Chapter 2
The Complex "I": The Formation of Identity in Complex Systems

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Who Am "I"?

Theories of the human subject (or self) have a long history in philosophy. In essence, such theories are an attempt to answer the kinds of questions we may have about ourselves: Who and what am I? Who and what are human beings? Where do I stop and where does the world begin? Our answers to these questions may determine how we think about ourselves, our neighbours, our enemies, people in general and even animals. The answers may also determine our ethics. After all, the justification for treating someone in a specific way often boils down to who or what we think they are, and who or what we think we are. Of course, the "we" that we are talking about here does not only refer to individuals, but can also refer to any instance where groups of people are identified as wholes, including organizations.

Traditionally, the self has been thought of as fixed, continuous, and indivisible – that clear-cut and intimately known essence that makes me "me" and accompanies me throughout my life. Our characterisation and understanding of the self inevitably changes with time, following changing fads, changing theories, and changing norms. One of the most influential views of the self that we have inherited is the Enlightenment conception of the irreducible, rational agent who, upon the rational assessment of a given situation, his own needs and desires and the available options, acts in a judicious manner to achieve an optimum outcome. If the actions of the agent in question turn out to be less than optimal, the assumption is made that something is amiss with the agent's judgement and assessment of the situation – he did not act rationally. Of course, the Enlightenment ideal of the purely rational agent is a fantasy. Today, thanks to theorists like Freud, we are quite used to the idea that there are factors other than our rational self-interest driving our decisions and

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actions. We understand that factors that could be termed thoroughly "irrational" also drive our actions – subconscious, psychological, illogical factors that range from basic biological drives, to unfettered and ill-advised individual ambition, to undue influence from a master manipulator. This insight has been incorporated particularly successfully into one area of the business world in a drive to manipulate and exploit our irrational desires and quirks – advertising. One would be hard pressed to think of an advertisement that appeals to our rational selves only. However, there are other areas of the business world where the self (as an individual or an organization) is still primarily regarded as a fixed essence characterised by rationality and logical self-assessment; some economic theories comes to mind here. Even where this characterisation of the self is recognised as a caricature, it is assumed that the model of the rational agent is at the very least a fair approximation of the actions of participants in the economic context as such, irrespective of any less-than-rational proclivities in their personal capacity. Moreover, as an extension of this assumption, the actions of corporations as a whole are seen as rational in that they are based on the cumulative effects of the "business-related", rational actions of the individuals that make up the corporation. However, we have to ask ourselves the question: is assuming a rational economic agent, even while acknowledging that that one is working with an idealised model, justified? Even more prosaically, is it wise? As the reader may have guessed, our answer in this regard will be "no", or, more accurately, a qualified "no".

Naturally, the foregoing description of economic theory and related theories is partly a caricature in itself. Today, many theories relating to economic and business practices, including ethical practices, do take a more nuanced view of what drives "agents" whether they be investors, customers, or companies. However, it is the contention here that in the business world, the Enlightenment's ideal conception of the self still predominates. The psychological and practical factors that complicate this picture are seen as difficulties or obstacles that need to be factored into, and accounted for in, a realistic economic theory, business strategies, and ethical guidelines. Needless to say, we should not lose sight of the fact that any attempt to define the self will necessarily result in an abstraction. In fact, describing or demarcating the self is always a matter of narrative. It consists of the selection or recognition in a given context of certain aspects that make up oneself (or someone else) and the omission of others, which may seem less relevant in that context. As shall be argued here, this constructed quality of the subject is an inevitable and even necessary aspect of the self that has important implications for the way that we understand both ourselves and other people. By making use of complexity theory, it will be argued that the self has to be understood relationally in a system of differences, and the implications of this contention will be developed.

The view taken in this chapter, therefore, is that before we can develop a truly useful theory of business ethics, we have to re-evaluate our, perhaps implicit, assumptions about the most important aspect of any ethical theory – the ethical subject. Any ethical theory that is based on an idealised conception of "the self" is doomed to failure. Furthermore, our conception of the self is fundamentally a philosophical matter; philosophical hypotheses have always formed the basis of

how we think about what makes us human, and we often inherit and perpetuate these hypotheses for as long as they remain useful, or until better alternatives are found. The position being developed here is that the hypothesis of a complex self is such a "better alternative". By way of introduction to the argument, a few traditional approaches to the self will be discussed. Thereafter, a detailed description of how complexity theory allows us to develop a more realistic conception of the self follows. Finally, some of the ethical implications of a complex model of the self are discussed. In essence, the main objective of this chapter is to develop a complexity-based model of the self. The task of incorporating this model into Business Ethics proper is left to other contributing authors in this volume (cf. Woermann's discussion in Chapter 9 of this volume).

The Cartesian Standard

One of the most influential theories of the self remains that of Descartes. His argument rests on the claim that the only thing of which anyone can be certain is the mind and its ability to think – a capacity that operates independently of the senses and of emotions. Descartes' argument represents one of the dominant paradigms in the discourse on the subject – the idea that "I" am that which I can experience through introspection. In the final instance, this argument is based on my identity/self as something that is "the same" – all selves are the same; they are that which makes us essentially human.

In keeping with the emerging tradition of his day, Descartes wanted to discover "only one thing that is certain and indubitable" (Descartes 1978: 85), something that Toulmin (1990: 14–20) refers to as the "primitive elements in experience", available to any reflexive thinker in all cultures at all times. Descartes and his successors were concerned with developing a formal theory of the subject, one with universal validity. The assumption of universality makes it unproblematic for him to start with his own existence as paradigm example – existence would be a universal attribute of all selves, "certain and indubitable". Yet, he is not entirely clear on what his universal self entails:

> But what is a man? Shall I say a rational animal? Assuredly not; for it would be necessary forthwith to inquire into what is meant by animal, and what by rational, and thus, from a single question, I should insensibly glide into others, and these more difficult than the first; nor do I now posses enough of leisure to warrant me in wasting my time amid subtleties of this sort. I prefer here to attend to the thoughts that sprung up of themselves in my mind, and were inspired by my own nature alone, when I applied myself to the consideration of what I was (Descartes 1978: 86–87).

The Enlightenment ideal consists partly in framing questions in a purely "rational" manner that would render them independent of context. The results of these "rational" arguments could then be applied in other contexts as is (Toulmin 1990: 21–24). For Descartes, it is perfectly logical to focus only on those thoughts that are "inherent to his own nature" and hence "do not have their origin in anything other than his own mind" – only these thoughts would be independent of context.

His conception of the self is that of an essential mind, able to register (albeit with a degree of suspicion) and act upon the world, but not a mind *formed* by the world. For Descartes, the self is a timeless, permanent structure that does not change in a contingent world. The constitution of his mind is not even dependent on the body in which it resides. Indeed, it possesses independent faculties that are capable of being deceived by the rest of his body, especially his senses and imaginings.[22]

The mind is not initially aware of its essential nature and only becomes aware of its susceptibility to deception upon reflecting on its own nature. It has to be "restrained within the limits of truth."[23] For Descartes, "mental" life encompasses rational calculation, intuitive ideas, intellectual deliberations and sensory inputs – the subject cannot accept responsibility for the emotions that interfere with or influence these calculations and inferences (Toulmin 1990: 40).

The mind's essence is its ability to think, a fixed and universal attribute. This essence is inherent to the mind and sufficient to know it with.[24] From here, it is not difficult to see that Descartes' thought leads to a solipsism. An individual is trapped inside his own head and reflects upon images of the external world that reaches his mind. The accounts of other people cannot be trusted or taken into consideration in forming a cognitive picture of the world. Descartes, however, does not satisfactorily explain how it is possible for thoughts not to be inspired by anything beyond his own nature, to "spring up by themselves" in his mind, unless one is inclined to accept his recourse to the existence of God and to interpreting all our manifestly accurate perceptions as proceeding from Him. Other than presupposing the existence of God as "A Perfect Being", where does Descartes' own nature come from? How can his "true nature" exist in complete isolation from the environment in which he finds himself?

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[22]Descartes insists that the imagination and the senses do not belong to the mind (intellect) and cannot comprehend the world correctly:

> .... it is now manifest to me that bodies themselves are not properly perceived by the senses nor by the faculty of imagination, but by the intellect alone; and since they are not perceived because they are seen and touched, but only because they are understood [or rightly comprehended by thought], I readily discover that there is nothing more clearly apprehended than my own mind (Descartes 1978: 94).

[23]Descartes paints a picture of a mind which is naturally wilful and wayward and which needs to be constrained:

> "But I see clearly what is the state of the case. My mind is apt to wonder, and will not yet submit to be restrained within the limits of truth. Let us therefore leave the mind to itself once more, and, according to it every kind of liberty [permit it to consider the objects that appear to it from without], in order that, having afterwards withdrawn from it from these gently and opportunely [and fixed it on the consideration of its being and properties it finds in itself], it may then be the more easily controlled" (Descartes 1978: 90).

[24]In fact, the world and the rest of the body can be disregarded as superfluous and cumbersome:

> "And there are besides so many other things in the mind itself that contribute to the illustration of its nature, that those dependent on the body, to which I have here referred, scarcely merit to be taken into account" (Descartes 1978: 94).

Zygmunt Bauman's (1992: xvii) description of modernity as "a long march to prison" can conceivably be applied to the Cartesian understanding of the subject. Bauman asserts that the modernist approach to the world arose from the (shocking) realisation that there is no order *inherent* to the world, that everything is contingent. In order for events to be regular, repeatable and predictable (i.e. independent of context) order needs to be *imposed* onto the chaotic natural world. The same goes for the subject. Descartes wants to know what about himself is certain, indubitable, universal and timeless. In order for him to reach his answer he has to disregard "subtleties"; he has to become measurable, containable and knowable. Bauman asserts that modernity managed to order the world by "obsessively legislating, defining, structuring, segregating, classifying, recording and universalising" (xiv) so that it could reflect universal and absolute standards of truth. Descartes' treatment of the subject also incorporates this strategy of structuring, classifying and universalising. He insists on elucidating the nature of the essential mind independently from the contingencies that the corporeal body is subject to. His attempt to impose order onto the mind – to show that the mind/self is the same for everyone – that which we encounter through introspection – leads directly to the dichotomy between mind and body and to the severing of the relationship between self and the world. This view on the self is more than a little restrictive; we are trapped in the prisons of our skulls. The Cartesian meta-narrative of the self leads us to disregard much of what it means to be human in the world. It also leads us to undervalue the relationships between ourselves and the world, and the relationship between selves. At the heart of this formal approach lays an insensitivity to the way in which the subject is constituted through ethical and political interaction. This issue will receive more attention in the final section, but let us first briefly examine a more contemporary and contrasting view, that of Sartre. This view appears to stress difference, instead of arguing for the essential, universal nature of the self. For Sartre, the self is constructed rather than deduced.

The Existential Self

The Sartrean view on the self is one in which "we will to exist at the same time as we fashion our image" (Sartre 1946: 29) and he rejects a universal human essence. But does this view escape the idea of the subject as an autonomous entity, an essential unity which ultimately has the ability to determine what it wants to be? Sartre declares his position as follows:

> Man is nothing else but that which he makes of himself . . .. [he] is, before all else, something which propels itself toward a future and is aware that it is doing so. . .[b]efore that projection of the self nothing exists; not even in the heaven of intelligence: man will only attain existence when he is what he purposes to be (Sartre 1946: 28).

Thus, we are not all essentially the same – the mind/self that makes us quintessentially human is as different as we want it to be.

Whilst the idea of freedom from determinism – including the fact that the ultimate responsibility for what man is lies with man – is an attractive one, it is not

altogether certain that this ultimate freedom is possible. The ability to choose your own image projection of self presupposes an autonomous "you" that can be distinguished over and above existence in a contingent world. This would compel Sartre to say that a person can "make" herself in complete independence from the circumstances that she finds herself in.[25] Although Sartre denies a universal human essence or nature, he presupposes a subject with the universal ability to freely determine itself and its existence.

Both Descartes and Sartre are certain of one thing: that there is a world "out there", external to and independent of the world "in here". In both cases the subject is clearly designated, and cordoned off from the world. Descartes' cogito and Sartre's man will have a universal structure, no matter where and when in the world they find themselves. Both these accounts of the subject lead to a number of questions: Where do subjects come from? What constitutes them? Are subjects with an immobile, essential nature able to deal with the contingencies of their environment? How does the environment affect them? Descartes purposely rejects the complexities (the subtleties) of his subject matter in order to discover what is essential to the subject. Saussure rejects essence altogether, which allows for endless complexities in constituting the self. If we were to argue that it is these very complexities that constitute the subject, it becomes impossible to talk about an essential mind, or a completely autonomous subject, as we shall see; it also becomes impossible to talk about a wholly self-determined conception of the self.

We wish to argue for a complex view on the self, a rich perspective on what constitutes the self, but also a perspective that takes the limits imposed on the construction of the self seriously. Before we do that, it may be useful to briefly examine another approach to the self, that of traditional analytic philosophy.

An Analytical View on Self and Identity

As a point of departure for our discussion of the standard debate on personal identity in contemporary analytical philosophy, we will rely on the discussion and critique offered by Stefaan Cuypers (1998). He focuses on two approaches to identity within this tradition: the bundle theory (which draws upon logical atomism) and the ego theory (which has an origin in Cartesian atomism). He argues that these positions overlap, since both rely on a foundationalist theory of knowledge that privileges *present* experience. The "I" is an object of direct knowledge (i.e. introspection), while external objects can only be known indirectly. The "I" here is taken to mean the mind only. The first person's body is seen as part of the rest of the external world. Nothing but the first person's mind can be relevant to the construction of

[25] Sartre concedes that historical situations are variable and do place limitations upon the subject, but argues that the necessities of living in the world do not vary. One needs to labour and die in the world. These limitations "are lived and are nothing if man does not live them" (Sartre 1946: 46). By "lived" Sartre means that man freely determines his existence in relation to these limitations.

his identity. Atomistic identity is non-bodily identity; the mind is only linked to a particular body contingently.

Both of the theories that Cuypers discusses rely on a perceptual theory of self-knowledge. Knowing oneself is to observe one's own mind and its contents. Ontologically, these theories rely on an external and an internal (immaterial) world that consist of separate particulars or atoms. Atoms are indivisible and stand in external relations to one another. The self is either a spiritual atom (the Cartesian ego) or a collection of mental atoms (a bundle of experiences). Cuypers criticises these two theories by showing that the perceptual model of self-knowledge, on which the two theories rely, is exceedingly inadequate.[26]

Cuypers' critique of these two atomistic theories rests on the argument that the problem of personal identity rests on an intellectual illusion. He argues that the standard debate on personal identity (in the analytic tradition) presupposes philosophical atomism,[27] which leads to epistemological foundationalism based on self-knowledge obtained through introspection If the perceptual model of self-knowledge is untenable, then the atomistic idea of the self as object of introspective knowledge becomes impossible. Cuypers asserts that his epistemological criticism makes it impossible to interpret the problem of identity as the problem of the self-identity of the first person and that it also casts doubt upon the idea of the ontological separateness of selves and experiences.[28]

Within the bounds of analytic philosophy, Cuypers postulates a person as "a bodily, public and dynamic agent who engages with other persons and the world" (364).[29] He believes that this conception of the person does not go far enough because it does not transgress "the bounds of descriptive metaphysics". For him, there is nothing wrong with trying to render our experiences intelligible through postulating non-experiential metaphysical principles. He calls upon the "psychophysical personalism of the Aristotelian-Thomistic view," where an existing substance, as an "active self-communicating presence, cannot *be* without *being*

[26]In his attempt to do this, Cuypers argues that introspection cannot be modelled on external perception, as is the case in the perceptual model of self-knowledge. In his own words (1998: 355) "the use of the pronoun 'I' is *identification free*." The self cannot be interpreted as an object. Similarly, he argues, the analogy between introspection and perception cannot be sustained in the light of the causal relation that exists between the phenomenological character of the perceived object and its perception. Introspection has no object. Cuypers (358) quotes Shoemaker in saying that, "from an empiricist standpoint the status of the self (the subject of experience) is suspect compared with that of such things as sensations, feelings, images, and the like." Our perspective, the one from complexity theory, calls atomistic theories of representation into question altogether (cf. Cilliers 1998: 11–12).

[27]Cuypers explains philosophical atomism with regard to identity as picturing "the self as a non-bodily, private and static object with which the first person is intimately acquainted" (354).

[28]This will be a key issue in the discussion of a complex view of the self and we will argue that Cuypers does not manage to overcome this separateness adequately.

[29]From complexity, we will argue that a subject can neither be "complete" nor can it be a "logical unity". Within a complex view it is equally impossible to distinguish with finality between separate bodily and non-bodily identities.

related in some way" (Cuypers 1998: 365). Along the lines of this "Aristotelian-Thomistic validatory anthropology", Cuypers develops a non-atomistic view of personal identity. Because a person is a substantial psychophysical unity, personal identity has bodily identity as an essential aspect of that identity. A person manifests and communicates himself or herself to a community of other beings; s/he constitutes a web of relations around herself or himself. In this web of relations a being exists in himself towards others.

According to Cuypers, the bodily aspect of personal identity depends upon the spatio-temporal continuity of a personal body; however, this does not exclude a non-bodily personal identity:

> Although bodily identity essentially realises (earthly) personal identity, the latter is not reducible to the former. As Rodin's statue of 'The Thinker' is constituted by a particular lump of bronze without being identical to it, so a person is constituted by a particular human organism without being identical to it. In other words, bodily identity is a necessary but not sufficient condition of personal identity (ibid. 366).

Cuypers asserts that personal identity consists of an *agential* identity over and above *bodily* identity: a person is a dynamic, self-communicative agent in relation to a public world. An agent needs the powers of intellect, will and memory. These are self-consciously exercised and makes agential identity subjective; "a person is continuously and immediately present to himself" (ibid. 367). This self-presence occurs in a unitary spatio-temporal framework, a personal body. "In sum, personal identity, as agential identity, essentially consists in the narrative unity of the actions of a rational and moral agent in a social setting within a historical condition" (ibid. 367).

Cuypers' argument helps us to make some important advances: He is sensitive to specific historical conditions, the role of the body in making identity possible in the first place and to the one's relationships with others in constructing identity. However, an approach informed by complexity theory would also have a number of important differences: Cuypers views a person as a logical unity with a bodily identity which does not exclude a "non-bodily identity". It is difficult to see why a non-bodily identity is necessary, given the rest of his analysis. What does a non-bodily identity do or accomplish except, perhaps, surviving the death of the body? He adheres to a distinction between the body – with its functions of intellect, will, and memory – and a separate, non-bodily identity that is fully present to itself and can present itself as an agent in social relationships. Is this position really that different from Descartes' cogito? It seems that Cuypers does not manage to move much beyond atomism, still distinguishing between an external world, which the self experiences and acts upon, and an "in here" with an essential, separate identity (even though it is dependent upon its spatio-temporal body). The self is still identified with the ostensibly rational characteristics agency, intellect, will, and (to a lesser extent) memory. This characterisation provides no hint of the, at times, impenetrable, inexplicable, even irrational post-Freudian self. How does the seemingly chaotic subconscious with its psychoses and neuroses fit into the atomistic self? The short answer is that it doesn't. More than a century of psychology

has made it clear that what is sometimes considered to be a coherent, unified self is, in fact, an extremely complex phenomenon – one that cannot be abstracted from its radical contingency. In order to develop such an understanding of a complex self, one that is relational through and through, a brief introduction to the theory of complex systems is required.

What Is a Complex System?

The burden of the argument so far was to show that traditional theories of the self seem to require a mind-body split, which makes them limited in their ability to account for an exceedingly complex phenomenon. Starting from essentialist features or distinctions fails to capture the intricacy of the self and leads to an impoverished account of what it means to be human. An approach which views the self as a complex system would, we hope, overcome some of these problems. Once we have established that the self is a complex system, we will analyse it in terms of complex systems theory in order to support our point that the self can best be described in terms of this theory.

Talking about a complex system requires that we take into account how constituents of this complex system interact amongst themselves, as well as with the environment that the system functions in.[30] A complex system has a large amount of components whose workings and interactions as a whole cannot be analysed precisely. Any analysis will have to impose limits on the description of the system, and will therefore distort aspects of the system. Examples of complex systems are usually living or social systems: the brain, living organisms, language, the economy, etc. What follows is a brief and general description of the characteristics of a complex system.[31] The implications of this for the self will be returned to later.

1. A complex system consists of a large number of elements which by themselves could be simple.
2. The elements of a complex system are in dynamic interaction. This interaction need not necessarily be physical; they could also be thought of in terms of the transference of information.
3. The interactions between the elements are rich, where every element can influence many other elements in the system. The behaviour of the system is not determined by the exact number of interactions associated with specific elements.
4. The interactions between them are non-linear. Small causes can have large results (and vice versa).

[30]When talking about the self, the term "environment" refers to the myriad of influences that the self is exposed to everyday: other people, the media, objects that it encounters, its own history, memories, perceptions, physical sensations etc.

[31]For more detail, see chapter one in Cilliers (1998).

5. The interactions occur over a short range, but can have long-range influence, mediated by other components. The influence interactions can have can be suppressed, enhanced or modulated along the way.
6. There are many loops and feedback paths in the system – the effect of any activity can feed back onto itself.
7. Complex systems are open systems. They interact with their environment and it often becomes difficult to define the borders of a system. The limits of a system are usually imposed on it by our description of it, not by some natural feature of the system. This is referred to as the problem of framing.
8. Complex systems operate under conditions far from equilibrium. Equilibrium is another word for death.
9. Complex systems have a history. They evolve through time and their past is co-responsible for their present behaviour.
10. Each element of the system is ignorant of behaviour of the rest of the system, or of the system as a whole – it can only respond to information available to it locally.

A complex system is not merely a passive reflection of its environment, nor does it control the environment. The relationship between the two involves a dialectic that is neither active nor passive.[32] The environment is usually complex in itself, and in order to cope, a complex system needs to be able to do two things: it needs to be able to store information about its environment (memory) and it needs to be able to adapt its structure to changes around it. This means that a complex system needs to gather information about its environment. This information cannot be a random collection of elements; it has to be meaningful to be to the system's advantage. Interesting philosophical questions can be raised at this point: How does this meaning come about? Is it inherent to the environment, waiting to be comprehended by the system, or does the environment have no meaning, save for that which the system confers upon it? Important for or purposes is the question of how the system thinks about itself. It stands to reason that if the system needs to function in a particular environment, it has to factor its knowledge of itself into its knowledge about the environment. It needs to be able to predict with relative accuracy how it will fare in the environment. This ability requires knowledge of itself that is fairly accurate.

The environment that a complex system functions in changes continually and for this reason the system cannot behave in a rigid manner. It needs to be adaptable in order to cope with changes. Specific adaptations cannot be programmed into the system, nor can the system act according to inherent or a priori principles which do not take the external world into account. In order to deal with contingencies, the system has to be able to organise *itself*. This self-organisation relationally incorporates the history of the system (memory) and elements external to it. What is important here

[32]This dynamic is captured best by Derrida's notion of *differance* (cf. Cilliers in Chapter 1 in this volume).

is that there is no central control; the network acts upon the relation between memory and external information to satisfy the constraints under which it operates.[33] Thus, the structure of the system cannot be completely determined by the environment in which it finds itself, nor is the environment important merely to the extent that it serves the purposes of the system. Meaning, for a specific system in a specific context, is the result of a process, and this process is dialectical (involving elements from "inside" and "outside" the system) as well as historical (previous states of the system are vitally important). The way in which a complex system cannot be clearly demarcated from its environment has obvious implications for our understanding of the self, to which we shall return.

The information that the system stores cannot be random, it needs to be useful for the survival and success of the system. The meaning this information has cannot be explained merely in terms of correspondence to some objective set of conditions in the world. If it merely mirrors the world around it, the system will have no separate identity that can be recognised. The system needs to interact with its environment; it needs to interpret what it sees in terms of its specific history. The relationships already established among the structural components of the system provide a framework that confers "meaning" upon what is perceived. Such "meaning" then, is in the world, but not *determined* by the world. This again has implications for how we understand ourselves in the world.

We cannot analyse all the parts that make up a system separately in the hope that we will capture the essence of the system. Because the characteristics of the system are established in the relationships between the components, we destroy such characteristics (often called "emergent properties") when we divide the system up. Since emergent properties are the result of the interactions in the system, they cannot be predicted by an examination of the components of a system. Furthermore, the non-linearity of the interactions means that we cannot replace a set of interactions with another, simpler set of interactions. The law of superposition does not hold. This leads us to an important conclusion: a complex system cannot be broken up into its constituent parts, nor can it be replaced by a simpler system, without losing vital characteristics of the system. From this we can deduce that formal, a priori models of complex systems (like the self) will not fully capture their nature.[34]

Before the implications of the theory of complex systems for our understanding of the self are examined in more detail, we will present some insights from the work of Derrida. It is illuminating to compare the remarkable affinities between deconstruction and complexity.

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[33] This point will be elaborated upon in order to argue that a complex system (and identity) cannot be seen as an arbitrary construct.

[34] Such models can be helpful in developing ideas, as long as we are aware of their limitations. It is exactly in these murky waters – that of the status of formal models – that research into artificial intelligence has been floundering.

Deconstruction and Complexity

In a recent interview Derrida asserts: "... a pure identity which is identical to itself is simultaneously identical to death" (Derrida 1999: 36).[35] This statement, which may seem a little ambiguous at first glance, can be given content in terms of our discussion of complex systems. A complex system can only exist, and transform itself, if there is a flow of energy and information through the system. A system survives (and also flourishes) in terms of tensions, anticipations and investments that may or may not mature.[36] When it reaches a state of equilibrium, it ceases to exist. These tensions are exactly the kind of thing that deconstruction zooms in on – not to destroy or eliminate them, but to tease them out, to transform them. Deconstruction and complexity are both notions that cannot do without some form of engagement with the world – meaning is a result of engagement. As we will see, such engagement relies on the presence of differences within the system.

The relationship between deconstruction and complexity can be established in a more general way with reference to Saussure's model of language. This model describes language as a system of signs which obtain their meaning through their relationships with all the other signs in the system. These relations are rich, non-linear (they are relationships of difference) and there are many feedback loops. It is not surprising that language can be described in terms of complexity. It is also interesting to follow how Derrida's elaboration of Saussure's model helps us to develop our understanding of complex phenomena.[37]

The traditional way of viewing language, one to which Saussure adheres, is to take spoken language as the pure case. It occurs in a context where meaning seems to be *present* as a result of the illusion that the person who is being addressed can at any time, at least in principle, interrupt the conversation and ask for an explanation or clarification.[38] Someone reading a written text does not have this certainty. A written text is the representation of the words that would have been spoken. With the writer of the text absent, the reader is left to interpret the text as accurately as possible, but there is always room for misunderstanding. Derrida argues that written language provides us with a better understanding of language, and that we should see speech as a kind of writing.

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[35]This interview was published in Afrikaans in the South African philosophical journal, *Fragmente*. The translation is ours.

[36]The Freudian contribution to the understanding of the self will not be elaborated upon, but should be clear from statements like these.

[37]Refer to Cilliers (1998: 37–47) and Cilliers Chapter 1 in this volume for a more detailed discussion of Derrida's elaboration of Saussure's language theory, and its implications for complexity theory.

[38]This idea of presence is similar to the idea that "pure", unmediated knowledge of the self can be obtained trough first-person introspection. Primacy is given to knowledge about oneself "seen" in the mind's eye, because it seems, to some theorists at least, improbable that one may be mistaken about such knowledge.

Meaning is never present in an unmediated form, but has to be reconstructed. The spoken word is, like the written one, a material form which needs to be interpreted, and which gains its meaning from its differences from other material forms. We cannot conceive of meaning outside these conditions (as, for example, an a priori essence, or as an ideal representation). This dynamic would not only pertain to language as such, but to anything that can be given meaning. It is in this sense that our interpretations of the world and of ourselves are textual events. We, as subjects, become who we are, and have meaning, in terms of a set of relationships with others and the world. In Derrida's terms "the assemblage to be proposed has the complex structure of a weaving, an interlacing which permits the different threads and different lines of meaning – or of force – to go off again in different directions, just as it is always ready to tie itself up with others" (Derrida 1986: 3).

A text's meaning cannot be exhausted, nor can it be controlled or prescribed. Meaning is not *present* in the text itself, it lies in the relationships between elements in the system of which it forms part (which includes an interpreter). Derrida calls the relationship between any two elements in a system a *trace*. A myriad of traces work to generate, through their differences, a pattern of meaning which they constrain, but cannot fix.[39] Any trace can contribute to a different meaning in a different context since there will be a different *collection* of traces when the context changes. One can also see traces as that in which the history of the system is sedimented. To establish a meaning in a given instance is to alter the traces, and this will influence future interpretations. Meaning cannot be static – it is always changing and always the result of differences within the network.

It is useful to explain the way in which traces interact in order to constitute meaning in terms of Derrida's notion of *différance*.[40] In French, this word corresponds phonetically to the word *difference* and in this manner encompasses three meanings, namely to differ, difference and to defer. Traces are different from one another and in the interaction between these differences meaning is generated. But meaning is not static or final – it is always deferred. The process in which meaning is generated is suspended somewhere between active and passive. The sign is produced by the system, but at the same time the meaning that is generated for it through the process of *différance* reverberates through the system, influencing other signs. The characteristics of the system are not inherent to it, but are the result of the process of *différance*.[41] Thus, meaning (identity) is both formed by and constrained by meanings that already exist in the system.

Meanings are constituted in a context, in a discourse. There are many contexts which do not have an absolute centre and which cannot be exhaustively defined.

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[39] "A text presupposes an extremely complex textual field that branches off in space and time in all directions, and to which a text points to and relies on" (IJsseling 1992: 21).

[40] See Cilliers (1998) pp. 43–46 for a more complete discussion of this important concept.

[41] "Since language, which Saussure says is a classification, has not fallen from the sky, its differences have been produced, are produced effects, but they are effects which do not find their cause in a subject or substance, in a thing in general, a being that is somewhere present, thereby eluding the play of différance". (Derrida 1986: 11)

"A context can always and continuously be extended in all directions" (IJssling 1992: 17). The limits to the text with which one is working are continually shifting. IJssling (1992) makes the point that these limits are chosen (he calls this deciding the undecidable) and in choosing to demarcate or frame a text we are making an ethical and political decision, a point to which we shall return. It is worth mentioning that with regard to the self that the boundaries are chosen in this instance (attributing meaning to the self) by the interpreter and not by the self as an agential entity. It should furthermore be kept in mind that the interpreter of the self can be done by another or by the self in question. I interpret my "self" just as much as someone else does; however, it may be assumed that I have access to more information (in the form of memories and feedback from my body) than someone else would have.

From the perspective of deconstruction, we can therefore conclude that the self, as a complex system permeated with signs, is constituted in a network of meanings and cannot be separated from its context. The self is the effect of a textuality of sorts.[42] We have seen, in accordance with Derrida's conception of trace and *différance*, that identity cannot be pure; it cannot be present to itself. " [I]t is only on the basis of *différance* and its 'history' that we can allegedly know who and where 'we' are, and what the limits of an 'era' might be" (Derrida 1986: 7). The self can only be a pure, unified entity when it doesn't exist by virtue of its relation to other elements, when it doesn't change, when it isn't interpreted and when it ceases to be part of a dynamic system – when it is dead. Derrida's claim that "there has never been, never will be a unique word, a master-name" (1986: 27) can, in the light of our discussion, be reformulated to the following: There has never been, never will be a unique self, a master identity. A person is not the origin of her identity, nor can she have complete control over it (IJsseling 1992: 21). The question arises; can we then be more specific about what identity is? We will return to complexity theory with this question.

The Self As a Complex System

We quoted Cuypers above saying that a person's identity is not identical to her bodily identity, just like Rodin's "The Thinker" is constituted by a lump of bronze, but not identical to it. By using a statue as a point of comparison, Cuypers raises a few interesting issues. A statue implies a sculptor. If identity can be thought of analogously to a statue, it would imply an external agent, someone or something that forms a self whom it is dependent upon, but not identical to the body in which it resides. Now this has something in common with our argument thus far: the self is dependent upon its world/environment and cannot be separated from the body. What does not sit well is firstly the idea of the self as something formed, a finished product,

[42] 'Thus one comes to posit presence – and specifically consciousness, the being beside itself of consciousness – no longer as the absolutely central form of Being but as a "determination" and as an "effect" (Derrida 1986: 16).

cast in bronze; and secondly the idea of separate bodily and personal identities. We have argued that a complex system needs to be able to adjust to its environment if it is to survive and that contingent circumstances and a specific historicity makes up the environment. It would be preferable to develop an idea of identity that is dynamic and does not depend on an external agent for defining its nature.

Derrida asserts that: "*différance* is no more static than it is genetic, no more structural than historical" (Derrida 1986: 16). What he says about différance is also true for the self. To think of the way that we perceive the world as receiving (particles of) information about it, through our senses and ordering these perceptions into a coherent whole and then acting upon them as an abstract subject, is to disregard our own historicity and our own interaction with the world that we perceive. Our "intellect, will and memory" (to return to Cuypers's argument) do not serve only to provide us with a spatio-temporal conceptual framework by means of which we order the world, they participate in and change the world. Furthermore, they originate from the world; the self has to form and operate within the structures and constraints provided by the environment, regardless of will, intellect and memory. In the process, we both participate in and create a world too diverse and complex to grasp or describe fully.

Part of this argument is that we cannot be born pre-programmed with an inherent idea of what it means to be human and how we have to be to get on in the world, nor with a fixed idea of what the world itself is. These ideas have to be developed through an engagement with the world. To be able to deal with the contingencies that form part of daily life, we have to be able to act upon information we are exposed to and adjust our ideas accordingly. It would seem more feasible to think of the self as a dynamic process, continually needing to adapt and change in response to its interaction with the world, while being influenced by its history through memory. Will, intellect and memory are all influenced by the world to a greater or lesser extent. This process can be given content by taking a more detailed look at how the different characteristics of complex systems (as discussed above) manifest themselves in the self:

1. If we think of the self as something that is constituted in a system of differences, then it does consist of a large number of elements. The self is not a singular thing, but divided in itself. This is not a schizophrenic understanding, but one that wants to give a voice to all the different, sometimes contradictory, aspects of personhood. What is more, all the innumerable traces in the textual field (the world and ourselves) contribute towards identity. The traces that make up our view of ourselves and the world include everything that we are exposed to in the world: other people, conversations, books, our education, our material circumstances, state of bodily health, our childhood memories and future prospects, everything. These things do not contribute to the self in a deterministic way, they interact and merge. We cannot identify all these components, and then fit them into a coherent whole in order to provide an exact description of our "self".

2. Traces gain their meaning from the textual field in which they operate and are empty (meaningless) if they do not interact. A self cannot be meaningful in isolation. The self is constituted by its relationships to others and the world. Our environment (context) is continually shifting and changing and we need to adjust the sense we make of it and of ourselves. We interact with others and with the world and these relationships are never static. No person can be understood independently from her context and different aspects of the self can be relevant in different contexts.
3. The interactions between traces are rich. People and things that contribute to our conception of self can be numerous and divergent and we interact with them continuously.
4. Some influences have a profound effect on the self; others may pass without so much as a ripple. The influence that something has on us is not only determined by the size of the cause, our context and history also contribute to the outcome. Some people and events may therefore be a bigger factor in a person's identity than others (e.g. family members as opposed to shop assistants). Another way of making this point is to say that the interactions that constitute the self are non-linear.
5. We can only respond to the influences available locally. Interactions thus have a fairly short range. Our sense of self comes from things and people we have been and are exposed to. However, stories, songs, books, artworks, news broadcasts and travel mean that this exposure is not limited to our immediate environment, but rather to a kind of "first-hand" encounter with texts that fall within our cultural orientation or our field of interest. Much of how you think about yourself and the world is contingent on your spatial and temporal location.
6. There are many loops in the interactions with others and the world. Many of our actions feedback on themselves. We have seen in the earlier discussion of *différance* that every instance of ascribing meaning (interpretation) is to already alter possible meanings. When we ascribe meaning to the world we interact with it. The world we are born into is not determined. Against our spatio-temporal background, education and economic means, we are able to choose at least some of the texts that we are exposed to. Our choice of literature or friends for example will be constrained by our view of the world and ourselves, and will also feed back upon this view. The way that we perceive things to be might be confirmed or called into question by texts we encounter. The world is not merely the origin of meaning – we participate in our world, and change it. In some instances we may have more control over this than in others. The effects of some of our interaction with the world can be quite unexpected and unpredictable.
7. The self is an open system. It is impossible to point to some precise boundary where "we" stop and where the world begins. To confine the self to the prison of the skull is a gross oversimplification.
8. The self is never in a state of equilibrium; our interaction with the world is dynamic. As our environment changes, we adapt. We are constantly reflecting

and acting. We do sometimes long for peaceful state in which no demands are made upon us; Freud refers to this longing the death-drive.

9. The self is greatly influenced by its history. The history and context of a person co-determines her identity. No two people have histories or contexts that are identical. Even if two people had very similar backgrounds, a host of other factors would contribute towards their view of themselves and the world. In a way, the self is nothing more than the sedimentation of its history in memory.
10. No person can be aware of her whole self. You are not aware of all the desires, needs, communications, fears and expectations making demands on you at the moment. Nor are you consciously aware of your complete history as a series of distinct events that chronologically make up your personal narrative. We are only conscious of parts of the self at any given moment. Much of what makes us what we are is not available to consciousness at all.

To summarise, the self is not a complete and coherent entity present to itself. It is constituted through the complex interactions amongst a host of factors, the significance of which cannot be pinpointed for each one. Our sense of self is the result of transient patterns in this network of traces, which we organise into a (temporary) narrative. Consciousness is an emergent property of this network, not a central control system that "causes" the experience of the self. Let us turn to this issue in a little more detail.

What Is Identity?

Viewing the self as relational makes for a more flexible way of understanding how we come to be who we are. Yet, it is still possible to talk about someone's identity or beliefs in a meaningful way. By arguing that identity cannot be fixed we are not suggesting that identity is fragmented and arbitrary. A dynamic, open system cannot be discussed in isolation from the different discourses of which it forms a part, that influence and constrain it. Returning to the analogy of the text, we can describe this in the following way: Texts exist in a contextual field, a network of meaning. They refer to each other and they rely on each other. They bear a likeness to one another, but also distinguish themselves from one another. In short, texts are *intertextual* events. Because of this intertextuality, texts can be quoted in other texts, recited, reproduced, commented on, interpreted, clarified, improved, summarised, amplified, supplemented, condensed (IJsseling 1992: 26). A text comes into being in an already existing network, and this network places constraints upon its possibilities. The self is not fragmented into a multiplicity of selves, it is distributed over a network of meanings (traces), in which it can be identified, but never definitely so. Identity/self is never final; it changes as context changes (even if only imperceptibly). In a sense, the self is a narrative distilled from the multiplicity of possibilities available from the world of experience.

It should be emphasised that a complex system is not chaotic; it has structure, even if this structure is continuously transformed. Just as words cannot have meaning if they are not repeatable or iterable (IJsseling 1992: 25), the structures in a complex system must be identifiable. Transformation cannot be other than the transformation of something specific into something that can be recognised as a new form of the previous structure. There is thus no contradiction involved if we deny an essentialist understanding of the self, but still talk of someone's "identity". This "identity" is the result of the play of a specific, contingent, historically determined and changing set of differences, it is not a "source" in itself. This identity can also not be separated from its embeddedness in social conditions and will therefore always have an ethical dimension. And, since our social conditions are always in flux (to a greater or a lesser degree), our identity and that of others is always in flux, always adjusting and changing as circumstances change. As a result, as we construct our narratives that given meaning and identity to ourselves and to others, it falls to us to continuously reassess our perception of ourselves and of others and to always remind ourselves that we are only ever dealing with a small part of the whole picture, and as the picture changes, so should we. This is not only a normative (ethical) point, but also a pragmatic one – if we do not adjust our narratives in accordance with changing conditions, we tend to fall behind and become more out of touch with the realities, norms and values of those that surround us. We do not only risk becoming unethical; we also risk becoming obsolete. In many respects, an ethical sensibility equates with the survival of the individual in the social realm.

The Ethical Self

Wilson (1998) addresses an objection frequently raised against postmodernist theories and against deconstruction in particular; namely, that they do not offer "a positive project". Critics accuse these theories of being more concerned with negative criticism of Enlightenment or modernist projects than with offering any suggestions as to alternatives. In the words of Wilson: "These critical theories are deemed dangerously apolitical" (1998: 21). Wilson answers this criticism by asserting that it is possible to say that deconstruction *exceeds* such classical concerns (such as a positive project, for example). "What this means is that rather than negating, excluding, or preventing classical political and epistemological projects, deconstruction is engaged in an examination of the conditions that make such projects possible and the implications and effects of their operations" (1998: 22). This claim is also relevant when talking about the self. The modernist or essentialist understanding of the self works with the notion of a subject that is pre-formed, that first exists and then engages in a number of activities, including ethical ones. The understanding of the self that we propose is partly constituted by a personal narrative, constructed through social interaction and is therefore always already political in the Aristotelian sense.

An understanding of the self as a construct in flux cuts in two directions: In the first place, it argues that a "neutral and objective" view is impossible. It is a fantasy that disregards crucial components of what constitutes a person. It leads to delimiting the subject where certain aspects of the self are considered legitimate or desirable while others (the subconscious, irrationality, emotion) are disregarded or deemed secondary and incidental. This approach is not only unethical, but also counterproductive. It leads to an impoverished understanding of ourselves, others and our environment. Since we can only exist and operate in the social environment, a poorer, or less complex, understanding of the complexity of that environment and the individuals in it will severely limit our ability to successfully act and interact in that environment.

In the second place, an emphasis on the ethical nature of the subject reminds us of the inevitability of political (and ethical) involvement. Our identities as individuals or institutions are formed to a great extent by our social interactions (or lack thereof). We are not already-realised subjects that have to make ethical decisions; we come to be through those decisions.

As entities embedded within complex social environments, we have to make use of various meaning-given frameworks and assumptions. Since we cannot step out of our complex environment to view these frameworks omnisciently, we have to make choices based on the contingent, local knowledge and options available to us. Another way to formulate this point is to say that in the realm of the self, we are always already in the realm of engaging with making choices – the realm of ethics.

The Self, Organisations and Responsibility

The position developed here can be used to inform our understanding of the relationships between "selves" and "organisations". The notion "organisation" can refer to many of the social structures we find ourselves in, including families, ethnic or cultural groups and political entities. It can also refer to the specific organisations we encounter in the workplace. It is to this latter context that we return with some concluding remarks.

The fact that the self is relationally constituted means that relationships at the workplace form part of what constitutes the identity of the self. What we do at the workplace cannot be compartmentalised or treated separately from the rest of our existence since it co-determines our identity, and vice versa, The self is also not constituted simply by the direct relationships with other co-workers, but also by the wider context in which the organisation one works for operates. An organization would do well to keep its employees' broader context (narrative) in mind and not to operate based on the fiction that that one's work self can be segregated from the rest of one's identity. These will always inevitably affect one another, sometimes to the benefit of the company, sometimes not. This argument can also be inverted.

One can talk of the identity of the organisation as a whole as something constituted in a way very similar to that of an individual. The identity of the organisation is

the result of the contingent set of differences at play between the different members within that society and with its external environment – which will of course include other organisations. The organisation can thus be seen as a kind of "self" with a dynamic identity. This self is constituted relationally, and thus has the same ethical character as the identity of the individual self. The organisation's choices cannot be reduced to a simple definition of what the organisation is or should be since this will imply a static understanding of what the organisation is. The whole argument from complexity indicates that this understanding will not create the conditions for a vital organisation which can deal with a complex environment.

The central insight should be the following: ethics is not something which a person or an organisation engages with over and above a number of other things, ethics *constitutes* the person or the organisation to a great extent. This we think has important implications for business ethics. The main question regarding the ethical aspects of a business cannot only revolve around whether our practices are acceptable. The main question is: What narrative are we working with? How do we constitute our identity and does it correlate with the changing environment in which we operate? Our identity is formed by how we answer this question. Accepting the responsibility for the answer, and for how it affects others, is not a burden we have to bear, it is what makes us who we are.

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