

Report on Transdisciplinary Workshop held on 11 – 14 April 2005 at the University of Stellenbosch

JOHN VAN BREDA¹

Facilitators

Prof Basarab Nicolescu (theoretical physicist at the National Centre for Scientific Research – CNRS – at the University of Paris 6, France).

Prof Manfred Max-Neef (ecological economist and ex-rector of the University of Valdivia, Chile)

Rationale

The motivating reason for having organised the workshop was born out of a deep realization and acceptance of the fact that our current specialised and hyper-specialised disciplinary knowledge systems have created an epistemological ‘tower of Babel’, a fragmented situation from which it has become impossible to look for integrated and sustainable solutions to the complex problems we are facing today. Problems such as poverty, water, energy, waste, climate change, violence, urbanization etc. are complex, not only because of their interconnectedness, but also because of their multi-dimensionality, emergent properties, globality as well as the severe and long-term consequences that flow from these problems, should they remain unattended and unresolved.

What has become very clear, though, is the fact that trying to look for solutions to these intrinsically complex problems from a single disciplinary perspective, or even two or three disciplines grouped together, does not go far enough. What is needed is a fundamentally new

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approach which does not disregard the obvious advances made by the multiple disciplines and sub-disciplines over the years, but an approach which will have as its aim not only the unification of disciplinary knowledge, but also the transcendence of the latter in our quest for sustainable solutions.

'Transdisciplinarity' is one such approach which has emerged over the last twenty years and which is seeking to understand the world and its complex problems not from a limited, one-dimensional epistemological perspective typical of the mono-disciplinary, and even inter- and multi-disciplinary, approaches, but rather to try and transcend the boundaries of disciplinary knowledge systems and discover what new knowledge can be generated in fertile ground or space which exists between such disciplinary boundaries. This goal and challenge can be achieved, according to the transdisciplinary point of view, if we accept the (finite) epistemological and methodological consequences of a multi-dimensional ontology: namely, that 'reality' comprises different or discontinuous 'levels of reality' coexisting at the same time and that the 'coherence' or 'wholeness' of this multi-layered and complex notion of reality can be conceptualised and investigated if the crucially important logic of the 'included middle' is accepted as the guiding principle in such intellectual endeavours.

In putting the workshop together, it was felt that not only do we, the academic community in South Africa, share this challenge of having to explore new and deeper ways of understanding the complexity of our world, but that we, as part of the African continent with its own unique socio-cultural challenges and opportunities, could very well play a leading role in introducing and institutionalising transdisciplinary studies and research in the tertiary institutions of higher learning in this country. In this regard, it was felt in particular that the University of Stellenbosch could become a starting point and 'home' of transdisciplinary studies given the current challenges and opportunities which are emerging in the search of how to finally break with its past connections to 'apartheid'.

Having to transform the University which played such a pivotal role in developing and justifying this 'ultimate political application of the principle of the *excluded middle*' is a mammoth task on its own. However, it also and at the same time presents an unique opportunity to introduce new knowledge systems which could alter the *fragmented* disciplinary structures, learning approaches and intellectual bases inherently part of the institutional make-up and history of this university. In short, having to transform the University of Stellenbosch into becoming a 'socially relevant' institution of higher learning not only in the context of an emerging democratic South Africa, but also in the planetary context of facing complex / global problems certainly provides an historical moment for fundamental change which may not exist in the same way and intensity elsewhere.

Objectives

Given the abovementioned double challenge of having to search for sustainable solutions to complex problems, whilst, at the same time, having to explore new ways of understanding this complex world in which we are living, formed the basis for attempting to achieve the following two broad goals during the workshop: (a) to invite two leading intellectual figures in the area of Transdisciplinarity and to create an opportunity and space in which a diverse group of academics in South Africa could explore the relevancy of this new, emerging trans-disciplinary field of knowledge to our South African and African conditions and context, and (b) should such a group of facilitators and participants felt that it was a worthwhile exploration and exercise, to further discuss and investigate ways and means of taking this further – most probably in the form of introducing and launching a post-graduate PhD Programme in Transdisciplinary Studies.

Judging from the feedback received from the facilitators and participants during and after the workshop, it can be stated without hesitation that the workshop was a real success. Not only was the engagement between the facilitators and participants to the point, relevant and in-depth, but the mutual exchanging of ideas, suggestions and experiences amongst the participants themselves were equally pertinent and, commented on by both facilitators, as being of a high academic standard. All in all, and specifically with regard to the first objective, it could be said that over the three and half days of the workshop that a truly transdisciplinary environment and space was created, which allowed the facilitators and participants to explore the potential implications and possibilities of going ‘beyond’ the disciplinary borders of our extant knowledge systems.

With regard to the second objective – exploring the possibility of introducing a PhD Programme in Transdisciplinary Studies – it can equally be reported as having been successfully achieved. In this regard, a very constructive meeting was held on Monday afternoon, 11 April 2005, with the rector of the University of Stellenbosch, Prof Chris Brink. In attendance were Profs Nicolescu, Max-Neef, Swilling and Mr John van Breda. Prof Nicolescu made a proposal which was that Stellenbosch University should be the first University in the world to offer a PhD in Transdisciplinary Studies. He gave Prof Brink a list of PhDs from around the world that have been written from a Transdisciplinary perspective. However, all of them are PhDs in particular disciplines with a Transdisciplinary methodology. None of them are PhDs in Transdisciplinarity as such. Prof Brink responded favourably to this idea of Prof Nicolescu’s of a PhD Programme in Transdisciplinary Studies at the University of Stellenbosch saying that this

Attendance

Title	Name	Surname	Institution	Discipline
Prof	Solly	Benatar	UCT	Medicine
Prof	Elwil	Beukes	US	Business School
Prof	Paul	Cilliers	US	Philosophy
Dr	Martin	De Witt	CSIR	Environmental Economics
Ms	Maddie	Duncan	UCT	Occupational Therapy
Dr	Moeniba	Isaacs	UWC	Land & Agrarian Studies
Prof	Chris	James	WITS	Engineering (Water)
Mr	Firoz	Khan	US	Public Management & Planning (Housing)
Dr	Siphokazi	Koyana	NRF	Manager: Thuthuka Programme
Dr	Robert	Kruger	NRF	Research (Policy & Strategy)
Prof	Bernard	Lategan	US	Stellenbosch Institute for Advanced Study (STIAS)
Mr	Panos	Lazanas	TWR	Power/Elec. Eng. & Cognitive Psychology
Mr	Haveline	Michau	NRF	Manager: Scholarships & Fellowships
Prof	Dulcie	Mulholland	UKZN	Chemistry
Ms	Anneke	Muller	US	Public Management & Planning (SD & Planning)
Ms	Ursula	Rust	Geoscience Inst.	Geo Science
Dr	Patricia	Sharrif	WITS	Language Studies
Dr	Rushiella	Songca	UNISA	Law
Prof	Leslie	Swartz	US	Psychology (Child, Youth & Family)
Prof	Mark	Swilling	US	Sustainable Development
Prof	Johann	Tempelhoff	NWU	Historian (Socio-economic history)
Prof	Danny	Titus	Unisa	Law
Mr	John	van Breda	SI	Sustainable Development
Ms	Elsona	van Huysteen	CSIR	Building & Technology
Prof	Wikus	Van Niekerk	US	Engineering (Mechanical - Sound & Vibration)
Dr	Jeremy	Wakeford	UCT	Economics
Prof	Vanessa	Watson	UCT	Architecture & Geomatics

could become a 'flagship' programme of the university's and that he would personally be very keen to support its implementation as early as 2006. He also mentioned importantly that whereas the Masters and Bachelors degrees are faculty and department specific respectively, it would be more correct to look at the DPhil structure and degree. A DPhil degree is

granted by the University as such and is therefore not department of faculty specific and would lend itself most appropriately towards achieving the epistemological and methodological objectives of a Transdisciplinary post-graduate programme.

As was mentioned earlier, the success of the workshop was largely due to the diverse nature of this group of attendees and as can be seen from this list of names the diversity of this group is evident not only in terms of the numerous disciplinary backgrounds and academic institutions represented here, but also in terms of the racial and gender mix of the group.

That the workshop was a worthwhile exercise and experience for most delegates can be gleaned from the following unsolicited feedback received from some of the participants:

"I found the workshop most interesting. Thanks again for all the organising that made it such a success" ~ Prof Dulcie Mulholland

"I would like to express my thanks for all your efforts in organising an excellent and stimulating workshop. It was a great opportunity for learning and for meeting like-minded people. I look forward to future meetings/collaboration" ~ Mr Jeremy Wakeford

"I really enjoyed the workshop. Thanks for putting it together" ~ Dr Siphokazi Koyana

"Thanks for having me at the conference. Sorry I could not participate properly. But I salute you with the initiative around this quite essential forward move. May it grow like it should." ~ Prof Ewil Beukes

"Thank you for the information and once again for a workshop that I truly enjoyed, the opportunity to meet so many interesting people and learn a lot, as well as for all the efforts to make it work" ~ Ms Elsona van Huysteen

"Thanks for the information and for a great 4 days. I really learned a lot and opened my mind to 'new worlds'" ~ Mr Panos Lazanas

"Thank you once again for a very interesting conference. I have learnt quite a lot" ~ Prof Danny Titus

"Thank you so much for inviting me to attend the transdisciplinary workshop. I am very invigorated by this stimulating intellectual encounter!" ~ Dr Patricia Shariff

"Many thanks for allowing me to attend the Monday afternoon session. I am very sorry that I could not attend more and I am sure you must have had very interesting debates" ~ Prof Solly Benatar

"Nogmaals baie dankie vir al die knap reëlings. Dit was 'n baie goeie sessie. Dankie vir julle leiding in hierdie verband" ~ Prof. Johann Templehoff

Content

Day One: Opening Address: Prof Chris Brink – Rector: University of Stellenbosch

Prof Brink opened the workshop with the title of his address being 'Transdisciplinarity and the Vision of the University of Stellenbosch'. He said that the linkage between the Vision of the University of Stellenbosch and Transdisciplinarity lies in the notion of 'transcendence'. He concurred that the University had been the 'birthplace' of Apartheid and that the Vision of this institution under his leadership is to simply *transcend* its past. This means rising above the many contradictions and juxtapositions that come with its historical baggage not only on a socio-cultural and political level, but on all levels and especially in so far as these socially constructed dichotomies have become part and parcel of the university's daily life of research and teaching. Prof Brink proceeded by giving the workshop telling reasons why realizing the University's Vision would be an impossibility if based on the dominant and ingrained Aristotelian logic of the 'excluded middle' and the concept of the 'golden mean'.

It is, then, for this reason that he welcomed Transdisciplinarity or Transdisciplinary Thinking into the life of the University of Stellenbosch. Not only because of the fact that it operates from and offers a different logic – the logic of the *included middle* – to the binary either/or thinking which has come to dominate our thought patterns, but also because of its transformative potential that it brings to the table, as it were. He said that Transdisciplinarity is to be lauded for not merely accepting the age-old disciplinary status quo with its firmly entrenched boundaries and for feeling compelled to want to go *beyond* and *between* these boundaries in a quest for discovering new knowledge to seemingly irreconcilable problems.

Prof Brink concluded his opening address with the following insightful words: "Let me link these comments to my vision for Stellenbosch University. In saying that Stellenbosch University should transcend its past, I do not mean to issue only a repudiation of our historical connection with the development of apartheid. I also mean to challenge our use of, and dependence on, two key concepts of Western rationality: the excluded middle, and the Golden Mean. Perhaps apartheid was the ultimate political application of the law of excluded middle – everything, and everybody, was either black or white, with nothing in between. That time is over now. But we have some more work to do. We are – and when I say 'we' I refer here specifically to the University – still locked into another Aristotelian paradigm, which predisposes us towards treating apparent opposites linearly, instead of orthogonally.

Both in the sense of rising above our past, and in the sense of rising above the stereotypical juxtapositions of apparent opposites, I believe we

can say that we are committed to transcending disciplinarity.”

Keynote Addresses: Proff. Nicolescu and Max-Neef

“Life is an unending sequence of bifurcations. The decision I take, implies all the decisions I did not take. The route I choose, is part of all the routes I did not choose. Our life is inevitably a permanent choice of one among an infinity of ontological possibilities. The fact that I was at a given place, at a very precise moment in time, when a given situation occurred or a given person appeared, may have had a decisive effect on the rest of my life. A few minutes earlier or later, or a few metres away in any direction, might well have determined a different bifurcation and, hence, a completely different life. As the great Spanish philosopher José Ortega y Gasset pointed out: ‘I am myself and my circumstance’”. These were the opening words and main theme of Prof Max-Neef’s keynote address. According to Prof Max-Neef humankind’s intellectual and spiritual history is littered with such moments of bifurcation where we unwisely decided to navigate a certain path rather than another. So, for example, we chose the path of Machiavelli (fear) vs Francis of Assisi (love), the path of Francis Bacon (torturing Nature) vs Fransesco Pico della Mirandola (multiple truths), the path of Rene Descartes (reductionism) vs Giordano Bruno (everything is life) and the path of Newton (rationalism) vs Goethe (feelings, intuition and imagination).

The end result of having traversed this path piloted predominantly by reason we have arrived at a point where we *know* a lot, but *understand* very little. However, the positive aspect about this situation is our ability of reflection and consciousness. We have become increasingly aware that our knowledge is not enough and that knowledge without understanding is a doomed project. We are finding ourselves, yet again, at a moment of bifurcation where we are compelled to look for sustainability and which we now know cannot be founded on and discovered by reason alone. In fact, real sustainability presupposes *understanding* and can only be achieved if a profound language shift towards understanding takes place.

In his keynote address Prof Nicolescu said that the fundamental epistemological questions raised by Transdisciplinarity about our knowledge and knowledge systems, is to a large extent related to the so-called disciplinary ‘big bang’. He mentioned that the latter is both a modern and exponential phenomenon, closely associated with the emergence of universities. In the 1950s there were only 54 disciplines, whereas in the year 2000 more than 8000 disciplines have been registered. The implications of this for the situation we find ourselves in today are far reaching. It is impossible to understand the present world in all its complexities from the vantage point of a specific discipline or sub-discipline alone. It is equally impossible to try and find sustainable solutions to these complex problems in such a situation of specialisation and hyper-specialisation.

Transdisciplinarity has emerged as a response to this double-edged problematique, namely the unification of our over-specialised knowledge systems, on the one hand, and finding integrated, sustainable solutions for the complex problems we are all facing today, on the other hand. However, trying to build bridges across the disciplines is not a new phenomenon and Transdisciplinarity is not the first approach which has ventured into this field. Multi- and Inter-disciplinarity are two such approaches which have emerged and preceded Transdisciplinarity in this regard.

Although it is not the intention of Transdisciplinarity to disregard the progress made by Multi- and Inter-disciplinarity, it is, however, important to distinguish the former from the latter two approaches to highlight their differences and even possible shortcomings. Multi-disciplinarity means in essence looking at a complex problem from the vantage point of a particular discipline whilst 'borrowing' viewpoints and insights from other disciplines. However, the 'enhanced' perspective that emerges in this exercise is always done by and for the root discipline which initiated this process. By taking over vantage points from other disciplines, the root discipline now makes the claim that it has gained a more advanced understanding of the problem at hand.

Inter-disciplinarity, on the other hand, goes a step further in an attempt to build bridges across the disciplines. A specific discipline looking at a complex problem will go as far as 'borrowing' *methodologies* from other disciplines in order to gain a more advanced perspective of the problem at hand. Examples in this regard are the exchange of methodologies between mathematics and physics, mathematics and stock market studies giving rise to new disciplines such as mathematical physics and chaos theory respectively. After the transfer of methodologies, however, the root discipline will, as in the case of multi-disciplinarity, pronounce a more advanced insight into the problem(s) that are being looked at.

Both Inter- and Multi-disciplinarity remain, in the final analysis, *disciplinary* enterprises. Whether viewpoints, perspectives or methodologies are being taken over from other disciplines, it always is done with a view to advance the vantage point of the specific and original discipline which has gone to look for something to borrow from another discipline(s). Transdisciplinarity, however, whilst recognising the tremendous advances made in science this way, argues that it is not enough to build bridges *between* and *across* disciplines *only*. If we are serious about wanting to understand the world we are living in and to find integrated and sustainable solutions to the said complex problems, there is a need to also go *beyond* disciplinary. And, for this to happen it is important to realise two important points: firstly, to accept the finiteness of the rational project. Although the latter has given birth to more than 8000 disciplines and sub-disciplines, this does not mean that we are necessarily developing a more profound understanding of the world and its complex problems. On the contrary, and as Prof Max-Neef has put it, we might *know* a lot,

but *understand* very little. Secondly, and flowing from the limitations of reason, it becomes important to acknowledge that what lies beyond the boundaries of the extant disciplines should not be construed as a 'void' in the sense that there is only 'nothingness'. On the contrary, if what lies beyond our disciplinary boundaries is seen in terms of the 'quantum void' where all is vibration, a fluctuation between being and non-being, then this space or ground can indeed be seen 'fertile' and full of potentialities and becomes an invitation to us to be discovered if we are prepared to open up all our faculties of knowing and understanding at the same time. Transdisciplinarity, in short, is not about wanting to create another (super) discipline and in doing so contribute to the further proliferation of disciplines, with their concomitant boundaries. Rather, Transdisciplinarity is about wanting to *transcend* the boundaries of existing knowledge systems by employing all our knowing and understanding capabilities simultaneously.

Day Two: Prof Nicolescu – The Three Pillars of Transdisciplinarity

Referring to his keynote address of the previous day, Prof Nicolescu said that it is important that Transdisciplinarity not be construed as some sort of a panacea or 'ultimate truth' in its attempt to go beyond disciplinary thinking and knowledge systems. However, as we find ourselves at another moment of bifurcation in our history and evolution, Transdisciplinarity certainly offers a real challenge to circumnavigate a path of the 'included middle'. This is a path – or to put it more correctly 'multiple paths' – which does not offer clear-cut, and mutually exclusive binary options between, for example *either* knowledge *or* understanding. But what is certain is that there is no *a priori* or transcendental 'Path' – with a capital 'P' – which can be arrived at through employing the faculties of reasoning alone. The 'path(s)' suggested by Transdisciplinarity can only be discovered if the navigation of our journey is guided by the logic of the 'included middle' and if we are prepared to use all our faculties of *knowledge* and *understanding* *simultaneously*.

In order to understand this metaphor of a 'path' to be traversed by using the logic of the 'included middle' – as opposed the binary logic of the 'excluded middle' – better, Prof Nicolescu proceeded to with a more in-depth explanation of the three founding principles, or pillars, of Transdisciplinarity: namely, (i) different levels of reality, (ii) the logic of the included middle and (iii) complexity. Prof Nicolescu started out by saying that Transdisciplinarity offers a definition of 'reality' which is both practical and ontological. According to the Transdisciplinary point of view, our practical understanding of 'reality' refers simply to that which *resists* our experiences, descriptions, perceptions, images and, even, mathematical formulations. The ontological definition or understanding of 'reality' re-

fers, on the other hand, to the *trans*-subjective aspect of reality – in other words, accepting that there *is* indeed an objective dimension to reality – e.g. nature – which is not merely a social or inter-subjective construction. Following on from this, Prof Nicolescu said that it is important to make a further conceptual distinction, namely that of ‘levels of reality’. According to this notion, what has previously been defined as ‘reality’ does not refer to one-dimensional understanding hereof. In other words, ‘reality’ does not exist in or on one level only. There are indeed multiple levels of reality which are *discontinuous* in nature. This means that one level of reality is fundamentally different to another level of reality – in fact, one level of reality *cannot* be understood *in terms of* another level of reality. The reason for this is that the laws and concepts which are applicable and operative on/in one level of reality are completely different to those on/in another level of reality. For example, we cannot understand the microphysical, or quantum, level of reality in terms of the notions of ‘causality’ or ‘linearity’ which are applicable and used to understand and explain the macrophysical level of reality. Based on this notion of discontinuous/different levels of reality, Prof Nicolescu, said that it is possible to distinguish, as a starting point, at least three levels of reality: namely, the microphysical, the macrophysical and cyber-space-time levels of reality.

Accepting this multi-dimensional ontological understanding of ‘reality’ does not mean, in turn, that we cannot conceptualise the ‘coherence’ or ‘inter-connectedness’ of the different levels of reality. That the micro- and macrophysical levels of reality co-exist in nature cannot be denied and it is possible to understand how this is possible if we are prepared to accept and employ the logic of the ‘included middle’. This means that we must be able to go beyond the age-old, but still dominant, Aristotelian logic which is founded on the following three fundamental axioms: (i) the axiom of identity: A is A, (ii) the axiom of non-contradiction: A is not non-A and (iii) the axiom of the excluded middle: that there is no third term “T” which is *simultaneously* A and non-A. According to Transdisciplinarity, it is indeed possible to postulate an axiom of the ‘included middle’ – a third term “T” – which is A *and* non-A at the same time, if, and only if, we accept the notion of different levels of reality. In other words, the resolution of what appears to be a mutually exclusive contradiction in terms on one level of reality can be found only on another level of reality – not necessarily on/in the same level of reality. A good illustration of this is that the apparent complete contradiction on the macrophysical level of reality – where something cannot be perceived to be a ‘wave’ (A) and a ‘particle’ (non-A) at the same time – is resolved as a problem at the microphysical level of reality where the ‘quanton’ (T) behaves like a ‘wave’ and ‘particle’ at the same time – or to put it more correctly, where the ‘quanton’ is *neither* ‘wave’ *nor* ‘particle’.

‘Complexity’, the third pillar of Transdisciplinarity, is to be understood in terms of this complex, multi-layered structure of reality with its cor-

responding levels of perception, which are both discontinuous and coherent at the same time. If guided by the logic of the 'included middle', it becomes possible to investigate and gain knowledge and understanding of this complex structure of reality. However, this action of the logic of the included middle on the different levels of reality induces an open structure of the unity of levels of reality. And, in turn, this complex structure of reality has far reaching consequences for our theory of knowledge because it implies the impossibility of a self-enclosed complete theory. Knowledge is forever *open*.

Day Three: Prof Max-Neef – Towards the Foundations of Transdisciplinarity

Starting with some of the main *problematiques* – such as water, forced migrations, poverty, environmental crises, violence, terrorism, neo-imperialism, destruction of social fabric etc. – we are facing today, Prof Max-Neef argued, that we are compelled to conclude that none of them can be adequately tackled from the domain of a specific individual discipline. These complex problems clearly represent transdisciplinary challenges.

Accepting as his point of departure the three pillars of Transdisciplinarity, as outlined by Prof Nicolescu, he proceeded with an in-depth exploration of what a Transdisciplinary methodology could look like when we set out to study and research such complex problems. He used the image of a hierarchical pyramid, explaining that at the bottom or first level we get the group of disciplines that asks the *empirical* question of 'what exists?' These are, for example, sciences such as physics, chemistry and biology in the natural sciences and sociology, anthropology and psychology in the social sciences which provide us with knowledge of the laws of nature and society. The organizing language of this level is *logics*.

The next level on this pyramidal structure is the *pragmatic* level and consists mainly of technological disciplines which ask and answer the question of 'what are we capable of doing?' Here we find sciences such as engineering and architecture which tells us how to build bridges, buildings as well as how to navigate to other planets. The organizing language of these disciplines is cybernetics which mainly focus on the *mechanical* properties and aspects of nature and society. What these disciplines or sciences in and of themselves do not tell us is whether we *should* be doing what we are capable of doing?

Such *normative* questions are reserved for the next level on the pyramid which ask and answer the question as to 'what do we want to do?' The organizing language at this level is planning and involves disciplines such as politics, law, project management and planning. In democratic countries such normative questions are normally decided upon through the voting system.

The last and fourth level on the pyramid is the *values* level and ask and answer the question ‘what should we be doing’ or ‘how should we do what we want to do?’ Here the organizing language is that of deep ecology as the global concerns such as continued existence of the human species and life in general are of concern. The disciplines that we typically find at this level are philosophy, ethics, values studies, theology etc.

Whereas it is possible to associate the first three levels on this pyramid with mono-, multi- and inter-disciplinary studies respectively, a Transdisciplinary action could be defined as the coordination between all the hierarchical levels, vertically as well as horizontally. The implications of this for how we study problems or how we look at existing disciplines are far reaching. For example, if ‘water’ is to be studied as a thematic area from a Transdisciplinary point of view, traversing all these four levels at the same time, could involve calling together engineers, lawyers, chemists, biologists, agronomists etc. and achieving transdisciplinarity in each of them. The outcome of such a study programme would be seeing ‘water’ in an integrated manner and not in terms of the perspectives of the individual discipline of engineering, biology and agronomy, for example. Prof Max-Neef concluded that, given the structure and learning approaches of universities currently, such thematic studies of the abovementioned problematiqués would be highly unlikely at the graduate and under-graduate levels. It would be best to start with such Transdisciplinary studies at the post-graduate, PhD level where there exists much more flexibility and potential for inter-departmental cooperation and collaboration.

Day Four – Reflections

The last day of the workshop was spent on reflecting on what has transpired during the workshop and what could be done to take this initiative further into the future. As regards the question of the future of Transdisciplinarity in South Africa, this will be reported on more specifically under heading 5 titled “Outcomes” immediately hereunder.

Although most participants were unanimous in saying that the exchanges of ideas between the natural and social scientists during the workshop were of a high standard and appreciated by all, the issue of language – or more specifically disciplinary language – was mentioned as a problematic area which will need a lot more attention in future if progress is to be made in respect of establishing a Transdisciplinary research culture in South Africa. Prof Chris James (Wits) felt that a lot of the discussions in the small groups were dominated by the people from a social scientific background and that the language that was used during these discussions resulted in side-lining those from the natural sciences. He said that this could very well develop into a ‘us’ vs. ‘them’ power dynamic and could work against the letter and spirit of Transdisciplinarity in future.

After some lengthy discussion on this matter, during which most participants felt that this issue of language and power is definitely something which will need the conscious attention of everyone participating in the discussion on Transdisciplinarity here and abroad, Prof Max-Neef agreed with the sentiments expressed, but mentioned that in practice this issue of language does not always amount to an insurmountable problem. He shared his experience in this regard where he has been involved for some time now with an experimental transdisciplinary group of post-graduate student in Chile. He mentioned that language is normally an issue at the beginning of a process where and when students come together from their specific disciplinary backgrounds to look at a specific problem, but that it progressively becomes less of an issue as these students start engaging themselves in the studying and researching of the problem at hand. Where people have a strong interest in finding integrated and sustainable solutions to problems, it has been confirmed by his observations that people find solutions to the problem of what words and concepts to use, sooner rather than later. However, he conceded that it is not something which can be dismissed lightly and that it would certainly deserve a conscious effort by all involved in shaping the discussion on Transdisciplinarity in South Africa.

Outcomes

The last session of the workshop was spent on looking at the way forward and in particular to explore in more depth to the implementation and institutionalisation of the idea of a DPhil in Transdisciplinary Studies. The participants responded enthusiastically to being informed of the constructive meeting with the Prof Chris Brink on Monday, 11 April, and proceeded to discuss the following important points:

DPhil: Structure

The meeting discussed Prof Brink's suggestion of a 'DPhil in Transdisciplinary Studies', rather than a 'PhD in Transdisciplinary Studies' in more detail and in the end agreed that the former certainly holds more advantages than the latter. Firstly, it will fit letter and spirit of Transdisciplinarity better in that it is a degree which is awarded by the University and not by a specific department or faculty and would lend itself therefore better for inter-departmental / faculty collaboration. Secondly, it would create the opportunity to design a new programme with a transdisciplinary curriculum and methodology, rather than taking over an existing PhD programme and trying to make it 'fit' into what is envisaged for this Transdisciplinary post-graduate programme.

DPhil: Supervision

Finding the right institutional arrangement for this programme from which all participating universities in South Africa will benefit was mentioned by Prof Swilling as a very important issue which will also have to be given serious attention. He mentioned that the current problem with the supervision of PhD students is that the supervisor is only a supervisor and that it is not always easy to get external examiners to come in on specific research projects. To overcome this problem, he suggested that a panel of transdisciplinary experts be established from local and international academics. This panel of interested and participating academics should distribute evenly the supervision and teaching load associated with a DPhil programme of this nature and should, consequently, receive just financial reward for their efforts in this regard.

DPhil: Curriculum

Prof Swilling said that the proposed DPhil Programme will certainly warrant a teaching component on Transdisciplinary epistemology and methodology. The thesis component of this programme could then, in turn, be theme and research based. For this to work the suggested panel of local and international transdisciplinary academics will become a vitally important aspect in ensuring the future success of the programme.

DPhil: International Collaboration

Prof Max-Neef also shared with everyone present that the University of Valdivia in Chile has given him a mandate to develop a similar post-graduate programme at that university and that it would be highly likely and desirable that the two programmes could enter into a formal collaborative relationship in future. In response to this idea, Prof Nicolescu added that he was very confident that similar programmes will be established in due course in countries such as Brazil, Romania and possibly France and that it is foreseeable that this could become a truly international post-graduate programme with multi-lateral relationships of cooperation, exchange and collaboration.

Dr Robert Kriger (NRF) supported this idea further by informing the meeting that the NRF already has existing bi-lateral research agreements with CONICICH in Chile and CNRS in France. He said it would not be necessary to create new agreements and that these existing agreements could certainly be used to create such an international network of intellectuals working and collaborating with each other in the area Transdisciplinary studies and research.

DPhil: Funding

Funding for the DPhil programme as well as the envisaged panel of local

and international academics will have to come from a number of sources, namely internal universities funds, the NRF as well as the private sector. In this regard, Prof Max-Neef mentioned that it would be very important to involve decision-makers in government, civil society and in business and to start creating a dialogue between these different sectors of society. Keeping them informed of this exciting development within the scientific community and possibly getting financial support for these ideas could create the necessary context conducive for constructive engagement and influencing policy-making processes in future.

DPhil: Marketing

The future success of the proposed DPhil programme will be dependent on attracting the right candidates and Prof Swilling mentioned that what would make a profound impact on the market will not only be the DPhil degree as such but also the suggested panel of local and international participating transdisciplinary academics and experts. He felt that this would be a particularly attractive option to a diverse group of nascent intellectuals in the African and South African context who are in the process of contemplating their post-graduate futures, but who do not want to be 'boxed' into a specific discipline. The meeting concurred strongly with this sentiment and felt that a post-graduate programme of this nature will make a significant contribution towards building and expanding the African intellectual tradition and capital.

Next Steps

Flowing from the above, the following action steps have been suggested in order to take matters forward:

- To follow the internal steps and procedures at the University of Stellenbosch to ensure that the proposed DPhil in Transdisciplinary Studies can be implemented at this university in 2006;
- A report back and follow-up meeting with the NRF during which taking the process forward will be discussed, including the idea of establishing a 'Centre of Excellence in Transdisciplinarity & Sustainable Communities';
- To invite Prof Chris Brink to the 2nd World Congress on Transdisciplinarity in Brazil in September 2005, to give a keynote address and announce the implementation of the DPhil degree in Transdisciplinary Studies at the University of Stellenbosch;
- Dr Johann Tempelhoff (Vaal Triangle) will take the initiative to establish an accredited Journal in Transdisciplinary Studies;
- To establish a website which will give participants and other in-

interested people the opportunity to discuss and debate any ideas which emerged during the workshop as well as any new ideas and suggestions on taking the process forward – in this regard, please visit the following website: www.td.org.za