to the notion of what we understand under “rational explanation”. To a large extent we still live in a world where “scientific” (objective) knowledge trumps all other forms of knowledge. This state of affairs is a legacy of a certain interpretation of Enlightenment thinking. In this interpretation, the quest for verifiable knowledge, at least since the Renaissance, presupposes the need for objectivity. Novotny et al. (2001: 50–51) describe this process in the following way:

In its historical contest with religion, a triumphant science acquired a monopoly of describing and explaining “reality”, which both resisted and also validated human wishes, fancies and follies. Because the physical world, including its chemical and biological processes, came to be regarded as the most substantial component of the “real world”, a scientific definition of reality became ever more plausible. As a result the authority, values and practices of science permeated many other dimensions of society. The everyday world shrank to what scientists had “discovered” and were able to exploit.

This traditional or, as it is often called, “modernist” style of scientific thinking is no longer adequate – to the extent that it ever was. This is not the result of a frivolous postmodern reaction to modernity,¹⁴¹ nor is it merely because of some

¹⁴¹The notions “modern” and “postmodern” have to be used with caution. Modernism is often treated in a much too simplistic way, as if there was one coherent “movement” which simply relied on an oversimplified understanding of rationality. Modernism was, or is, a divided strategy containing different strategies not easily reducible to one another. Sophisticated attempts to clarify the role and limits of rationality, as in the work of Habermas, for example, cannot be treated as

logical problem with the verification of experimental processes (in the tradition of Popper, Kuhn or Feyerabend), but a result of the complexity of the phenomena we deal with. As Novotny et al. (2001: 21) state:

Contemporary society is characterized – irreversibly – by pluralism and diversity and also, we argue, volatility and transgressivity. It can no longer be understood either in terms of the norms and practices of scientific rationality.

What is at stake when we deal with complex things is thus the appropriate style of rationality. The argument is that the traditional modernist rationality – established in the first half of the 17th century and based on the ideas of Galileo, Newton and Descartes in the context of a more settled Europe after the peace of Westphalia (Toulmin 1990) is *not* adequate to cope with complexity.

Edgar Morin (2007: 5) gives specific content to the inadequacy of what he calls “classical science”. For him “classical science rejected complexity in virtue of three fundamental explanatory principles:

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.”

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.

In discussing a wide variety of topics from a systems perspective, the authors of this volume each attempt to demonstrate how and why a systems approach extends and supplements the accepted traditional or “modernist” rationality or design in their respective fields. Although many of the contributions fall outside the traditional Business Ethics genre in the way that they have been presented here, they play an important role in informing all the well-known and familiar dilemmas that one stumble upon in Business Ethics theory and practice. The dilemma of choosing

if they are simply an extension of the Cartesian/Newtonian paradigm. The notion “postmodern” is also misused frequently. For some it simply means the justification of relativism, for others it is merely a tag of approval without much content. These misunderstandings should not get in the way of recognizing the real problem, namely the inadequacy of reductive thinking when dealing with complex things. The notion “scientific” is similarly problematic, i.e. an uncritical reliance on first-order logic and verifiable observation. The critical use of complexity theory in no way intends to dismiss science; it seeks to expand the notion, or at least, to mark its limits.

between “corporate versus individual responsibility” or establishing with what values the organisation will identify, relate directly to the Chapters 1, 2, 4, and 5 of Cilliers, De Villiers-Botha & Cilliers, Byrne, and Collier who write on the importance of looking at identity formation as something that is not formed in a polarised fashion at either the individual or the organisational level, but as something which emerges due to the interaction that takes place between the components of the system (individuals, individual values) and the structure that comprises the organisation to be identified as an organisation as such (the leaders, share-holders, policies and business goals).

Wicomb, Allen et al., Praeg and Swilling et al. explore how an understanding of difference, which is informed by a systems perspective, leads one to understand issues of agency, sovereignty, governance and the implementation of regulating strategies as processes that emerge dynamically. This is due to the ways in which difference and diversity enable the organisational system to be resilient and to co-evolve in ways that allow for organisational change in novel ways. Grebe and Kunneman’s contributions discuss the importance of difference and ethics from a more theoretical level and they offer insight into how the formulation of theories and the paradigms that inform them influence the ways in which we conceptually shape and construct the world we live and act in. Their contributions are especially important for the teaching of Business Ethics and for those who are concerned about Business Ethics “as an academic discipline” (van Liedekerke and Dubbink 2008: 273). All the contributions attempt to engage with their fields of study in a way that embraces a departure from instrumental rationality. They all explore ways that seek to engage with an epistemological shift which replaces “reduction” with “distinction” and “disjunction” with “conjunction” (Morin 2007: 10), hence a systems rationality that supplements and expands the boundaries of our models of knowing the world.

Conventional Patterns of Problem Solving Processes Are to Be Revised and Complemented by Systems Thinking

Complexity is a problem word and not a solution word. (Edgar Morin 1992)

A third strategy that is noticeable in the contributions of this volume, is the fact that tackling problems from a critical systems perspective questions our understanding of “problems and problem-solving methods” (Ulrich 1994: 27). It is almost as if more problems arise from the critical process to which we have fewer answers. Based on an understanding of the provisionality of an ethics of complexity as discussed above, we see that a critical systems approach does not offer solutions in the form of a “best practice” manual or toolkit. Problems are not viewed as isolated instances that need to be solved. Instead they are viewed as relationally constituted and are the effect of a number of non-linear interactions and various feedback loops that are the causes and effects of each other (Cilliers 1998).

Hence, there are no simple solutions to problems that emerge in complex systems. Because we do not have full knowledge of a complex system, we cannot be in a position to calculate what the exact cause of a problem is and how to solve it. Our limited knowledge and lack of comprehension becomes the basis on which we should build a critical attitude towards tackling problems and issues of decision making. Ulrich (1994: 35) suggests that “from this new perspective, the implication of the systems idea is not that we must understand the whole system, but rather that we critically deal with the fact that we never do”. This attitude provides us with the “methodological basis for developing tools of critical reflection” (Ulrich 1994: 35).

This strategy relates directly to the notion of critical complexity and an ethics of provisionality as discussed earlier. The Chapters 6, 7, and 8 by Grebe, Wicomb and Kunneman deal with this theme explicitly. Aligning his notion of critique with the philosophical traditions of Nietzsche, Hegel, Adorno and Derrida, Grebe explores how complexity theory can be situated within this critical tradition of the negative dialectic. By situating the study of difference and identity within the tradition of the negative dialectic and connecting it to deconstruction, complexity theory requires the potential to be a rich resource for critical and progressive thinking. The ethical consequences of complexity thinking’s negativity are also explored and the notion of critique is re-framed within this philosophical perspective.

In her examination of the reach and capacity of the legal system to solve problems and make judgements on human rights issues and inequality, Wicomb argues that differences between people should not be viewed as problems to be solved. Instead, the significance of human diversity is articulated as the essence of discovering ethical ways of dealing with conflict and inequality. By retaining the tension between notions of difference and identity, a dynamic and productive system of difference secures that diversity is not reduced to identity. Wicomb applies her understanding of complex diversity to the human rights discourse. The implications of such an understanding of diversity is also important for business ethicists who struggle with issues related to establishing criteria for ethical decision making and setting up guidelines that secure the rights of employees, stakeholders and managers respectively.

Kunneman’s exploration on the notion of “ethical complexity” deals directly with the problems we face when we do not have concrete answers or solutions to ethical dilemmas. For him the need to develop an ethical understanding of complexity reaches further than just the fact we that lack epistemological and ontological understanding. In order to make the ethical dimension of problem situations explicit, Kunneman suggests a strategy of narrativity that is developed from the perspective of critical hermeneutics. His analysis of narrative forms of mediation and the elaboration of the difference between the notions of “autopoiesis” and “diapoiesis” provide fruitful connections between narrative approaches in organisational theory and the practical and moral challenges that confront organisations in general. Kunneman spans a conceptual trajectory between the work of Cilliers and the narrative philosophy of Paul Ricoeur. The outcome of this strategy forms the necessary connections Kunneman employs to propose a framework by which the notion of

ethical responsibility and our ways of acting in the world can be framed more comprehensibly.

Developing Tools for Critical Reflection and Debate

The fifth strategy, still related, highlights the fact that a complex systems view does not provide exact analytical tools for solving problems nor offers a final theory for finding solutions to difficult problems. Instead, it encourages and challenges us to develop the tools we have and to supplement them with an attitude of thoroughgoing critical reflection.

The Critical Position

The general importance of a critical position should be developed in some detail. It is important to show that such a position does not entail negativity or inaction, but that it is nevertheless critical to remain perpetually critical. This elaboration still has to take place, but three characteristics of such a position can serve as a starting point.

A critical position informed by complexity will have to be *transgressive*. It can never simply re-enforce that which is current. Transformation takes place continually, despite all efforts to contain it. In this respect, we need some bold alternatives to orthodoxies like liberal democracy and free-market economy. Given the fact that communism failed, we should not allow ourselves to be bullied into believing that the alternative is correct or much better. We should resist the macho nature of most political and economic cultures, irrespective of whether it is politically correct to do so or not. We should not be coerced, frightened or shamed into a state where we relinquish being transgressively critical.

A critical position will, in the most positive sense of the word, be an *ironical* position. There is no final truth which operationalises our actions in an objective way. Irony also implies, in a very systematic way, a self-critical position. Given the horrors of the world, this claim may be controversial. Nevertheless, we require a sense of humour if we are not to lose our humanity.

In the third place, a central role for the imagination is indispensable when we deal with complex things. Since we cannot calculate what will or should happen, we have to make a creative leap in order to imagine what things could be like. Aesthetic and creative activities are thus not interesting diversions, they open up the possibility of imagining better, more sustainable futures. Our humanity, our very existence, depends on this.

Keeping the study of Business Ethics alive and dynamic also requires a kind of thinking and doing that are challenged to be critical of entrenched and conventional theories and practice. The contributions of Byrne, Collier, Swilling et al. and Praeg serve as examples of how it is possible to engage with the problem of difference and identity in a critical manner.

Collier addresses problems in contemporary analytic philosophy which focus on how the discourse on concepts such as identity and individuation are established. He offers a critical response to traditional approaches of identity that rely on some version of classification via essential or typical properties. Collier's approach suggests that classification should be set up in terms of the dynamical properties of systems, starting with individual systems rather than classes, and working up by abstractions that fit causal generalities. Arguing against the traditional position, Collier proposes a dynamical account of identity and individuation based on the dynamics of complex systems with respect to their formation, further individuation, and the production of diversity.

Informed by a critical realist position, which according to him overlaps with his understanding of complexity, Byrne suggests how the method of Qualitative Comparative Analysis could be enriched by considering differences amongst complex systems as source of causality, instead of focussing on objects that seem to have similar properties. When the seemingly similar objects are looked at from a participatory position (e.g. action research), one learns that objects that seem similar from an objective point of view, are actually rather different when viewed from a subjective (or objective-subjective) point of view. When this is acknowledged, one can no longer speak of an object's (or community's/society's) properties. Based on the view from complexity, such complex objects/communities should be categorised critically according to their shared combination of characteristics rather than by any single characteristic and entities become "traces of systems" interacting with one another in non-linear ways.

When thus observed, the control parameters (or model by which the community is measured/compared with another) become the generators of difference. These differences become the source of the causality. Engaging with action research offers the researcher a critical position from which one can reflect upon groups and organisational structure.

Both the contributions by Swilling et al. and Praeg reflect critically on how modernist thought strategies influence the practice of categorising people and places in reductionist ways. They both offer critical analyses of traditional practices, which influenced discourses and policy making practices in how groups of people should be classified according to their differences and social and economical status in society. Although working in very different fields, both Swilling et al. and Praeg engage with anti-development approaches which expose the inefficiencies and ideologies of such practices and thought strategies. Both contributions suggest that a critical systems approach has the ability to allow for managing and policy-making practices that undermine the "top-down" approach.

The critical position offered by a systems approach may be helpful to the business ethicist who seeks to find new ways of decision-making strategies that are sensitive to how "habits, beliefs and expectations inform the cultural dynamics within organisations" (Painter-Morland 2008: 509). From this position issues relating to distributive leadership strategies, trust and notions of accountability can also be revisited in a critical manner.

The Possibility of Intervention Is Problematised

Building on the idea that a systems approach does not offer clear-cut solutions to complex problems, that it rather enables a fundamentally critical position, it is argued that any intervention which may arise from a systems approach, can only be provisional and temporary in nature. This last overarching theme exposes the fact that change and intervention does not come about by following rules and regulations in a programmatic way. Instead, change and interventions are the result of the careful and critical consideration of the dynamic interactions of the components of the system as a whole. The performance and resilience in a system depends directly on the diversity of components, interactions and ethical values within the system.

Following the logic of a systems approach, intervention is inextricably linked to the possibility of being able to gather knowledge about the system and locating its boundaries. Traditional theories related to issues of intervention and organisational change often suggest an objective position from where universal valid principles can be established which would guide and instigate intervention processes. As discussed throughout this book, it is, from a systems perspective, impossible to make such claims (cf. Chapters 1, 2, 7, and 9). The distinction between what is inside and what is outside the system is problematised. Hence, the distinction between insider and outsider is also blurred. Change and intervention can thus only succeed when reflected upon by means of a participatory approach, involving the constitutive components of the system. The notions of difference, identity and constitutive ethics are key concepts without which such participatory interventions cannot take place effectively. All the contributions in this book aim to expose this element by re-defining intervention and change in terms of a systems thinking perspective.

The acknowledgment of the limits of the models we are using, new possibilities are opened up for doing research without invoking metaphysical truth claims. Approaching the world from a kind of thinking that does not disconnect opposites, but thinks them as part of a dynamic unity, informs a style of thinking that challenges old models of representing the world. The notion of “complex thought” (Morin 2008) challenges the philosopher and business ethicist to reform their ways of thinking and to consider different ways of getting to know the world. The weaving together of different approaches opens up a space where a discipline such as Business Ethics can operate from a critical position grounded in the complexities of the lived experiences of their subjects of study. The claim that our understanding of complex systems cannot be reduced to calculation means that there will always be some form of creativity involved when engaging in “the politics of knowing and being known” (Lather 2001: 486).

By re-linking different types of knowledge and strategies, the business ethicist is challenged to enter into a space where her research and modelling practices keep up with the complex world in which we live. Informed by the characteristics of complexity theory we are called to engage with research and problem solving practices that have the capacity to expand the understanding of what it is to be human. Acting from such a position would “allow us to see besides the probable”, because

the “intelligence of complexity” compels us to “explore the field of possibilities, without restricting it with what is formally probable” (Morin 2007: 29). Therein lies the invitation to reform or change organisational practices and even to dream about a better future.

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