

Transdisciplinarity as a Model of Post/Disciplinarity

Bruce B. Janz

One of the more sustained efforts to think beyond current academic structures has been launched by CIRET, the International Centre for Transdisciplinary Research, in Paris. This centre was involved in the First World Congress of Transdisciplinarity, in Portugal, 1994, and another international congress in Locarno, Switzerland, in early May 1997. They have a project with UNESCO on transdisciplinarity, and are involved in the World Conference on Higher Education, to be held in Paris at the end of September 1998.

The director of the centre, Basarab Nicolescu, has published extensively on transdisciplinarity, including a forthcoming manifesto on the topic. He has also been involved in drafting a charter of transdisciplinarity, a set of recommendations adopted at the Locarno conference, and several papers on the structure and future of the university. He is a physicist, and also a scholar of the German Reformation mystic Jacob Boehme. Boehme provides a kind of guide for Nicolescu's work, a way of thinking about the structure of knowledge.

But CIRET is not the first group to use the term "transdisciplinarity." As early as 1972, Eric Jantsch from Austria argued for a qualitatively different approach to disciplinarity than was extant at the time (Jantsch, 1972). It was an important enough effort to catch the attention of Julie Thompson Klein in her overview of interdisciplinarity. (Klein, 1990). While Jantsch's and CIRET's uses of the terms may not be identical, they point to a similar dissatisfaction with the structures of knowledge currently available in the university, as well as dissatisfaction with the plethora of attempts to work between, through, or beyond disciplines.

Given the activity of CIRET and its important project with UNESCO, as well as the earlier discussion incorporating the term, it is worth critically reflecting on the vision of the

university held by those who advance transdisciplinarity as a new model of knowledge. The focus will be on CIRET's program. I will begin by outlining this vision, move to some analytic comments about it, and finish by suggesting avenues of conversation which may help push the project forward.

A. Transdisciplinarity Described

Transdisciplinarity emerged as a response to a sense by members of several disciplines that knowledge was being multiplied at increasing rates, but this knowledge had no sense of direction, application, or relation to any other aspects of knowledge in the world. There is a strong sense of existential dissatisfaction with the fragmentation of knowledge and the resultant loss of meaning that occurs in the university, while at the same time recognizing the necessity of specialization for the advancement of knowledge (n.a., 1987).

There are various descriptions of the project of transdisciplinarity, even within CIRET itself, but all have at least three components in common: a belief in levels of reality, a redefinition of Aristotelean logic to include a "law of included middle", instead of a law of excluded middle, and a recognition of complexity as a fundamental feature of knowledge.

When Nicolescu talks about "levels of reality", he takes "reality" to "designate that which *resists* our experiences, representations, descriptions, images or mathematical formalizations." (Nicolescu, 1998a). Levels of reality, then, are

an ensemble of systems which are invariant under the action of certain general laws: for example, quantum entities are subordinate to quantum laws, which depart radically from the laws of the macrophysical world. That is to say that two levels of Reality are *different* if, while passing from one to the other, there is a break in the laws and a break in fundamental concepts (like, for example, causality). No one has succeeded in finding a mathematical formalism which permits the rigorous passage from one world to another.

(Nicolescu, 1998a)

This notion of “levels of reality” (see, for example, article 2 in the Charter) is an attempt to introduce true difference into conversation. The practitioners within the ranks of CIRET seem mostly to be from the sciences, and resist the tendency toward fragmentation and reductionism in science. If reality has levels which are not reducible, true conversation must take place.

The “law of included middle” suggests that, contrary to Aristotle’s law of excluded middle, there is something other than a claim and its negation, A and not-A. Nicolescu explains it as follows:

In order to obtain a clear image of the meaning of the included middle, we can represent the three terms of the new logic -- A, non-A, and T -- and the dynamics associated with them by a triangle in which one of the vertices is situated at one level of Reality and the two other vertices at another level of Reality. If one remains at a single level of Reality, all manifestation appears as a struggle between two contradictory elements (example: wave A and corpuscle non-A). The third dynamic, that of the T-state, is exercised at another level of Reality, where that which appears to be disunited (wave or corpuscle) is in fact united (quanton), and that which appears contradictory is perceived as non-contradictory. (Nicolescu, 1998a)

The inspiration of this principle comes from the logic required by quantum mechanics. If the first principle established that true difference is required for dialogue to occur at all, this principle establishes that the levels of reality serve to unite what seems irreconcilable at one particular level of reality. It is a principle that bears some resemblance to a Hegelian dialectic, but in fact does not have the directional nature of that dialectic, or the tendency to destroy the poles of the dialectic in the process of *Aufhebung*. In fact, it bears more resemblance to Jacob Boehme’s dialectic, which has often been confused with Hegel’s but is in fact quite different. Nicolescu, as a Boehme scholar, is of course well aware of the differences.

The recognition of complexity (sometimes called relativity) builds on the previous two

principles. It is, in a sense, a principle of incompleteness. Nicolescu has this to say about it:

A new Principle of Relativity emerges from the coexistence between complex plurality and open unity: no one level of Reality constitutes a privileged place from which one is able to understand all the other levels of Reality . A level of Reality is what it is because all the other levels exist at the same time. This Principle of Relativity is what originates a new perspective on religion, politics, art, education, and social life. And when our perspective on the world changes, the world changes. In the transdisciplinary vision, Reality is not only multi-dimensional, it is also multi-referential. (Nicolescu, 1998a)

The argument concerning the future of disciplinarity, then, looks like this: our modern history of specialization in the pursuit of knowledge has brought precision, but at the cost of insularity. It has given progress, but this progress is ultimately defeated by the limitations of its own method. And, the pursuit of knowledge without any sense of moral direction has led to perversions of progress and excessive abstraction from reality itself. This critique is not new, and many have tried to address these problems in the past. Unfortunately, most attempts do not get at the real root of the problem. It is not enough to simply encourage disciplinary cooperation without an intellectual framework, and an epistemology that can direct this. It is not enough to simply hold onto the twin goals of efficiency and progress, and find ways that disciplines can mine the resources of other disciplines to achieve these goals. And, it is not enough to predetermine the nature of conversation between disciplines by establishing an over-arching “meta-discipline”. What is needed is a way of preserving the particularity of disciplinary knowledge, while at the same time finding the underlying rationality. Both the infinite and the finite (to use Kierkegaard’s terminology) must be preserved to have knowledge that is truly human.

This argument has its precursors in any number of places in continental, mystical, and pragmatic philosophy. In the next section, I wish to raise some questions about the position just

outlined and also which is represented in the Charter and the Declarations of Locarno. These questions are not meant to deny the usefulness of transdisciplinarity, but are meant to push the conversation along.

B. Transdisciplinarity Assessed

The attempt to find a grand unity to knowledge within the bounds of philosophy goes at least back to Hegel, and one might argue much further back than that. The project of transdisciplinarity bears some similarities to these earlier attempts, although it is clear that its advocates would disavow any connection with most of these synthetic or meta-projects. The similarities come from the common urge to resist the nihilism or relativism of particularity in favour of a coherence which nevertheless continues to take individuality seriously.

This goal is important, and the practitioners of transdisciplinarity have made interesting contributions to the question of how this relates to the university. Having said that, there are some questions that arise as one looks at the program.

1. Despite Nicolescu's comments to the contrary, there seems to be a utopian streak that runs through this project. There is a sense of what the world might be, if only we would take this seriously. And, there is a strong sense of the inadequacy of the current situation. What is the target of this proposal? Scientism on the one hand, defined as the reliance on precision, objectivity, specialization, outcomes, and so forth to produce contextless and meaningless knowledge; on the other hand, a kind of vague new-age mysticism which has plenty of imagination, and focusses on the questions of meaning, but cannot root any of this in anything

more than its own stories.

The *Charter of Transdisciplinarity* (Freitas et. al., 1994), while providing an initial basis for conversation, could certainly be taken as an ideology, or in this case, a set of generally positive claims drawn from a variety of other ideologies. There is a little liberalism in here, a little environmentalism, a general sense of wholism, and a kind of metaphysics that informs the whole project. Each of these seems to be appropriated without the requisite theoretical foundation for them. Why is openness a good thing? Why is it important to have a transhistorical horizon? Why should we take all cultures seriously? By asking these questions, I am not suggesting that we should not take these things seriously, but rather that they seem to be disconnected bits drawn from more extensive intellectual positions. This may, in fact, be an inevitable problem in a system that regards open-endedness as a virtue. Nevertheless, while there may not be a vision of a specific future (the hallmark of most utopias), there may be an intuited vision of a future based on dialogue that might serve to justify potentially repressive measures.

Jacob Boehme gives us an example of how this might work. For Boehme, there is a vision of a world in which all creation vibrates in tune. There is no specific utopia for Boehme, but one can hardly read the *Aurora* without getting a sense of an age in an eschatological future where everything works. Life in the present does not exhibit this kind of unity and coherence, for a variety of reasons ranging from outward oppression to inward inadequacy. So, how do we get to this goal? By resisting the outward oppression, and remedying the inner inadequacy. But here's the key -- who defines this? Who says what is basically constructive and lends support to creation, and which does not? Nietzsche, a thinker with many points of common interest with Boehme, was instinctively suspicious of attempts to define the utopia, and yet even he

distinguishes between complete and incomplete nihilism. Not just anything goes for Nietzsche, or for that matter, for Boehme either. But the question of how to distinguish creating from un-creating is not answered, or is shunted to the level of intuition or mystical experience. And this is no way to start a dialogue.

The *Charter of Transdisciplinarity* (Freitas et. al., 1994) gives a great deal of space to the discussion of the parameters of dialogue and the attitude in which dialogue should take place. There ought to be an “open attitude toward myth and religion (article 9) and an “open minded rationality (article 4). It is transcultural (article 10), in favour of dialogue and respect toward diversity (article 13), and in favour of rigour, openness, and tolerance (article 14).

These are laudable goals, but the question about their theoretical status remains. How could any of these things be verified? What do they even mean? Or are these to be defined within the conversation itself? Boehme’s answer would be clear -- there is an intuitive, perhaps mystical connection which guarantees this sort of knowledge. You have an intuition of the signatures. But of course, that undermines dialogue, and places the intuition as the ultimate arbiter of the conversation. And, it means that real conversation cannot get off the ground.

This is one place where a fruitful conversation might happen between hermeneutics and transdisciplinarity. Hermeneutics has not taken any of these things for granted. The context of conversation is always rooted in a life-world, and its terms spring from that world. It is not necessarily a negotiation prior to meaningful conversation, but the meaning shows itself forth in the discussion of difference and similarity. It seems that in giving a description of the attitude of transdisciplinarity before the fact, the writers have tried to circumscribe the conversation and, ironically, distance the program from any discussion.

2. How can this practically be accomplished? How is a scientist supposed to change his or her activity in light of this proposal? How would this work for the humanist? From the point of view of disciplinary activity itself, it may be difficult to convert the unconverted that an additional intellectual responsibility is worth the effort. The operative term here is “conversion”. The intellectual position suggested in transdisciplinarity seems to be predicated on an inherent agreement between people. This is not surprising in a system rooted in Boehme’s thought. Boehme believed that reality was expressed through signatures (at least, this is the image he uses at one point in his writing). These signatures both showed the individuality of the thing in question, as well as showing the eternal nature of that thing, and of all other things. Those who could not see the signatures (or could not see them the way Boehme did) were dismissed. In other words, true knowledge required a kind of conversion, or a shedding of the illusions brought on by only seeing the “*Gefassete*”, or husks, of reality.

Clearly, the problem of practicality is acute. What are members of disciplines being asked for? Or is this a conversation that assumes that it will only happen between the “elite”, defined as those who are able to see past the husks of partial knowledge? How do we get from here to there?

3. Again despite objections, this seems to be a proposal which has more to say about its own method than how it arrived at that method, and what its own assumptions are. In other words, all the discussion really happens among the disciplines, particularly between science and humanities. But can there be discussion about the proposal itself? For example, could transdisciplinarity and hermeneutics find a way to discuss the world, or would each simply insist

on its own presuppositions? It seems that both have something to offer the other. But if this is following Boehme, it seems unlikely that this is possible. Boehme was notoriously resistant to having his theoretical assumptions challenged, dismissing any such discussion as “*Vernunft*”, or discursive reason. His works are filled with paragraphs that start “*Vernunft sagt. . .*” followed by some mistaken inference that incomplete reason makes, and a correction by *Verstand*.

This may suggest that following Boehme does not give us as much as we want in a theoretical framework for the critique of disciplinarity. Boehme was good at dealing with the problem of evil, and the problem of how wholes and parts relate to each other. He was also good at giving a view of an open-ended system, yet one bounded by some sense of direction. Not just anything goes for him.

What is he not good at? Basically, he does not incorporate true difference as well as one might hope. It is put in a mythology where what disagrees can either be *Turba*, the move towards un-creation, or *Vernunft*, discursive reason that only sees the parts but does not see the whole. In other words, true difference can always be dismissed for him.

Here are a couple of examples of aspects of transdisciplinarity that may resist critique, precisely because they are fundamental to the project. First, how is the idea that reality has levels different from something like Wittgensteinian language games? We can incorporate all the discussions of the irreducibility of logics and epistemological systems, without introducing a hierarchy. In fact, one might suspect that talking about levels is really an attempt to assert a meta-level discipline (again, against the explicit objections of the literature in the area). Does the notion of a variegated reality require that it have levels? If it does not, we have something much more amenable to postmodernism than otherwise. But, the connection to Boehme may prevent

such a move.

Another example: The Locarno Declaration speaks of “hard” and “soft” knowledge (Camus, 1997, #7). It is unclear what these are, and why meaning lies on the “soft” side. Is this an historical observation, that science has tended to deal in facts that are divorced from social context? Is this an attempt to re-combine Dilthey’s two types of knowledge, *Naturwissenschaft* and *Geisteswissenschaft*? The goal of transdisciplinarity is to resist the current structures of science. But there may be more than one way to do this, and the lines of conversation may be found in places other than the fault line of “meaningful” and “meaningless”. Perhaps both emerge from a world of human meaning, and the lines of dialogue themselves will have to emerge organically, rather than be legislated beforehand.

4. More attention needs to be given to the question of language. Boehme himself paid a great deal of attention to the workings of language, but usually to see the mystical underpinnings of *Sprache* and yearn for the *Ursprache*. Perhaps this needs to be put in conversation with the observations made by various hermeneutic and critical theory thinkers, that language is also used as a tool of domination, or of legitimating a certain viewpoint.

C. Transdisciplinarity and Dialogue

The central issue at stake in the account of the revision of disciplinarity offered by the transdisciplinary project is whether it has the theoretical tools for the job. The tool it has chosen for the task is dialogue; my contention is that the nature of dialogue needs further work, so that it can function in the manner it is intended to.

But of course, reflection on dialogue has always been a tricky business, due to the fact that it can only happen within the bounds of dialogue. One cannot simply establish an abstract theory of dialogue before the fact, and then proceed to use it. It is, in point of fact, not a tool at all, but life itself. The virtue of transdisciplinarity is that it recognizes that dialogue has an end, and that simple reflection on its nature is not enough. Sometimes in continental philosophy, the concern for dialogue can turn into arid theory, and can forget that there is a task.

On the other hand, the gains made by post-structuralism, hermeneutics, and critical theory cannot be ignored. While theory is not everything, it is also not nothing. Transdisciplinarity seems to have established that dialogue is a useful tool for an important task, and has spent much effort in describing the nature and boundaries of that tool. The problem is that the tool cannot reflect upon itself. Disciplines in dialogue have their “others” which show themselves back for what they are. Transdisciplinarity itself does not. It might be objected that since it is not a science, or a religion, or a new philosophy, it does not need reflection in the same way. The problem is that it is still a coherent approach to an identifiable subject matter, and as such has a kind of internal unity and coherence. Manifestos and charters cannot be written about nothing.

The revision I would suggest is really just an extension of what CIRET already seems to be willing to do. Dialogue is central to this project; I would like to suggest that transdisciplinarity must not only be the place where dialogue between disciplines is fostered, but also the place where dialogue concerning the nature of transdisciplinarity itself is fostered.

Another way of saying this: the project of transdisciplinarity is fundamentally a metaphysically based project. It assumes something about the nature of reality, and tends to

resist any epistemological or interpretive dodges that would obscure that. There is a reality there for these researchers -- perhaps not a necessary reality, perhaps not one that is logically explicable or completely available to us for delineation, but there is a reality that drives this research. The contemporary move within continental philosophy has been suspicious of assertions about reality. Derrida derides the metaphysics of presence; Heidegger links human consciousness to reality through Dasein, making reality only an issue inasmuch as it is phenomenologically available to us. Structuralists have little to say about a reality that is not socially inflected or constructed. In short, the 20th century has been a time of suspicion toward metaphysics.

Transdisciplinarity's foundation is that there is a reality out there that must be assumed before true conversation can happen at all. Conversation has prerequisites in terms of beliefs or assumptions (apart from the prerequisites in terms of skills), and not everyone can participate.

Perhaps this is another place where hermeneutics can contribute to the transdisciplinary project. Hermeneutics does not necessarily have the suspicion toward metaphysics that post-structuralism does. This is not to say that there is a prior metaphysic that undergirds conversation, but rather that the metaphysic is inextricably linked to an epistemology (or a theory of language and its social character). Yes, there is reality, and its not just what some cynical postmodern thinker wants to make it into. But at the same time, it cannot be legislated as a prerequisite to conversation. Most importantly, it foregrounds its own presuppositions. It is able to reflect on its own theoretical structure as a part of the conversation. Transdisciplinarity, despite all its declarations, manifestos, and charters, cannot yet subject itself to a philosophical critique. It is object-oriented, and the object is its utopian vision. Conversation about itself has

yet to happen, at least in its published or posted literature.

This may strike its practitioners as an ironic criticism, given the conferences, papers, and discussions about the nature of transdisciplinarity. What have they been talking about, if not the nature of the enterprise? But constructing an understanding of the world and subjecting it to the same critique that it is encouraging in others are not the same thing. Ironically, hermeneutics and transdisciplinarity can have a commonality at this point, and not simply an adversarial relationship. One criticism of hermeneutics is that it is not able to truly deal with critique. It rather just absorbs it into its own system, using some device such as tradition to reduce it to the same level as all other conversation. Habermas' famous criticisms of Gadamer illustrate this well -- until the problem of the alienation of language is dealt with, any seeming agreement generated by hermeneutics may simply be a false unity.

The same charge might be brought against transdisciplinarity. Is it able to deal with thoroughgoing critique, or will it either absorb it into the system or (following Boehme) reject the critique as a product of incomplete discursive reason (*Vernunft*), and thus render itself immune from real conversation about its own position as an epistemological construct? Does the notion of reality that undergirds this project preclude conversation by stipulating the boundaries of that conversation? Is conversation, in the final analysis, made safe by the unexamined assumptions of transdisciplinarity?

This comment is not meant to suggest that transdisciplinarity is a futile exercise, but rather to suggest that its ability to reflect on its own hidden assumptions has yet to take place. It may do well to enter into conversation with other intellectual traditions. It is an assumption in hermeneutics that the self is known in its reading, by casting itself on the other. Conversation with

a text or with a person, then, have a similar type of movement, and in the “reading” that conversation allows the self is shown for what it is. This does not presume that transdisciplinarity will find itself wanting, but rather it may show forth some of its as yet unseen commitments.

Perhaps the chief virtue of transdisciplinarity is that it represents a dialogue among thinkers from a wide variety of backgrounds, who do not have this as a professional obligation or area of interest. The question of disciplinarity has been the province of philosophers, sociologists, and post-modern theorists in general, and has been directed more by theoretical concerns than any real sense of the need for change. Some of it has been ideologically inflected, and amounts to a working-out of a particular position. Judging from the “published” (at least on the WWW) discussions and papers that CIRET hosts, this seems less about ideology or clever theory, and more about instigating a change in the way we do things. And, if there were no other reasons to admire the work that CIRET does, that in itself would be enough.

References

n.a. (1987). “Moral Project” <http://perso.club-internet.fr/nicol/ciret/projen.htm>.

Camus, Michel & Basarab Nicolescu (1997). “Declaration and Recommendations of the International Congress **Which University for Tomorrow? Towards a Transdisciplinary Evolution of the University** in Locarno, Switzerland” <http://perso.club-internet.fr/nicol/ciret/locarno/loca7en.htm>.

Centre International de Recherches et Etudes transdisciplinaires (CIRET) WWW Site:

<http://perso.club-internet.fr/nicol/ciret/>.

d'Ambrosio, Ubirata (1998). "Universities and Transdisciplinarity." Bulletin Interactif du Centre International de Recherches et Etudes transdisciplinaires, number 12(February 1998).

<http://perso.club-internet.fr/nicol/ciret/locarno/loca5c10.htm>.

Freitas, Lima de, Edgar Morin, Basarab Nicolescu (1994). "Charter of Transdisciplinarity."

<http://perso.club-internet.fr/nicol/ciret/english/charten.htm>.

Gadamer, Hans-Georg (1994). "The Idea of the University – Yesterday, Today, Tomorrow" in *Gadamer on Education, Poetry, and History*. Albany: SUNY Press.

Jantsch, Erich (1972). "Towards Interdisciplinarity and Transdisciplinarity in Education and Innovation." in *Interdisciplinarity: Problems of Teaching and Research in Universities*, pp. 97-121. Paris: Organization for Economic Cooperation and Development.

Klein, Julie Thompson (1990). *Interdisciplinarity: History, Theory, and Practice*. Detroit: Wayne State University Press.

Klein, Julie Thompson (1998) "Notes Toward a Social Epistemology of Transdisciplinarity." Bulletin Interactif du Centre International de Recherches et Etudes transdisciplinaires, number

12(February 1998). <http://perso.club-internet.fr/nicol/ciret/bulletin/b12/b12c2.htm>.

Nicolescu, Basarab (1991). *Science, Meaning, and Evolution: The Cosmology of Jacob Boehme*. New York: Parabola Books.

Nicolescu Basarab.(1998a). “Gödelian Aspects of Nature and Knowledge.” Bulletin Interactif du Centre International de Recherches et Etudes transdisciplinaires, number 12(February 1998). <http://perso.club-internet.fr/nicol/ciret/bulletin/b12/b12c3.htm>.

Nicolescu, Basarab (1998b). “The Transdisciplinary Evolution of the University Condition for Sustainable Development.” Bulletin Interactif du Centre International de Recherches et Etudes transdisciplinaires, number 12(February 1998). <http://perso.club-internet.fr/nicol/ciret/bulletin/b12/b12c8.htm>.

Voss, Karen-Claire (1998). “University as a Space of Possibility.” Bulletin Interactif du Centre International de Recherches et Etudes transdisciplinaires, number 12(February 1998). <http://perso.club-internet.fr/nicol/ciret/bulletin/b12/b12c10.htm>.