Post-Graduate Programme in Transdisciplinary & Sustainability Studies
Towards Introducing Transdisciplinarity at MPhil and DPhil Levels

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"Universities should create ateliers of transdisciplinary research (free from any ideological, political, or religious control) comprised of researchers from all disciplines" ~ Basarab Nicolescu[1]

1. The Emerging Global Significance of Transdisciplinarity (TD)

It has become rather commonplace these days for complexity theorists to state that we are living in a complex world with complex problems and that we therefore need to move away from simplistic, reductionistic and linear thinking if we want to understand this world. Indeed, we need complex thinking to understand the complex world in which we find ourselves today. 'Complexity' being one of the three pillars – the other two being levels of reality and the logic of the included middle – of TD means that the latter is certainly in agreement with this viewpoint. However, TD goes a step or two further. Firstly, it not only purports to offer a complex or multi-dimensional model of reality with which to interpret and understand the world, but TD also wishes to find sustainable solutions to the complex problems we are having to face. Understanding and discovering integrated, holistic and long-term solutions are two sides of the same TD coin. Secondly, TD recognises that we need to *transcend* the very disciplinary boundaries which have kept us from grasping the complex nature of the world that we live in. In fact, this going *beyond* the boundaries of disciplinary thinking is, in a sense, a precondition for the latter. We will never be able to fully understand the complexity of the world and its problems from *within* a singular disciplinary perspective. Neither will we be able to discover sustainable solutions from the specificity of a particular disciplinary viewpoint. It is only to the extent that we manage to *cross* the borders of the mono-disciplinary knowledge system that we can hope to assume a position from where we can begin to comprehend our complex world.

What is clear from these introductory remarks about our engagement with the complex world is that, from a TD point of view, the three processes of understanding, problem solving and unification of knowledge are inextricably linked. All three need to happen at the same time. Finding sustainable solutions is dependent on complex thinking, which, in turn, is dependent on unified knowledge. The implications of the interdependence of these three aspects are indeed of crucial importance to the University. Although this modern invention of 'higher learning' has become the embodiment of a fragmented, mono-disciplinary knowledge system, the University is still accepted and seen today as one of the key institutions of knowledge generation and management in society. How the University understands itself, how it answers the questions 'what' is regarded as valid knowledge and 'how' should it be produced, disseminated and shared throughout society, will have a major impact on the extent to which we can come up with lasting solutions to the complex world and its problems which we – the human species – are being confronted with at the moment. From a TD perspective, it is clear that the University is in need of deep transformation. Whilst the many advances and achievements made over the last three centuries in the fields of science and technology are being acknowledged, what is equally recognised is that the extant mono-disciplinary knowledge system of the University will have to be transformed if we are to engage with the complexity that surrounds us. If the transformed University of the future is capable of transcending those dominant institutionalised and 'reified'[2] disciplinary boundaries that have become part and parcel of

'academic life', accepted as the only way things 'are' or 'should be' organised at a 'normal' institution of higher learning, it will play a pivotal role in providing both the *locus* and integrated knowledge system *from* and *within* which sustainable solutions to complex problems can be sought. To be sure, the transformation of the University is not an end in itself. It comes into focus and question as part of the dynamic interplay of the simultaneous needs for complex thinking / understanding, problem solving and unified knowledge.

The transformation of the University can, and should, have many points of departure, internally as well as externally. The call to introduce a Post-Graduate Programme in TD Studies is to propose *one* such starting point to transform the University from within. It is not the only beginning, but, nevertheless, a very important one if we are serious about finding durable solutions to complex problems. A DPhil / PhD in TD Studies can become a conduit for discovering what it takes to transcend disciplinary borders, whilst, at the same time, establishing a *locus* for the unification of knowledge – a platform from which integrated and sustainable solutions to complex problems can be sought. As we know, this call for such a Post-Graduate programme is not just a theoretical possibility any more. At the Universities of Cluj (Romania), Valdivia (Chile) and Stellenbosch (South Africa) substantive plans are underway to launch this programme in the near future. This is indeed very exciting and encouraging news and is hopefully a sign of a much broader and wider process to follow where in future many more Universities will decide on this course of events. Under sections 2, 3, 5 and 6 below we will explain in more detail why this is being considered specifically at the University of Stellenbosch as well as highlighting some of the salient points which have emerged in our thinking and planning ahead of implementing this degree as from 2006.

However, before we do so it is important to spend a few more thoughts on explaining our understanding of the nature of our complex world and, in view hereof, our reasoning for why it is considered necessary to transform the mono-disciplinary knowledge system prevalent at Universities the world over. To call for the transformation of the University on the basis that mono-disciplinary knowledge production has become too fragmented and restricted to help finding lasting solutions for intrinsically complex problems, is a rather serious matter and warrants more in-depth reasoning to substantiate this claim. In fact, the argument goes a level deeper with the assertion that the very complex problems and crises we have to solve today are outcomes of this non-unified and disjointed knowledge system. In other words, there is a relationship between our thoughts / ideas and actions / deeds. It is the manner in which we have seen and appropriated the world through our knowledge systems of the past that have played a significant role in the emerging problems and crises that we are being confronted with at this point in time. Conversely, if we could change the way we think and the systems that produce our knowledge, we may stand a much better chance to discover lasting solutions to the intricate problems facing us. If we change our traditional preconceptions and classifications of what constitutes 'valid' knowledge and how this knowledge is to be generated and applied, for what purpose(s), we could indeed find ourselves on a road to understanding the complexities we have to deal with. In all of this, the transformation of the University is of paramount importance, because for as long as we remain locked into the current mono-disciplinary system we would be drawn towards *reductionism* and *fragmentism* – perhaps like moths to the flame of a candle (with the same consequences?). Furthermore, if we accept, from a TD perspective, that one of the points of entry into initiating the transformation of the University could very well start with the introduction of a PhD / DPhil programme in TD Studies, then it is incumbent upon us to explicate in more detail the reasoning underpinning this position, namely that: it is possible to cross the boundaries of mono-disciplinarity whilst, at the same time, establishing a transdisciplinary 'space' within the current structure of the University that would enable the

emergence / generation of new knowledge better suited to respond to and deal with our complex world.

The opening argument presented so far can be summed up more or less as follows: that the shortcomings and limitations of mono-disciplinary knowledge generation and application has been rudely exposed by our world becoming increasingly more complex and that the transformation of the University, the physical and institutional embodiment of mono-discplinarity, is vitally important if we are to find long-term, sustainable solutions to the challenges facing us on this planet of ours. The question then is what is it about the complex nature of the world and its problems that is forcing us to radically review and transform our thinking as well as our institutions of learning, teaching and researching respectively? How are we to understand the intricacy of our individual and collective lives on this planet of ours if it is demanding from us such drastic action, namely to fundamentally re-evaluate and change not only our thought processes and mindsets, but also the systems, structures and institutions that we have used in the past to exercise, experiment, house and distribute the outcomes of our conscious efforts – i.e. our knowledge?

Typifying and contextualising our being-in-the-world today has been done by numerous authors and commentators. Indeed much has been written and is still in the process of being written with a view to capture some of the salient features of what has commonly become known as 'globalisation'. This is not the place to go into an in-depth literature survey of what has been written on this topic, but rather to focus on some pertinent descriptions which manage to capture the complex nature of the times we are living in. In this regard, Edgar Morin (1999) coins the notion of 'Planetary Era'. Central to this concept is a portrayal of the current global context in which we find ourselves as a *world-in-crisis*. In fact, the singular word 'crisis' has become somewhat obsolete to try and capture the complexity and adversity of what we are being confronted with at the moment. Morin therefore invents another phrase, namely 'polycrisis', to better depict the reality of us being confronted with not necessarily a single, big problem or crisis today, but rather with a series of overlapping crises which are not localised in one specific socio-geographical space or place on the Earth. By their very nature of being interconnected, this series of crises must be understood in global or *planetary* terms. "One is at a loss to single out a number one problem to which all others would be subordinated. There is no single vital problem, but many vital problems, and it is this *complex* intersolidarity of problems, of antagonisms, crises, uncontrolled processes, and the general crisis of the planet that constitutes the number one vital problem"[3].

Thinking along similar lines, Manfred Max-Neef (2005) prefers to use the term 'problematiques'[4] to refer to problems such as poverty, energy, water, waste, health, violence, food security, mass migrations, destruction of local cultures (cultural diversity) etc. as examples of what constitutes this series of interwoven crises which manifest themselves globally. Therefore, using concepts such as 'planetary', 'polycrisis' and 'problematiques' is indeed a way to create a language to communicate and relay (to ourselves and others) the complexity of our being-in-the-world. As mentioned, the literature on this topic is vast and this list of descriptions could be significantly increased. However, for our purposes we could summarize our understanding of the complex nature of the problems we are facing today in terms of, at least, the following five aspects or dimensions:

- **Multi-dimensional** – complex problems straddle different levels of reality at the same time and, therefore, implies a through understanding of the simultaneity of both the discontinuity *and* coexistence of natural and social systems;

- **Systemic** – complex problems are interconnected and cannot be understood in isolation from each other – it is not so much the individual problem areas in themselves that are complex, but rather the sets of overlapping relationships between them that defines and constitutes the bigger, planetary, nexus of problems;
- **Emergence** – complex problems tend to show or reveal new or different sides as our perceptions of them change – understanding complex problems therefore implies a multi-referential epistemology with its point of departure in a non-separable subject-object relationship and which involves all our faculties of knowing and understanding – the mind, body and feelings / intuition;
- **Global-local context** – complex problems do not manifest themselves exclusively on either the macro-, meso- or micro-levels – they are not restricted to a particular 'scale' or 'level' – neither are they limited to a specific geographical place or region on the earth – complex problems are by definition planetary which means that their presence are observed and experienced both *globally* and *locally* at the same time;
- **Long-term consequences** – complex problems pose severe / adverse implications for the continued existence of the human species if left unattended or unresolved – this implies the urgency of sustainability or finding sustainable solutions to these complex problems.

It is, therefore, when we look at the complexity of the *problematiques* facing us today along these lines and in terms of these dimensions, that it becomes quite apparent to us that we are being confronted here with a transdisciplinary challenge. We simply cannot imagine anymore how we will find solutions to complex problems from the perspective of a singular discipline – or even from a multi- or interdisciplinary perspective where one, two or three disciplines have come together to exchange viewpoints, insights and/or methods. Transcending the borders of the disciplinary divide, most notably and severely manifested in the 'natural' vs. 'human' sciences split, is a precondition for being able to deal with the complex nature of the world and its problems in an integrated and holistic manner. The unification of our fragmented knowledge is not a moral-ethical matter only. It has become an epistemological and institutional prerequisite if we are to respond to these problems that are simultaneously multi-dimensional, systemic, emergent, global/local and with severe long-term social and ecological consequences if they remain unresolved.

Implicit in this description of the world as 'complex' is another important question though: does this 'complexity' reside in our minds or in reality itself? Does this increasingly 'complex' appearance of the world come to us because of the way perceive and interpret it or can it be found in the structure of reality as such, in the way things *are* in the world? These are unavoidable questions that cannot be sidestepped. They are important for the very reason that the way we answer them will deepen our understanding and reasoning as to why the pursuit of transdisciplinarity has become imperative. Underlying and underpinning these questions is the relationship between ontology and epistemology, a topic that has attracted huge amounts of philosophical work. For our purposes, the direct answer to this question is that 'complexity' exists "*both* in the nature of things *and* in our minds"[5]. In short, this means acknowledging that the complex nature of reality resides on both the ontological and epistemological levels simultaneously – or what Basarab Nicolescu (2002) has, from a transdisciplinary point of view, referred to as the complex relationship between a multi-dimensional ontology and multi-referential epistemology.

This, as we know, has far reaching implications. On a methodological level it implies that we cannot interpret, study and research our complex world with concepts such as 'linearity', 'local causality', 'predictability', 'separability' etc. only. These concepts, central to the mono-disciplinary project, emerged in response to one level of reality – the macro-

physical level – and were coined and used in a reductionist paradigm where the search was on for the most fundamental or simple building blocks and/or laws of Nature and the Universe. Conversely, acknowledging that complexity resides simultaneously on both the ontological *and* epistemological levels implies having to approach reality in our hermeneutic endeavours with fundamentally different notions and concepts, such as: 'non-linearity', 'global causality', 'unpredictability', 'uncertainty', 'non-separability', 'included middle' etc. Using these new lenses not only changes our *perceptions* of reality, but they also allow us to observe a radically different 'Reality'. Or to put it differently, we have, as it were, allowed reality to reveal a totally different face of it to us.

This is clearly an impossibility in the mono-disciplinary paradigm. In this paradigm, not only has the macro-physical level of reality been taken as the one and only level of reality, but it (i.e. 'reality') has been imagined and conceived as predictable, static and certain – always operating machine-like under the same fundamental and universal laws. However, this does not mean that disciplinary thinking is completely invalid and has nothing to offer. That would be absurd. The problem with this mode of thought is that it can only interpret and study reality from its own perspective, using its own internal logic and concepts, and, above all, tends to reduce what it perceives as 'reality' to the so-called basic building blocks or fundamental laws of its own worldview. In short, mono-disciplinarity is ontologically, epistemologically and methodologically speaking too limited when having to face our complex world with its complex problems. The fragmentation that occurs as a logical result of the mono-disciplinary approach adds to or becomes part of the problem, rather than the solution. The *problematiques* which we are being confronted with today simply cannot be studied and problem-solved in isolation. Integrated, long-term, sustainable solutions are needed and TD with its multi-dimensional and multi-referential ontology, epistemology and methodology offers a much more holistic approach in this regard.

There is, however, another important reason why we should be critical and cautious of the dominant and fragmented mono-disciplinary model and why we should seriously consider introducing a TD presence into the University, starting with a post-graduate programme in TD Studies. Mono-disciplinarity with its strong predisposition towards reductionism did not come about merely as an exercise in a 'will to truth'. The emergence of the various disciplines and sub-disciplines cannot be understood only in terms of competing claims to *the* 'Truth'. Adopting a Nietzschean definition of knowledge[6], Michel Foucault has made us acutely aware of the intimate relationship that exists between *power* and *knowledge* and the extent to which our 'will to power' has played a decisive role in bringing about and constituting the rather modern phenomenon of disciplinary domains of knowledge or *disciplines* in short. Much has been written about this topic by Foucault himself, his followers and critics alike and space and time do not allow us to enter into an in-depth analysis of this discourse.

However, from our point of view, the following three cursory observations about this intimate power-knowledge relationship will suffice. Firstly, the emergence of *disciplines* is not something which has occurred in an ad hoc manner or by chance. They are the products our outcomes of a significant change which occurred in the epistemological structure of our consciousness. The *severance* or *separation* of the relationship between the 'sign' and the 'signifier', which registered an abrupt changeover from the Renaissance to the Classical epochs, played a significant role in preparing the historical conditions of possibility within which the emergence and formation of the 'natural' and 'human' sciences occurred. As soon as 'signs' were no longer restricted as they had been during the Renaissance by a relation of *resemblance* between *words* and *things*, 'signs' became 'tools of analysis', 'principles' or 'means' whereby which relationships of *difference* and *identity* could be established between things. In short, 'signs' became keys for a 'taxonomy', which allowed for the world to be *reduced to order*. Based, then, on this relationship of *non-*

resemblance between words and things, and the ability to classify and order, the once general areas of knowledge of the Renaissance period became 'organised' into more specific and distinguished or separate domains of knowledge with the advent of the Classical era – a precursor to the Modern era which was to follow and generate even more specialised and fragmented disciplines. Although general grammar, natural history and an analysis of wealth emerged as areas of study during the Classical period, what was absent from this systemization of knowledge was the study of man, as an object of study in itself. This came about only with the dawning of Modernity with the transformation of the Subject *into* an 'Object' of study. During the Classical era there was no epistemological consciousness of Man *per se*, with, consequently, no possibility of a 'science of man' as such. It was only with the advent of the Modernity that Man as the complex Subject and Object of knowledge emerged.

What characterised the introduction of Modernity was a new configuration of the once unified areas of knowledge into a system along the following three dimensions: (a) mathematical and physical sciences, (b) philosophical reflection, and (c) the sciences of language, life and production. It is, then, within this scheme of things, this epistemological arrangement of knowledge into three separate broad domains that the split between the so-called 'human sciences' vs. 'natural sciences' was construed and constructed. Framed in this manner, and given their specific epistemological allocation in this classificatory system, explains to a large extent the difficulties and problems experienced by the 'human sciences' from the onset in justifying their scientific status. According to Foucault, their lack of specificity and diversity of form can be explained in terms of their being allocated a specific 'space' *in* this system by virtue of which they (i.e. the human sciences) can utilize mathematical formalization, employ concepts and methods from the sciences of linguistics and biology as well as focus themselves on the 'inner' mode of being of man which forms the object of philosophical analysis. He concludes that the uncertainties experienced by the human sciences since inception cannot be ascribed by their 'immaturity', but rather their "uncertainty as 'sciences', their dangerous familiarity with philosophy, their ill-defined reliance upon other domains of knowledge, their perpetually secondary and derived character, and also their claim to universality, is not, as is often stated because of the extreme density of their object. It is not the metaphysical status or inerasable transcendence of this man they speak of, but rather the complexity of the epistemological configuration in which they find themselves placed"[7].

Secondly, this classification and atomization of the once general and unified areas of knowledge into specific 'disciplines', culminating in the juxtaposition of the 'natural' vs. 'human' sciences, did not merely occur as a result of a shift in the underlying epistemological structure of the Renaissance, Classical and Modern epochs. This would imply an over-reliance on a notion of a 'will to truth' being at the core of things. This would, in turn, warrant too abstract or idealistic (read *idealism*) an explanation for understanding this phenomenon of the emergence of distinct disciplinary domains of knowledge. According to Foucault, the 'will to power' played an equally critical role in this process of simultaneously *fragmenting* and *producing* knowledge. The convergence of these two processes occurred with the advent of Modernity. During this epoch we observe not only the separation between the subject and object, but also see this epistemological split turning in on itself with the *transformation* of both the Subject and Object into 'Objects' of study and control. We can only understand this, says Foucault, if we accept the notion that *power* is not only *repressive*, but also *productive* [8] in the sense that power actually *produces* knowledge. However, although this emphasis on the productive dimension of power implies a possible positive interpretation of power, in the final analysis, both these repressive and productive forms of power involve a notion of exerting domination or control *over* something or somebody – a critically important notion to grasp if we are to understand the crux of the matter at hand, namely how knowledge is being

produced *by* power: "... power would be a fragile thing if its only function were to repress, if it only worked through the mode of censorship, exclusion, blockage and repression. If, on the contrary, power is strong this is because it *produces* effects, at the level of desire and also at the level of *knowledge*. Far from preventing knowledge, it *produces* it ... it was on a basis of **power over** the body that a physiological, organic knowledge of it became possible"[9].

Thirdly, by linking the fragmentation and production of disciplinary knowledge with power helps us to better understand three interrelated questions: *what* happened, *how* it happened and *why* it happened. Driven by the 'will to over-power' (why) and enabled by an epistemological split and objectification of the Subject and Object (how), the once general and unified areas of knowledge of the Renaissance era became fragmented into separate / specific domains of disciplinary knowledge (what). Foucault's in-depth historical analyses of how all of this came about makes for important reading. His elaborate writings on the transformation of the Subject through various discursive and non-discursive techniques of power aimed at exerting control over both the Mind (ideology) and the Body (bio-power) is testimony of the extent to which the objectification of the Subject has occurred. Although Foucault himself remains rather silent on the transformation of the Object, i.e. Nature, into an 'Object' of study and control, it is perhaps true to say that Scientism, and more specifically Technoscientism, is the corollary of this very same process. Has the relentless search for the fundamental building blocks and laws of Nature been an exercise in a 'will to Truth' only? Or, has the 'will to power' not also been equally evident in the way that Nature has been 'tortured' to reveal her secrets (Francis Bacon) to serve the Subject's (i.e. our) interests?

Therefore, following this Foucauldian explanation of the convergence of knowledge production and fragmentation with the advent of Modernity, on the one hand, and juxtaposing the latter with the needs and challenges currently facing us in the complex, post-Modern, Planetary Era, on the other hand, has indeed deepened our understanding of the epistemological and institutional imperative to transcend [10] and transform the mono-disciplinary model of the University. Mono-disciplinarity has become too limited as the only intellectual paradigm to rely on when confronted with a complex world and complex problems. Not only is it restricted to its own one-dimensional worldview (ontology) and internal logic of mutual exclusivity and reductionism, but it also has a history of producing knowledge through a 'will to over-power' which, in the final analysis, has as its goal the subjugation and control of both the Subject and Object. As already mentioned, we are indeed in need of an approach which not only will help us to *understand* the complexity of the world, but which can also help us find sustainable solutions. In view of the brief overview of the birth and genesis of disciplinary knowledge production, it is evident that the epistemological point of departure of such an approach cannot and should not be that of Modernity, the Descartesian subject-object separation / dualism. This mindset paves the way for the transformation of both the subject and object into 'Objects' of study and control, which, in turn, constitutes a platform for the construction of a classificatory system, a taxonomy, in terms of which knowledge gets divided up into certain (systemic) categories or dimensions. Consequently, when contrasted and viewed from a post-Modern perspective of the Planetary Era, it becomes highly questionable as to whether the knowledge produced *by* and *within* this scheme of things can be accepted uncritically. How can we hope to find sustainable solutions to the abovementioned complex problems using knowledge which is being produced from *within* a fragmented system and driven *by* a 'will to over-power'? Is it, then, not exactly for these reasons that we feel compelled to transcend the mono-disciplinary knowledge system still dominant and prevalent at Universities around the world?

In conclusion, it is against this background of the Planetary Era and the inherent restrictions and limitations of disciplinary knowledge that the introduction of the PhD / DPhil in TD Studies should be seen and considered. Our almost exclusive dependence on knowledge being produced *by* and *within* a classificatory system of division and driven by a 'will to power' in a context where we have to look for the *relationships* and *interconnections* between natural and social systems, not their separation and objectification, is what is motivating us to launch this post-graduate programme. We realise that we have reached a bifurcation moment in our (Western) intellectual history and evolution where we cannot continue to uncritically follow the trajectory of Modernity with its belief in progress, predictability, certainty, reason, etc., on the one hand, or the relativism, nihilism, subjectivism etc. of its binary counter-part, deconstructionist post-Modernity, on the other hand. Sustainable solutions to the complex problems we are facing will *not* be forthcoming from *within* the intellectual paradigms which have either directly or indirectly contributed to this situation of a polycrisis. Neither will they (i.e. sustainable solutions) come from the paradigms which, in their diametrically divergent opposition to predictable, rational and certain 'Truth' of Modernity, see the world as nothing but a series of social reconstructions, a complex of inter-subjective agreements and contestations which can only be continuously deconstructed, *ad infinitum*.

To be sure then, as an alternative theoretical *and* methodological framework, the global significance of TD emerges on two levels: (i) providing us with an in-depth understanding of both the shortcomings and complexities of Modernity and post-Modernity (i.e. the Planetary Era) respectively, and (ii) providing us with the means to pursue the transformation of the extant and prevalent mono-disciplinary knowledge system, the hallmark of Universities the world over. Underpinning this is a meta-theoretical offering of a radically new epistemology of non-separability of the TD Subject and TD Object, enabled by the logic of the included middle. From this post-postmodern point of departure it becomes possible to not only transcend the subject-object dualism, but to actually think *outside* of the restrictions and adverse consequences imposed by Modernity and (deconstructionist) post-Modernity in this regard. From this vantage point it becomes possible to postulate and conceptualise the simultaneous discontinuity *and* coherence of reality as a true *unitas complexitas*. However, whilst stating the virtues of TD in these rather bold and ambitious terms, a word or two of caution need to be registered here without hesitation. Albeit that we understand our individual and collective positions as that of facing a bifurcation moment in our history and standing on the brink of a conscious decision to navigate a different path, which celebrates and affirms the unity and non-separability of life and reality on all levels, we should be under no illusions that TD is not some sort of a 'holy grail' or a new type of a 'meta-discourse' where the road to a new 'Truth' – with a capital 'T' – is clearly laid out. It is a path which will have to be invented as we go along, where we will make mistakes, perhaps even repeat the mistakes we are criticising Modernity and post-Modernity of. However, it is a path that we have consciously chosen and that we are prepared to map and create as we go along. The introduction of the PhD / DPhil in TD Studies is but only one of the starting points on this journey.

2. Why Introduce a Post-Graduate Programme in TD Studies at the University of Stellenbosch (USB)?

As you have already been informed by the paper delivered by our Rector, Prof Chris Brink, at the USB we are not only *thinking* about introducing a PhD / DPhil in TD Studies, but we are in the process of actively *planning* to introduce this programme in 2006. The immediate question which arises from this scenario is why specifically the USB? Why is it that a window of opportunity has opened up at *this* University to launch, we are being told, what could be the first official Post-Graduate Programme in TD Studies in the world? After having pursued a path of both creating and legitimising the Apartheid State for four

decades and until quite recently (1948 – 1995), how did it come about that this University, of all universities!, is considering implementing a transdisciplinary programme? These are rather intriguing questions with much more to them than a mere curiosity value – especially when considering Prof Brink's fitting description of the USB's instrumental role in bringing about one of the ultimate socio-political applications of the principle of the 'excluded middle'. Answering these questions is important as it provides us with an understanding and insight into the history and context that have both created this opportunity and that will receive the programme. With this view in mind, let us highlight a few salient points about the history and context of the USB.

2.1 Socio-political: Pre-1994

- Starting out as a theological seminary *for* the Dutch Reformed Church in the 1860s, the USB was subsequently established as fully-fledged University[11] in part to resist the dominance of British Imperialism at the time, but, also importantly, to serve the interests of the emerging *Afrikanervolk* (the Afrikaner people). It was to become a *Volksuniversiteit* (an university for the Afrikaner people), an institution to help develop the Afrikaans language not only into a respectable language of science and literature, but also as *the* administrative and legal language through which the socio-political governance of the country would eventually occur.

- The successful struggle to establish the Afrikaans language and identity of the USB during these early formative years took a dramatic turn after 1948 – the year the National Party came to power. From then onwards the USB assumed an increasingly important role becoming the intellectual and ideological birthplace of Apartheid – a political-economic ideology which not only wanted to retain the 'purity' of those 'inside' an imagined and socially constructed notion of a 'pure' *Afrikanervolk*, but which also went about systematically excluding those people – 'non-whites', 'blacks' and 'coloureds' – from society who were perceived to be 'different' or even a 'threat' to the Afrikaners. D F Malan, H F Verwoerd, John Vorster and P W Botha, all four prime ministers of the Apartheid State, had extremely close personal and institutional ties with the USB either as a student, lecturer and figure head (chancellor).

- Despite all attempts to gain and keep control over the racial (the body) and ideological (the mind) purity of this imagined *Afrikanervolk*, the ideologues and gatekeepers of this ideology did not succeed entirely. From *within* the very place of birth of this ideology, the USB, alternative thinkers and intellectuals – such as Beyers Naude (theologian), Van Zyl Slabbert (politician), Nico Smith (theologian) and Edwin Cameron (judge) – emerged. However, their different ideas were not tolerated and dealt with very harshly as mere 'dissidence' or 'heresy', followed by various tacit and explicit techniques of marginalising and excommunicating them from society.

- These socio-political ideas of separation, mutual exclusivity and reductionism had to be put into practice in order to create and maintain the type of society envisaged by this ideology. In order for this to happen, thousands upon thousands of predominantly white Afrikaans speaking students were 'educated' and 'prepared' at the USB to take up key positions in the then civil service, schools, military, church and even private sector to become functionaries of the Apartheid State – all in an effort to make it work.

2.2 Socio-political: Post-1994

- If we adopt the pragmatic transdisciplinary definition of 'reality' as that which *resists* our ideas, perceptions and experiments, then at the social level we can see and understand how this ideology and socio-political experiment was not only resisted, but also eventually crushed by a four decade long process of continuous undermining, subverting, counter-action and strategising *against* what the architects of Apartheid had willed and brought about. The year 1990 signifies a watershed year in the history of SA. In this year Nelson Mandela, the African National Congress (ANC) and numerous other previously outlawed political organisations were unbanned, changing forever and irrevocably the course of events in our country.

- The resistance and demolition of the Apartheid State came as great shock and even threat to the USB. Its *raison d' être* as a *Volksuniversiteit* had dramatically come to an abrupt end. Clearly understanding the implications of these changes for the future of the USB, one last, and very significant, attempt was made by the then Rector of the University, Prof Andreas van Wyk, to secure and retain the ideal of USB being a *Volksuniversiteit*. In 1992, Prof van Wyk successfully lobbied the National Party (still in power) to change the national legislation on the USB to legalise Afrikaans as the only official language of the University. Up until then, even throughout the years of Apartheid, both English and Afrikaans were by law the two official languages of the University.

- With this almost unnoticed, to the general public at least, victory in the bag so to speak, the next ten years – 1992 to 2002 – into the new democratic dispensation in the country, the leadership at the USB adopted a 'neutral' approach. The University's previous active support for a divide-and-rule policy and strategy was now exchanged for a wait-and-see approach neither resisting nor supporting the new emerging multi-racial and multi-cultural democracy.

- A fundamental change in this rather short-term wait-and-see approach could only occur with a change in leadership at the very top. This happened in 2002 with the appointment of the current Rector, Prof Chris Brink. Under his leadership a new vision to *transcend* its past has emerged at the USB. Clearly understanding the radically different situation the University finds itself in currently, both locally and globally, *transcending* its past means not only repudiating its historical connections to Apartheid, but also implies breaking with an over-dependence on Western concepts and knowledge systems in order to re-define the current and future role and function of the University in society. The global/local *problematiques* referred to above not only pose a threat to the continued existence of the human species at a global level, but equally and simultaneously threaten our emerging and fragile democracy locally. Under the new vision, articulated and pursued by the Rector, being globally competitive and locally embedded, *in* this emerging democracy of ours, are of key importance. Articulating the future of the University has taken a significantly different direction since 2002. It is safe to say, therefore, that strategies such as the fence-sitting 'wait-and-see' and exclusivist *Volksuniversiteit* approaches have finally been discarded with. (Note: this does not mean that there are still individuals and groups actively at work and following such strategies. On the contrary. More will be said about this below under the heading "Challenges Ahead").

- Turning this vision into reality has started in all earnest. The transformation of the USB is underway. Over the last couple of months a number of significant events and processes have been initiated to give meaning and content to the notion of having to transcend its past, whilst remaining globally competitive and locally rooted. On the socio-cultural level, this has led to the Rector following a course of action intended to establish Stellenbosch as a university town. As we have seen, this is an idea which was already expressed as far back as 1863, but of course with a major difference. The notion of a 'university town' back then was ideologically motivated and charged to mean a 'university town *for* the then emerging Afrikanervolk'. Today this means re-integrating the USB into the local Stellenbosch community which has become part of and having to face all the problems, threats, opportunities and challenges of the broader democratic society. Regular, monthly meetings are happening between the Rector and the Mayor of Stellenbosch where ways and means are being continuously investigated and explored to forge closer relationships between the University and the town of Stellenbosch. On the academic level, the Rector is pursuing an ambitious plan to raise enough money to employ approximately 20 A-rated academics in an effort to ensure the global competitiveness of the University.

- Added to this, of course, is the Rector's public commitment to the idea of a 'DPhil in TD Studies' at the USB which has contributed to a very large extent to our current plans to introduce this programme next year. Profs Basarab Nicolescu, Manfred Max-Neef and Mark Swilling discussed this idea with Prof Brink during our TD Workshop in April this year and he had no hesitation to come out in full support of it saying that it could become one of flagship programmes of the University. This would be, as he said, a very real and concrete way of breaking methodologically and conceptually with the historically inherited long list of juxtapositions of apparent opposites[12] which still dominate our daily intellectual endeavours and interaction with each other on campus.

This very cursory overview of the history of the USB cannot do justice to a process which has been much more complicated and complex as has been sketched here. However, what this overview wants to emphasize is the fact that although the history of this institution of higher learning has been ingrained in a mindset and praxis of binary opposites, of mutual exclusivity, fragmentation and separation, significant opportunities and challenges to fundamentally transform this University have opened up and are currently being pursued. These currents and forces flowing through the veins of the USB, as it were, at the moment perhaps explain the uniqueness of the situation and provide an answer to the question posed above: why is the idea of a 'DPhil / PhD in TD Studies' being pursued specifically at *this* University? In short, in order to transcend its past, a deep-rooted transformation process of the University has begun as recently as 2002 and the opportunity to introduce this TD post-graduate programme has not only been made possible by these events, but will also play an important role in supporting and strengthening this 'opening up' of the USB. There is a clear understanding and acceptance in the mind of our Rector that the transformation process should not occur at the socio-cultural and –political levels only, but that it should reach into the underlying knowledge systems upon which the University is founded as well.

2.3 Disciplinary–Knowledge Systems

Like most other universities in the world, the USB followed a similar trajectory of disciplinary specialization and hyper-specialization. From its very early beginnings during the late 1800s and early 1900s with its five 'divisions' (see footnote 10) to its current 10 faculties[13] split up into a further 102 departments offering 2776 modules[14] to approximately

16,000 students per year, the trend is quite clear: the sharp increase in 'growth' over the years went hand in hand with an increase in the number of disciplines or departments presenting an ever increasing number of specializations or courses.

Although our focus here is on the post-graduate level, looking at the above scenario, or in Foucault's language looking at this particular way in which knowledge has been ordered and classified into a system, a 'taxonomy', one wonders what transformation and restructuring it will take to offer a transdisciplinary[15] Baccalaureate degree covering thematic areas such as poverty, water, energy, climate change, conflict resolution, cultural identity and diversity, sustainable communities and local economic development etc.? If we accept that the Planetary Era in which we find ourselves at the moment warrants transdisciplinary knowledge and understanding, then it becomes questionable as to whether the above classificatory system of knowledge, itself a phenomenon and product of Modernity, can still be used and applied as if this 'systemic fragmentation of knowledge' is the only way of doing it. Are the laws and concepts[16] needed to understand and live in the Planetary Era not fundamentally different to that of Modernity? Or, put differently, does the discontinuity between Modernity and the Planetary Era not warrant a radical review of the abovementioned systemization of knowledge? These questions are perhaps to be reserved for another discussion on the redesign of the undergraduate structure and curriculum of the University. However, they are worthwhile posing whilst we keep a more specific focus on the introduction of our transdisciplinary post-graduate programme.

What is clear from the above picture, though, is the extent to which the USB has followed the path of disciplinary compartmentalisation. What this picture, of course, does not tell us, is the real extent of this fragmentation. How deeply has it infiltrated the mono-disciplinary system, at both micro and macro levels, *within* a discipline, *between* departments, *between* faculties and *between* universities? To what extent are academics and intellectuals finding it difficult to engage in, at least, inter- and multi-disciplinary research due to a pervasiveness of disciplinary specialization and hyper-specialization? What this picture also does not tell us is the extent to which people have come to accept this situation of disciplinary fragmentation as 'normal' – the way things 'are' or 'should be'. And, coupled with this question, is another question, namely to what extent have people *em*powered themselves *within* this mono-disciplinary structure with vested interests in perpetuating the status quo. These are vexing questions which warrant ongoing and in-depth debate and will no doubt be surfacing as and when the transformation of the University broadens and reaches into all other domains of academic life.

2.4 The Challenges Ahead

From the discussion so far on the history and context of the USB, it should be quite clear that the processes of separation, fragmentation and compartmentalisation have cut deep trenches in the social, political and cultural landscape of USB. These different manifestations of the logic of the 'excluded middle' have, over a protracted period, burrowed themselves deeply into all spheres of academic, social and even personal life at this University. Needless to say this poses some serious challenges for not only introducing the PhD / DPhil in TD Studies, but also for sustaining and expanding it.

Given its strong roots in the establishment of the Apartheid State and the idea of a *Volksuniversiteit*, it speaks for itself that Prof Brink's vision of deep transformation of the USB will not go without some form of internal and counter-resistance from those intellectuals who have not broken with the past as yet and who still want to hold onto the remnants of mutual exclusivity, separation and purity. This was clearly illustrated by recent debates over the awarding of a posthumous honorary doctorate degree to Braam Fischer, another Afrikaner intellectual – a communist – who played a pivotal role in bringing down

Apartheid. Prominent intellectuals, learned professors and doctors, at the USB vehemently opposed Fischer being posthumously recognized for his role in dismantling Apartheid on the basis of his 'subversive' communist ideology and, very importantly, the fact that he was an 'outsider' – i.e. not a 'product' of the USB. In contrast, albeit another bitter pill to swallow, a similar posthumous doctorate degree was awarded for the role that Beyers Naude played in bringing down the Apartheid regime. Albeit another bitter pill to swallow, Naude received this honour on the grounds that he was a Christian and, again very importantly, a 'product' of the University. What this hotly contested debate indicates is that there are still a considerable number of influential people, even intelligentsia, who are still living in the past with puritanical, reductionist and exclusivist mindsets. This has important implications for the introduction of the PhD / DPhil in TD Studies. We can, therefore, expect considerable resistance to this idea not only from the point of view that the transcending of well established disciplinary boundaries will itself be perceived as 'threatening', even 'subversive', but also from the point of view that this programme is in support of the broader process of socio-political and cultural transforming of the USB. The self-appointed 'gatekeepers' of a still imagined pure and homogeneous Afrikaner community with their *own* University are very much part and parcel of academic life at the USB and the future success of the PhD / DPhil programme will have to include well formulated strategies and action plans to counter any resistance coming from these quarters.

It is anticipated and hoped that the lessons learnt from this experience will be of such an overwhelmingly positive nature that they will outweigh such attempts to counter the future success of this programme. However, when viewed against the background of the long history of entrenched *disciplinary* learning, teaching and researching at the University, this might appear to be an idealistic (read idealism) position to adopt. Is it really possible to imagine the University as a fundamentally different institution of learning and teaching, founded on different values and principles such as 'non-separability', 'interconnectedness' and the 'included middle', to mention only a few? Are we not busy here with the proverbial 'pie in the sky' idea that will never materialise in future? What are the chances of success in this regard if the history and evolution of the University followed the logic of the excluded middle so strongly? The force of these questions are, of course, strengthened if we incorporate the Foucauldian notion of an intimate relationship between *power* and *knowledge* here and acknowledge the fact that a 'will to power' was also present and to be seen from the very humble beginnings of the USB in the early 1900s when the initial arrangement of a unified B.A., which included both the humanities and natural sciences, quickly made way for a clear separation between them in the form of two distinct 'divisions' (today's equivalent of faculties). Following this universal template and logic of 'taxonomizing' or 'systematizing' knowledge was seen as a prerequisite to gain its status as a fully-fledged and independent 'university' during its formative years. Therefore, if the transformation of the USB is to go beyond the socio-political and cultural levels and reach into its underlying and foundational knowledge systems, which have after 140 years in all probability assumed a *reified* status, these questions about our anticipated success with the introduction of TD post-graduate programme cannot be avoided. What we do know from asking these questions, however, is that the challenges of the transformation of the University goes beyond the organizational-institutional level with relatively predictable Business School-type remedies and solutions of 're-structuring' and 're-engineering'. It is much more complex than this as it involves transforming the mono-disciplinary knowledge system which has been instrumental in bringing the University into existence in the first place.

The challenge before us, to put it mildly, is a rather daunting one and whatever strategies we contemplate to secure the future success of this TD PhD / DPhil programme will have to include *becoming* an embodied / lived example of the 'unitas complexitas' principle – on all levels. In other words, those individuals – students and supervisors – involved in the

programme will have to demonstrate that diversity is to be embraced and that adopting a *trans*cultural and *trans*personal approach in a multi-cultural environment does not mean forsaking ones own identity – be that from a disciplinary or a socio-cultural point of view. On the contrary, it means affirming and celebrating the latter whilst, at the same time, discovering and confirming commonality of what lies *between* and *beyond* the differences. Achieving success on the social and cultural levels will, in turn, no doubt have a very positive effect on transcending disciplinary borders. Given the dynamics of our specific history and context the challenge to cross boundaries is not confined to a particular level only. The PhD / DPhil in TD will certainly be put to test on all levels and at the same time – cultural, social, personal and intellectual levels. The extent to which this multi-dimensional challenge will be responded to positively by all involved will certainly create a role-model which could be adapted and extended into many other areas of the University, hereby contributing to the broader transformation process. In turn, the long-term viability of this programme will be determined by the extent to which it can be confirmed that a group of socially and culturally diverse students and lecturers can jointly discover and formulate sustainable solutions to the complex problems, the polycrisis, facing the African continent through a process of transcending disciplinary borders and generating *new* knowledge, transdisciplinary knowledge.

3. The Sustainability Institute (SI) – The 'Birthplace' of TD at the USB

In the context of the USB, the SI can be seen as the 'birthplace' of TD. The concept of TD was introduced in April 2004 by Prof Manfred Max-Neef during one of his lectures on the Globalisation module of the MPhil in Sustainable Development. Inspired by this notion of TD, Prof. Mark Swilling incorporated the latter into his inaugural lecture which he delivered a few weeks after the departure of Prof. Max-Neef. This event marked an important moment in the intellectual history of the USB. With the title and sub-title of his inaugural lecture was "Can a New Culture of Sustainability Emerge in Cities?" and "Building the Transdisciplinary Foundations of a New Culture of Sustainability", Prof. Swilling has been the first academic who presented a compelling argument for a meta-theoretical and theoretical relationship between Sustainability and Transdisciplinarity in the context of the City. However, this inaugural lecture was important from another – strategic – point of view as well. In attendance was the Rector, Prof. Chris Brink, who was clearly impressed and persuaded by the force of the argument presented by Prof Swilling and approached him to become a key member of his team of strategic advisors on the future of the USB – leading to many of the current strategies being pursued around the transformation of the University. Out of this relationship also grew the invitation to and acceptance by Prof. Brink to open our recently held Workshop on TD in April 2005 and, which, in turn, resulted in a personal invitation by Prof. Basarab Nicolescu to Prof. Brink to deliver to the keynote address of this 2nd World Congress on Transdisciplinarity on 11 September 2005.

Furthermore, the combined effort of Prof Max-Neef's 'planting' the seed' of TD in our midst, as it were, and Prof Swilling's rigorous demonstration of the said relationship between Sustainability and Transdisciplinarity provided the 'energy' needed to pursue matters further. Amongst other things, it resulted, firstly, in the discovery of the work of Basarab Nicolescu and, secondly, making contact with him and inviting him together with Prof. Max-Neef to facilitate a "Workshop on TD" in April this year – the first of its kind in South Africa. It is therefore no mere coincidence that our paths crossed with the notion of TD and the bringing together of Profs. Nicolescu and Max-Neef in person in SA. The environment for this to happen was created by the SI as the logical place for receiving TD and taking it further into the wider context of the USB. It is there appropriate to make a few cursory remarks about the SI so as to provide the reader with a good feel for texture of this important institution for the role it has played and will still play in the future in ensuring the success of the PhD / DPhil programme.

- The SI is an international living and learning centre located outside university town of Stellenbosch and forms part of the wider Lynedoch EcoVillage which is an emerging ecologically designed socially mixed community built around a learning precinct, the heart of which is a primary school of 400 children who come mainly from the families of farm workers.

- Surrounded by the natural beauty of the Western Cape's majestic mountains and rooted in an agricultural community that needs to break free from its exploitative past, the SI provides a space for people from all countries to explore the vision for a more equitable society that lives in a way that sustains rather than destroys the eco-system within which all social systems are embedded.

- The SI believes that to equip people for the fundamental global changes already underway, learning should combine explorations of deep experience with skills building and rigorous intellectual inquiry that cross-cuts and goes beyond traditional academic boundaries. This can best be achieved through learning in close-knit dialogue groups engaged in both in- and outside the classroom environments. This relational approach to learning is implemented throughout the range of short courses and degree programmes that are aimed at people from all sectors and all countries.

- Founded in 1999, the SI also provides residential accommodation for visiting writers, artists, development workers, and a learning space for participants in the Institute's various educational programmes. An integrated discussion-centred learning approach is followed that involves, inter alia, disciplined reading, self-learning, community work, field trips, creative expression, reflection and meditation.

- A Masters degree in Sustainable Development is delivered in partnership with the University of Stellenbosch's School of Public Management and Planning. The modules of the Masters programme are as follows:
  - ✓ Sustainable Development
  - ✓ Complexity Theory and Systems Thinking
  - ✓ Leadership and Ethics
  - ✓ Governance, Globalisation and Civil Society
  - ✓ Sustainable Cities
  - ✓ Biodiversity and Sustainable Agriculture
  - ✓ Ecological Design for Sustainable Communities
  - ✓ Corporate Citizenship

- Each module is a six day full-time course and after the first module participants are free to choose the order of the different modules. They can also elect to study full-time or complete the degree on a part-time basis via this flexible modular format. After completion of the core modules, participants will be required to complete an Integrated Assignment which can take various forms.

- The SI works with a number of partners within the local Stellenbosch context of which the most important ones include: the University of Stellenbosch, Spier Estate, Lynedoch Development Company, USIKO Youth Development Project, Stellenbosch Savings and Credit Cooperative, Lynedoch Primary School and the Small Farmers Holdings Trust.

- To date, the SI has received grant funding from: Spier Estate, USAID, DANIDA, Investec, IFC, Ford Foundation, Price Waterhouse Coopers, NedBank, the University of Stellenbosch and the Mott Foundation. Debt finance for the EcoVillage Development was sourced from the Development Bank of SA.

In conclusion, what is important to realise about the SI is that, although it has a formal relationship with the USB, it has its own legal and corporate identity. This is significant for the very reason that it has been autonomous to develop the said curriculum of integrated learning for the MPhil in Sustainable Development and which contributed directly to the emergence and current interest in TD. Prof Mark Swilling is both academic director of the SI and head of the Sustainable Development and Planning Division of the School of Public Management and Planning at the USB. He, together with Eve Annecke (non-academic Director of the SI), have played a crucial role in conceptualising and delivering the MPhil which currently draws students from across the world and especially the African continent. This well established relationship between the SI and the USB will be further strengthened through the PhD / DPhil in TD Studies as it is envisaged that the PhD / DPhil students will become involved in the supervision of the MPhil students' theses.

4. Strategy – A Workshop on TD: Raising Awareness and Getting Commitment

4.1 Introduction

Upon discovering Basarab Nicolescu's ideas on TD, and especially his call for the introduction of 'ateliers of TD Research' and 'PhDs in TD Studies' at all universities, the question was how to take this further? How do we go about both introducing TD to the SA context as well as finding out whether there would be sufficient support for this at the USB plus other key academic institutions in the country to consider taking the idea of a PhD / DPhil in TD Studies further? The first step in this process was to make contact with Basarab himself and see how he would feel about coming out to SA to facilitate a "Workshop on TD" and at the same time discuss in more depth the possibility of introducing a post-graduate programme in TD Studies at the USB. The next step was to get Manfred and Basarab introduced to each other (as they have not met one another as yet), and thanks to cyber-space-time this happened almost instantaneously and very smoothly. With both their very busy schedules allowing to being available during the week of 11 – 14 April this year for the envisaged workshop, we immediately started to plan[17] for this to happen towards the end of 2004 and beginning of 2005.

Given the strategic importance of this event, it is important to highlight the following salient points which led to and emerged during and after the workshop:

4.2 TD Workshop ~ 11 – 14 April 2005

4.2.1 Workshop Objectives

- To introduce and create general awareness of TD amongst the academic community in SA;
- To get the buy-in and commitment from certain key people at the USB for the idea of a PhD / DPhil in TD Studies – e.g. the Rector and Departmental Heads;
- To initiate the beginnings of a local and international network of people and institutions with whom we will work very closely in future. In this regard, it was important to invite academics from other Universities in SA as well as the National Research Foundation (NRF) which will play a key role in funding the programme. Furthermore, it was important that all the role players see this from the beginning not merely as a local idea, but that it will indeed form part of some global initiatives already underway.

4.2.2 Duration and Attendance

- The workshop lasted for 3.5 days and was well attended by a socially and disciplinary diverse group of 28 academics from all the well known Universities in SA, including four delegates from the NRF;
- The workshop was chaired and facilitated by Profs Mark Swilling (South Africa) Basarab Nicolescu (France) and Manfred Max-Neef (Chile).

4.2.3 Workshop Content [18]

- The workshop was officially opened [19] by the Rector of the USB, Prof Chris Brink, emphasising the importance of the USB having to transcend its past and the positive and constructive role that TD can play in this regard. Prof Basarab Nicolescu went into an in-depth explanation of the three pillars of TD – different levels of reality, the logic of the included middle and complexity – and stressed the importance of working within this (meta)theoretical framework, especially when considering doing post-graduate level studies and research in future. Prof Manfred Max-Neef using these three pillars as his point of departure, in turn, elaborated on a possible TD methodology for substantive research to be undertaken. In this regard, all TD orientated research should cover, simultaneously, four levels of study: (a) the empirical level, looking at *what exists*, (b) the pragmatic level, looking at *what can* be done, (c) the normative level, looking at what we *want to do* and (d) the level of values and ethics, looking at *what* it is that we *should be doing?*

- Workshop participants had ample time to discuss these thoughts in their own contexts in small group sessions in the afternoons and report back on these deliberations in further plenary sessions with Basarab and Manfred in attendance.

4.2.4 Workshop Outcomes

All of the abovementioned objectives were achieved, especially if our attendance of the workshop on "Complexity & Complexity Theory" in June 2005 is also taken into consideration. International contacts have been confirmed with Basarab in France, Manfred in Chile and Brian Goodwin currently at the Schumacher College in the UK. Locally, the NRF indicated a strong commitment in principle to considering helping with funding of the planned PhD / DPhil programme. Most importantly, strong interest and commitment for becoming involved in the latter was received from the following people at the USB:

- the Rector – Prof Chris Brink;
- Department of Micro-biology – Prof Jannie Hofmeyer;
- Department of Engineering – Prof Wynand Coetzer;
- Department of Psychology – Prof Leslie Swartz
- Deputy Dean: Faculty of Economic & Management Sciences – Prof Fanie Cloete;
- School of Public Management & Planning – Prof Johann Burger;
- Department of Philosophy – Prof Paul Cilliers.

The timing of the workshop in April this year was perfect. As mentioned above, the transformation of the USB is already underway and raising the awareness amongst the above key people of potential and possibilities that TD offers to move *between* and *beyond* those (reified) disciplinary boundaries that have embedded themselves

into the very life and context of this University. More specifically, the Workshop succeeded in generating sufficient enthusiasm and commitment amongst a core group of people, both inside and outside of the USB, necessary to launch the post-graduate programme in TD Studies. However, this support needs to be transformed into further concrete action and a lot of hard work still lies ahead, as will be explained in more detail under heading 7 below.

5. The DPhil Degree

During the various discussions[20] and deliberations we have had on the PhD / DPhil programme so far, the following ideas have emerged as being of importance in order to secure its success:

5.1 Programme Structure

- **DPhil vs. PhD**:- on advice of the Rector it was felt that we should look at the DPhil degree offered by the University as such and not, as is the case with the PhD, a specific Faculty or Department. This structure should lend itself better for inter-departmental and faculty cooperation and collaboration, which, in turn, should meet the needs of a post-graduate degree in TD much better than a Faculty or Department specific degree. However, this implies having to create a totally new course and would only be able to go through the various internal academic planning and authorisation processes during 2006 and would, consequently, only be ready to be offered as a new degree in 2007. As will be explained under point 6.1 below, this in itself does not necessarily prevent us from using the current PhD degree to launch the programme and have the new DPhil in TD Studies registered and authorised as a new degree during 2006.

- **Core modules: TD Epistemology and Methodology**:- Dr. Jan Botha (Head: Academic Planning) suggested that we develop one or two core modules on a TD epistemology and methodology. This will serve a number of purposes: (i) this will be essential and compulsory course work for the DPhil students to attend and become familiar with from the onset of their course, (ii) these modules could be offered as electives to current MPhil students in Sustainable Development and who would be keen to furthering their post-graduate studies and (iii) creating a necessary course structure and content that will become very important to be able to refer to during the course of 2006 when application will be made for the registration of a totally new course – the 'DPhil in TD & Sustainability Studies'.

- **Full-time vs. part-time course**:- it was felt that a programme of this nature will best be served if we accept full-time students only. Our experience with the current part-time PhD programme strongly confirms that its lack in real-time interaction amongst the group of students would not be conducive in achieving the objectives of a DPhil in TD Studies. This places an extra burden on getting additional funding for full-time student bursaries which means, in turn, that we would have to approach a range of possible funders, including the private sector.

- **Group size**:- the optimal number of full-time students from a group dynamics and resources point of view, would appear to be between10 – 12 students. However, we would most probably start the programme next year with an initial group of about 5 full-time students before we take on a bigger group. This

should also give us enough space and time to learn from the process itself and implement any necessary changes before the next bigger intake in 2007.

5.2   Curriculum & Learning Approach

- Although the DPhil / PhD will be predominantly thesis and research based, it is foreseeable that some compulsory modular work and teaching will be required. In this regard, we are looking at a solid grounding in TD epistemology and methodology at the beginning of each year / intake;
- As for the research areas, we are considering the 'thematic' route, which means that students would be able to opt for, but not restricted to, themes such as: poverty, water, energy, waste, climate change, sustainable cities and communities, cultural identity and diversity, peace and conflict resolution etc.;
- Being a full-time programme, it will be necessary for the group to meet regularly and we are looking at implementing two-weekly colloquium meetings / workshops during which the students will be given an in-depth opportunity to discuss and exchange ideas and experiences on progress made, problem areas and obstacles and how to proceed – all the time keeping in mind the central tenets and guidelines of the TD epistemology and methodology;
- Contact sessions will not be restricted to real-time meetings and workshops. Web-based learning and interaction will certainly also play a significant role in furthering the aims and objectives of the programme. Individual might be away on field trips for extended periods and would want to keep in contact with the core student group. This could be achieved through cyber-space-time contact and interaction. Therefore, making use of our available web-based and other telematic learning technologies (e.g. WebCT) will become an important ingredient in the process. Utilising these facilities will also enable students to keep in contact with those international lecturers who would have participated on the abovementioned Epistemology and Methodology modules. Furthermore, students would want to make and remain in contact with other post-graduate students doing similar studies and research elsewhere in the world. For example, it is envisaged that our students will come into contact with their counterparts at the Universities of Valdivia (Chile) and Cluj (Romania) where a similar PhD programme is currently being planned for by Manfred Max-Neef and Mircea Bertea respectively.

5.3   Supervision

- Establishing a panel of local and international TD experts, who will receive fair remuneration for supervising individual students, will be another crucial aspect to securing the long-term success and viability of the programme. This should also go a long way towards solving current problems experienced with getting external supervisors for PhD theses;
- The role and function of supervision will not be restricted to panel of TD experts supervising individual full-time DPhil / PhD students only. These full-time students will, in turn, also be required to supervise our MPhil students' currently busy working on their respective theses. The positive consequences of this arrangement speak for itself. Not only will it create a much desired feedback loop between the two post-graduate programmes, but it could also mean that a significant number of the MPhil students might want to progress to be doing the DPhil / PhD after successful completion of their MPhil degree.

5.4   Marketing & Selection

- It is important that we attract students with the right 'TD Attitude' and profile to this programme. This will be a diverse group of students who have through their own life experiences and internal inquiry come to understand the connection between having to transcend disciplinary knowledge boundaries, on the one hand, and finding sustainable solutions to the vexing problems facing us, on the other hand. These will be students with a creative and 'entrepreneurial' spirit, willing to invent and discover new knowledge, transdisciplinary knowledge, and be bold enough to take this forward into policy-making processes where important decisions about our future are being made daily. These will be students that would have realised that all our faculties of knowing and understanding, i.e. the mind, body and feelings / intuition, are equally important in our quest for generating and formulating a new knowledge which affirms the non-separability of life in all its manifestations. Consequently, our promotion and selection processes of the PhD / DPhil programme will be of vital importance in this regard, ensuring that we take on board students that have both the capacity and drive to embark on this journey, which is, as mentioned, no 'holy grail', but one that will have to be mapped as we proceed.

5.5   Financial & Funding

- From our initial budgetary research into the financial viability of introducing a new post-graduate programme of this nature, it would appear that it takes at least three years before it breaks-even and only thereafter starts producing positive financial results for the University. Based on these figures, it is quite clear that we cannot rely on internal university funds only, but that we would have to get outside funding from other state and private sector sources as well, such as the NRF, Ford Foundation, Anglo American etc.

6. The Way Forward

Flowing from these salient points in respect of launching the PhD / DPhil degree next year, we intend to take the following action steps:

6.1   Use current PhD Structure for 2006

- We will be using the current PhD structure for 2006. This means that we can advertise and promote the degree formally as a 'PhD in TD Studies' and attract the necessary awareness and interest in this post-graduate programme that is required.

6.2   Follow Internal University Procedures

- During the course of 2006, we will be following the various internal Academic Planning Committee, Programme Advice Committee and Senate meetings and procedures in order to get the 'DPhil in TD Studies' officially approved and registered as a wholly new course.

6.3   Re-registration of Students in 2006

- Once the DPhil has been officially approved and registered, we will re-register the first intake of 2006 PhD students onto the (new) DPhil degree.

6.4 Advertising & Marketing

- The degree will be advertised towards during September 2005 after which (early October) the interview and selection of potential candidates will be concluded. As was mentioned, we will be looking at starting the course with a smaller number of approximately five full-time students.

6.5 Funding

- Organisations such as the NRF and the Ford Foundation will be approached with a view to provide financial assistance especially for the first three year period of the course.

6.6 Facilities

- The degree will be presented and offered on the Main Campus of the USB and a dedicated room will be made available at the School of Public Management and Planning for the full-time students to meet regularly and to have access to the computer and other electronic facilities.

6.7 TD Epistemology & Methodology Module

- The module on a 'TD Epistemology and Methodology' needs to be developed and finalised with Basarab Nicolescu and Manfred Max-Neef with a view to be ready for presentation to the first intake of full-time students during February 2006.

7. Conclusion

We are living in the Planetary Era, a complex world with complex problems which cannot necessarily be interpreted and understood in terms of the concepts, notions and principles used to understand Modernity with. The discontinuity between these two epochs are significant enough to say that concepts such as 'linearity', 'local causality', 'predictability', 'certainty' and 'reductionism' will no longer suffice and need to be replaced with 'non-linearity', 'global causality', 'probability', 'uncertainty', and 'complexity'. The implications of this shift in our thinking about the complex nature of 'Reality' are indeed significant and far reaching for our epistemological and problem-solving endeavours. We cannot solely rely on finding permanent, durable solutions to the polycrisis facing us today from *within* the extant mono-disciplinary knowledge system – itself the product of Modernity's fragmented epistemological classificatory system and driven / motivated by a 'will to over-power'. This probably what Einstein meant when he said that we cannot solve problems with the mindset that created these problems in the first place. Holistic, long-term and sustainable solutions to these vexing problems will most probably only come from a unified, integrated knowledge system which has as its ontological and epistemological point of departure the non-separability of Reality – on all levels.

TD is an approach or paradigm which makes a serious claim to be offering us such a radically different perspective and position from which to fundamentally review the way that we have conceptualised, constructed and ordered our knowledge and knowledge systems with the advent Modernity. Whilst not negating the major advances made by the various forms of disciplinary knowledge production, TD equally recognises the inherent limitations of the latter as well as the need to transcend the self-imposed and almost 'reified' disciplinary boundaries of this particular knowledge system. As such, TD should be afforded with a serious opportunity to embed itself in the current University set-up and

system. Although the broader transformation of the inherited mono-disciplinary knowledge system is ultimately at stake, the introduction of TD into the University structure need not happen at a 'macro level', but could be ushered into the University environment in various other ways and means such as Centres, Institutes or Post-Graduate Programmes in TD Studies and Research. Once implanted in these 'spaces' or 'locations', the opportunity and challenge will be there to demonstrate that the generation of *new* knowledge, transdisciplinary knowledge, is not only possible, but can indeed make a significant and qualitative difference in finding sustainable solutions to the *problematiques* facing all of us on this Planet Earth of ours.

At the USB a rather unique window of opportunity to do just this has opened up. The top Leadership at this University deeply understands the need and relationship between transcending its past and transforming the University on all levels – including the still dominant fragmented disciplinary knowledge system. We have been given a mandate by the Rector and other important decision-makers at the USB to proceed with the implementation of a 'PhD / DPhil in TD Studies' as from 2006. This is an opportunity that we cannot afford to let slip through our hands. On contrary, we need to seize this moment with courage and conviction and demonstrate that, if given the chance, the long-term viability of TD and its contribution to the ongoing transformation of the University is indeed a realistic possibility. However, although we might take the lead in this regard, we certainly would not want to go it alone forever. A global network of TD Centres, Institutes and PhD / DPhil Programmes at as many as possible Universities throughout the world needs to emerge as a matter of urgency if we indeed serious about solving the polycrisis facing us all. So, in conclusion, the challenge to do what we are trying to do at the USB is going out to everyone attending this 2nd World Congress on TD. Let us agree, collectively, that when we meet again in a couple of year's time – but certainly not in ten years time! – that we will be able to report back to each other on some real progress made, not only in terms of having established these 'ateliers of TD', but also on a *new* body of transdisciplinary knowledge and understanding that has emerged as a result of having successfully formalised and institutionalised TD at a significant number of Universities in different parts of the world.

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[1] In, *The Transdisciplinary Evolution of the University Condition for Sustainable Development*, p.7.

[2] 'Reification' is thought of here in the Lukacsian meaning of the word, where these disciplinary boundaries are not seen anymore as a *human* intervention, a product of the mind, an epistemological ordering of things. Instead, they are perceived and acknowledged as 'objective' reality – that which is 'normal', they way things 'are' or 'should be' and, henceforth, not to be 'transformed' or 'changed', but rather to be 'preserved' or 'maintained.

[3] Edgar Morin, *Homeland Earth*, p. 74.

[4] "If we go through a list of some of the main problematiques that are defining the new Century, such as: water, forced migrations, poverty, environmental crises, violence, terrorism, neo-imperialism, destruction of social fabric, we must conclude that none of them can be adequately tackled from the sphere of specific individual disciplines. They clearly represent transdisciplinary challenges.The term *problematique* is here used in the sense proposed by the Club of Rome; that is, problems of global and long term impact", Manfred Max-Neef, Foundations of Transdisciplinarity, p.1.

[5] Basarab Nicolescu, *Manifesto of Transdisciplinarity*, pp. 38.

[6] "Knowledge is an 'invention' behind which lies something completely different from itself - the play of instincts, impulses, fears, desires and the will to appropriate. Knowledge is produced on the stage where these elements struggle against each other..." Foucault, *Language, Counter-Memory & Practice*, p.202.

[7] Foucault, *The Order of Things*, p.348.

[8] In an interview with him on the nature of the relationship between power and knowledge, Foucault explicates very clearly that we need to understand the productive aspect of power in that it *produces* knowledge: ".....it seems to me that the notion of repression is quite inadequate for capturing what is precisely the productive aspect of power. In defining the effects of power as repression, one adopts a purely juridical conception of such power, one identifies power with a law that says 'no', power is taken above all as a carrying force of prohibition ... I believe that this is a wholly negative, narrow, skeletal conception of power ... if power were never anything but repressive, do you really think that one would be brought to obey it? What makes power hold good, what makes it accepted, is simply the fact that it traverses and *produces* things, it induces pleasure, *forms of knowledge*, *produces discourse*. It needs to be considered as a productive network which runs through the whole social body, much more than a negative instance whose function is repression". Foucault, *Power/Knowledge*, p. 119.

[9] Foucault, *Power/Knowledge*, p. 59.

[10] The word transcendence is used here to specifically indicate that we are not thinking of completing negating the advances made in disciplinary studies and research. Whilst acknowledging the latter, it is important to think instead of going beyond the existing boundaries of disciplinary knowledge. In the words of Basarab Nicolescu: "As the prefix trans indicates, transdisciplinarity concerns that which is at once between the disciplines, across the different disciplines, and beyond all discipline". And, "disciplinarity, multidisciplinarity, interdisciplinarity and transdisciplinarity are like four arrows shot from a single bow: knowledge". Basarab Nicolescu, *Manifesto of Transdisciplinarity*, pp. 44 – 46.

[11] The USB was officially established as an autonomous and independent 'university' in April 1918. However, this was preceded and the result of a number of important historical moments which shaped and determined its character and destiny. In 1863 the inhabitants of Stellenbosch decided that Stellenbosch should become a 'university town' for the people of an Afrikaner-Dutch background. The Theological Seminary was established in 1866 as a result of a Synod meeting of the Dutch Reformed Church deciding upon Stellenbosch as the appropriate place to train and educate students. These students were not able to enter the Seminary directly and had to be 'prepared' for this beforehand. This led to the creation of the "Stellenbosch Gymnasium", the first beginnings of an institution of 'higher learning' in the town of Stellenbosch. In 1880 the Stellenbosch Gymnasium became the "Stellenbosch College" which, in turn, became the "Victoria College" in 1887 to coincide with the jubilee year of Queen Victoria in England. Characteristic of the years leading up to and following the Victoria College was the establishment of a highly credible and excellent institution of higher learning whist, at the same time, increasingly assuming a dominant Afrikaans identity. Plans by the then British Government in Cape Town to bring about a unified, English-orientated tertiary education system for the whole of SA were not only opposed by the Senate of the College, but contributed directly to mobilise and energise the leadership at the College to successfully lobby and petition those in government to accept and agree in law that the 'University of Stellenbosch' should be established as an independent and autonomous university. This then happened in 1918.

[12] Such as: "Pure / Applied , 'Blue-sky' / "Relevant" , Knowing / Doing , Disciplinary / Cross-disciplinary, Science / Humanities, Research / Teaching, Quality / Efficiency, Analysis / Synthesis, Specialisation / Generalisation, Private Benefit / Public Good, Structures / Functions, Subject / Object, Qualitative / Quantitative" , Prof Brink, *Transdisciplinarity and the Vision of Stellenbosch University*, pp. 2 – 3.

[13] See Annexure "A" for more detail on this structure.

[14] The US, *Faculty Planning Document*, 2005, p11.

[15] In other words, not a multi- or inter-disciplinary type of course which will merely bring the existing disciplinary modules 'together' under a new name, but a truly transdisciplinary under-graduate degree which will still draw from current disciplinary areas but at the same time also go beyond these, discovering and generating new areas of knowledge.

[16] The laws and concepts already referred to earlier, such as: non-separability, non-linearity, global causality, complexity, interconnectedness etc.

[17] In fact at the time of making and securing the contact between Manfred and Basarab we tried to get them to attend another workshop on Complexity and Complexity Theory which was already in the process of being planned for June 2005. Unfortunately, or rather fortunately, this could not happen due to financial reasons and the fact that the list of participants was already well established at that stage. This was fortunate in that it we ended up with two workshops, one specifically on TD and the other on Complexity, and both yielding some very positive outcomes. For example, albeit that the workshop on Complexity was more of a inter- and multi-disciplinary nature, it nevertheless gave us an opportunity to participate in the discussions from a TD point of view and, most importantly, to establish some key contacts and relationships with people like Profs Jannie Hofmeyer (Micro Biology) and Wynand Coetzer (Engineering), both of whom could not attend the TD workshop in April due to other commitments, but showing very strong interest in our plans for the PhD / DPhil in TD Studies. Also, the workshop on Complexity was opened by our Rector, Prof Chris Brink, and during his opening address made explicit reference to the TD workshop which he opened and fully endorsed earlier in April. This unsolicited support from him certainly worked in our favour.

[18] See Annexure "B" for a full report on the workshop.

[19] See Annexure "C" for a full report on his opening address.

[20] Subsequent to the Workshop on TD, a further meeting was held with Dr Jan Botha (Head: Academic Planning) on 15 June 2005 to explain to him what was envisaged with this new post-graduate degree. Not only has he encouraged us to press ahead with this exciting venture, but has given us his full support to be personally involved in helping us in this regard.